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THE NEXT FARM BILL

HEARINGS

BEFORE THE

SUBCOMMITTEE ON CONSERVATION AND FORESTRY;

AND THE

SUBCOMMITTEE ON LIVESTOCK AND FOREIGN AGRICULTURE;

AND THE

SUBCOMMITTEE ON COMMODITY EXCHANGES, ENERGY, AND CREDIT;

AND THE

SUBCOMMITTEE ON BIOTECHNOLOGY, HORTICULTURE, AND RESEARCH;

AND THE

SUBCOMMITTEE ON NUTRITION;

AND THE

SUBCOMMITTEE ON GENERAL FARM COMMODITIES AND RISK MANAGEMENT;

AND THE

COMMITTEE ON AGRICULTURE

HOUSE OF REPRESENTATIVES

ONE HUNDRED FIFTEENTH CONGRESS

FIRST SESSION

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THE NEXT FARM BILL
(CONSERVATION POLICY)

TUESDAY, FEBRUARY 28, 2017

HOUSE OF REPRESENTATIVES,
SUBCOMMITTEE ON CONSERVATION AND FORESTRY,
COMMITTEE ON AGRICULTURE,
Washington, D.C.

The Subcommittee met, pursuant to call, at 10:00 a.m., in Room 1300 of the Longworth House Office Building, Hon. Frank D. Lucas [Chairman of the Subcommittee] presiding.

Members present: Representatives Lucas, Thompson, LaMalfa, Allen, Bost, Abraham, Kelly, Conaway (*ex officio*), Fudge, Walz, Kuster, Nolan, O'Halleran, Vela, and Peterson (*ex officio*).

Staff present: John Weber, Josh Maxwell, Patricia Straughn, Stephanie Addison, Anne Simmons, Evan Jurkovich, and Nicole Scott.

OPENING STATEMENT OF HON. FRANK D. LUCAS, A REPRESENTATIVE IN CONGRESS FROM OKLAHOMA

The CHAIRMAN. This hearing of the Subcommittee on Conservation and Forestry entitled, *The Next Farm Bill: Conservation Policy,* will come to order. I almost want to say I am back, but that is beside the point. Let me turn myself to myself for an opening statement.

Good morning, and welcome to today's hearing. For some of us, it is hard to believe it is already farm bill time again, and to some degree, it feels like we just finished hashing out the details of the last farm bill. But it is true that we are already entering the 4th year of the Agricultural Act of 2014, and that means we must now set about the hard work of preparing for the next farm bill.

As Chairman Conaway noted at the rural economic outlook hearing 2 weeks ago, we are entering this farm bill reauthorization against a much different backdrop. Net farm income has been cut in half over the past 4 years, the steepest 4 year percentage decline since the start of the Great Depression. As I have noted before, we write farm bills for the bad times, not the good times, and our nation's farmers and ranchers currently are struggling with that as we speak.

While the 2014 Farm Bill has been vital in responding to the needs of the countryside, we revisit the farm bill and all farm bills roughly every 5 years to make sure that they are tuned to the current conditions in the countryside. To that end, we are starting our important aspect of this work this morning. Over the course of the

next month, each Subcommittee will hold hearings focusing on the portions of the farm bill that fall under their respective jurisdictions. Each Subcommittee is going to ask stakeholders to give us their farm bill ideas sooner, rather than later. And as an Oklahoma State graduate, it is difficult for me to say that. Nonetheless, that is an inside joke.

Today, we are focusing on the nation's voluntary conservation initiatives. These initiatives have undergone many changes over the past 2 decades, during which time I served as Chairman and Ranking Member respectfully of the Subcommittee with jurisdiction over the conservation title, and then as Chairman of the full Committee. Once again, I have the pleasure to serve in a familiar role as we begin this process. I take conservation policy very seriously. My dedication to conservation comes from being raised by folks who lived through the drought and the Dust Bowl of the 1930s, and the drought of the 1950s, both of which caused some of the hardest times rural America has ever experienced.

As a western Oklahoma farmer, I have also seen firsthand the important role conservation plays in making sure that a Dust Bowl never happens again. While this Committee cannot control the weather, we can provide our farmers and ranchers the tools necessary to protect and conserve not only the land, but also their way of life.

Congress has acknowledged this over the past 20 years by making significant investments in conservation policy. We expanded our commitment to important issues like CRP and EQIP, while also creating new tools like CSP to expand the use of on-farm conservation practices. The conservation title of the 2014 Farm Bill answered the call for meaningful deficit reduction, saving taxpayers $6 billion by consolidating 23 programs into 13, further streamlining and targeting delivery to farmers, ranchers, and foresters.

I am proud of the work that we have accomplished over the years, and I am proud of the work of the farmers, ranchers, and forest owners who implement these important conservation practices. I think the results speak for themselves. Voluntary conservation works.

That said, I understand that no policy is perfect, and I look forward to hearing from our witnesses today about how these critical tools can be improved to address new natural resource challenges.

Thanks to all of our witnesses who have taken time from their work and families to join us today. We appreciate your efforts and your willingness to share your thoughts on the future of conservation policy. I would be remiss if I didn't note that I am delighted to be partnered with my Ranking Member in this endeavor on this Committee, and Ms. Fudge, we had quite the set of adventures in the 2012, 2013, and 2014 Farm Bill process, and I look forward to working with her in every way.

[The prepared statement of Mr. Lucas follows:]

PREPARED STATEMENT OF HON. FRANK D. LUCAS, A REPRESENTATIVE IN CONGRESS FROM OKLAHOMA

Good morning and welcome to today's hearing.

For some of us, it's hard to believe that it's already farm bill time again. To some degree, it feels like we just finished hashing out the details of the last farm bill. But, it's true that we are already entering the 4th year of the Agricultural Act of 2014, and that means we must now set about the hard work of preparing for the next farm bill.

As Chairman Conaway noted at the rural economic outlook hearing 2 weeks ago, we are entering this farm bill reauthorization against a much different backdrop. Net farm income has been cut in half over the past 4 years, the steepest 4 year percentage decline since the start of the Great Depression.

As I've noted before, we write farm bills for the bad times—not the good times—and our nation's farmers and ranchers are certainly struggling right now. While the 2014 Farm Bill has been vital in responding to needs in the countryside, we revisit farm bills roughly every 5 years to make sure they are attuned to current conditions in the countryside.

To that end, we are starting an important aspect of that work this morning. Over the course of the next month, each Subcommittee will hold hearings focused on the portions of the farm bill that fall under their respective jurisdictions. Each Subcommittee is going to be asking stakeholders to give us their farm bill ideas—**sooner** rather than later.

Today we are focusing on the nation's voluntary conservation initiatives. These initiatives have undergone many changes over the past 2 decades, during which time I served as the Chairman and Ranking Member, respectively, of the Subcommittee of jurisdiction for the conservation title and then as Chairman of the full Committee.

Once again, I have the pleasure to serve in a familiar role to begin this process. I take conservation policy very seriously. My dedication to conservation comes from being raised by folks who lived through the drought and Dust Bowl of the 1930s and the drought of the 1950s, both of which caused some of the hardest times rural America has ever experienced.

As a western Oklahoma farmer, I have also seen firsthand the important role conservation plays in making sure that a Dust Bowl never happens again. While this Committee cannot control the weather, we can provide our farmers and ranchers the tools necessary to protect and conserve not only the land, but also their way of life.

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I'm proud of the work we have accomplished over the years, and I'm proud of the work of the farmers, ranchers and forest owners who implement these important conservation practices. I think the results speak for themselves—voluntary conservation works.

That said, I understand that no policy is perfect, and I look forward to hearing from our witnesses today about how these critical tools can be improved to address new natural resource challenges.

Thanks to all of our witnesses who have taken time from your work and families to join us today. We appreciate your efforts and your willingness to share your thoughts on the future of conservation policy.

I must also mention how delighted I am to be partnered with our Ranking Member, Ms. Fudge.

With that, I yield to the Ranking Member for any opening remarks she would like to make.

The CHAIRMAN. With that, I would like to yield to the Ranking Member for any opening remarks that she would like to make.

OPENING STATEMENT OF HON. MARCIA L. FUDGE, A REPRESENTATIVE IN CONGRESS FROM OHIO

Ms. FUDGE. Thank you very much, Mr. Chairman, and thank you all for being here this morning.

I am really excited to be here today for our first Conservation and Forestry Subcommittee hearing, and for the opportunity to work with my good friend, Chairman Lucas, as we get to work on the next farm bill.

Conservation programs are a staple of the farm bill, and play an invaluable role in preserving our agricultural landscapes across the country. Farmers are the original conservationists. Their livelihood is tied to the land, and it is in their best interest that their land be the healthiest, most productive, and most resilient it can be. Farm bill conservation programs help our producers accomplish just that, while compounding benefit after benefit to deliver cleaner air, cleaner water, and helping address some of our nation's most pressing natural resource concerns.

The last farm bill consolidated some conservation programs with a goal of making the programs easier for producers to use and easier for NRCS to manage. I am interested to hear today how those changes are working, and if, indeed, they have made the programs easier to use and administer.

The 2014 Farm Bill's conservation title also saved almost $4 billion over 10 years. This was a substantial cut initiated by the Committee as part of the overall farm bill savings. Further cuts to these programs as part of the upcoming farm bill would significantly hamstring the efforts to achieve our conservation goals.

I am also looking forward to hearing how our tried and true conservation programs like EQIP, CSP, CRP, and easement programs are working, and how they can work better for producers on the ground.

Finally, and I know some of our witnesses will touch on this today, I am interested to hear how the new Regional Conservation Partnership Program is working. This program was an effort to give more flexibility on the ground and leverage our Federal dollars to bring more non-Federal resources to our conservation needs.

I want to thank the witnesses, and I especially want to thank my good friend, Chairman Lucas. I yield back.

The CHAIRMAN. The gentlelady yields back. The chair notes that the Subcommittee is privileged and pleased that we have both the Chairman of the full Committee and the Ranking Member in attendance today.

Mr. Chairman, Mr. Conaway, would you have any opening comments to make?

OPENING STATEMENT OF HON. K. MICHAEL CONAWAY, A REPRESENTATIVE IN CONGRESS FROM TEXAS

Mr. CONAWAY. Just that I want to thank both yourself and the Ranking Member for kicking off this series of Subcommittee hearings. You all are the first ones to start. All the Subcommittees will have a series of hearings over the next couple months, covering their areas of jurisdiction, and I am looking forward to both of y'all's able leadership in this endeavor, and look forward to the hearing.

With that, I yield back.

The CHAIRMAN. The gentleman yields back. The chair recognizes the Ranking Member of the full Committee for any comments he might make.

OPENING STATEMENT OF HON. COLLIN C. PETERSON, A REPRESENTATIVE IN CONGRESS FROM MINNESOTA

Mr. PETERSON. Well thank you, Chairman Lucas and Ranking Member Fudge, for holding today's hearing to review conservation policy. We will be hearing from a great panel of witnesses today, and so I welcome to them to the Committee.

At the Committee's recent hearing on farm economy, I expressed my intent to take a good look at the CRP program, and try to see if we can simplify and reform and increase the acres in that program. We lowered the cap on CRP in the 2014 Farm Bill, even though I really didn't want to do that, but we were loosing the acreage anyway, and if we wouldn't have lowered the cap, the money would disappear. We used that money to protect the conservation baseline, and it has helped offset some cuts in other programs in title II.

But now, given what is going on around the country, it is time for us to figure out how to get back to 40 million CRP acres in this farm bill. This increase will help improve water quality and address the declining wildlife populations that we have experienced in my region of the country: big tract CRP worked. We boomed with pheasants, ducks, and deer and other wildlife because of it, but it has been diminished because of economics. Because of an over-emphasis on some of these carve outs that have been put in there to satisfy everybody's idea, and you know, the general sign-up has become a step-child in the program. That is the opposite of what needs to be done. I would like to see us increase the acres, but if we don't reform this program, I am not going to support increasing the acres. That is how strongly I feel about it.

I am going to be looking for ways to make CRP less complicated, to make the rental rates more affordable for the budget, and also more competitive so that farmers aren't losing their land to CRP. I am also interested in steps that we can take to bring the program up to date by getting rid of the requirement that was originally put in, because the program originally was to get land out of production to raise prices. We still have in place the fact that you have to have base acres and program acres in order to get into the program. I don't think that is necessary anymore, or right. I would like to see us get rid of that.

By and large, the farm bill conservation programs are working. As was said, we simplified some of these other programs in the last bill. Now, it is time for us, in my opinion, to take a good look at CRP and simplify that program as well.

I am looking forward to today's witnesses, and thank the chair for allowing me to spout off, and I yield back.

The CHAIRMAN. The gentleman is timid as always. I thank the Ranking Member.

I would like to welcome our witnesses to the table. First, Mr. Chuck Coffey, Owner/Manager Double C Cattle Company, Davis, Oklahoma, on behalf of the National Cattlemen's Beef Association. Also, Mr. Tim Gertson, a member of the USA Rice Federation Board of Directors, Lissie, Texas. Mr. Jeremy Peters, Chief Executive Officer, National Association of Conservation Districts, Washington, D.C., on behalf of Mr. Lee McDaniel, who may be under the weather, correct, Mr. Peters? Mr. David Nomsen, Vice President of

Governmental Affairs, Pheasants Forever, Garfield, Minnesota; and the Honorable John Piotti, President, American Farmland Trust, Washington, D.C.

And with that, Mr. Coffey, you are recognized for 5 minutes. We have these wondrous lights, green, yellow, red. Proceed, sir.

STATEMENT OF CHUCK COFFEY, OWNER/MANAGER, DOUBLE C CATTLE COMPANY; MEMBER, NATIONAL CATTLEMEN'S BEEF ASSOCIATION, DAVIS, OK

Mr. COFFEY. Thank you very much, Chairman Lucas, Ranking Member Fudge. We sincerely appreciate your recognition of agriculture's important contribution to our nation's lands.

Good morning. My name is Chuck Coffey. Ruth, my wife of 30 years, and I operate a fifth generation cattle ranch in south central Oklahoma, where we own and operate over 30,000 acres of grassland, rangeland. I am testifying before you today representing the many cattle producers who each have a stake in protecting the environment.

U.S. cattlemen own and manage considerably more land than any other segment of agriculture. In fact, we manage the net sum of ⅓ of the nation's total land mass. Since our livelihood is made on the land, the utilization of our natural resources and being good stewards of the land not only makes good environmental sense, it is fundamental for our industry to remain strong. We strive to operate as environmentally friendly as possible, and it is through voluntary conservation programs that ranchers will continue to be proud partners with the government to reach our environmental conservation goals.

Ranching in south central Oklahoma comes with its fair share of difficulties, as it does for many fellow cattlemen across the country. However, we have been able to keep our operation sustainable during those hard times by utilizing voluntary conservation programs and applying management practices that enhance our operation.

Drought is a common problem in south central Oklahoma, and requires adaptability and forward thinking to maintain the resources we have on the ranch. In 2011 and 2012, we were challenged with one of the worst droughts in a generation. It was similar to the droughts of the 1950s and the droughts of the 1930s, but praise the Lord, Mr. Lucas, we didn't have a Dust Bowl situation due to the conservation practices that we have on the ground. However, we survived and remained sustainable because of our grazing management practices, and the opportunity to work with NRCS' voluntary conservation programs. One way we made our ranch drought resistant is by installing solar wells and above ground water storage systems, and even piping water to some critical areas, this water serving both the needs of livestock and wildlife that inhabit our lands.

We graze our cattle with a carefully managed grazing plan, developed with the assistance of the NRCS. Through cooperation with state and local agencies, in addition to the development of innovative grazing strategies, we have increased perennial grasses on our ranch, improved ground cover, greatly reduced soil erosion, and ensured adequate forage for livestock and wildlife.

Another key to improving the grasses on our ranch is brush control, which we often do in partnership with NRCS when funds are available. We use a variety of ways to reduce brush, including prescribed burns and mechanical treatment.

Conservation programs that keep land in production and do not limit its use are best for both ranchers and conserving our nation's resources. That is why the working lands programs, in my opinion, works best for ranchers. One such program, CSP, the Conservation Stewardship Program, rewards those of us that have been conservationists and have spent both time and money improving our land, water, and wildlife habitats. CSP offers cattlemen the opportunity to earn payments for actively managing, maintaining, and expanding conservation practices.

NRCS personnel are a tremendous resource for ranchers. In recent years, local NRCS personnel have been prevented from going to training sessions provided by the Society for Range Management, the Grassland Conservation Initiative meetings, and it has also become more difficult, in my opinion, for them to find time to get out of the office due to the tremendous amounts of paperwork that they are required to keep up with. We as ranchers must have well-informed NRCS personnel on the ground with us to move forward with these innovative conservation practices.

As Congress begins to process the next farm bill, I have a few recommendations on how to make these programs work even better for producers. NRCS needs to work on streamlining the application process to be able to garner more participation in the program. CSP, for example, needs to be simplified and based on outcomes and adaptive management, rather than a prescribed set of management practices.

The biggest point I would like you to take away from this hearing is that the voluntary part of the conservation program is what really makes it work for ranchers. If they were to become mandatory, the rules and regs that farmers and ranchers would be subjected to would make it harder for them to utilize the unique conservation practices that help their individual operations thrive.

USDA's conservation programs have been a great asset to cattle producers, and it is important that these programs be implemented in a practical, producer-friendly, and voluntary manner to ensure that cattlemen can continue to responsibly produce the world's safest, most nutritious, and affordable source of protein. I appreciate the opportunity to visit with you today, and thank you for your time. I would welcome any questions moving forward. Thank you, Chairman Lucas.

[The prepared statement of Mr. Coffey follows:]

PREPARED STATEMENT OF CHUCK COFFEY, OWNER/MANAGER, DOUBLE C CATTLE COMPANY; MEMBER, NATIONAL CATTLEMEN'S BEEF ASSOCIATION, DAVIS, OK

Good morning, my name is Chuck Coffey. Ruth, my wife of 30 years, and I operate a fifth-generation cattle ranch in south central Oklahoma where we own and operate over 30,000 acres of grassland. I am a graduate of Texas A&M where I studied Rangeland Ecology, and proudly have three children who have graduated from Oklahoma State University with degrees in Agribusiness and Natural Resource Management and are now the sixth generation on the Ranch. I taught agriculture at Murray State College, chairing the department, until I joined the Noble Foundation as a Pasture and Range Consultant in 1993. I am a member of the National Cattlemen's Beef Association and am testifying before you today representing the

many cattle producers and family ranchers, who each have a stake in protecting the environment. Thank you Chairman Lucas and Ranking Member Fudge for allowing me to testify today on voluntary conservation programs.

U.S. cattlemen own and manage considerably more land than any other segment of agriculture—or any other industry for that matter. Cattlemen graze cattle on approximately 666.4 million acres of the approximately 2 billion acres of the U.S. land mass. In addition, the acreage used to grow hay, feed grains, and food grains add millions more acres of land under cattlemen's stewardship and private ownership. Some of the biggest challenges and threats to our industry come from the loss of our natural resources. The livestock industry is threatened daily by urban encroachment, natural disasters, and government overreach. Since our livelihood is made on the land, through the utilization of our natural resources, being good stewards of the land not only makes good environmental sense; it is fundamental for our industry to remain strong. We strive to operate as environmentally friendly as possible, and it is through voluntary conservation programs that ranchers will continue to be a proud partner with the government to reach our environmental conservation goals.

I represent the fifth-generation of ranching within the Coffey family. As I stated earlier, we ranch on 30,000 acres of grassland spanning across Carter and Murray counties in south central Oklahoma. Our goals are very similar to many other ranchers around the country, be profitable, and leave the land in better condition for future generations. The primary way we are able to preserve the land, as well as our ranching heritage for future generations, is through innovative practices, diversification and voluntary conservation programs.

Ranching in south central Oklahoma comes with its fair share of difficult times, as it does for my fellow cattlemen across the country. However, we have been able to keep our operation sustainable during those hard times, by utilizing voluntary conservation programs and applying management practices that enhance the operation. Drought is a common problem in south central Oklahoma, and it requires adaptability and forward thinking to maintain the resources on the ranch. In 2011 and 2012, we were challenged with one of the worst droughts in a generation. Water was virtually nonexistent and wildfires were prevalent. But we were able to survive, and remain sustainable, because of our grazing management practices and the opportunity to work with the NRCS's voluntary conservation programs to improve our ranch and make our grasslands more resilient. Also key to our survival has been the voluntary insurance programs such as FSA's NAPP Insurance and the private insurance known as PRF–RI insurance provided through USDA–RMA. These voluntary programs were a great benefit to many producers who, quite frankly, would not have survived without them.

One way we made our ranch drought-resistant is by installing solar wells and above ground water storage systems, and even piping water to some critical areas. This ensures our livestock and wildlife have adequate and reliable water throughout the year.

We graze our cattle with a carefully managed grazing plan that we developed with the assistance of the Natural Resources Conservation Service (NRCS) and the National Grazing Lands Coalition (NGLC) utilizing their conservation planning capabilities. We have learned that when you utilize a flexible, planned grazing program at a conservative stocking rate, leave grass cover after you move out of a pasture, and give the rangeland adequate recovery time, you will grow more grass with limited rainfall. Through cooperation with state and local agencies, in addition to the development of innovative grazing strategies, we have increased perennial grasses on the ranch, improved ground cover, greatly reduced soil erosion due to both wind and water, reduced labor inputs, and ensured adequate forage for livestock and wildlife populations on the ranch. Our grazing strategy is a big part of why we've been able to keep the ranch resilient and sustainable. Furthermore, by implementing these programs we are able to keep expenses down by lowering feed, fuel, labor and equipment costs, thus improving the profitability of our operation.

Another key to improving the grasses on our ranch is brush control, which we often do in partnership with NRCS when funds are available. We use a variety of ways to reduce brush including prescribed burns and mechanical treatment. We leave the bigger trees in to give the grasslands a savannah effect which also provides shade for the cattle, improving their welfare.

We are strong advocates of prescribed fire on the rangeland. We try to mimic the fire conditions that nature historically provided the land prior to settlement. It is a very good tool within our tool box of land improvement measures. NRCS and the GLCI have provided valuable assistance in our burning endeavors.

The Environmental Quality Incentive Program, or EQIP, is a cost-share program that rewards and provides incentives to producers for implementing conservation

practices. When wildfire came through our ranch in 2011, we had to rebuild miles of fencing. EQIP helped us do it. One of the reasons EQIP has become popular among ranchers is because it is a working-lands program. Conservation programs that keep land in production and do not limit its use are best for both the ranchers and conserving our resources.

Another working lands program is the Conservation Stewardship Program. CSP rewards those of us that have been conservationists and have spent the time and money in the improving of our land, water, and wildlife habitats. CSP offers cattlemen the opportunity to earn payments for actively managing, maintaining, and expanding conservation activities like cover crops, rotational grazing, ecologically-based pest management, and buffer strips.

NRCS personnel are a tremendous resource for ranchers. In recent years local NRCS personnel have been prevented from going to training sessions provided by the Society for Range Management and Grasslands Conservation Initiative meetings. It is also becoming more difficult for them to find time to get out of the office due to the tremendous amounts of paperwork they are required to keep up with. We as ranchers must have well informed NRCS personnel to move forward with innovative conservation practices. They are our first go to source of knowledge. It is critical we have "boots-on-the-ground" in conjunction with the voluntary programs offered.

As Congress begins the process of developing the next farm bill, I have some recommendations on how to make these programs work even better for producers.

- First and foremost—NRCS needs to make it as simple as possible for farmers and ranchers to participate in these programs. Streamlining the application process will garner more producer participation.
- Farmers and ranchers need greater access to programs like CSP, where there is a great demand for these programs but limited funding. I, and cattle ranchers around the country, would like to see CSP simplified and based on outcomes and adaptive management rather than a prescribed set of management practices.
- The EQIP program should disclose penalty cancellation costs before producers sign on the dotted line. And producers who enter into an EQIP contract should have the ability to periodically revise the terms of a multiple-year contract to adjust for rising costs over time.
- NRCS should maintain and enhance EQIP at 60% or greater allocation for livestock related applications for all operations, regardless of their size.
- Reinvigorate the focus at the local "grassroots" level by increasing the NRCS staff that work with producers and provide technical assistance at the local level.
- Increase research in soil, water, plant, and wildlife science so that we have an accurate and growing pool of data to inform policy decisions.

The biggest point I'd like you to take away from this hearing is that the "voluntary" part of the conservation programs is what really makes it work for ranchers. We've had success using some of these conservation programs, but just because this system works for us does not mean it's right for everybody. It's important that we keep these programs funded to safeguard their continued success, and above all else—these programs must stay voluntary. A one-size-fits-all approach that accompanies top-down regulation does not work in my industry. If these programs were to become mandatory, the rules and regulations that farmers and ranchers would be subjected to would make it harder for them to utilize the unique conservation practices that help their individual operations thrive.

I believe that economic activity and conservation go hand in hand and we are always looking for new, innovative conservation programs that will have tangible benefits for the environment, and help to improve our ranching lands. USDA's conservation programs have been a great asset to cattle producers and it is important that these programs continue to be implemented in the same practical, producer friendly, and voluntary manner for years to come to ensure that cattlemen will continue to have the ability to do what we do best—produce the world's safest, most nutritious, abundant and affordable protein while operating in the most environmentally friendly way possible. Together we can sustain our country's natural resources and economic prosperity, ensuring the viability of our way of life for future generations. I appreciate the opportunity to visit with you today. Thank you for your time, and I welcome any questions you may have.

The CHAIRMAN. Thank you, Mr. Coffey.

Mr. Gertson, you are recognized for 5 minutes.

STATEMENT OF TIMOTHY GERTSON, CO-OWNER/CO-OPERATOR, G5 FARMS; MEMBER, BOARD OF DIRECTORS, USA RICE FEDERATION, LISSIE, TX

Mr. GERTSON. Chairman Lucas, Ranking Member Fudge, and Members of the Subcommittee, thank you for holding this hearing today. I appreciate the opportunity to offer testimony on behalf of the USA Rice Federation. My name is Timothy Gertson, and I own and operate G5 Farms along with my cousin. We are fifth generation rice farmers, and first began farming independently of our parents in 2009. We farm in and around Lissie, Texas, a small community about an hour outside of Houston.

On our farm, we normally begin planting rice March 1, and if you take a look at the calendar, you will see that is tomorrow. But here I am in a suit and tie in D.C., 1,500 miles from home. That is because the issue of conservation is critically important to me and my family.

With my testimony today, I would like to focus on the importance of investments in working lands programs, specifically, EQIP, CSP, and the RCPP. Rice is the only commodity that is 100 percent irrigated, with many growers dependent on ground water. It is necessary to flood our fields during the growing season, and we have the option and opportunity to maintain those floods throughout the winter to benefit the millions of migratory water fowl passing through. Winter flooded rice fields provide many of the same functions for migrating water fowl as natural wetlands.

The close relationship between rice and water fowl led to an historic partnership between USA Rice and Ducks Unlimited. The Rice Stewardship Partnership has unified us around our common goals and working lands conservation programs, and the theme "What's good for rice is good for ducks."

Since the partnership was formed, we have worked together to secure $25 million through three different RCPP projects from NRCS to implement EQIP and CSP projects across all six rice growing states, and to construct a small reservoir near my hometown, Anita Lake, to benefit water fowl and rice farmers when we experience drought. USA Rice would like to see the continuation of RCPP as part of the next farm bill.

CSP, and especially EQIP, are referred to by farmers as the workhorses of NRCS conservation programs. They are valuable cost-share programs that incentivize implementation of conservation practices that have proven benefits to the environment. My father and his brothers can attest, as some of the earliest adopters of both programs on our family operation.

Many rice farmers operate on rented cropland. These cost-share programs allow land renters to install conservation measures while footing only a portion of the costs. Improvements in efficiencies benefit the farmer, while the environmental perks benefit the landowner, simultaneously raising the land value.

We heard there was a huge demand for the EQIP program when we got our first contract in 2010, and we soon learned why as the results came quickly and our input costs dropped significantly. We cost-shared the installation of more than 4 miles of pipeline to replace the irrigation canals, resulting in up to 20 percent less water used, providing both instant savings and environmental benefits.

What previously took 24 hours of pumping to start just a trickle of water into my fields is now on demand and immediate.

After we implemented our initial EQIP contracts, we saw the returns and we decided to do more of it. Due to backlogs, we paid for it out of pocket. NRCS conservation programs not only incentivize conservation, but they help farmers develop an appetite to continue the environmental stewardship, making their full value truly incalculable.

Throughout rural America, working lands programs serve as economic drivers. It takes more than just a single farmer to complete the work needed to implement an EQIP or CSP contract, not to mention, the land is still in production, keeping small communities like mine thriving, unlike some programs like CRP that pay farmers not to grow a crop. More than 75 percent of rice farming operations in the South operate in what USDA calls StrikeForce counties, rural counties with more than 20 percent of the population below the poverty line. Small towns like mine rely on the agriculture industry for jobs. My operation alone provides jobs to the folks in my town, and the revenue generated from my farm is reinvested in inputs for the following year, and ends up in the hands of small local businesses. A new study by Texas A&M's Agriculture and Food Policy Center drives this home, showing every U.S. farmer on average is generating $1 million annually for their local economy.

I have talked a lot about what the industry is doing, the benefits working lands conservation brings to local economies, and why these investments pay off for our taxpayers, but now I want to talk about the real reason I am here. I have three boys at home, ages 5, 3, and 1, and they all want to be farmers just like Dad. They want to work the same ground that my family has worked for the last 108 years. But without being able to maintain the natural resources and keep my land in production, there won't be anything left to hand to the sixth generation. That is why I am here, is to ask this Subcommittee and the full Agriculture Committee membership to support robust funding for the conservation title, and to focus that support on important working land investments so that my children can play a part in feeding this great nation.

Thank you for your leadership, and the opportunity to offer testimony. I look forward to working with you and your staff, and to respond to any questions you may have. Thank you.

[The prepared statement of Mr. Gertson follows:]

PREPARED STATEMENT OF TIMOTHY GERTSON, CO-OWNER/CO-OPERATOR, G5 FARMS; MEMBER, BOARD OF DIRECTORS, USA RICE FEDERATION, LISSIE, TX

Introduction

Chairman Lucas, Ranking Member Fudge, and Members of the Subcommittee, thank you for holding this hearing to gather input on how the conservation title of the Agricultural Act of 2014 is working and hopefully how we can improve it as we start the process of writing a new farm bill. I appreciate the opportunity to offer testimony on behalf of the USA Rice Federation.

My name is Timothy Gertson. I own and operate G5 Farms along with my cousin, Daniel Gertson. We are fifth generation rice farmers and usually grow some corn and sorghum on the side. We first began farming independently from our parents in 2009 and manage land primarily in and around Lissie, a small community in Wharton County, Texas, about an hour outside of Houston.

In Texas, we normally begin planting rice on March 1st; if you take a look at the calendar you will see that is tomorrow. Planting and harvesting are among the most stressful parts of a farmer's year. But here I am, sitting in a suit and tie in Washington, D.C. 1,500 miles from home. That is because the issue of voluntary, locally-led agricultural conservation is all too important for me to hand off to someone else.

USA Rice-Ducks Unlimited Stewardship Partnership

Conserving our natural resources is not something we take lightly and for rice farmers our livelihoods depend on it. Rice is the only major commodity that is 100 percent irrigated with most growers still heavily dependent on ground water for irrigating their rice crop. Because of the necessity to flood our fields during the growing season, we have the option to maintain those floods throughout the fall and winter to benefit the millions of migratory waterfowl that get 40 percent of their food source directly from our rice fields. Ducks dabble in the shallow water for waste grain, weed seeds, and other forms of food and the fields provide resting areas for migratory birds on the move. Winter-flooded rice fields provide many of the same functions for migrating waterfowl as natural wetlands.

Without the voluntary contribution of rice farmers, these birds would lose all of that critical habitat which is exceedingly important for the survival of many species. An industry study in 2012 found that the estimated restoration costs of replacing flooded rice habitats with managed seasonal wetlands would exceed $2,200 per acre. In total, the replacement cost for wetlands nationwide would exceed $3.5 billion without domestic rice production to replicate the effects of natural wetlands.

This symbiotic relationship with the waterfowl industry led into a historic partnership with Ducks Unlimited, called the Rice Stewardship Partnership. I would even go as far as to say that we could be used as the model for commodity and wildlife groups working together going forward. While we both have separate missions and methods, we have managed to collaborate and find common ground and develop goals for our Partnership, including work on the Regional Conservation Partnership Program (RCPP).

Regional Conservation Partnership Program Is a Success

Our Partnership was awarded $10 million in 2015 by the USDA's Natural Resources Conservation Service (NRCS) to implement an RCPP project across the six major rice-growing states. The project directly funds Environmental Quality Incentives Program (EQIP) and Conservation Stewardship Program (CSP) contracts with rice growers. While the CSP portion of our project is still underway, the Partnership has been able to facilitate more than 200 EQIP contracts with growers throughout the country to further improve rice's environmental footprint.

This year, the same Partnership was able to secure an additional $15 million through two new RCPP projects, further stretching the reach of the cost-share programs throughout the South and constructing a small reservoir near my hometown in Eagle Lake, Texas to benefit waterfowl and rice farmers when we experience the all too often droughts.

It is important to us that this fiscally responsible program is reauthorized when you are writing the next conservation title. Our three projects alone have pulled together nearly 100 diverse partners to help implement their goals, communicate successes, and ultimately share the cost of investment in working lands conservation programs to ensure NRCS gets the most bang for their buck.

The Importance of Working Lands Programs

CSP, and especially EQIP, are referred to by farmers as the "workhorses" of NRCS conservation programs. They are valuable cost-share programs that incentivize farmers to implement any number of conservation practices on our operations that have proven benefits to the environment. The relatively small investment made by the program has no doubt made our land more resilient to extreme weather events by reducing erosion and runoff and improving soil health. My father and his brothers were some of the earliest adopters of both programs. Their first EQIP contract was signed in 2002 and they secured a CSP contract through the old Conservation Security Program following its inception in the 2002 Farm Bill.

EQIP is vital because it is such a straightforward program with an extensive list of practices that NRCS is able to assist farmers with implementing. EQIP's structural practices can help establish the equipment needed to better manage water resources, help with irrigation efficiency, fencing, and erosion control.

CSP has been revised to become more like EQIP but operates with 5 year contracts to provide more time for the extensive work to be completed. This program helps to target specific resources using a number of complimentary practices, and has been a great tool for rice farmers to have in our toolbox to pay for expensive long-term management practices.

In the South it is not uncommon for most farmers to rent the majority of their cropland, we have a system that works well for us, usually. Many farmers do not have certainty of whether they will hold the lease on a piece of ground from one year to the next so it is often not worth the risk to invest a lot of capital into someone else's land. These cost-share programs are the only thing that help to bridge that gap, allowing land-renters to install conservation measures while footing only a portion of the cost. Improvements in efficiencies benefit the farmer while the environmental perks benefit the landowner by simultaneously raising the land value. Across the country, a great deal of EQIP and CSP contracts are carried out on rented land that would otherwise probably be left untouched by conservation improvements.

My father taught me to be a conservationist as just a kid, and I was so passionate about it that I nearly took a job with NRCS on two separate occasions. Therefore, it came as no surprise to anyone when my operation secured its first EQIP contract in 2010, just a year into farming. We always heard there was a huge demand for the program across the country and we soon learned why, as the results came quickly and our bottom line could feel the difference. We cost-shared the installation of more than 4 miles of 16″ underground pipeline to replace irrigation canals, resulting in up to 20 percent less irrigation water needed to grow our crop, providing both instant savings and environmental benefits. It previously took nearly 24 hours of pumping at a rate of 3,000 gallons per minute to build up in my old canals to start just a trickle of water into my fields. Now, with underground pipeline, my water supply is on demand and immediate.

Soon after our first EQIP venture, we were able to secure an additional EQIP contract to begin cost-sharing irrigation land-leveling portions of our operation. Level land results in less water losses when a rice crop is flooded and that was able to provide us with an additional ten to twenty percent irrigation water savings. As beginning farmers, we were also fortunate enough to qualify for prioritized applications and higher cost-sharing percentages to help incentivize our participation.

These programs obviously provide farmers with the resources to implement a lot of effective practices and there is clearly data to back that up. Surprisingly, their true benefits are not so visible on the surface. After we implemented our initial EQIP contracts, we saw the financial returns and the obvious preservation of natural resources and we decided to do more of it, this time on our own dime. I think these NRCS financial assistance programs not only incentivize locally led conservation, but they help farmers develop an appetite to continue the environmental stewardship, making their full value truly incalculable.

Working Lands Programs Are Economic Drivers

Throughout rural America, working lands programs serve as economic drivers. It takes more than just one farmer to complete the work needed to implement an EQIP or CSP contract. Think about the outside technicians, engineers, and local soil and water conservation districts needed to help oversee the conservation planning; the scientists, the land movers, the equipment that needs to be purchased to implement these conservation practices.

Not to mention, with working lands programs the land is still in production, so the economic drivers of small communities are still working, unlike some programs like the Conservation Reserve Program (CRP) that pay farmers not to grow a crop. For example, my small town has less than 75 residents and my operation's size ensures that at I'll provide jobs for at least several of those residents. The revenue generated from my farm is then reinvested in inputs for the following year and ends up in the hands of other small, local businesses. Small towns like mine rely on the agriculture industry for jobs and investment or they would disappear; when my business prospers, everyone around me benefits in one way or another.

My town, however, is not unique. More than 75 percent of rice farming operations in the South operate in what USDA considers "StrikeForce counties"—rural counties with more than 20 percent of the population below the poverty line. These communities all rely on vibrant farming operations to stay alive and NRCS working lands programs help to shoulder the burden of high operating expenses. The practices I have put into place over the years have helped make my land more resilient to the multi-year drought we experienced a few years ago. These conservation practices have helped me stay in business over the course of this depressed farm economy having increased my efficiency by increasing my yields and decreasing my input costs to boost my margins.

When we are not in the growing season and purchasing inputs, we are still growing the local economy. Like I mentioned, rice has this intrinsic relationship with waterfowl and the waterfowl habitats in our fields also serve as a perfect habitat for waterfowl hunters. The waterfowl hunting business brings millions of dollars to the

South's local economies during the fall and winter months when work elsewhere is short. Visitors travel from all over the world to hunt in the rice fields and they all need lodging, food, equipment, *etc.*

Again, I feel like we are doing more than our part to contribute to our local economies and the EQIP and CSP projects we are implementing help to make that all possible. A study released earlier this month by Texas A&M's Agricultural and Food Policy Center drives this point home, showing that every U.S. rice farmer is generating more than $1 million for their local economies on an annual basis.

As an industry, we see these two programs targeted every year during the appropriations process. Their mandatory funding is cut, reducing the amount of work NRCS can provide in each of your Districts throughout the country and creating a backlog that will take years to catch-up to the demand that is out there. It is important to us that these are not only preserved but codified in a way that they are not always seen as low-hanging fruit when it's time to find savings.

EQIP Provision Limits Long-Term Effectiveness

Current EQIP rules place an arbitrary 3 year limit on funding annual management practices. As strong stewards of the land and staunch advocates for migratory waterfowl, we support a change in this limitation for projects implemented "purely for the benefit of wildlife". This is necessary in order to sustain these beneficial practices and demonstrate long-term benefits. While these annual management practices benefit water birds, some of them ultimately reduce farm profitability because of their expense to the farmer. Therefore, producers will most likely stop implementing them if cost-share assistance for these proven, effective annual management practices is terminated after 3 years.

SAM/DUNS Is a Barrier to Conservation Adoption

Currently, farmers who want to participate in farm bill conservation programs have to wade through an annual registry process called the System for Award Management (SAM) and Data Universal Numbering System (DUNS), designed for transparency for multi-billion dollar Federal defense contractors. This complicated process to comply with SAM and DUNS typically ties up hours of my time and that of our local soil and water conservation district or NRCS office. It is disincentive for many us to sign-up for these important conservation programs. Immediately following a successful registration using SAM, my inbox, mailbox, and phone are flooded with solicitors who have just been provided my information, a serious breach of my privacy. The rice industry is supportive of efforts to exempt NRCS programs from complying with this burdensome reporting process.

Sustainability Is Necessary for Future Generations

I have talked a lot about what the industry is doing, the benefits working lands conservation bring to our local economies, and why the investment really pays off for taxpayers, but now I want to talk about the real reason I am here. I have three sons under the age of 10. My boys want to be farmers just like dad and someday farm the same land we have been working for the last 108 years. But without being able to make a living for my family and maintain the natural resources to keep my land in production, there won't be anything left to hand to the sixth generation. That is why I am here: to ensure that this Subcommittee fights to maintain conservation title funding and important working lands program investments so that my children can play a part in feeding this great nation.

I thank this Subcommittee for holding this important hearing on the farm bill's conservation title. And I appreciate, as a farmer, as a conservationist, and on behalf of the USA Rice Federation, the work you have done to ensure that farmers have the tools they need to implement conservation practices on the landscape and feed our growing population. While conservation may not necessarily be the most controversial issue in the farm bill, it is a vital part of our industry and a necessary investment if we want to leave our land and operations as a legacy for our children.

Again, thank you for your leadership and for the opportunity to offer my testimony this morning. I look forward to working with you and your staff and will be happy to respond to any questions you might have.

ATTACHMENT

Sustaining the Future of Rice RCPP Project Financial Breakdown July 1, 2015–June 30, 2016

Financial Support
(July 1, 2015–June 30, 2016)
$8.3 Million

Where the Money Goes



Source: 2016 Rice Stewardship Partnership Annual Report.

The CHAIRMAN. Thank you, Mr. Gertson.

Mr. Peters, you are recognized for 5 minutes.

STATEMENT OF JEREMY PETERS, CHIEF EXECUTIVE OFFICER, NATIONAL ASSOCIATION OF CONSERVATION DISTRICTS, DARLINGTON, MD; ON BEHALF OF LEE MCDANIEL, IMMEDIATE PAST PRESIDENT, NATIONAL ASSOCIATION OF CONSERVATION DISTRICTS

Mr. PETERS. Good morning, Chairman Lucas, Ranking Member Fudge, and Members of the Subcommittee. Thank you for the opportunity to testify this morning. I am Jeremy Peters, Chief Executive Officer for the National Association of Conservation Districts, standing in for our immediate past President, Lee McDaniel, who is unable to attend today's hearing. We appreciate your flexibility in allowing me to testify this morning.

I have been involved with NACD since 2006, and became the Association's Chief Executive Officer in April of 2015. But my roots are in agriculture and in my family's farm in rural southwestern Virginia, where we continue raising cattle today.

NACD represents America's 3,000 conservation districts, and the 17,000 men and women who serve on their governing boards, as well as their respective state and territory associations. Conservation districts are local units of government established under state law to carry out natural resource management programs at the local level. Conservation districts work with cooperating landowners and operators in all 50 states, as well as the territories, to help manage and protect land and water resources on private working lands, and many public lands in the United States.

Conservation districts are vital to conservation in this country. Working with partners at USDA, they provide on-the-ground conservation planning, technical expertise, and scientific assistance to implement conservation practices tailored to the landowner's management goals. Conservation districts are also unique since they are directly involved in the local working group process which in-

forms NRCS about what the greatest resource concerns are at the local level.

As NACD began its farm bill evaluation process last year, we created a Farm Bill Task Force to guide our policy priorities. We first created a farm bill survey to seek input and opinions from our members on the last farm bill, what programs were working or needed improvements and where they wanted NACD to focus. Based upon the over 500 responses we received, the Task Force developed a set of principles that was officially adopted by NACD's Board of Directors at our annual meeting earlier this month, and those principles are attached to the written testimony that was submitted to the Committee. These principles focus on items like local input and the need for investments in farm bill conservation programs. While not directly authorized under the farm bill, all of the programs discussed in my testimony would not be as successful without the technical and scientific expertise provided through Conservation Technical Assistance, or CTA. Through the CTA program, landowners work with local conservation professionals, including conservation district employees, to develop individual conservation plans, ensuring producers know that they are implementing the best conservation practices to meet their individual land's resource needs, and that taxpayers are getting the most out of their investment.

Successful implementation of on-the-ground conservation is also dependent on proper investment through the farm bill conservation title. The financial and technical assistance that farm bill dollars provide are the lifeblood of the voluntary conservation model. Without this funding, we would see less adoption of conservation practices and in turn, we would see fewer conservation benefits. The last farm bill reduced conservation spending by almost $6 billion over 10 years when including sequestration. While NACD and the larger agriculture and conservation community understood the budgetary constraints that Congress had to deal with when writing the last farm bill, the cuts to the conservation title were significant. These funding reductions in EQIP, CSP, CRP, and ACEP have dramatically limited the ability to put conservation on the ground. We recommend that Congress seriously look at not only maintaining funding for the conservation title, but we strongly recommend increasing it.

Demands on the landscape and our natural resources are greater than ever, and in these difficult financial times for farmers and ranchers, it is unrealistic to think that landowners will take on costly conservation practices with fewer financial incentives and less technical assistance. That is why it is even more important to double down on farm bill conservation funding.

While there are several programs worth discussing during my testimony, one I would like to focus on is the new Regional Conservation Partnership Program. RCPP was created to bring together new partners and help leverage non-Federal dollars to achieve greater conservation outcomes. Conservation districts and their close working relationships with landowners, have been natural partners in many of these projects. In fact, 25 out of the 88 projects funded in the most recent round of awards were led by conservation districts or their state associations.

As with all programs, RCPP needs to be thoroughly evaluated while writing the next farm bill. Even in new programs, the locally led aspect of the conservation delivery system is crucial to ensuring that conservation programs are focused on the greatest resource concerns in a particular area. Unfortunately, RCPP does not always fully take that into account, and the local conservation practices established by the local working groups. Greater emphasis on state and local coordination and consultation with local conservation districts is needed to ensure that these programs are indeed addressing the greatest resource concerns.

An additional obstacle is the SAM and DUNS reporting requirements. Current law requires landowners who participate in NRCS cost-share programs to follow time consuming Federal reporting requirements. These requirements can act as a barrier to implementing conservation practices on the ground. The NACD does not believe farmers and ranchers were the intended recipient of this regulation, and thankfully, Congresswoman Kuster and Congressman Crawford introduced H.R. 1163, Improving Access to Conservation Act to fix this problem. The NACD encourages the Committee to ensure its passage or its inclusion in the farm bill.

While there are many issues that we will discuss today, the bottom line is that our nation's conservation districts and the locally led conservation delivery system continue to be effective in communities all across the nation. For this to continue, Congress must provide robust funding and continue the tradition of a locally led conservation system. We cannot let our nation's investment in farm bill conservation programs continue to erode, and as this Committee begins reauthorizing the next farm bill, we appreciate the opportunity to provide our insights and expertise. We look forward to a farm bill that will continue to provide the ability for landowners to conserve our nation's soil, water, and wildlife for future generations.

Thank you.

[The prepared statement of Mr. McDaniel follows:]

PREPARED STATEMENT OF LEE MCDANIEL, IMMEDIATE PAST PRESIDENT, NATIONAL ASSOCIATION OF CONSERVATION DISTRICTS

Good morning, Chairman Lucas, Ranking Member Fudge, and Members of the Subcommittee. Thank you for the opportunity to testify this morning as you gather input from stakeholders on how conservation policy in the Agricultural Act of 2014 is performing and what improvements Congress should make in the next farm bill.

I am Lee McDaniel, Past-President of the National Association of Conservation Districts (NACD), and I currently operate a corn, soybean, and alfalfa hay farm in Darlington, Maryland. I have been involved with conservation districts since 1997 when I first served on my local district board. On my own land, I implement a variety of conservation practices, including grassed and wooded buffers, grassed waterways, strip cropping, and no-till farming.

NACD represents America's 3,000 conservation districts and the 17,000 men and women who serve on their governing boards, as well as their respective state and territory associations. Conservation districts are local units of government established under state law to carry out natural resource management programs at the local level. Conservation districts work with cooperating landowners and operators in all fifty states as well as the territories to help manage and protect land and water resources on private working lands and many public lands in the United States.

The origins of agricultural conservation date back to the Dust Bowl and even before with the efforts of Hugh Hammond Bennett, the father of U.S. soil conservation. Sadly, it took the devastating effects of the Dust Bowl to spur a real change

in policy. As a part of this policy landscape shift, the Standard State Soil Conservation Districts Law was signed in 1937, authorizing farmers to organize local soil and water conservation districts. These new districts gave local farmers a voice in Federal programs and is widely acknowledged as one of the key reasons for the success of private lands conservation.

Today, our nation's conservation delivery system reaches into virtually every community with technical and financial assistance that is targeted to local resource concerns. The voluntary-incentive based model that this local input supports has and continues to work to ensure our nation's natural resources are protected. Part of the voluntary conservation model's purpose is to help producers comply with local, state, and national regulatory requirements. However, voluntary conservation can take this purpose one step further by helping avoid the need for these regulations altogether. The general public expects clean air and water, healthy soils and abundant wildlife habitat. The Federal Government has a better chance at achieving these goals, not by adding additional requirements and regulations, but by encouraging landowners to implement good conservation practices on their land.

Conservation districts are vital to conservation in this country. Working with partners at USDA, they provide on-the-ground conservation planning along with technical and scientific assistance to implement conservation practices tailored to the landowner's management goals. Conservation districts are also unique since they are directly involved in the Local Working Group process which informs NRCS about what the greatest resource concerns are at the local level. Local working groups are required to "*provide recommendations to USDA on local and state natural resource priorities and criteria for conservation activities and program.*" It also is the responsibility of the local conservation district to assemble the Local Working Groups, chair the group's meetings, identify the conservation needs of the area and ensure that NRCS is notified of the group's recommendations. Keeping the Local Working Groups as a critical component of conservation decisions at NRCS is an important priority for NACD.

As NACD began its farm bill evaluation process last year, we created a Farm Bill Task Force to guide our policy priorities. We first created a farm bill survey to seek input and opinion from our members on the last farm bill, what programs were working or needed improvements and where they wanted NACD to focus. Based upon the over 500 responses we received, the Task Force developed a set of principles that was officially adopted by NACD's Board of Directors at our annual meeting earlier this month.

These principles focus on items like local input and the need for investments in farm bill conservation programs. While not directly authorized under the farm bill, all of the programs discussed in my testimony would not be as successful without the technical and scientific expertise provided through Conservation Technical Assistance (CTA). Through the CTA program, landowners work with local conservation professionals, including conservation district employees, to develop individual conservation plans ensuring producers know that they are implementing the best conservation practices to meet their individual land's resource needs and that taxpayers are getting the most out of their investment.

An additional principle is to simplify the delivery of conservation programs. Landowners who are interested in participating in NRCS cost-share programs face Federal reporting requirements that can be time consuming and hard to navigate which ultimately acts as a barrier to implementing conservation practices on the ground. Current law requires them to obtain a Data Universal Numbering System (DUNS) number and annually register with the Federal Government's System for Award Management (SAM). NACD does not believe farmers and ranchers attempting to do the right thing by putting conservation practices on the ground were the intended recipient of this regulation and thankfully Congresswoman Kuster and Congressman Crawford introduced legislation 2 weeks ago to fix this problem and would encourage the Committee to ensure its passage or inclusion in the farm bill.

Successful implementation of on-the-ground conservation is dependent on proper investment through the farm bill conservation title. The financial and technical assistance that farm bill dollars provide are the lifeblood of the voluntary conservation model. Without this valuable funding, we would see less uptake of conservation practices and in turn we would see fewer conservation benefits. In these difficult financial times for farmers and ranchers, it is unrealistic to think they will take on costly conservation practices with fewer financial incentives and less technical assistance.

The Agricultural Act of 2014 consolidated conservation programs from 23 to 13 and reduced conservation spending by almost $6 billion over 10 years, including sequestration. Let's examine that number on a programmatic level. Funding for the Environmental Quality Incentives Program (EQIP), by far the most popular con-

servation program, had its authorized funding level reduced by an average of $250 million for the first 4 years of this farm bill, a devastating cut when added to the yearly reductions in the appropriations process. The Conservation Reserve Program (CRP), a program which was first authorized in its current form in 1985, had its acreage cap reduced to 24 million acres, a reduction of 25%. The Agricultural Conservation Easement Program (ACEP) will only have an annual baseline of $250 million in Fiscal Year 18 (FY18) and beyond, a cut over 60% from pre-2013 levels. The Conservation Stewardship Program (CSP), the largest conservation program by acreage, was reduced by over 2 million acres per year.

While regulatory reform is something many farmers and ranchers want to see, the general public's desire for clean air and water, healthy soils and abundant wildlife will not wane. That is why it is even more important to "double down" on farm bill conservation funding since one of the purposes of these programs is not only to comply with regulations but help avoid the need for them altogether. While NACD and the larger conservation community understood the budgetary constraints that Congress had to deal with while writing the last farm bill, the cuts to the conservation title were significant.

Since reauthorization, conservation programs like CSP and EQIP are regularly cut further through the appropriations process known as Changes in Mandatory Program Spending (CHIMPs). In FY14–16, mandatory farm bill conservation spending was reduced by nearly $1 billion through the appropriations process alone. The bottom line is farm bill conservation title funding was cut in the last farm bill by 10% and it continues to be cut annually in the appropriations process. Demands on the landscape and our natural resources are greater than ever, so we recommend that Congress seriously look at not only maintaining funding for the conservation title but we strongly recommend increasing it.

One of the new programs created in the Agricultural Act of 2014, was the Regional Conservation Partnership Program (RCPP). This new program, which combined four regionally-based programs into one larger program, was created to further the conservation, restoration, and sustainable use of soil, water, and wildlife and was designed to help producers meet, or even avoid the need for, natural resource regulations. This program helps bring together new partners and leverage Federal funds for large-scale conservation projects.

Conservation districts, and their close working relationships with landowners, have been natural partners in many of these projects. In fact, in December when NRCS announced the list of 88 projects which were receiving funding through their third funding round, conservation districts and their state associations were the lead on 25 funded projects and were supporting partners in many more. Altogether, the $225 million in funding that was available during the most recent funding round will be leveraged with an additional $500 million from the private-sector successfully proving that this public-private partnership can work.

As with all new programs, RCPP, needs to be thoroughly evaluated during this process. As previously mentioned, the locally-led aspect of the conservation delivery system is crucial to ensuring that farm bill conservation programs, including the four programs which contribute funding to RCPP, are being focused to meet the greatest resource concerns in that area. Unfortunately, RCPP does not always fully take into account the local conservation priorities established by the locally-led process and these priorities may not be considered in the development or funding of RCPP projects. Greater emphasis on state and local coordination and consultation local conservation districts is needed to ensure that these programs are indeed addressing the greatest resource concerns.

Another program I wanted to mention during my testimony is the Small Watershed Rehabilitation Program. In the 1940's and 1950's, Congress passed laws which led to the construction of almost 12,000 small watershed dams, many times led by the local conservation district in the area. These dams represent critical infrastructure in many communities and provide approximately $2 billion in benefits from improved water quality and erosion control. Yet with the original dams approaching 70 years old, these aging dams now also present public health, safety, and environmental concerns. Under Chairman Lucas' leadership, the Agricultural Act of 2014 provided mandatory funding of $250 million to ensure necessary investments in these infrastructure projects. The Watershed Rehab program, and the underlying Watershed Protection and Flood Prevention Act, continue to be a priority for the many conservation districts who stepped up to lead these projects.

While there are a multitude of other issues which will undoubtedly be discussed during this hearing, the bottom line is that our nation's conservation districts and the locally-led conservation delivery system continue to be effective in communities all across the nation. However, for it continue to thrive, Congress must provide robust funding and continue the tradition of a locally-led conservation system. We

cannot let our nation's investment in farm bill conservation programs continue to erode. As this Committee begins reauthorizing the next farm bill, NACD along with our nation's 3,000 conservation districts and the 17,000 supervisors on their local boards stand ready to provide our insights and expertise in crafting legislation that will continue to provide the ability for landowners to conserve our nation's soil, water, wildlife and air.

ATTACHMENT

NACD Principles for the 2018 Farm Bill

Principle 1—The Locally-Led, Voluntary Incentive-Based Conservation Model Works

NACD strongly believes in the locally-led, voluntary, incentive-based model for addressing natural resource concerns; not a one-size-fits-all regulatory scheme. Farm bill conservation programs should be locally-led and resource driven with sufficient flexibility to direct funding to local priorities and concerns. Program priorities should be tailored to the natural resource needs of the states and local areas. Local Conservation District Boards, Local Working Groups, and State Technical Committees should help identify local needs to maximize conservation benefits.

Principle 2—No Further Cuts to Conservation Title Funding in the Farm Bill

Strong mandatory funding levels authorized in the farm bill are fundamental to not only putting conservation on the ground, but for dealing with, and ultimately avoiding, the need for environmental regulations. The conservation title (title II) took a 10% cut in funding in the Agricultural Act of 2014, and continues to be cut annually during the appropriations process. Every dollar cut from mandatory conservation programs leads directly to less conservation on the ground and only increases the natural resources concerns and the probability of regulatory hassles. Each farm bill conservation program plays a significant role in addressing natural resource concerns. From the importance of the Environmental Quality Incentives Program (EQIP), to the Small Watershed Rehabilitation Program, robust mandatory funding is critical. NACD believes, at a minimum, no further cuts should occur in the next farm bill to the conservation title, and if funds are available, to increase its funding.

Principle 3—Commitment to Working Lands

Landscapes across the nation vary in their resource concerns, and farm bill conservation programs must continue to meet the specialized needs of the agricultural producers who work these lands. Given the projected increase in the world's population, programs must provide assistance to implement or maintain conservation practices on working lands that produce much needed food, fiber, and fuel while at the same time protecting our natural resources.

Principle 4—Technical Assistance and Conservation Planning Are the Bedrock of the Conservation Model

Technical Assistance and conservation planning is a critical tool and first step in evaluating a producer's resource needs. NRCS, along with conservation districts, helps agricultural producers plan and apply conservation practices on the land. They develop conservation plans; plan, design, lay out, and install conservation practices; and inspect completed practices for certification. Conservation Technical Assistance is vital to ensuring producers know that they are putting the best conservation practices on their ground to meet their individual land's resource needs.

Principle 5—Agricultural Operations Need To Be Economically Viable

In order for the locally led, voluntary, incentive-based model to be successful, NACD believes agricultural operations need to have a strong safety net, robust marketing opportunities, and supportive farm policy. Without viable agricultural operations, districts will not be able to help install conservation practices on the ground. The farm bill must work for each facet of the nation's diverse agriculture industry.

Principle 6—Farm Bill Education and Outreach Is Necessary

NACD believes conservation education is a necessary tool to drive more conservation adoption. If producers are not aware of the tools available to them, then the adoption of conservation practices will suffer. This is especially the case with beginning, socially disadvantaged, and limited resource farmers. NACD supports a dedicated funding stream within title II to advance conservation adoption and outreach.

Principle 7—Streamline and Simplify Conservation Programs/Application Process While Reducing Administrative Burdens

Conservation programs and the application process should both be simple and easy to understand. Administrative burdens that disincentivize program participation should be eliminated. Just one example of this is the SAM/DUNS reporting requirements that NRCS program participants must comply with. This only complicates the conservation delivery system by taking time away from NRCS staff and producers, but can actually prevent producers with the greatest resource needs from applying.

Principle 8—Forestry

NACD supports a forestry title that addresses the unique complexities of forestry on non-industrial, private forest land and the effective management of Federal and state forest lands. NACD encourages an expansion in the ability to provide technical assistance and outreach to non-industrial private forest owners, especially landowners not currently engaged in conservation or managing their lands. NACD supports addressing issues identified by state forest resource assessments and strategies as well as state wildlife action plans and continue to provide the ability to make regular updates to these state-level efforts.

Principle 9—New Approaches and New Technologies

Working lands conservation is not a static term, but is constantly changing and adapting as the introduction of new technologies and partners occur. The farm bill should reflect this and ensure they are addressed. This includes addressing the natural resource concerns presented by urban agriculture as well as the recent increase in drone technologies and the adoption of precision agriculture.

The CHAIRMAN. The gentleman's time has expired.

The chair now recognizes for 5 minutes Mr. Nomsen.

STATEMENT OF DAVID E. NOMSEN, VICE PRESIDENT OF GOVERNMENTAL AFFAIRS, PHEASANTS FOREVER, INC., GARFIELD, MN

Mr. NOMSEN. Chairman Lucas, Ranking Member Fudge, Members of the Subcommittee, my name is Dave Nomsen with Pheasants Forever. Mr. Chairman, I had the same thought when I sat down here this morning too as you sat down. I thought, "I am back, and I am here once again to talk primarily about the Conservation Reserve Program this morning." But I do want to start by pointing out, there is an incredible entire suite of conservation programs that we work with across the country. But frankly, CRP has been this nation's most successful conservation program at USDA.

Let's look back a little bit and start by looking at the period from 1990 to 2010. During that period, the CRP averaged about 32 or 33 million acres enrolled in the program. During that time period, we had an authorization for basically a 40 million acre program. It was dinged a little bit here and there, it was 39.2, it was 36.4, but basically a 40 million acre program. And quite frankly, the program worked quite well at that time. We had some good old days for pheasant hunting. We had record pheasant harvest in a number of states, and frankly, we would like to return to those days, and that is why we are calling once again for an authorization for a 40 million acre program.

We hit a bit of a train wreck starting after the 2010 period, and actually right now, if you look at the northern Great Plains States, perhaps Montana, the Dakotas, Nebraska, Iowa, Minnesota, and Kansas, if you look at those states, they had 16.4 million acres of CRP in 2007. Today, they have 9.3. Forty-three percent of those acres are gone. That grassland has left the landscape, and for pheasants and other ground-nesting birds; obviously, grassland

habitats are critical. Between that and then what happened with the 49th general signup results, we are actually saying we are at a grassland conservation crisis in much of this country, and we really need to establish CRP as the flagship program with a 40 million acre authorization.

During that signup period, some 26,000 offers were made, and unfortunately because of the severely reduced cap, 21,000 offers were rejected. Landowners from all across the country that wanted to do good things for soil, water, and wildlife conservation, they weren't allowed entrance into the program. Mr. Chairman, in your State of Oklahoma, you came out right at the national average, about 600 offers, 22 percent acceptance rate. Basically four out of five people were denied entrance into the program.

In the flagship State of South Dakota, about 42,000 acres were offered. During the process, USDA accepted two offers on 101 acres. Frankly, that just can't continue into the future, and it threatens the integrity and the future of the program.

That is why one of the things I am calling for is a complete reevaluation, revamping of both the signup process, signup period. We simply have to find ways to put those larger tracts of grass back on that landscape that are important to wildlife production and for hunting. We also need to take a look at the other end of the process. During the last farm bill, we had some really, really strong report language that encouraged expiring CRP to be redirected into many of the other conservation programs. It didn't happen. We have to find a way to make that happen. The program will only continue if it does evolve and it becomes the robust, dynamic program as acres flow through the program, we maintain the benefits, and we go out and capture new acres and new involvement in the program as well.

One of the ways to do that, too, is we are going to have to take a look at looking at the historic distribution of acres as part of the signup process. It just simply can't keep bouncing around the country here and there with a number of different factors. We would like to see, for example, South Dakota go back to about 1½ million acres in the program. That is not going to happen with the current system that we have in place, and the same thoughts apply to many of those other states that I spoke about earlier.

We have a number of other priorities at Pheasants Forever and Quail Forever, and we are going to be looking forward to working with you and Members of the Committee on the easement programs, on working lands programs, especially the EQIP program where we do good things in the West. We are going to continue to support strong conservation policies like conservation compliance linked to crop insurance, like the SodSaver provisions to help protect native prairies. Our nation's sportsmen and sportswomen are really interested in continuing the VPA–HIP Open Fields Program to help landowners provide voluntary access for hunters and fishers.

Thank you very much for the opportunity to testify this morning. I would be happy to take your questions.

[The prepared statement of Mr. Nomsen follows:]

PREPARED STATEMENT OF DAVID E. NOMSEN, VICE PRESIDENT OF GOVERNMENTAL AFFAIRS, PHEASANTS FOREVER, INC., GARFIELD, MN

Chairman Lucas, Ranking Member Fudge, and Members of the Subcommittee, my name is Dave Nomsen and I am the Vice President of Governmental Affairs with Pheasants Forever and Quail Forever based out of St. Paul, Minnesota. I am a wildlife biologist by education, served on the Wildlife Department faculty at South Dakota State University, and have since then worked on conservation policy and programs for nonprofit wildlife conservation organizations, growing up in north-central Iowa and currently living in west-central Minnesota.

I am here today representing our 735 community based Pheasants Forever and Quail Forever chapters; and 142,000 members and volunteers that work every day to promote and implement conservation programs. Each year our chapters complete more than 30,000 individual projects with farmers, ranchers and forest owners. To complement the work of our dedicated volunteers, we have a team of 125 Farm Bill Biologists that work as natural resource professionals with expertise in fields such as wildlife biology, forestry, range management and precision agriculture. They work with landowners every day to find the best voluntary based, conservation solutions that fit producers' needs as part of their agriculture operations and personal goals.

Since 2003, these Farm Bill Biologists have worked on over 148,000 projects with landowners covering over 5.1 million acres. These projects involve the establishment of quality habitat that meet the life cycle needs of a wide variety of wildlife, not only pheasants and quail, but other species such as Golden-winged warbler in Pennsylvania, Lesser Prairie Chickens in the Southern Great Plains and the iconic Elk and Sage Grouse in the West, and enhancing habitat for pollinators, like honey bees and Monarch butterflies throughout the country. In addition to wildlife benefits, all Americans benefit from improved soil health and water quality improvements related to wildlife conservation projects.

Thank you for the opportunity to speak to you today about important conservation policies and program need as part of the next farm bill. My comments will focus on the program that is routinely referred to as the U.S. Department of Agriculture's most successful conservation program—The Conservation Reserve Program and I will briefly address other important priorities that we have for the next farm bill.

Conservation Reserve Program

Originally established in 1985, the U.S. Department of Agriculture's (USDA) Conservation Reserve program (CRP) enables farmers and landowners to voluntarily enroll environmentally sensitive croplands and grasslands and plant it to grasses, shrubs, and trees in return for 10 to 15 year contracts with annual rental payments. Originally designed for both soil erosion and commodity supply control, the original CRP proved a great boon for wildlife. In fact, CRP's wildlife benefits were instrumental in the programs reauthorization in 1996. That year, the CRP was reconfigured as a true resource conservation program benefitting soil, water, and wildlife resources while continuing to provide economic security to farmers and landowners, and supporting rural economies and communities. Other significant changes in 1996 strengthened CRP by allowing for mandatory funding and creating the CRP buffer initiative. Today's generations of sportsmen and sportswomen will view CRP's wildlife legacy as the "good old days" just as previous generations thought of the "Soil Bank era" of the late 1950s and 1960s. No other private lands conservation program has benefitted hunters more than the successful CRP.

During the 20 year period from 1990–2010 CRP enrollment averaged approximately 32–33 million acres per year with an historical peak of 36.7 million acres in 2007. During this period hunters experienced strong levels of bird hunting across many states. Below is the lead paragraph from our 2007 forecast that turned out to be an accurate prediction of times to come.

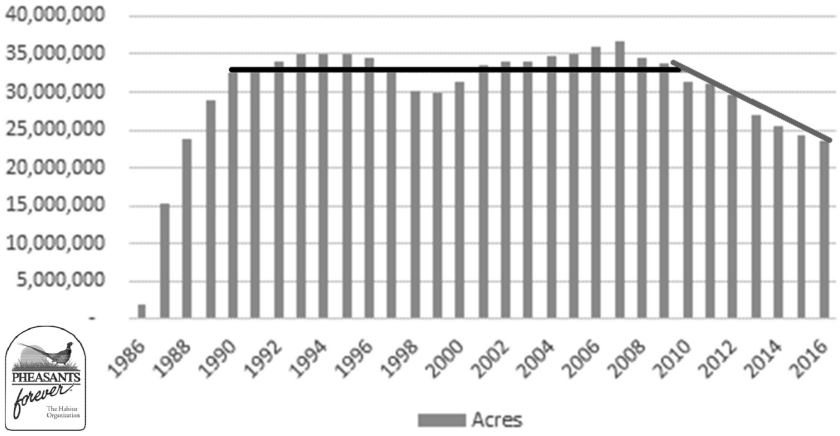
Pheasants Forever's 2007 Pheasant Hunting Forecast

With potential habitat losses . . . is 2007 the boom before the bust?

Overview: All across the Midwest and Upper Midwest, signs are pointing to an excellent pheasant hunting season. The typical pheasant powerhouses—South and North Dakota, Iowa, Kansas, Minnesota, and Nebraska—will again top the list. Unfortunately, because of the potential for massive habitat losses this year and next, namely Conservation Reserve Program (CRP) acres under soon-to-expire contracts, we may soon be referring to 2007 as "the good old days."

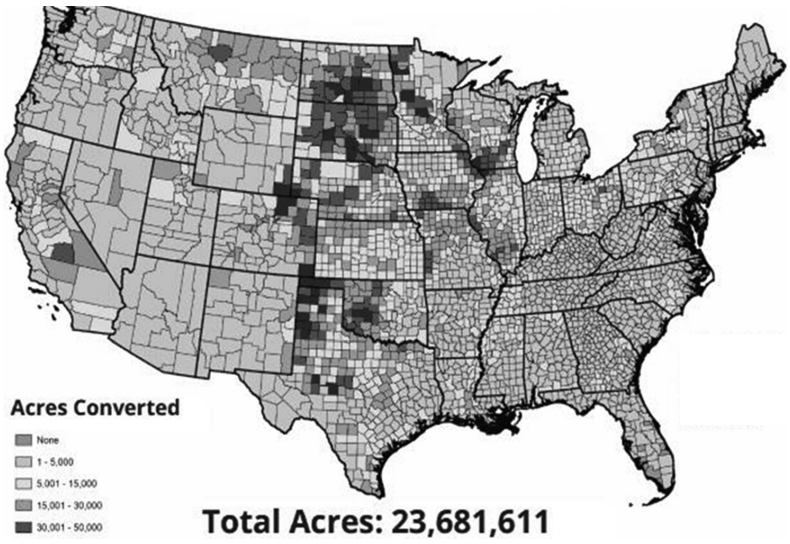
Fig 1. Historical CRP Acreage Enrollment 1986–2016

CRP Acres By Year



Landscape level forces after 2010 including record high commodity and land prices coupled with budget reductions led to a 2014 Farm Bill CRP authorization of 24 million acres and today's total enrollments hover just below the 24 million acre cap. Unfortunately, very dramatic changes resulting in loss of grasslands habitats have occurred over much of the country a problem that has been exacerbated by significant increases in cropland acreages. Additionally, the results of the 49th general CRP signup conducted from Dec. 1st, 2015–Feb. 26th, 2016 have led to what we characterize as a current "grassland conservation crisis".

Fig [2]. Acres of Grassland/Wetlands/Shrub Land Converted Crop Production By County, 2008–2011



http://static.ewg.org/pdf/plowed_under.pdf.

Calculated using the NASS–USDA Cropland Data Layer for crop years 2008 (56m), 2009 (56m), 2010 (30m), & 2011 (30m).

In 2007, seven key upland bird hunting states (MT, ND, SD, NE, KS, MN and IA) had 16.4 million acres of CRP. By the end of 2016, this region contained 9.3 million acres of CRP—a loss 7.1 million acres or 43%.

49th General Signup

During CRP Signup No. 49 1.8 million acres in 26,000+ offers were submitted. Of these 4,857 offers (18%) for 410,773 acres (22%) were accepted nationwide. In the core northern and central plains states renowned for upland bird hunting (MT, ND, SD, NE, KS, MN, and IA) 701,060 acres in 10,983 offers were submitted. Of these 1545 offers (14%) for 105,745 acres (15%) were accepted. In South Dakota, the pheasant capitol of the world, only two offers on 101 acres were accepted (.0275%). These acceptance rates are by far the lowest ever throughout the entire history of CRP. As a result, more than 21,000 individual offers for enrollment in CRP were denied enrollment nationwide with nearly 9,500 of these offers from the above key upland bird hunting states.

During the first Grassland CRP sign up that took place during the same timeframe as CRP signup No. 49, farmers and ranchers offered over 1 million acres, and USDA only allowed 101,000 acres to enter the program (10%). During the latest sign up, 986,000 acres were offered and 316,000 acres were accepted (32%). Currently there are about 800,000 acres of enrollment, with most of those contracts having delayed start date of Oct 1st, 2017 due to current CRP cap of 24M acres.

We have seen strong demand from landowners when acres are put out there on a more target approach. For example just last month, IA State Acres For Wildlife (SAFE) 50,000 acres were allocated in a little more than a week due to high landowner demand. In SD, allocations for pheasant focused SAFE projects typically last for short times as demand remains high.

Changing Times

Today we're at substantially reduced commodity prices, near or record level commodity stocks, diminishing land values, cash rents, and growing concerns about low farm incomes. Some of these reasons have contributed to the substantial demand that we've seen for both continuous CRP (CCRP) and general CRP signup 49. As of the end of December 2016 CRP enrollment is at 23.49 million acres with a 24 million acre cap. Upcoming expirations are minimal with 2.5 million acres expiring this coming September 30, 2017 and another 1.49 million acres on September 30, 2018.

In our view, we're at a tipping point once again for CRP. Clearly, we have strong demand to call for a substantial increase in the acreage authorization and we recommend returning CRP to at least 40 million acres as part of the 2018 Farm Bill. We need CRP now to address the substantial demand to complete voluntary soil, water, and wildlife habitat improvement projects. In addition, CRP does offer substantial economic and income stability benefits while providing commodity price support benefits.

Additionally, we recommend a complete review and overall of the CRP application/signup processes. The program needs to continue to evolve to continue as a robust and dynamic landscape level program on working farms and ranches. Future signups should target larger blocks of habitat important for wildlife production and hunting. It is the combination of both the general signups larger tracts of CRP and the corridors/buffers and targeted specialty tracts that are available through the CCRP that result in the "habitat mosaic" most beneficial to soil, water, and wildlife resources AND supports outdoor recreational opportunities including hunting. Small, rural communities benefit as do all residents that enjoy a high quality of life in rural areas.

Future CRP should contain additional provisions to maximize benefits to quail. Encouraging use of early successional native covers in shorter-term rotations within contracts could be very beneficial.

We need to address provisions for soon to expire CRP as well. As CRP contracts near expiration, we should support provisions encouraging longer term resource protection including permanent options for selected tracts. Congress should support pathways to "move" CRP lands into working farms and ranching that continue CRP's resource benefits. CRP can support grazing programs and wildlife with through comprehensive conservation management plans that provide high quality forage, and quality wildlife habitats.

We also believe USDA should utilize CCRP initiatives to cover areas with high contract expiration rates. As these acres come out of a general contract and are not extended/re-enrolled, we would ask USDA to promote keeping field borders and environmentally sensitive/important lands in CCRP practices. The trend has been that when a general CRP contract expires, the entire field is brought back into production.

Other Conservation Program Priorities

In addition to maintaining a strong and robust CRP as the flagship conservation program we support a strong Agricultural Conservation Easement Program (ACEP) as well as the successful Environmental Quality Incentives Program (EQIP). EQIP in particular has played an important role in our western states where we work with ranchers and other partners to enhance rangelands for both livestock operations and to benefit wildlife species like sage grouse and mule deer.

Through EQIP and Partnerships, we are addressing some of the resource concerns in forested ecosystems; however another priority is providing wildlife benefits in CRP tree plantings, especially managing pine stands for quality timber production in the Southeast while benefiting Bobwhite Quail. We are encouraged that USDA implemented the $10M in cost share assistance that was introduced in the 2014 Farm Bill. We hope that these successes demonstrate additional resources for management. We also continue to support the linkage between conservation compliance and crop insurance. Sodsaver provisions play an important role in addressing native prairie conversion and should be continued as well.

Last, The Voluntary Public Access and Habitat Incentive Program (VPA–HIP) plays a vital role in supporting recreational access for hunters while supporting enhancement of wildlife habitats. We support reauthorization of VPA–HIP at $150 million over 5 years.

Mr. Chairman, we look forward to providing more detailed program by program recommendations to the Committee in the near future. We look forward to participating in upcoming dialogues focused on reviewing existing programs and procedures and to look for new efficiencies and saving wherever possible. We pride ourselves as part of incredible partnerships that work day to day to deliver important voluntary incentive-based conservation programs to America's farmers and ranchers. Thank you for the opportunity to comment and I would be pleased to take your questions.

Additional Resources

2013 Multi-State Land Use Study: Prepared by Decision Innovation for MN, SD, IA, IL, NE, IN, and MI Farm Bureau. July, 2013. *http://www.decision-innovation.com/webres/File/docs/130715%20Multi-State%20Land%20Use%20Report.pdf.*

Conversion of 398,223 acres if non-cropland to cropland during 2012 crop year[.] USDA–FSA. June 26, 2013 *www.fsa.usda.gov/Internet/FSA_File/cropland_noncropland.pdf.*

The CHAIRMAN. Thank you, sir.

The chair now recognizes Mr. Piotti for 5 minutes.

STATEMENT OF HON. JOHN F. PIOTTI, PRESIDENT, AMERICAN FARMLAND TRUST, WASHINGTON, D.C.

Mr. PIOTTI. Thank you. Chairman Lucas, Ranking Member Fudge, Members of the Committee, my name is John Piotti and I am the President and CEO of American Farmland Trust, AFT. Though I am new to AFT, I have worked on farming issues in my home State of Maine for the last 25 years, much of that time as part of an organization that worked to protect farmland and support farmers. And that is how I have firsthand, on the ground experience with many of the programs within the farm bill.

I want to thank the Committee for seeking input from stakeholders on the priorities for the next farm bill at this time.

For 36 years, AFT has been dedicated to protecting America's farmland and ranchland, promoting sound farming practices, and keeping farmers on the land. In the United States, we lose the equivalent of 40 acres of farmland to development every hour. Replacing our farmland with homes or shopping centers has ripple effects for our society, from eroding rural towns and their traditions, to decreasing our ability to provide our citizens with healthy food, to losing wildlife populations, to habitat destruction. AFT recognizes that farmers and ranchers hold the solutions to many of our most pressing environmental problems when they implement vol-

untary conservation practices on their land. Finally, AFT is concerned with the decreasing number of farmers and their increasing age. In the time since AFT's founding, the average age of farmers has increased from 50 to 58 years. While the number of beginning farmers decreased by 20 percent in the last Census of Agriculture.

The farm bill's conservation title should, and at its best, does address all these issues. AFT used the conservation title as a set of tools to address the complex needs of America's farmers and ranchers, while at the same time addressing public interest. One of AFT's goals for the upcoming farm bill is to ensure that we retain a full set of tools, and that we fund each program adequately.

My written testimony provides detail about how the 2014 Farm Bill voluntarily reduced spending in an effort to reduce future deficits. The conservation title saw a ten percent decrease in funding levels, or nearly $6 billion in cuts. A recent CBO study shows that the entire farm bill will result in nearly $100 billion in deficit reduction.

My point on all this is that the farm and food community has already done its part, and should not be the target of additional cuts with the next farm bill.

Although AFT sees great value in all of the programs in the conservation title, my remarks today offered here early in the farm bill process focus on two programs that benefit working lands and that AFT has strongly been involved with, and that is ACEP and RCPP. I will start with ACEP, the Agricultural Conservation Easement Program, which is the farm bill's program for protecting farmland, a necessary part of our nation's infrastructure.

Protecting farmlands from development protects the foundation of our agriculture and our agriculture-related industries. Protecting farmland means protecting wildlife habitat, water tables, and carbon that is stored in our soils. Protecting farmland means protecting our supply of healthy food, and protecting farmland means protecting the way of life in rural America, and ensuring the next generation of farmers can enter the profession. Simply put, Federal investment in farmland protection through ACEP provides vital benefits for Americans today and into the future.

Allow me to take just a minute to further explain one of the many benefits of ACEP, which some people may not be familiar with. We don't always talk about farmland protection playing a critical role in making land more affordable for farmers, both existing farmers who are looking to expand, and beginning farmers who are trying to enter the profession. And yet, in any part of this country where there are significant development pressures, protected farmland is often the only farmland that farmers can afford.

I earlier mentioned that the number of beginning farmers dropped by 20 percent in the last Census of Agriculture. That is a national statistic. It doesn't play out in every region. In my home State of Maine, for instance, our story could not be more different. Between 2007 and 2012, the number of beginning farmers in Maine grew by an impressive 39 percent, and one of the key reasons is that Maine during this period significantly increased its farmland protection efforts, creating affordable options for entering farmers to acquire land.

Despite the many benefits of protecting working agricultural lands, the funding for ACEP saw a huge decrease in the 2014 Farm Bill. The three components that were created in that farm bill to create ACEP, Wetlands Reserve, FFRP, and the Grassland Reserve Programs, these were funded at an average of $732 million a year from 2009 to 2012. Yet the average for ACEP for 2014 through 2018 is $405 million. Even more alarming is that ACEP funding drops to $250 million annually in 2018 and going forward.

So listen to what I just said. We are talking about going from $732 million to $250 million, a huge drop. And already without that step, NRCS is only funding about 30 percent of the applicants. Think what it is going to be with the next drop in 2018.

Now in addition to ensuring adequate funding for ACEP, AFT believes there is a need to streamline the program to ease administrative burdens, going forward. This would save the Federal Government significant time and money, while making the process easier and more timely for a broad variety of farmers and ranchers.

AFT is discussing with advocacy organizations, land trusts——

The CHAIRMAN. Please summarize, Mr. Piotti.

Mr. PIOTTI. Yes?

The CHAIRMAN. Can you summarize, please, so we can get to questions?

Mr. PIOTTI. Yes, absolutely.

In conclusion, I just want to say the conservation title is vitally important, not just for farmers and ranchers, but for all Americans. It gives our farmers and ranchers a variety of tools to achieve cleaner air and water, healthier soils, more wildlife habitat, and to protect farmland and ranchland. While we all acknowledge the budget realities that the nation faces, we believe that adequate funding for the conservation title is critical at this time. Beyond this, these voluntary conservation programs help our nation's farmers and ranchers advance environmental goals without burdensome regulatory requirements, something that is needed today more than ever.

I thank you for your time.

[The prepared statement of Mr. Piotti follows:]

PREPARED STATEMENT OF HON. JOHN F. PIOTTI, PRESIDENT, AMERICAN FARMLAND TRUST, WASHINGTON, D.C.

American Farmland Trust is the nation's leading conservation organization dedicated to protecting America's farmland and ranchland, promoting sound farming practices, and keeping farmers on the land. Since its founding in 1980 by a group of farmers and citizens concerned about the rapid loss of farmland to development, AFT has helped save millions of acres of farmland from development and led the way for the adoption of conservation practices on millions more.

Introduction

Chairman Lucas, Ranking Member Fudge, and distinguished Members of the Subcommittee,

My name is John Piotti and I am the President and CEO of American Farmland Trust (AFT). Though I am new to AFT, I have worked on farming issues in the state of Maine for 25 years, much of that time as part of a statewide organization that has protected farmland and supported farmers. I have first-hand, on-the-ground experience with many of the programs within the farm bill.

I want to start by thanking Chairman Conaway and Ranking Member Peterson, as well as Subcommittee Chairman Lucas and Ranking Member Fudge, for seeking input from interested stakeholders on policy priorities for the next farm bill.

For 36 years, AFT has been dedicated to protecting America's farmland and ranchland, promoting sound farming practices, and keeping farmers on the land. In the United States, we lose the equivalent of 40 acres of farmland to development every hour. Replacing our farmland with homes or shopping centers has ripple effects for our society, from eroding rural towns and their traditions, to decreasing our ability to provide cities with fresh, local food, to losing wildlife populations through habitat destruction. AFT also recognizes that farmers and ranchers hold the solutions to many of our most pressing environmental problems when they implement conservation practices on their land. Finally, AFT is concerned with the decreasing number and increasing age of farmers: in the time since AFT's founding, the average age of farmers has risen from 50 to 58, while the number of beginning farmers decreased 20% between 2007 and 2012.

The farm bill's conservation title should, and often does, address all these issues. AFT views the conservation title programs as a set of tools to address the complex needs of America's farmers and ranchers—as well as public interests. Each program has demonstrated value to producers and landowners to achieve specific outcomes tailored to their needs. One of AFT's goals for the upcoming farm bill is to ensure that we retain a full set of tools, and that we fund each program adequately. More specifically, AFT believes the next farm bill should adequately fund and streamline the Agricultural Conservation Easement Program (ACEP) and strengthen the Regional Conservation Partnership Program (RCPP).

The Need for Conservation Title Funding

First and foremost, AFT urges Committee Members to work with colleagues on the Budget and Appropriations Committees to ensure that conservation programs do not undergo additional funding cuts. The 2014 Farm Bill marked the first time a farm bill voluntarily reduced spending, and it was the only reauthorization bill in that Congress that voluntarily offered savings. As part of this effort to reduce future deficits, the conservation title saw a 10% decrease in funding levels, or nearly $6 billion in cuts. While the 2014 Farm Bill was originally estimated to contribute $23 billion to deficit reduction over 10 years, a recent analysis by the Congressional Budget Office shows that the entire bill will result in nearly $100 billion in deficit reduction. The cuts already endured, coupled with better-than-expected spending outcomes for the 2014 bill, show that the farm and food community has already done its part—and should not be the target for additional cuts.

Cuts to the conservation title have many negative consequences. Some programs, such as the Environmental Quality Incentives Program (EQIP) and RCPP have expressly-stated purposes of providing conservation assistance to avoid regulatory requirements for farmers; inadequate funding stands in the way of this purpose. Further, funding for voluntary, incentive-based conservation ensures both environmental sustainability for our farms and economic sustainability for our farmers and ranchers. For example, not only does ACEP provide funds for farmers to enable them to protect their land, it also often allows them to reinvest in their businesses. Recent cuts to ACEP mean that the Natural Resources Conservation Service (NRCS) must turn away 70% of the farmers and ranchers who apply for funds each year.

Although AFT sees great value in all the programs in the conservation title, these remarks—offered early in the farm bill process—focus on two programs that benefit working lands, and with which AFT has been strongly involved: ACEP and RCPP.

The Importance of Federal Farmland Protection: Funding and Streamlining ACEP

Farmland is a necessary part of our country's infrastructure. Protecting farmland from development protects the foundation of our agriculture and agriculture-related industries, which contribute $985 billion to the U.S. gross domestic product (GDP). Protecting farmland means protecting wildlife habitat, water tables, and carbon stored in our soils. Protecting farmland means protecting the supply of healthy foods provided to our cities. Protecting farmland means protecting the way of life in rural America and ensuring that the next generation of farmers can enter the profession. Simply put, Federal investments in farmland protection through ACEP provide vital benefits for Americans today and into the future.

Allow me to take just a minute to further explain one of the many benefits of ACEP, with which some people may not be familiar. We don't always think of farmland protection playing a critical role in making land more affordable for farmers, both for existing farmers who are looking to expand, and for beginning farmers who

are trying to enter the profession. And yet, in any part of this nation with development pressures, protected farmland is often the only farmland that farmers can afford.

I earlier mentioned that the number of beginning farmers dropped by 20% in the last Census of Agriculture. But that's a national statistic; that doesn't play out in every region. In my home state of Maine, for instance, our story could not be more different: between 2007 and 2012, the number of beginning farmers in Maine grew by an impressive 39%! And one of the key reasons is that Maine during this period significantly increased its farmland protection efforts, creating affordable options for entering farmers to acquire land.

Despite the many benefits of protecting working agricultural lands, the funding for ACEP saw a precipitous decrease in the 2014 Farm Bill. The three component programs that were combined to create ACEP (Wetlands Reserve Program, Farm and Ranch Lands Protection Program, and Grassland Reserve Program) were funded at an average total of $732 million annually from 2009–2012. Yet the average for ACEP for 2014–2018 is $405 million, a 32% decrease from the previous average. Even more alarming is that ACEP funding drops to $250 million annually in FY18 and in future years, which is a 66% decline from the previous average. This decrease in funds makes it increasingly difficult for partners, who rely on ACEP funds to leverage state and local funding for farmland protection projects. AFT believes it is of utmost importance to return ACEP funding to historic levels.

In addition to ensuring adequate funding for ACEP, AFT believes there is a need to streamline the program to ease administrative burdens for producers, land trusts and NRCS. This would save the Federal Government significant time and money, while making the process easier and more timely for a broad variety of farmers and ranchers, from Vermont to Texas, Pennsylvania to Montana, California to Michigan, and every state in between. AFT is discussing with other advocacy organizations, land trusts, and state farmland protection programs how ACEP might be refined to best serve the farmers and ranchers who need it. We look forward to working on this important issue with Members of this Committee and staff.

Quantifying Benefits through the Regional Conservation Partnership Program

AFT has long championed a targeted, partnership-based project approach to conservation to achieve landscape-scale environmental outcomes. RCPP is an innovative program that brings together a diverse array of partners with technical and scientific expertise and leverages private-sector dollars. RCPP projects can focus on specific natural resource concerns in specific geographies to magnify desired conservation outcomes. By 2018, NRCS and its more than 2,000 conservation partners will have invested over $2.4 billion in high-impact RCPP projects nationwide, with more than half of that funding coming from non-Federal sources.

AFT is working with many partners to implement RCPP projects around the country. In Washington State, AFT and partners have helped farmers adopt conservation practices to improve water quality in Newaukum Creek. Funding has gone towards stream-side plantings to improve habitat, projects that help farmers better manage manure and nutrients, and several other conservation practices. In Illinois, AFT and partners are working to improve water quality in the Upper Macoupin Creek Watershed, which feeds into the Mississippi River and eventually the Gulf of Mexico. According to the Illinois Nutrient Loss Reduction Strategy, the Macoupin Creek watershed is one of the three highest phosphorus-yielding watersheds in Illinois. In addition to providing technical and financial assistance for soil-saving and nutrient-saving conservation practices, the AFT-led partnership will also address the need for expensive new equipment that would otherwise be a significant barrier to the adoption of water-quality practices. Included in this watershed, and eligible for support by this project, are farmers in the traditionally under-served African American community of Royal Lakes.

One of the goals of RCPP was to fund projects that elect to measure environmental, social, and economic outcomes of the practices adopted within a project area. However, AFT, like other groups, have struggled to do so, due to the lack of guidance from NRCS on what such outcomes mean or which measurement methods to use. AFT believes that improvements to the farm bill could help NRCS and its conservation partners quantify the different outcomes associated with conservation practices, which will provide needed evidence to the public, Congress, farmers, and the conservation community to show that voluntary conservation works.

For these reasons, AFT believes that the farm bill should, first, include definitions of these environmental, social, and economic outcomes, and second, direct the Secretary of Agriculture to provide guidance and reporting criteria to RCPP project partners. That would enable data showing the progress that RCPP and its project

partners are having in achieving, quantifying, and reporting on these outcomes to be regularly reported to Congress. Having information about the actual outcomes of conservation practices, rather than simply reporting on the dollars spent, will allow agricultural and conservation organizations to make a stronger case for voluntary conservation going forward.

Concluding Remarks

The conservation title is vitally important not just for farmers and ranchers, but for all Americans. It gives producers a variety of programmatic tools to achieve cleaner air and water, healthier soils, more wildlife habitat, and protected farmland and ranchland that benefit us all. The importance of conservation title funding in obtaining these public benefits cannot be underestimated. While we acknowledge the budget realities that this nation faces, we believe that adequate funding of the conservation title is critical to protecting our valuable natural resources. Beyond this, these voluntary conservation programs help our nation's farmers and ranchers advance environmental goals without burdensome regulatory requirements. We feel that such programs are needed now more than ever.

Thank you again, Mr. Chairman, for the opportunity to share our views on these important issues. I would be happy to address any questions you have.

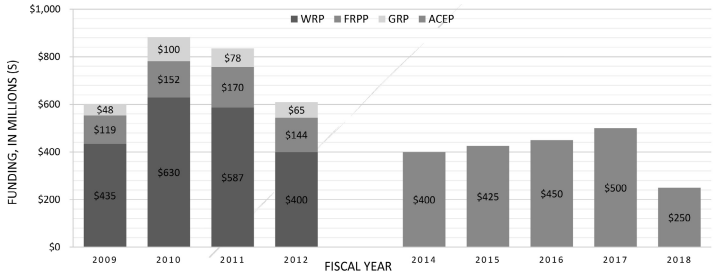
ATTACHMENT

Funding for Agricultural Conservation Easements Under the 2008 and 2014 Farm Bills

The Agricultural Conservation Easement Program (ACEP) combined funding from three programs in the 2008 Farm Bill: the Wetland Reserve Program (WRP), the Farm and Ranch Lands Protection Program (FRPP), and the Grassland Protection Program (GPP). Under the 2014 Farm Bill, the funding level for ACEP reaches its peak in FY17 at $500 million, compared to the peak of $882 million in FY10. In FY18, funding is slated to drop precipitously to $250 million—a 66% decrease when compared to the average funding level under the 2008 Farm Bill.

Funding for ACEP Under 2008 and 2014 Farm Bills

2008 Farm Bill **2014 Farm Bill**



The CHAIRMAN. Thank you, Mr. Piotti.

The chair would like to remind Members that they will be recognized for questioning in order of seniority for Members who were here at the start of the hearing, and after that, Members will be recognized in order of arrival. I appreciate Members' understanding. With that, I would recognize myself for 5 minutes.

Mr. Coffey, clearly you are a very progressive sort of fellow on your ranch, utilizing resources and programs that are available to us. You have been in the process for a time. Could you describe for me the availability of the technical assistance that comes from NRCS, and the relevance that is to how you implement your conservation practices on your ranch?

Mr. COFFEY. Yes, sir. I appreciate that question.

I have been involved with both EQIP and CSP contracts. In fact, I am currently under a CSP contract right now. I am into a re-

newal program with CSP. Many of the practices that we have used with the CSP program have including grazing management, which requires us to leave residual forage at 12″ to 14″ on an average of our pastures. We have added fencing for rotation grazing. We have added solar wells for water management. We are on a non-herbicide program, and so many of these conservation practices have made us more aware of the importance of the grasses that we have and leaving residual things behind for future use.

The CHAIRMAN. How available is the technical assistance? How much of a wait do you have when you need the good folks from NRCS to work with you, those kind of questions? Even though this Committee is focused on authorizing programs, and our brethren on Appropriations actually fund positions at USDA, nonetheless, it doesn't matter how good the programs are if you can't implement them and you have to have people and technical experts to help, correct?

Mr. COFFEY. That is very true. Technical assistance is very hard to come by. They are inundated with paperwork, and I am good friends with them and have served on committees with them through SRM and so forth, but it is very difficult to get them to come out on the land to do surveys and to assist. It seems like they are just inundated with the paperwork. If I had to choose between payments for cost-share or these programs and technical assistance, I would honestly choose the technical assistance. We need more effort in that arena.

The CHAIRMAN. This is a question for the whole panel. This summer, former Secretary Vilsack heard comments from young and beginning farmers in Iowa about their concerns in competing rental rates, whether the land would go to a CRP contract or be available to rent. Part of this Committee's responsibility is to preserve the soil, the water, and the air, but also to preserve our productive capacity, and those young people and beginning farmers who represent that.

Whoever on the panel, let's touch for a moment on this issue about if we get CRP rates too high, do we choke off farmers? By the same token, if we get CRP rates too low, which benefits potential new farmers and expanding farmers, then we lose the conservation benefits. Let's touch on that for just a moment, that balance that I believe must be achieved. Whoever would care to step in, in my remaining couple of minutes.

Mr. NOMSEN. Mr. Chairman, perhaps I will start. Let me offer the thought that first of all, I remind you that initially put into the CRP program were county to county limitations, being sensitive to that balance between agriculture and CRP lands. We have struggled with many farm bills on the CRP rental rate issue, and typically over its history, the rates have typically lagged behind and we have had more issues with getting them competitive and raising them.

Well, that turned a little bit with the skyrocketing land values, cash rents that we have seen. All of a sudden, we have probably got a bit of the opposite situation now. It is something we do need to revisit clearly, and I think there are ways that we can use kind of today's CRP, a little bit more of the targeted CRP so that we can

help beginning farmers and ranchers out there a little bit more, just because of some of the practices.

That said, I think there is a real opportunity to help farmers and landowners right now. It is somewhat like the situation in the early 1990s. It is not as dire; however, just because CRP is now a true resource program, soil, water, and wildlife, that doesn't mean that it also doesn't still have income security and stability benefits to it, price support, commodity supply control. Those are all elements of it, because it is a true landscape level program, and those things are important right now in the situation that we are in with the agricultural economy.

The CHAIRMAN. Anyone else wish to touch on that? Mr. Coffey?

Mr. COFFEY. Thank you. Yes. I am of the opinion that I love the working lands programs, and if we had more boots-on-the-ground, we may not need to focus so much on set-aside land. I mean, conservation involves livestock, wildlife, soil, water, forages, on and on, and those can be blended together in a way that what is good for the goose is good for the gander, so to speak. In my opinion, putting more funding to set-asides, such as CRP, may not be in the best interest of the taxpayer in this country.

The CHAIRMAN. Seeing that my time has expired, I now recognize the gentlelady, Ms. Fudge, for her 5 minutes.

Ms. FUDGE. Thank you very much, Mr. Chairman. I would now yield to the Ranking Member of the full Committee.

The CHAIRMAN. The gentlelady yields to the Ranking Member.

Mr. PETERSON. I thank the gentlelady.

Mr. Peters and Mr. Gertson, you both mentioned the DUNS and SAMS situation. A few years ago I bought a little farm, and in a way we ought to really require every Member of this Committee to own a farm, because I have been now subjected to all of the different aspects of the farm programs, and I was in the CSP program, and I have a partnership with my son. We had to get one time the DUNS number. That was not a big deal, but then because we are a partnership and whatever this law was that we passed and guidance that was put out by OMB or whatever it was, and we had to have a SAMS number.

What ended up happening, because this stuff is public information, I get a call from somebody in Fort Lauderdale, Florida, who tells me that I have to go through him and it is going to cost me $600 to get this SAMS number. They are scamming us, like they do with the IRS and so forth. Not only is it bad enough you have to go through this, they are actually scamming people because you don't need to pay anybody to get this. But he basically told me I had to pay them to get this number. Well I was only getting $700 a year out of the CSP in the first place, we got through that and so forth. I can't see any reason in the world why these farm programs are in this system in the first place. We have the controls at the county level and we know what is going on, would you agree with that, that we should just get rid of these impediments?

Mr. GERTSON. Absolutely, Congressman Peterson. Yes. I am the guy on our farm who deals with NRCS, and yes, I am one who has personally gotten a DUNS number and the SAM number. The DUNS number, yes, that was no big deal, but I get solicitations

through my DUNS number as well. People come in and want me to do stuff.

The SAM number was a complete disaster, I can tell you that. That was a 100 percent disaster. Not only do I get tons of solicitations because my information is out there, now, we had millions of dollars of payments held up because the NRCS offices weren't really even sure what to do or how to tell you to do it right. I have a lot of farmers around me who did their practices right, installed hundreds of thousands of dollars of dirt work and pipelines and all of this stuff, paid it, right, paid their bills. Now they are waiting on their cost-share and couldn't get it, because they didn't sign up for the SAM number because they didn't know or didn't know how or had to use the confusing website. I can tell you from experience that the SAM system has been a complete disaster.

Mr. PETERSON. I dropped out of CSP because of it. My contract came up. They changed the practices so it really wasn't hardly worth anything for me to go back into it. And I just wasn't going to go through it again, so I just dropped out. I think there are a lot people who have done that, am I right, Mr. Peters?

Mr. PETERS. That is correct. We would agree with you, and we, through our district, have heard countless stories similar to your own and to Mr. Gertson's. We see this is an impediment to getting good conservation on the ground for people that are just seeking to do the right thing. And it is a system that was never intended for cost-sharers——

Mr. PETERSON. It is for defense contractors.

Mr. PETERS. Correct.

Mr. PETERSON. Mr. Nomsen, your organization supports 40 million acres, am I right?

Mr. NOMSEN. That is correct.

Mr. PETERSON. Who else supports it? I know the DNR guy in Minnesota is organizing all of the DNR people in that part of the world to support it. First, are there other folks out there that are on board supporting the 40 million? And second, are there people that are fighting you on that that you know of?

Mr. NOMSEN. The latter part of your question is the easier one to answer.

As we get started here in the process, I am hopeful that many, many other groups will look to the CRP and the fact that we need a strong increase in the program. I don't know where the number is going to shake out for many, many groups. But to the earlier part of your question when you mentioned the DNR, one of the tools that we have available now that we have not had in previous farm bill discussions is we now have a national pheasant restoration plan that is put together by all of the state agencies, and in that plan, one of their goals is to support a 40 million acre CRP as one of the critical components of the national plan as well. Thank you.

Mr. PETERSON. Thank you.

I yield back, Mr. Chairman, and thank the gentlelady for yielding.

The CHAIRMAN. The gentleman's time has expired. The chair now recognizes the gentleman from Pennsylvania for 5 minutes.

Mr. THOMPSON. Thank you, Chairman, and thank you to the members of the panel for your individual and your organizations' leadership on conservation. It is greatly appreciated.

Mr. Piotti, an issue that I hear about is that there are some provisions in the easement program that make it more difficult for states like Pennsylvania, who have established state easement programs to participate. Can you elaborate further on that?

Mr. PIOTTI. Sure. Thank you for that question.

The ACEP program is a great program, but it is very much a one-size-fits-all program as it is currently crafted, and there are a number of states like Pennsylvania who have developed very robust state-based farmland protection programs, usually these statewide programs utilize ACEP funds as matching. You have to bring the requirements of the state program and the requirements of the Federal program together and make the project happen, and that can be daunting. And we really love to see some refinements of the ACEP program so that states like Pennsylvania who do a good job on their own might be able to get access to the Federal funds without jumping through quite so many hoops.

Mr. THOMPSON. Just to follow up on that: are there any specific refinements that you could recommend at this point?

Mr. PIOTTI. Well, we have been talking to a number of other groups, land trusts around the country and the like, to get very specific as part of this farm bill.

I can say right now there are just issues around some of the specific easement language that NRCS might dictate that might be a little different from what a state is looking for. There are frequently timing issues, as you can well imagine, trying to get the funds from both sources to work at the right time for a closing in an expeditious way. There are timing issues. In some cases there are retirement issues. Some cases there are monitoring or baseline issues. And as I said, we are working with a group of ag land trusts around the nation to bring some specific information to the use of the Committee.

Mr. THOMPSON. Great. I appreciate that very much.

This question is for whomever would like to respond. Often environmental groups point to regulations as the only way to achieve conservation results. And yet, the work of NRCS has resulted in many, specifically through voluntary conservation. It has resulted in a remarkable number of Endangered Species Act delistings. It has cleaned up wetlands and streams and conserved soil. In your opinion, why does voluntary conservation have such a better track record, and why do farmers rarely get credit?

Mr. GERTSON. I guess voluntary is a big deal. You talk to any farmer, or rancher, for that matter, and we are pretty independent people, right. We don't like people intervening, telling us what to do. I used to work for a company as an engineer for a year before I farmed. I could probably never go work for anybody again now. I have spoiled myself. I am the boss, right? Voluntary conservation works well in our mindset. You will find almost every farmer and rancher is working hard to improve his land, and natural resource conservation just comes naturally, because that is what is required for them to even remain profitable. You can't farm or ranch and hand anything down to the next generation unless you are doing

some sort of conservation. I don't think that will ever be an issue. You will always be able to have people participate, because it just comes natural to farmers and ranchers, their mantra is doing more with less. That is how we have to survive.

Mr. COFFEY. Many times, I think where the problem is, is that when we start talking about mandatory, it ends up being single species specific. It is a pheasant. It is a monarch butterfly. It is a quail. It is a lesser prairie chicken. And that becomes the focus, and we can't see the forest for the trees at that point, because we are staring at that one tree.

We, as ranchers and farmers, understand the entire realm of conservation. We understand the water, the soils, the forages, the crops, whatever it might be, and that is where our focus is. And it is interesting how we don't do anything for the monarch butterfly, but seasonally every year I can ride my horse along a creek and just be covered up in monarch butterflies when they fly through. And, too often, the focus becomes too narrow in conservation programs.

Mr. THOMPSON. It seems like voluntary conservation truly is kind of a landscape approach.

Mr. COFFEY. Or it could become too narrow. Yes, sir.

Mr. THOMPSON. Thank you, Mr. Chairman.

The CHAIRMAN. The gentleman's time has expired.

The chair now recognizes the gentlelady from Ohio, Ms. Fudge, for 5 minutes.

Ms. FUDGE. Thank you so much, Mr. Chairman, and thank you all for being here. It is nice to be on a Committee where people think that the Federal Government does something good, that there are some good programs. Thank you for that. We may think that they are too cumbersome, and they probably are, but I am certainly hopeful that instead of just saying it is too onerous, too much paperwork, help us streamline the process. Because we do have some responsibility and accountability for tax dollars. We just can't give you money and say have a great day, we need for you to have some accountability. But we want to make the program better for you as well, so please, do tell us what that is.

To Mr. Piotti and to Mr. Peters, do you believe that the current farm bill conservation title provides adequate funding, and if it takes another hit in this farm bill, what do you think the consequences might be?

Mr. PIOTTI. As my testimony indicated, I certainly do not feel that there is adequate funding right now for the programs. The last question about voluntary compliance, has an easy answer because every farmer I have ever met wants to do what is right by the land, but there are a lot of steps that economically are hard to do without the support of some of these Federal programs. We absolutely need more.

And what will happen if we don't get this support is we will not see the results on the ground that we want to see. We will not get the conservation impacts that we want. There will be impacts on water. There will be impacts on soil, and there will be impacts in the fairly near-term on the economic viability of our farms. It would both be environmentally and economically a bad move to not invest at the level that is needed.

Ms. FUDGE. Thank you. Mr. Peters?

Mr. PETERS. Thank you, Congresswoman.

As I indicated in my testimony, we support maintaining or increasing funding in this next reauthorization. The need for that is several-fold. One, we know that across the country farm and ranching is down, and it is increasingly difficult for the cost-share investment to continue to flow forward with a low economy. We have to continue the investment through the Federal conservation programs.

We know the landowners continue to want to do the right thing. We know that the pressure continues to be on the land in terms of water, soil, wildlife. If you look at the last farm bill, the conservation community, the agriculture community already gave a significant amount of funding. If we continue to cut into the programs, we are really going to be cutting into the bone, and we just can't afford to continue to turn landowners away when they are seeking tools to be able to do right on their land.

Ms. FUDGE. Thank you very much.

Mr. Coffey, you have talked a couple times about NRCS's staff on the ground and the difficulty they have. Do you think that some of it might be just a morale problem because of how we fund it? We have continuing resolutions, we have sequestration, we have hiring freezes. We have all of these things that make it difficult. Do you think that that might be part of the problem with the people on the ground?

Mr. COFFEY. I certainly won't disagree with that, but those that I tend to know have pretty good morale. But when I visit with them, their lack of morale, it tends to be with the paperwork and it just seems to prevent them from getting out. They are highly educated people and they are motivated, but they are struggling. I don't think it is a morale issue solely.

Ms. FUDGE. Thank you.

Mr. Peters, of course, I am from Cleveland, Ohio, right, so talk a little bit to me about urban farmers and what concerns they are facing.

Mr. PETERS. Absolutely. Thank you for the question.

One of the items that we understand from our districts that urban conservationists are seeking right now is technical assistance, and we have been working through our districts to help identify those needs and to help meet those needs in the communities where urban agriculture is a priority.

If you look at the landscape, the resource concerns are the same. We want to make sure that soil is healthy and that it is being prevented from erosion. We want to make sure that there are not unintended consequences to the water. We want to make sure that wildlife habitat is available. And all of those outcomes are achieved through sound conservation planning.

One of the things that we have identified as a need in this space of urban agriculture is strong technical assistance to make sure that those folks that are, again, seeking to do the right thing on their land have the resources available to do so.

Ms. FUDGE. Thank you very much, and Mr. Chairman, if you want to sell me a part of your farm, I am in.

The CHAIRMAN. We will invite you out to work on it first. With that, the gentlelady's time has expired.

The chair now turns to the gentleman from Georgia, Mr. Allen, 5 minutes.

Mr. ALLEN. Thank you, Mr. Chairman, and I thank all of you for being here today, and discussing the future of our conservation programs. Many of you have stated in your testimony, and I would have to agree that our farmers are really the true stewards of our land. Each and every day, our farmers spend their livelihoods caring for our lands and preserving our natural resources for the generations to come, and it is good to hear that we have fifth generation, and hopefully sixth and seventh and eighth generation farmers out there.

As the son of a farmer, I understand to a great extent what we are talking about today, and the importance it is to the success of our farmers and ranchers, particularly in my home State of Georgia, which agriculture is the number one industry. Of course, we are looking toward the next farm bill and we have talked already today about the need to ensure that we have the tools and programs that will help us to potentially expand these programs and to make them successful.

The best way I know to do that, because I come from the business world, is to look at every dollar invested and what is the return on that dollar. We represent the taxpayers, and the taxpayers expect us, and we should, use their money as an investment return as far as conservation practices go.

Mr. Peters, are there any actual statistics on what for a dollar invested what the dollar received is from this program, which would help us to increase this in the next farm bill?

Mr. PETERS. I am sure there are. I don't have those statistics readily available with me this morning. One thing that bears mentioning is that historically, for the Federal investment through the farm bill conservation programs, there are years upon years worth of cost-share that have come out of the pockets of the farmers and ranchers and landowners that are participating in those programs.

Mr. ALLEN. Right.

Mr. PETERS. That is a tremendous private investment that has leveraged those Federal funds.

Mr. ALLEN. And that is important, because everybody has skin in the game.

Mr. PETERS. Yes, sir.

Mr. ALLEN. And that is very important to our taxpayers.

Mr. Piotti, do you have any comments?

Mr. PIOTTI. Yes, I do. At the state level, and it was mentioned earlier that a lot of states have farmland protection programs that often work in companion with ACEP, and a number of states have done these kind of analyses. And we can compile some of that for you.

I also will point out, the NCPP program, that is one of our better partnership programs. This has leveraged significant dollars outside of Federal funding, and one of the requirements of that program is to identify the economic benefits of what is occurring, and that is happening. But to be honest, it is one of those places where the next farm bill needs some tweaks because, the quantification

of those outcomes is not occurring at a level that it could. But that program, which is working, we think, very well, could be elevated to a level to not only do great work on the ground, but begin to provide some of the data that you are looking for.

[The information referred to is located on p. 51.]

Mr. ALLEN. And that is what we need in providing for these programs.

The other thing is, as far as from the standpoint of the Federal Government, is the Federal Government the best place to do these programs, and of course, we talked about cost-sharing. Everybody has skin in the game. Would we be better served to do this in possibly another way? Any comments on that, Mr. Peters?

Mr. PETERS. We feel like the conservation delivery system that is in place is effective and it does work, and that delivery system engages partners at the Federal, state, and the local level. We feel like that has borne strong outcomes over the years, and we feel like that is the way of the future.

Mr. ALLEN. Mr. Gertson, as far as flexibility of the program, do you believe that the Federal Government is flexible enough to deal with, I know that every day the farmer wakes up is a different day. How are they working out?

Mr. GERTSON. Yes, I enjoy working with NRCS. They have worked as a good vehicle to administer programs. I share the same concerns as Mr. Coffey. The people are great, but quite often, I find that they are overwhelmed. That is the problem. I love working with the NRCS employees are a lot of times a lot like the farmers are, right, especially your field reps who come out and do stuff, and get along with them great. Yes, there are lot of times there is an information gap there. I will know more about programs than they do, because the information just hasn't disseminated down to them quick enough. There is definitely a possible staffing or information problem that could be there.

And I wanted to touch about how the money was being returned?

Mr. ALLEN. Investment return, yes, sir.

Mr. GERTSON. Right. Okay, our USA Rice and DU partnership, the RCPP program we have been running there is an excellent example of that. That was $25 million, and what I didn't mention is that there has been $25 million additional private dollars that have matched that for a total of $50 million, so that is matching every dollar that had been given into that program. And one other thing I would like to mention on that is that when you are looking at stretching a taxpayer dollar, I would point out, at least in my point of view, working lands programs go a long way, because that money isn't going to just the farmer. That money is going to me and then I am funneling it right back into the economy to pay for these practices. In my community, it is not uncommon to see, you have dirt moving sponsoring T-ball teams or our pipeline guys are sponsoring dinners. It is all integrated. Money that is spent in working lands programs, and EQIP and CSP, it multiplies and goes right back into the local economy.

Mr. ALLEN. Thank you. That is the kind of information we need.

The CHAIRMAN. The gentleman's time has expired.

Mr. ALLEN. I yield back the time I don't have.

The CHAIRMAN. The chair readily accepts it.

The chair now recognizes the gentleman from Minnesota, Mr. Walz, for 5 minutes.

Mr. WALZ. Well I thank the Chairman, and I too would like to thank the Chairman and the Ranking Member for starting out this farm bill process with this hearing. For many of us in this room, we should feel proud of the last farm bill and the conservation title that was in it that was wildly heralded across the spectrum as being in the right direction. And now we come back and we improve upon those things, and being a very literal Minnesotan, I know that the Chairman had a big presence in that as he sits over this room with the big photo and will be there again.

And so I would come back to this. My friends are making a very good point of this return on the investment, trying to understand the bigger picture, understanding how there are win-win-wins involved in this and seeing a table like this, this is exactly where it is at.

Over the last few years of having the privilege of being the co-chairman of the Sportsmen's Caucus, we took it upon ourselves to quantify outdoor activities, what they mean and what they mean for this economy. The numbers we came to are about $650 billion. When you take care of the environment and you have places for people to be able to fish or to hunt or to mountain bike or to take their Polaris out, where they are doing the things they are doing, all of those peripheral issues have a huge impact. To get a sense of that, that is bigger than the pharmaceutical and auto industry combined. And couple that with ag, that is the power of rural America, and it is working with the coalitions that are here. And I agree, where we can do working lands conservation, those are win-win. But we have a broad suite of things that we can do that fill all of those niches.

So again, and I have seen this with a $900,000 investment in EQIP on a spring feedlot near a trout stream in southeast Minnesota. That trout stream now generates over $4 million in income to that local community from that investment, and that cattleman is also running more cattle on that land in a more responsible manner. That is a win-win-win for everybody involved, so I do think we approach this from that perspective that we can get this out of it, and we are doing things like CRP. They are not just taking land out of production, which we need to make sure that we are compensating people fairly. There is also a return to the economy on that.

I wanted follow up, Mr. Nomsen. You mentioned the pheasant plan. I know Minnesota's pheasant plans, and yes, in full disclosure on this, I am very glad there are more pheasants, because my odds increase of getting one when we are out there. I had the pleasure, with Mr. Peterson, of seeing him get one as we both got one. They are coming back. Tell me how the Minnesota pheasant plan fits together with what we are doing federally to make sure, as they set target numbers, what are we going to have to do so they hit the targets?

Mr. NOMSEN. Thank you for the question, and specifically to the Minnesota State pheasant plan, there is a short-term goal of a harvest of about 450,000 birds. We have a ways to go to get to that. We are probably around 300,000 or so right now. Our estimates are that would take probably another 600,000 or 700,000 acres of land

in pheasant-friendly types of habitats. Not all CRP, probably a combination of CRP plus perhaps grassy habitats provided by small grains. If for some reason we saw an increase in small grain plantings in Minnesota, these are very, very wildlife friendly plantings. And so it is a combination of all of those things.

And just to add to your discussion on economics that you are all having, there is no question that conservation programs have been incredibly successful, not only for that individual farmer and landowner, but frankly for all Americans. If we are doing CRP in Ohio or Minnesota and maybe the driver is some quail or a few more pheasants or monarch butterflies, that project is helping benefit hypoxia situations in the Gulf and nutrient runoff and things that all Americans find important. These conservation programs are vitally important to all of us.

Mr. WALZ. Mr. Nomsen, is it possible like when we have drought situation of the CRP, and I know we have this in Minnesota with the hay shortage, and we are shipping hay up from Texas and wherever we can get it. Is there a responsible way that you can have CRP land and graze that for these folk? Can we do that?

Mr. NOMSEN. Absolutely, and I was chatting with my colleague, Mr. Coffey, earlier and we were talking about what is good for the herd is good for the bird.

Mr. WALZ. Yes.

Mr. NOMSEN. And yes, absolutely. CRP does have a managed hay and grazing component to it. Frankly, the entire CRP management issue is one that needs to be revisited. We need to get the agriculture community and the producers, the environmental groups, conservation groups at the table to evaluate where it is at, how can we do a better job, and how can we encourage the land management in a very, very farm and ranch friendly way?

Mr. WALZ. I would like to work with you on it, because I think that is the key of making sure we have those people at the table, and so when it gets tough, makes it easy for them to get on there and graze.

I yield back.

The CHAIRMAN. The gentleman yields back.

The chair now recognizes a farmer from California, Mr. LaMalfa, for 5 minutes.

Mr. LAMALFA. Thank you, Mr. Chairman. My apologies for the multiple committee schedule today for my tardiness, but thank you for your recognition.

I will jump right into it. As a rice farmer from California, I wanted to speak with, well, good morning, Mr. Gertson. Maybe I can talk to you for a moment here. As you know, we are medium grain growers primarily out there, and likewise, growers in my area have seen the program of EQIP as a very important tool with water saving practices. We don't need to save a lot of water right now in California, but it is always either feast or famine. It is an ongoing issue with water savings being a good tool, as well as shorebirds, waterbirds.

And so in your statement which I am sure you made earlier, that the EQIP 3 year limit provision does hamper the long-term effectiveness of these practices for shore birds, for habitat, for water savings, all the other benefits that the program has shown for

growers in my state and yours. Would you supply a little more detail in what changes you would see regarding maybe the 3 year limit provision or other areas?

Mr. GERTSON. Sure, sure. Yes, we would support extending the life of EQIP contracts. From a point of view from a farmer, conservation is for life, for us. This isn't a 3 year deal. We are in it for the long haul.

Mr. LAMALFA. How many years have you been on your place?

Mr. GERTSON. I am sorry?

Mr. LAMALFA. You are a fifth generation. How many years——

Mr. GERTSON. I am fifth generation, 108 years.

Mr. LAMALFA. One hundred and eight, okay. We are going on 86 years. We are raising the fifth.

Mr. GERTSON. Yes, I have the sixth coming. I have three boys who are coming behind me. And without conservation, we definitely wouldn't have been there 108 years. These programs are what are going to make farming and ranching available to the next generation. Not only are they conserving the environment, but it is a win-win as you guys are liking to say, because they are also cutting our costs, right, and with farming, we are always constantly having to cut back wherever we can. We are always having to do more with less.

Mr. LAMALFA. Yes, sir. We are not price makers. We are price takers.

Mr. GERTSON. Right, exactly.

Mr. LAMALFA. What kind of term would you see instead of 3 years, open ended? What kind of number do you think you have been hearing or would actually be practical?

Mr. GERTSON. I don't know that I can answer that right off the cuff.

Mr. LAMALFA. Well I am sure we will figure it out here.

Mr. GERTSON. Yes.

Mr. LAMALFA. All right. Let me switch. Thank you, Mr. Gertson.

Good morning, Mr. Coffey. I feel like Joe DiMaggio for a second there, if you are over 40, you will get that. You see from being a cattle rancher in Oklahoma, there are many technical fixes that Congress needs to make to EQIP to make it work better for farmers and ranchers. What technical problem do you find you are running into in ranching in the Midwest there?

Mr. COFFEY. Thank you. To begin with, the physical technical problem I believe is not having enough boots-on-the-ground, not having enough trained conservationists with NRCS that have the time to come out and be on the ground. Now there are other technical——

Mr. LAMALFA. What kind of timeline to get from maybe your first request or first ask to boots-in-your-field?

Mr. COFFEY. The only boot I have ever had on my place, they were touring it and it was a training session and we were training NRCS personnel. It has to have been to follow up on an EQIP contract to make sure that we perform according to the worksheet. Beyond that——

Mr. LAMALFA. Is this based more on trust? Do you go in and do the forms at the NRCS office and more or less that is the end of the verification?

Mr. COFFEY. And then you go home, follow the worksheets, and accomplish the goals, yes.

Mr. LAMALFA. And do they have a pretty big inbox that you are at the bottom of sometimes on their work, do you think?

Mr. COFFEY. Well I don't know how big their inbox is.

Mr. LAMALFA. Well, you know what I am saying. Does it feel like it takes a while for you?

Mr. COFFEY. I just know that they are, and it may be that they trust me. They know me well enough so they don't feel bad that I am not the biggest priority in the area. I don't know what the answer is.

Mr. LAMALFA. Well that is good. It is nice to have an honor system going.

There is one other thing that hadn't been talked about in the Committee today on this topic. What would you put in there, since my time is running out? What has been left out, do you think?

Mr. COFFEY. I would look at increasing the conservation strategies. I would look to make them more adaptive and flexible by region, and then increase the accountability, both on the side of USDA and the producer.

Mr. LAMALFA. It is a little rigid by region? You might have to one-size-fits-all amongst regions?

Mr. COFFEY. Yes, sir. Worksheets are developed in Washington, sent out to the State Conservationists, but if we had more worksheets, more things by region, we could accomplish more of our goals.

Mr. LAMALFA. It is coming from Washington. Maybe we should put that office in like Tulsa.

Mr. COFFEY. Yes, bring it over. Yes.

Mr. LAMALFA. I agree.

Mr. COFFEY. Davis, Oklahoma is a nice place to live right there in Murray County.

Mr. LAMALFA. Thank you, Mr. Coffey.

Mr. COFFEY. Thank you.

The CHAIRMAN. The gentleman's time has expired.

Chair now turns to the gentlelady from New Hampshire, Ms. Kuster, for 5 minutes.

Ms. KUSTER. Thank you very much, Mr. Chairman, and to Representative Fudge and yourself, thank you for hosting this important discussion about conservation programs. I come from the Northeast, New Hampshire, where we have smaller farms than all of you, but the conservation programs are incredibly important. I just want to echo my colleagues' comments about the impact of the outdoor community. The conservation in New Hampshire also leads to a great resurgence in ag returns, and then our colleague from Maine spoke about this. We are very proud to have a five percent increase in the number of new farmers in New Hampshire, and we have a renewed interest in healthy food and organics and farmers' markets, and really a resurgence in being closer to our food. I appreciate all the work you have done.

Our Ranking Member, Representative Peterson stole my thunder. Thank you to both of our witnesses, Mr. McDaniel and Mr. Gertson, for pointing out my legislation, H.R. 1163, Improving Access to Farm Conservation Act, that talks about this SAM–DUNS

problem. I look forward to having my colleagues on the Committee join. It is a bipartisan bill, and we can all agree, the underlying law was not intended for farmers working with their son or their brother or sister, as it may be, and so we will move forward with that and try to at least alleviate that burden of paperwork that you have been experiencing.

I have a bigger concern and will know more tonight, but I am worried about the cuts in the budget across the board. The President has talked about $1 trillion in infrastructure funding, an $800 million wall. Today and yesterday, a ten percent increase in defense budgets. I am concerned that these are the kinds of programs that are just going to get wiped off the map, and I am glad this is such a congenial bipartisan hearing, because I hope as we move forward with the farm bill, we will be able to keep this funding, because it is important both for the agriculture community, for our outdoor economy, for our environment, and I just wondered if any of you have any comments on how we can come together in a bipartisan way to make sure that we keep the funding for conservation programs.

Mr. PIOTTI. I will offer one thought and plant the seed if it hasn't already been planted with you, and that is that I view farming and farmland as being critical infrastructure, and there is value in thinking about it that way. And the conservation programs that undergird those activities are also part of that infrastructure. Maybe there is an opportunity to turn the debate around a little, and as we are thinking about rural infrastructure, focusing more attention on agriculture.

Ms. KUSTER. That is creative. I like that. Thank you very much. That is a great idea. Any others? That is brilliant, by the way. If they are going to spend $1 trillion, let's make sure we are included.

Mr. NOMSEN. Exactly. I would like to add to that just briefly, in that we do need to take a hard look at return on investment and the discussion that we had. From my chair, the starting point is what are the resource needs out there? What do we need on the landscape, and that should be the starting point for the discussion. And yes, I recognize it likely is going to get much more challenging as we start to talk about money available and making sure that we prioritize and fund the best of the best. That is why we need to look internally at even all of our programs and find efficiencies and savings so that we can put more acres out there on the ground for farmers and landowners and for everyone.

Ms. KUSTER. And can you show that return-on-investment? Do you have that kind of analysis of the programs?

Mr. NOMSEN. We do, and I actually made a note when you had a discussion earlier, and one of the things that we will add to our testimony are some of the studies that have looked at individual conservation programs in terms of their efficiencies and what are they providing to taxpayers.

[The information referred to is located on p. 49.]

Ms. KUSTER. I think that information would be very helpful for the Committee, because in a bipartisan way, we will need to sell this to our colleagues that this is important spending, and that is not going to be popular this cycle. I appreciate that.

Anybody else?

Mr. PETERS. Congresswoman, I want to thank you for the question. I would say we have also talked a lot this morning about capacity at the local level, and one of the things that we need to make sure that we address is that as we are looking at the delivery of financial assistance, that there is strong conservation planning at the beginning of that process. Having a strong plan in place, making sure that the appropriate resource concerns are being addressed, and that the landowner is in the management seat in the development of that conservation plan will help us achieve the greatest outcomes with the Federal investment, both in financial assistance and technical assistance.

Ms. KUSTER. Thank you. My time is up, but if anybody has any other suggestions, we are going to need them to get this done and to sell it to our colleagues on the floor.

Thanks very much.

The CHAIRMAN. The gentlelady's time has expired. She has yielded back.

Before we adjourn, I invite the Ranking Member to make any closing remarks that she would care to.

Ms. FUDGE. Thank you so much, Mr. Chairman, and thank you all for being here today. We appreciate your testimony, and certainly we will take it under advisement. I think that we are going to have a tough battle, but we are ready for the fight. Thank you so much.

The CHAIRMAN. The Ranking Member yields back.

I would just simply note to my colleagues on the Committee, and for that matter, the witnesses, many very important topics have come up today. We do face a struggle as we march forward. We have a great deal of uncertainty on what the funding issues will be, the lay of the land, but I am confident in the full Committee Chairman and the full Ranking Member, and I would note for the record, the process of trying to evaluate conservation takes many things into consideration. Whether it is issues as simple as other programs within our jurisdiction, like the upstream flood control dams, where you can calculate the amount of property and lives protected, or as in the case with CRP, how many tons of soil remain in place that don't enter the water stream, don't move downstream, don't affect dams and structures? There is the value of enhanced wildlife, whether you are a sportsman, a bird lover, with a hook or a bullet or a camera, so to speak, there is value in that. All of these things factor in. But ultimately, we have to remember in so many of these programs, we are talking about making investments that are not financially practical for an individual producer to make and achieve a return in a 3 to 5 to 7 to 10 year period. We are making investments that are for a generation or generations or hundreds of years, and we need to assess that in our calculations. We are investing in the future forever.

And with that, I look forward to the work of this Subcommittee and the work of the full Committee, and under the Rules of the Committee, the record for today's hearing will remain open for 10 calendar days to receive additional information and supplementary written responses from witnesses to any question posed by a Member.

This hearing of the Subcommittee on Conservation and Forestry is adjourned.

[Whereupon, at 11:30 a.m., the Subcommittee was adjourned.]

[Material submitted for inclusion in the record follows:]

SUBMITTED STATEMENT BY HON. MIKE BOST, A REPRESENTATIVE IN CONGRESS FROM ILLINOIS; ON BEHALF OF NATIONAL GRAIN AND FEED ASSOCIATION

Chairman Lucas, Ranking Member Fudge, and Members of the Subcommittee, thank you for having conducted this hearing to receive input on how the conservation title of the Agricultural Act of 2014 has operated and gather ideas for the next farm bill's conservation title.

This statement for the record is respectfully submitted by the National Grain and Feed Association (NGFA). NGFA, established in 1896, consists of more than 1,050 grain, feed, processing, exporting and other grain-related companies that operate more than 7,000 facilities. Its membership includes grain elevators; feed and feed ingredient manufacturers; biofuels companies; grain and oilseed processors and millers; exporters; livestock and poultry integrators; and associated firms that provide goods and services to the nation's grain, feed and processing industry. NGFA also has 34 State and Regional Affiliated Grain, Feed and Agribusiness Associations.

Since enactment of the last farm bill in 2014, NGFA-member companies have increasingly heard from consumers of their preference for food raised in a sustainable and environmentally sensitive manner. Fortunately, Congress had the foresight to create two working-land programs, the Conservation Stewardship Program (CSP) and the Environmental Quality Incentives Program (EQIP), that assist producers in further enhancing conservation practices to produce grain-based crops in an even more sustainable fashion. CSP and EQIP allow agricultural producers to maintain active agricultural production on their land while managing conservation activities. Examples of conservation activities that participants can choose under CSP and EQIP include fertilizer optimization practices and cover crops to reduce erosion, improve soil organic matter, promote efficient nutrient cycling, fix nitrogen in the soil, suppress weeds, increase biodiversity and improve overall soil health. These conservation activities often result in more conservation practices taking hold for the long-term in the community and across the nation—there are 362.7 million acres of cropland and 526.9 million acres of pastureland and rangeland for these programs to impact either directly or indirectly. The NGFA strongly believes CSP, EQIP and other working lands conservation programs will become increasingly important to maintaining the long-term health of soils and in attaining the goal of environmentally and sustainably producing food for a growing world population.

By contrast, investing scarce conservation dollars in dramatically increasing the size of land-idling programs like the Conservation Reserve Program (CRP)—as advocated by some—risk short-changing working land conservation programs.

Since 1985 when CRP was created, millions of acres of America's best and most productive farmland have been idled under 10 to 15 year CRP contracts, siphoning the economic lifeblood that emanates from production agriculture out of hundreds of rural communities. Many landowners used general CRP signups and its whole-farm enrollments as a retirement program. Rural businesses, including farm equipment dealers, input suppliers and banks, closed. So did schools. Rural populations plummeted.

As can be seen in *Table 1,* U.S. cropland has plunged from 420.6 million acres in 1982 to 362.7 million in 2012. The long-term economic well-being and competitiveness of U.S. agriculture depends upon retaining production on cropland that can be farmed in an environmentally sustainable way. The National Resources Inventory, which is a report published by USDA's Natural Resources Conservation Service (NRCS), found that only 60 percent of expired CRP land in 2007 returned to cropland by 2012. Thus, long-term CRP contracts contribute to the reduction in the availability of U.S. cropland.

Table 1: U.S. Land Use
(in million acres) [1]

Year	Cropland	CRP Land [2]	Developed	Pastureland	Range-land	Forest Land	Other Rural Land	Federal Land	Water	Total
1982	420.6	—	71.9	131.3	419.4	410.3	42.8	398.2	49.8	1,944.1
1987	406.4	13.8	77.9	127.4	413.9	412.3	42.9	398.7	50.8	1,944.1
1992	382.0	34.0	85.2	125.8	410.2	412.2	43.2	401.0	50.5	1,944.1
1997	376.4	32.7	95.9	120.7	408.1	413.3	43.5	402.6	51.1	1,944.1
2002	367.7	31.8	104.9	119.3	407.8	413.7	43.4	404.1	51.5	1,944.1
2007	358.9	32.5	111.1	119.7	407.2	413.1	44.9	404.8	51.9	1,944.1
2012	362.7	24.2	114.1	121.1	405.8	413.3	45.4	405.3	52.1	1,944.1

[1] Source: U.S. Department of Agriculture. 2015. *Summary Report: 2012 National Resources Inventory,* Natural Resources Conservation Service, Washington, DC, and Center for Survey Statistics and Methodology, Iowa.
[2] CRP land is only CRP general sign-ups and does not include CRP continuous sign-ups.

History has shown that South American countries and other foreign competitors respond to U.S. land-idling schemes by plowing up virgin land on more than an acre-for-acre basis, capturing export market share previously held by U.S. farmers

and depriving rural America of the economic ripple effects that resonate from U.S. agricultural production.

Fortunately, over the years, Congress has right-sized the CRP, while the U.S. Department of Agriculture has refined its Environmental Benefits Index to better target CRP on reducing soil erosion and improving water quality, although wildlife benefits were added as a criterion and have a disproportionately heavy weighting when USDA determines the scoring of acres eligible for enrollment.

Even now as can be viewed in *Table 2,* NGFA has determined that 26 percent of the 24.2 million acres that were enrolled in the CRP general signup as of 2012 were classified as "prime farmland." Here's how USDA's NRCS defines "prime farmland": "Land that has the best combination of physical and chemical characteristics for producing food, feed, forage, fiber and oilseed crops . . . It has the soil quality, growing season and moisture supply needed to produce economically sustained high yields of crops when treated and managed to acceptable farming methods."

Table 2: U.S. Prime Farmland on Non-Federal Land
(in million acres) [1]

Year	Cropland	CRP Land [2]	Pastureland	Rangeland	Forest Land	Other Rural Land	Total Prime Farmland
1982	228.2	—	35.1	18.2	42.9	5.6	330.0
1987	223.4	3.3	34.7	17.6	43.3	5.7	328.1
1992	214.4	9.6	35.0	17.2	43.6	5.9	325.6
1997	210.9	9.2	34.2	17.5	44.5	6.0	322.3
2002	206.5	8.5	34.7	17.8	45.7	6.0	319.3
2007	202.0	8.7	35.5	17.9	46.3	6.4	316.8
2012	202.1	6.4	36.1	17.8	46.8	6.5	315.7

[1] Source: U.S. Department of Agriculture. 2015. *Summary Report: 2012 National Resources Inventory,* Natural Resources Conservation Service, Washington, D.C., and Center for Survey Statistics and Methodology, Iowa State University, Ames, Iowa.
[2] CRP land is only CRP general sign-ups and does not include CRP continuous sign-ups.

In addition, *Table 3* shows that as of 2012, CRP had enrolled 15.3 million acres of cropland within land capability classes I, II or III, which are the three best classes of U.S. land. The land capability classification is a system of grouping soils primarily based on their capability to produce common cultivated crops and pasture plants without deteriorating over a long period. Class codes I to VIII indicate progressively greater limitations and narrower choices for agriculture.

Table 3: U.S. Land Capability Class I through Class III (Good Land) on non-Federal Land
(in million acres) [1]

Year	Cropland	CRP Land [2]	Pastureland	Rangeland	Forest Land	Other Rural Land	Total Class I thru Class III Land
1982	345.1	—	73.3	66.0	111.7	12.3	608.4
1987	335.7	8.3	71.6	64.0	112.6	12.5	604.7
1992	318.7	21.8	71.3	62.5	113.0	12.8	600.0
1997	314.6	21.0	69.0	62.4	113.8	13.0	593.8
2002	307.5	20.3	68.9	63.0	115.5	13.0	588.2
2007	300.6	20.8	69.6	63.1	116.1	13.9	584.3
2012	303.0	15.3	70.5	62.8	116.6	14.2	582.5

[1] Source: U.S. Department of Agriculture. 2015. *Summary Report: 2012 National Resources Inventory,* Natural Resources Conservation Service, Washington, D.C., and Center for Survey Statistics and Methodology, Iowa State University, Ames, Iowa.
[2] CRP land is only CRP general sign-ups and does not include CRP continuous sign-ups.

Table 4 displays U.S. land capability classes IV through VIII, which have lower capability to produce crops. NGFA believes less harm would be inflicted on U.S. agriculture if CRP enrollments were focused on land that had both an erodibility index score of 8 or higher and was classified within capability classes IV through VIII. NGFA also believes whole farms or large tracts of land within farms should not be enrolled in CRP. Instead enrollments should be targeted at the most environmentally sensitive portions of farms, such as critical fragments of tracts prone to erosion, serving as drainage, frequently drowning out or located next to streams. CRP under this new NGFA-advocated approach would be operated in a manner that would allow farmers to work in tandem with USDA to identify and enroll the portions of their farms that best complement environmentally sustainable agriculture. This surgical approach to CRP would substantially elevate the environmental benefits (soil health and water quality).

Table 4: U.S. Land Capability Class IV through VIII on non-Federal Land
(in million acres) [1]

Year	Cropland	CRP Land [2]	Pastureland	Rangeland	Forest Land	Other Rural Land	Total Class IV thru Class VIII Land
1982	75.5	—	58.0	353.3	298.6	30.5	815.8
1987	70.7	5.5	55.8	349.9	299.6	30.4	811.9
1992	63.3	12.2	54.5	347.7	299.2	30.5	807.5
1997	61.7	11.7	51.7	345.7	299.5	30.5	800.8

Table 4: U.S. Land Capability Class IV through VIII on non-Federal Land—Continued
(in million acres) [1]

Year	Cropland	CRP Land [2]	Pastureland	Rangeland	Forest Land	Other Rural Land	Total Class IV thru Class VIII Land
2002	60.1	11.4	50.4	344.8	298.2	30.4	795.4
2007	58.2	11.6	50.1	344.1	297.0	31.0	792.1
2012	59.8	8.9	50.6	342.9	296.7	31.3	790.2

[1] Source: U.S. Department of Agriculture. 2015. *Summary Report: 2012 National Resources Inventory,* Natural Resources Conservation Service, Washington, D.C., and Center for Survey Statistics and Methodology, Iowa State University, Ames, Iowa.
[2] CRP land is only CRP general sign-ups and does not include CRP continuous sign-ups.

In addition to currently targeting the wrong land for CRP enrollment, there also are indications that rental rates paid by USDA to enroll CRP acres in several regions of the country continue to be considerably higher than local farmland cash rental rates, thereby pitting the U.S. Government as a competitor against young and beginning farmers trying to enter production agriculture and remain in rural communities.

Conclusion

As noted previously, NGFA strongly believes CSP, EQIP and other working land conservation programs are crucial for helping U.S. agriculture meet the challenge of preserving healthy soils and meeting the long-term demand for producing food in an environmentally sustainable manner. Conservation activities incentivized by CSP and EQIP often result in more conservation taking hold in communities and the nation. There are 362.7 million acres of cropland and 526.9 million acres of pastureland and rangeland for CSP and EQIP to impact either directly or indirectly.

On the other hand, idling of large tracts of productive farmland in the Conservation Reserve Program has harmed rural economies and contributed to the reduction in the availability of cropland upon which U.S. agriculture depends.

As it considers the next farm bill, the NGFA urges Congress to retain the current CRP acreage cap of 24 million acres and avoid repeating the mistakes of the past when CRP was used as a supply control program, which only encouraged greater production by America's foreign competitors. To achieve greater conservation, NGFA recommends criteria be placed on future CRP enrollments to target land that has both an erodibility index score of 8 or above and is classified within capability classes IV through VIII. NGFA also believes whole farms or large tracts should not be enrolled in CRP. Instead CRP enrollments should be targeted at the most environmentally sensitive portions of farms, such as critical fragments of tracts prone to erosion, serving as drainage, frequently drowning out or located next to streams.

NGFA believes scarce Federal funding should be targeted at working land conservation programs, such as CSP and EQIP, which promote agricultural sustainability. Finally, NGFA requests that Congress carefully examine the issue of CRP rental rates, which in some cases are considerably higher than local farmland cash rental rates and serve as an economic barrier for the next generation of American farmers to get into production agriculture.

The NGFA appreciates the opportunity to submit this statement for the hearing record, and would be pleased to respond to any questions Members of the Subcommittee may have.

SUPPLEMENTARY MATERIAL SUBMITTED BY DAVID E. NOMSEN, VICE PRESIDENT OF GOVERNMENTAL AFFAIRS, PHEASANTS FOREVER, INC.

Insert

Mr. NOMSEN. Exactly. I would like to add to that just briefly, in that we do need to take a hard look at return on investment and the discussion that we had. From my chair, the starting point is what are the resource needs out there? What do we need on the landscape, and that should be the starting point for the discussion. And yes, I recognize it likely is going to get much more challenging as we start to talk about money available and making sure that we prioritize and fund the best of the best. That is why we need to look internally at even all of our programs and find efficiencies and savings so that we can put more acres out there on the ground for farmers and landowners and for everyone.

Ms. KUSTER. And can you show that return-on-investment? Do you have that kind of analysis of the programs?

Mr. NOMSEN. We do, and I actually made a note when you had a discussion earlier, and one of the things that we will add to our testimony are some of the studies that have looked at individual conservation programs in terms of their efficiencies and what are they providing to taxpayers.

Date: March 24, 2017
To: House Committee on Agriculture, Subcommittee on Conservation and Forestry
From: Dave Nomsen, Pheasants Forever, Inc.

Re: February 28, 2017 Hearing Addendum to Testimony

Below is additional information submitted as an addendum to my testimony of February 28, 2017 including a response to Representative Bost regarding pollinators.* Thank you for including this in the record with my testimony and please feel free to contact me with any additional comments or questions.

Additional Statement on the Environmental Quality Incentives Program—We urge policymakers to expand funding for the Environmental Quality Incentives Program (EQIP) and to increase to 10% funds used for wildlife conservation practices. For example, we strongly support the Working lands for wildlife initiatives that we work in partnership with NRCS on implementing. Specifically the Sage Grouse Initiative in the West, Lesser Prairie Chicken Initiative in the Southern Great Plains, and even working on young forest initiatives to benefit the Golden Winged Warbler in the East. Just a few months ago, Quail were added as one of the priorities.

USDA—NRCS and FSA Conservation Programs

Since the inception of various conservation programs in farm bill's since 1985, PF has worked with respective agencies to leverage funding through financial and in-kind contributions. Some of the best examples we have of these partnerships are with NRCS and the EQIP program, especially as it relates to delivery wildlife related practices. This includes the initiatives under the Working Lands for Wildlife. We are partnership with NRCS to fully leverage the Federal funding, with state, local and private sources. This is most evident with Three of NRCS WLFW initiatives Sage Grouse, Golden-winged Warbler, Lesser Prairie Chicken, and we will certainly be engaged range wide with the addition of Bobwhite Quail. Not only do our community led chapters and volunteers assist in implementing USDA conservation programs, our organization, with assistance from NRCS, have supported our Farm Bill Biologist program. In partnership with state/county agencies, and other non-government organizations, we have a team of Farm Bill Biologists that work as natural resource professionals with expertise in fields such as wildlife biology, forestry, and range management. Every day, they work with landowners that encompass farms, ranches and forestland thought out the Country, to find the best voluntary based, conservation solutions that fit producers' needs as part of their agriculture operations and personal goals.

One of our organizations top priorities, along with many of our partners, are to maximize the wildlife benefits, soil health, and water quality through voluntary Federal, state and local conservation programs on as many acres of fields, farms, ranches and forestlands as possible.

Additional Sources of information About the Economics of Conservation Programs

Economic Impacts of CRP on Rural Economies, and Wildlife Benefits of Farm Bill Conservation Programs on Fish and Wildlife

Shortly after CRP was implemented in the 1985 Farm Bill, there were regional concerns that the CRP negatively impacted local economies. No question, this is a very complex issue and we would like to highlight some literature for reference that suggests that, over the 30 year history, CRP has had little or no impact on most rural economies. In fact, several analyses suggest that CRP stimulated local economies through, keeping fa[r]mers on the land (*i.e.,* they were not forced to relocate to more urban areas) increased recreational opportunities through hunting, improving fisheries through reducing soil erosion and water quality improvement, and overall providing natural resource benefits for all Americans. We also contend that CRP has always been a working lands program through the fact that most acres can be hayed and/or grazed through the managed haying and grazing provisions, and even expanded to other conservation practices/programs if the USDA Secretary deems necessary in an emergency situation. We offer the view that by keeping a robust CRP on the landscape, we can maximize crop, forage and fiber production, while reducing soil erosion, improving water/air quality and providing wildlife benefits.

*The response to Hon. Mike Bost's submitted question is located on p. 56.

The Conservation Reserve Program—Economic Implications for Rural America. USDA–ERS Report: *https://www.ers.usda.gov/webdocs/publications/aer834/19569_aer834_researchbrief_1_.pdf.*

The Conservation Reserve Program—An Economic Assessment: https://www.ers.usda.gov/webdocs/publications/aer626/50870_aer626fm.pdf.

Bibliography—*Effects of Agricultural Conservation practices on fish and wildlife.* USDA–ARS: *https://www.nal.usda.gov/waic/effects-agricultural-conservation-practices-fish-and-wildlife.*

It is estimated that pheasant hunting alone, provides $500 million annually: *http://nationalpheasantplan.org/national-plan/.*

Implications of a Reduced Conservation Reserve Program—The Council on Food, Agriculture, and Resource Economics: *http://www.cfare.org/UserFiles/file/publications/Wu-Weber_8.21%5B1%5D.pdf.*

Assessing Cost-Effectiveness of the Conservation Reserve Program and its Interaction with Crop Insurance: http://www.card.iastate.edu/products/publications/synopsis/?p=1232.

2014 Farm Bill Field Guide to Fish and Wildlife Conservation: https://www.fws.gov/greatersagegrouse/documents/Landowners/2014_Farm_Bill_Guide%20to%20Fish%20and%20Wildlife%20Conservation.pdf.

SUPPLEMENTARY MATERIAL SUBMITTED BY HON. JOHN F. PIOTTI, PRESIDENT, AMERICAN FARMLAND TRUST

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Mr. ALLEN. . . .

The best way I know to do that, because I come from the business world, is to look at every dollar invested and what is the return on that dollar. We represent the taxpayers, and the taxpayers expect us, and we should, use their money as an investment return as far as conservation practices go.

Mr. Peters, are there any actual statistics on what for a dollar invested what dollar received from this program, which would help us to increase this in the next farm bill?

Mr. PETERS. I am sure there are. I don't have those statistics readily available with me this morning. One thing that bears mentioning is that historically, for the Federal investment through the farm bill conservation programs, there is years upon years worth of cost-share that have come out of the pockets of the farmers and ranchers and landowners that are participating in those programs.

Mr. ALLEN. Right.

Mr. PETERS. That is a tremendous private investment that has leveraged those Federal funds.

Mr. ALLEN. And that is important, because everybody has skin in the game.

Mr. PETERS. Yes, sir.

Mr. ALLEN. And that is very important to our taxpayers.

Mr. Piotti, do you have any comments?

Mr. PIOTTI. Yes, I do. At the state level, and it was mentioned earlier that a lot of states have farmland protection programs that often work in companion with ACEP, and a number of states have done these kind of analyses. And we can compile some of that for you.

I. Benefit-Cost Analyses of Farmland Protection

The Public Benefits of Farmland Protection

Farmland protection easements are well known for the private benefits that they offer to farmers, who commonly use the funds from selling their development rights to reinvest in their businesses, pay off debt, or retire. In addition, farmland protection offers many public benefits, including:

- Avoided taxpayer expenditures on municipal community services and infrastructure given less sprawl.
- Preserved economic makeup of the community, as protected farms maintain agriculture support industries and remain affordable to farmers.
- Avoided urban runoff, supporting water quality.
- Protected permeable surfaces in watersheds, supporting water quantity, flood control, and water purification.
- Reduced landscape fragmentation, supporting biodiversity and wildlife habitat.

There are many methods for estimating a dollar value of these benefits of farmland protection. The following examples, though using differing methodologies, both show a positive benefit-to-cost ratio for protected farmland.

Environmental Return on Federal Farmland Protection Funds

A study from Lancaster County, Pennsylvania, evaluated 13 ecosystem service benefits on protected cropland and pastureland. These ecosystem services included aesthetic quality, pollination, recreation, water regulation, and animal habitat, among others. The dollar values were drawn from peer-reviewed research that used multiple methodologies including market pricing, cost avoidance, replacement cost, travel cost, hedonic values, and contingent valuation.

The report showed the value of these services to be between $27 million and $219 million **annually,** depending on the ecosystem service valuation used. These lands were preserved in **perpetuity** at a combined total of roughly $100 million in state and Federal funding and $13 million in private funds from the Lancaster Farmland Trust (Schwartz & Kocian, 2014). Assuming the Federal input was $50 million (½ of the total public investment), it would take only 2 years at the very lowest estimate to pay back the benefits environmentally—to say nothing of the public economic benefits from the protection of agricultural jobs and businesses, the taxes paid by the farmers, the sale of farm products, and the agriculture-related industries supported.

Federal Farmland Protection Cost-Benefit Analysis

On the Federal level, the Natural Resources Conservation Service (NRCS) (2014) produced a benefit-cost analysis of the Farm and Ranch Lands Protection Program (FRPP), a precursor to the present Agricultural Conservation Easement—Agricultural Land Easement (ACEP–ALE) program. Instead of placing a dollar value on the ecosystem services provided, NRCS used a "willingness-to-pay" (WTP) model, which in effect uses survey data to calculate a value for protected farmland based on what urban dwellers are willing to pay to have their local farmland protected. The NRCS calculated the average annual WTP per thousand acres per household to be $1.54.

In FY 2007, FRPP protected 54,490 acres at a cost of almost $73 million, for an average cost of about $1,300 per acre. The benefits from these lands based on WTP was about $11 million **in that year.** However, the estimates of total net benefits for the FY 2007 FRPP baseline, taking into account the fact that these are **perpetual** easements, range from $81 million to $285 million (for a seven percent and three percent discount rate, respectively). These estimates both constitute a positive net return on the investment of Federal funds.

References

Natural Resources Conservation Service. 2014. *Final Benefit-Cost Analysis for the Farm and Ranch Lands Protection Program (FRPP).*

Schwartz, A., and Kocian, M. 2014. *Beyond Food: The Environmental Benefits of Agriculture in Lancaster County, Pennsylvania.* EARTH ECONOMICS, Tacoma, WA.

II. Quantifying Conservation Benefits in the Regional Conservation Partnership Program

Two interconnected points were made by several Members during the Subcommittee on Conservation and Forestry hearing, *The Next Farm Bill: Conservation Policy;* first, that farmers do not often receive credit for their implementation of voluntary conservation methods, and second, that it is important to wisely invest taxpayer dollars in conservation programs that show measurable results and provide evidence to the American public that conservation programs offer a good return on investment.

American Farmland Trust (AFT) believes that the new Regional Conservation Partnership Program (RCPP) provides a unique opportunity to satisfy both those points. One of the stated goals of RCPP has been to fund projects that elect to measure environmental, social, and economic outcomes of the practices adopted within a project area. These specific, on-the-ground outcomes would make the case that voluntary conservation is working and would allow farmers to receive credit for the public benefits they provide.

While some studies have attempted to quantify the environmental or economic benefits associated with conservation, more needs to be done to empower RCPP partners to gather this data. Congress should encourage the United States Department of Agriculture Natural Resources Conservation Service (USDA NRCS) to define those desired outcomes, provide methods to measure the outcomes, and establish reporting criteria so success stories can make it back to NRCS and to the Congress.

Efforts To Quantify Environmental and Economic Benefits of Federal Conservation Programs

There are a variety of studies that attempt to quantify environmental or economic benefits associated with conservation activities such as water quality improvements in specific watersheds and the increases in spending on outdoor recreation and sportsmen's activities. However, no definitive studies exist that quantify the environmental and economic benefits of specific conservation programs, or of total Federal conservation spending.

Until about a decade ago, Federal agricultural conservation programs were solely quantifying their success by counting the dollars spent, conservation contracts signed, and acres or units of practices implemented rather than on-the-ground outcomes. In 2003, the NRCS Conservation Effects Assessment Project (CEAP) began modeling simulations to estimate the environmental effects of conservation practices on cropland in 12 very large river basins. The latest CEAP report for the Western Lake Erie Basin identified $277 million in annual investment in conservation practices by the area farmers (without specificity to spending by Federal, state, or local programs) that are estimated to reduce annual sediment losses by 81 percent, nitrogen losses by 36 percent, and phosphorus losses by 75 percent.

The United States Fish and Wildlife Service estimates that the Conservation Reserve Program (CRP) has helped achieve a net increase of two million additional ducks per year (a 30 percent increase in duck production) in North Dakota, South Dakota, and northeastern Montana since 1992 (FSA, 2013). Modeling simulation by the Food and Agricultural Policy Research Institute (FAPRI) estimates that CRP reduces nutrient losses by 565 million pounds of nitrogen and 113 million pounds of phosphorus, compared to land that is cropped (FSA, 2013).

From the economic perspective, a University of Virginia study found that every $1 of state or Federal funding invested in agricultural best management practices would generate $1.56 in economic activity in that state (Rephann, 2010). The Chesapeake Bay Foundation (2014) estimated that having a clean Chesapeake Bay would provide $130 billion in economic benefits annually to watershed residents, in the form of air and water filtering, agricultural and seafood production, enhancement of property values, and protection from floods and hurricanes. The cost of implementing such a plan has been valued at $5–$6 billion dollars annually.

Still other studies attempt to quantify the economic impact of activities related to public recreation lands, clean, healthy waters, and healthy wildlife populations, all of which are supported by agricultural conservation funding. During the hearing, Representative Walz of Minnesota noted the example of a $900,000 Environmental Quality Incentives Program (EQIP) grant on a feedlot that led to cleaner water in a nearby trout stream that generates $4 million for the local economy through recreational activities. The Congressional Sportsmen's Foundation (2013) estimated the country's "sportsmen and women are an economic force, fueling the American economy," spending $90 billion in 2011 and specifically $3 billion on the American system of conservation funding.

All of these studies are important efforts to quantify environmental and economic benefits associated with public and private investments in the environment and agriculture. We need more of them.

Farmers Want To Know What Their Voluntary Conservation Efforts Are Accomplishing in Their Own Backyards

In order to more fully understand the benefits of RCPP and other conservation programs, we need to quantify the environmental, economic, and social outcomes of the conservation programs. RCPP, as an innovative program that brings together a diverse array of partners and leverages private-sector dollars to implement targeted best management practices, is an ideal place to start. By 2018, NRCS and its more than 2,000 conservation partners will have invested over $2.4 billion in high-impact RCPP projects nationwide, with more than half of that funding coming from non-Federal sources.

Other than counting the dollars spent and the practices adopted, farmers and the RCPP project partners want to know what environmental benefits their conservation activities are achieving in their project area. To address this issue, AFT believes that the farm bill should, first, include definitions of these environmental, social, and economic outcomes, and second, direct the Secretary of Agriculture to provide guidance and reporting criteria to RCPP project partners to measure those outcomes. AFT would be happy to visit with Members and staff of the House Subcommittee on Conservation to provide examples of various outcome definitions and measurement methods.

References

Chesapeake Bay Foundation. 2014. *Cleaning Up the Chesapeake: A Valuation of the Natural Benefits Gained by Implementing the Chesapeake Clean Water Blueprint. http://www.cbf.org/document.doc?id=2258.*

Congressional Sportsmen's Foundation. 2013. "America's Sporting Heritage: Fueling the American Economy." *http://sportsmenslink.org/uploads/page/EIR_full_12_feb_low_res.pdf.*

Farm Services Agency (FSA). 2013. *Environmental Benefits of the Conservation Reserve Program: United States. https://www.fsa.usda.gov/Internet/FSA_File/us_benefits_2013.pdf.*

NRCS Conservation Effects Assessment Project (CEAP). 2016. *Effects of Conservation Practice Adoption on Cultivated Cropland Acres in Western Lake Erie Basin, 2003–06 and 2012. https://www.nrcs.usda.gov/wps/portal/nrcs/detail/national/technical/nra/ceap/pub/?cid=nrcseprd949606.*

Rephann, T. 2010. *Economic Impacts of Implementing Agricultural Best Management Practices to Achieve Goals Outlined in Virginia's Tributary Strategy. http://cbf.org/document.doc?id=467.*

SUBMITTED QUESTIONS

Response from Chuck Coffey, Owner/Manager, Double C Cattle Company; Member, National Cattlemen's Beef Association

Question Submitted by Hon. Mike Bost, a Representative in Congress from Illinois

Question. As of November 2016, there have been little over 340,000 acres enrolled in pollinator habitat since the program was established in 2012. In your opinion, has this program and the investments made my outside organizations made a meaningful difference in increasing the population and health of the pollinator population and are there any changes that you would like to see to make this program more effective?

Answer. While it's still premature to determine the cumulative impact of the pollinator habitat efforts, we do know that agriculture, and grazing in particular, plays a critical role in conserving the pollinator habitat we have and establishing new habitat where we can. We also know that these efforts are most effective and appeal to the widest audience when they are truly voluntary and incentive-based. It's also critical to recognize the benefit of these voluntary conservation efforts by offering assurances to participating producers when making ESA listing determinations.

Response from Timothy Gertson, Co-Owner/Co-Operator, G5 Farms; Member, Board of Directors, USA Rice Federation

Questions Submitted by Hon. Mike Bost, a Representative in Congress from Illinois

Question 1. You said in your testimony that when you participate in the EQIP program you saw immediate benefits to your bottom line. This return on investment then led you to implement the same conservation practices on more of you acres. What benefits did you see that were worth putting you own skin in the game and did you look at utilizing the Conservation Guaranteed Loan Program offered my FSA? Finally, do you know of any other producers who take this same approach to conservation efforts?

Answer. We cost-shared the installation of more than 4 miles of 16″ underground pipeline to replace irrigation canals, resulting in up to 20 percent less irrigation water needed to grow our crop, providing both instant savings and environmental benefits. A quick calculation shows that since installation our new pipeline alone has saved somewhere between 1,000 and 2,000 ac-ft of water. This is enough water to fill between 500 and 1,000 Olympic-sized swimming pools. Not only are we saving the water, we are saving the cost of pumping it, and that has a big impact on my bottom line. It previously took nearly 24 hours of pumping at a rate of 3,000 gallons/minute to build up in my old canals to start just a trickle of water into my fields. Now, with underground pipeline, my water supply is on demand and immediate. This added precision to my irrigation scheduling lends itself to increased yields by minimizing crop stress, again helping my bottom line.

Almost every single rice producer I know in my county and the surrounding counties has applied for EQIP or CSP funding. Unfortunately, not all of them have received it. Many farmers apply year after year for EQIP to help get started with their conservation practices only to be turned down because of lack of funding. EQIP is extremely competitive in our region because everyone has seen the benefits that these conservation practices bring to our land, water, wildlife, and economy.

We have looked at FSA loan programs before, but not the Conservation Guaranteed Loan Program in particular. We wrote off talking to FSA about any loan programs several years ago because their process was too time consuming and it takes too long for approval. In my area, conservation practices have to be installed between crop rotations. This means there is a limited timeframe to get the practice installed. The weather can be hard enough to work around, I can't imagine having to wait on a loan approval as well.

Question 2. Your testimony should be required reading when it comes to the positive impact working lands conservation programs has on local economies. As you point out, with working lands programs, the land is still in production and as a result you are able to provide jobs for several of the residents in your town. Generally, how would your ability to contribute to the local economy be impacted if there were a dramatic shift in policy that allowed for millions of more acres to be retired/idled through CRP?

Also, with you being a young farmer, do you feel that beginning farmers and ranchers are competing for rental acres with CRP contracts that are too high? As an example, in Illinois, CRP rates in some areas of the state are over $300 an acre. What do you believe could be done to reform the rental rate?

Answer. If millions of additional acres were to be enrolled in CRP I'd really be wondering where the money came from to pay for those contracts. Is that money that could have been spent on working lands programs? Something that really frustrates me is that CRP is a 'conservation' program, but it feels like it should fit under the commodity title. I understand that the intent of the program is to provide conservation benefits, but I feel like the same goal could be accomplished on that land by using EQIP or CSP and keeping the land in production. Producers enrolled could be required to do things like strip till, min till, or no-till, or cover cropping to reduce erosion and improve water quality. I know those types of practices don't work perfectly in every region and for every crop. We can't no-till rice (we tried it when I was in high school) because you run the risk of the ground never drying out in the spring to be able to plant.

Since a lot of rice seems to be grown on rented land and most beginning farmers rely on rented land, it's got to be an issue if you're surrounded by lots of open land but it's tied up in 10 year CRP contracts. If my landlord is considering enrolling the land I rent into CRP, that does not give me any certainty about the future and it's going to deter me from implementing any conservation whether cost-share or out of pocket on that land if I may not farm it next year.

Question 3. As of November 2016, there have been little over 340,000 acres enrolled in pollinator habitat since the program was established in 2012. In your opinion, has this program and the investments made my outside organizations made a meaningful difference in increasing the population and health of the pollinator population and are there any changes that you would like to see to make this program more effective?

Answer.

Question Submitted by Hon. Ralph Lee Abraham, a Representative in Congress from Louisiana

Question. Mr. Gertson, it's great to see such a young, and positive rice farmer in here, I've got quite a few rice farmers in my own District and it's promising to see you undeterred from farming after the way the market's been. You say a lot of rice farmers rely on rented land and that's a deterrent from forking over the money to implement conservation practices, can you tell us a little bit more about how NRCS incentivizes farmers to implement practices on rented land?

Response from Jeremy Peters, Chief Executive Officer, National Association of Conservation Districts; on Behalf of Lee McDaniel, Immediate Past President, National Association of Conservation Districts

Question Submitted by Hon. Mike Bost, a Representative in Congress from Illinois

Question. As of November 2016, there have been little over 340,000 acres enrolled in pollinator habitat since the program was established in 2012. In your opinion, has this program and the investments made my outside organizations made a meaningful difference in increasing the population and health of the pollinator population and are there any changes that you would like to see to make this program more effective?

Answer.

Response from David E. Nomsen, Vice President of Governmental Affairs, Pheasants Forever, Inc.

Question Submitted by Hon. Mike Bost, a Representative in Congress from Illinois

Question. As of November 2016, there have been little over 340,000 acres enrolled in pollinator habitat since the program was established in 2012. In your opinion, has this program and the investments made my outside organizations made a meaningful difference in increasing the population and health of the pollinator population and are there any changes that you would like to see to make this program more effective?

Answer. While the leadership demonstrated by USDA in creating and delivering a pollinator habitat incentive is to be applauded, many of the pollinator benefits and national goals are well short of achievement. Two important national pollinator goals are striving to lower annual honey bee hive losses to 15% and to increase the area occupied by monarch butterfly on overwintering sites in Mexico to 6 hectares. National Hive losses remain at 40 to 50% and 2017 monarch wintering area was estimated at 2.91 hectares. Much work remains to be done.

The Conservation Reserve Program (CRP) and the suite of NRCS Working Lands for Wildlife Programs offers perhaps the single greatest opportunities to impact these national pollinator goals and subsequent pollinator populations. Unfortunately, too often the habitats created through these programs falls short of providing the high quality pollinator habitat needed. Examples of improvements that would significantly benefit pollinators and CRP program results include:

(1) Design seeding mixtures using more updated and appropriate planting rates and design.

(2) Allow the use of a broader range of pollinator-friendly species adapted to a geographic area.

(3) Increase the minimum requirements for pollinator plantings to 15 pollinator-friendly forb species and encourage the use of highly diverse seeding mixtures.

(4) Implement seed establishment practices that allow a broader range of establishment and management options.

(5) Adjustment to the current EBI to include pollinator value as a criteria and placing those projects in the geography that will most benefit pollinator species (honey bees, monarch butterflies, *etc.*).

Recommendations regarding these and other opportunities to increase and improve forage, CRP outcomes and habitat for pollinators through USDA conservation programs have been submitted by a broad coalition of conservation, commodity and agriculture groups through the Honey Bee Health Coalition.

NRCS site with pollinator and monarch butterfly information: *https://www.nrcs.usda.gov/wps/portal/nrcs/detail/national/plantsanimals/pollinate/?cid=nrcseprd402207*.

Response from Hon. John F. Piotti, President, American Farmland Trust

Question Submitted by Hon. Mike Bost, a Representative in Congress from Illinois

Question. As of November 2016, there have been little over 340,000 acres enrolled in pollinator habitat since the program was established in 2012. In your opinion, has this program and the investments made my outside organizations made a meaningful difference in increasing the population and health of the pollinator population and are there any changes that you would like to see to make this program more effective?

Answer. American Farmland Trust (AFT) has long been involved in efforts to improve the health and increase the population of pollinators through the use of integrated pest management (IPM) and other conservation practices, and in efforts to incorporate more pollinator habitat into farming operations. Wild bees and honeybees provide a critical service to agriculture and to natural ecosystems by ensuring pollination of crops and wild plants. Both types of bees contributed to an estimated total of 11 percent of the agricultural gross domestic product of the United States in 2009, equivalent to $14.6 billion (Koh, *et al.,* 2016).

Therefore, AFT applauds the efforts to enroll hundreds of thousands of acres in pollinator habitat through the Conservation Reserve Program (CRP) CP–42 Pollinator Habitat practice, although this particular program has not historically been an area of involvement for AFT. According to a recently published study, wild bee populations declined across 23 percent of the United States between 2008 and 2013. The study also identified 139 counties where low bee abundance corresponds to large areas of pollinator-dependent crops, accounting for nearly 40 percent of the

pollinator-dependent crop area in the country (Koh, *et al.,* 2016). Additional study would be necessary to determine whether practices defined under CP 42 have had a broad-reaching impact in changing these trends since 2013. However, promoting pollinator-friendly practices in regions where native bee population declines have been measured should be a priority.

Outside of CRP, there are several USDA programs that also offer the opportunity to protect pollinators and their habitats. AFT is currently involved in a Conservation Innovation Grant (CIG) in Michigan that is piloting the use of Pollinator Habitat Credits on protected farms. This innovative approach seeks to draw in corporations and businesses that have established corporate sustainability programs and are searching for projects in which to invest corporate sustainability funds, thereby leveraging Federal funds with private funds. By focusing on developing pollinator habitat on protected farmland, this project ensures that its gains will not be under threat from development.

Reference

Koh, I., Lonsdorf, E.V., Williams, N.M., Brittain, C., Isaacs, R., Gibbs, J., & Ricketts, T. (2016). *Modeling the status, trends, and impacts of wild bee abundance in the United States.* PROCEEDINGS OF THE NATIONAL ACADEMY OF SCIENCES, 113(1), 140–145.

THE NEXT FARM BILL

(INTERNATIONAL MARKET DEVELOPMENT)

TUESDAY, FEBRUARY 28, 2017

HOUSE OF REPRESENTATIVES,
SUBCOMMITTEE ON LIVESTOCK AND FOREIGN AGRICULTURE,
COMMITTEE ON AGRICULTURE,
Washington, D.C.

The Subcommittee met, pursuant to call, at 2:25 p.m., in Room 1300 of the Longworth House Office Building, Hon. David Rouzer [Chairman of the Subcommittee] presiding.

Members present: Representatives Rouzer, DesJarlais, Kelly, Marshall, Costa, and Evans.

Staff present: Bart Fischer, Caleb Crosswhite, Callie McAdams, Darryl Blakey, Mollie Wilken, Stephanie Addison, Liz Friedlander, Matthew MacKenzie, Mike Stranz, Troy Phillips, and Carly Reedholm.

OPENING STATEMENT OF HON. DAVID ROUZER, A REPRESENTATIVE IN CONGRESS FROM NORTH CAROLINA

The CHAIRMAN. This hearing of the Subcommittee on Livestock and Foreign Agriculture entitled, *The Next Farm Bill: International Market Development,* will come to order. Let me apologize for our delay in getting started, but votes take precedent around here, and we just arrived back from a series of votes.

Before I go into my opening statement, I want to recognize a new Member that I see here on the Republican side, Mr. Marshall. Welcome to the Subcommittee. As you all know, Mr. Marshall is a new Member from Kansas, and it is great to have you here on the Subcommittee with us.

Well, thank you all for gathering here this afternoon as the Committee continues its work to reauthorize the farm bill in advance of its expiration next fall.

As was explained in this morning's Conservation and Forestry Subcommittee hearing, the plan is for each Subcommittee to hold at least two hearings exploring the farm bill programs and issues under its respective jurisdiction.

This afternoon, we will focus on a slate of programs that, unfortunately, do not get much attention until they become targets for cuts during consideration of farm bills and various appropriations measures. Those are the trade promotion and market development programs administered by the USDA. A number of you here, myself included, have been through a lot of those fights.

The goal today is to change that narrative, by giving a wide variety of organizations who receive funding from those programs a platform to discuss the continued need for the programs, and the innovative ways in which they use them to establish and enhance markets for U.S. products overseas.

I also look forward to hearing from a distinguished economist on today's panel about the economic benefits that the two programs; MAP and FMD, in particular, generate within our own borders.

Given the uncertainty of the future of our existing trade agreements, and the blatant disregard of WTO commitments by a handful of our global competitors, I see tremendous value in these effective and proven methods of gaining new access for U.S. goods abroad and developing those market relationships. These programs truly embody an America first policy.

From improving customer trust in U.S. beef in South Korea, to developing export markets for ice cream in China, to putting our cotton exports on a more level playing field with our global competitors, I am impressed with the overarching benefits that market development funding brings to the U.S. agricultural industry as a whole.

I look forward to learning more today about the success of the USDA programs that provide such opportunities, but I am certainly open to suggestions as to how to improve them, moving forward.

Again, thank you all for being here.

[The prepared statement of Mr. Rouzer follows:]

PREPARED STATEMENT OF HON. DAVID ROUZER, A REPRESENTATIVE IN CONGRESS FROM NORTH CAROLINA

Good afternoon, and thank you all for gathering here this afternoon as the Committee continues its work to reauthorize the farm bill in advance of its expiration next fall.

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Given the uncertainty of the future of our existing trade agreements, and the blatant disregard of WTO commitments by a handful of our global competitors, I see tremendous value in these effective and proven methods of gaining new access for U.S. goods abroad and developing those market relationships. In my opinion, these programs truly embody an "America first" policy.

From improving customer trust in U.S. beef in Korea, to developing export markets for ice cream in China, to putting our cotton exports on a more level playing field with our global competitors, I am impressed with the overarching benefits that market development funding brings to the U.S. agricultural industry as a whole.

I look forward to learning more today about the success of the USDA programs that provide such opportunities, but I am certainly open to suggestions as to how to improve them moving forward.

Again, thank you all for being here, and with that, I yield to the Ranking Member for his opening remarks.

The CHAIRMAN. I yield to the Ranking Member, Mr. Costa, for his opening remarks.

OPENING STATEMENT OF HON. JIM COSTA, A REPRESENTATIVE IN CONGRESS FROM CALIFORNIA

Mr. COSTA. Thank you very much, Mr. Chairman. And I want to thank the Members of the Subcommittee and our panel in advance.

This hearing of the Livestock and Foreign Agriculture Subcommittee, entitled, *The Next Farm Bill: International Market Development,* is critical for so many reasons, and I will explain in my comments. But the fact of the matter, in my most sincere view, is that too often American agriculture gets taken for granted because we do it so well. With 2½ percent of our nation's population directly involved in the production and the processing of the food and fiber that is grown in America, we have allowed the rest of our population to pursue other goals in their life. And American farmers, ranchers, and dairy people are among the best producers in the world; the finest quality, the highest yields, the safest food that is grown anywhere. And we do it so well that we are able to not only feed our entire country, but large parts of the world.

This context for the Subcommittee, Mr. Chairman, and as we begin setting the table for the next farm bill that we will all be actively engaged in, it is important that we not take this for granted; that we recognize it as a food security issue as we formulate the policies, and we recognize trade is an important part of that component. We can't consume all the products we produce. And so, unfortunately, trade in the last year or so, on both sides, has become a bit of a political football, some might say a pariah. It is important for the agriculture community to stand strong in its support for international market development, global trade, and the programs that we are going to talk about here today.

I was proud to be one of the 28 Democrats in the House who voted for Trade Promotion Authority. I received a lot of grief for it. That is fine, because this Administration, like the last Administration, needs strong negotiating directions and parameters that they must be able to work with. The farm bill authorizes a few international market development programs we will talk about this afternoon for America's farmers, ranchers, dairy producers, and their products abroad. The Market Access Program, the Foreign Market Development Program, and the Technical Assistance for Specialty Crops Program all provide vital funding for their roles in America's agricultural industry.

It makes it easier for American farmers and ranchers and dairy producers to market their products in foreign markets where it is not always a level playing field, as we know. And, of course, everybody seeks, wherever I go around the world, American products. They really like California products, and I market them all equally.

I disagree though with the new Administration's shortsighted approach to trade. Its withdrawal from the Trans-Pacific Partnership is going to be looked upon in the next several years as something we need to recognize that China is going to enter into that market, and I hope that we are not the losers as a result of that choice.

These programs play a critical role, not only in TPP, but T–TIP and other negotiations. Let me give you some examples. In my

home State of California, agricultural export values were $20 billion for a third consecutive year; 2015 it was $20.6 billion. Furthermore, California's share of the total U.S. agricultural exports was 15.6 percent. My family and other families have been doing this for two, three, four generations. Whether you believe it or not, the fact is, nobody does it better. Nobody does it better than American agriculture, and that is the bottom line.

In closing, I believe Ambassador Froman said it best. The question about trade agreements, and let's be clear about this, we can be critical and that is fine, and I get the politics, but a trade agreement only works when you have cooperation on both sides. It has to be a win-win. If it is a win-lose, the other country is not going to agree. Why would they? Why should they? So as Ambassador Froman said, "The question is not whether we roll back the tide of globalization, but it is whether or not we are going to shape it or be shaped by it. Whether we are going to do everything we can to ensure that it reflects our values, or let others define the values." We face a choice: raise the bar or stay on the sidelines as other countries write the rules of the game. That is my view. The United States must lead, not be led. These programs that we will talk about this afternoon provide American agriculture and the 2.2 million farmers in the country with markets, access to customers all over the world who enjoy the fruits of these agriculturalists' labor. And it is not always a level playing field, and that is why these programs are so important.

The funding ought to be maintained, and in some areas increased, and we will talk about that during the farm bill process.

Finally, Mr. Chairman, you have been very kind with the time, and I would be remiss if I didn't make one other comment. All of us around here benefit from the wonderful people who we work with; our staff. We get a chance to ask the tough questions, and have the interaction and solve problems for our constituents, but if it wasn't for our staff we would be in a world of hurt, at least I would. And one, Mr. Donald Grady, has worked for over 5 years on my staff, and has done a terrific job on two farm bills, and I guess it was because he looked at a third farm bill that he was taking that admonition by, Mr. Greeley or someone who said, "Go West, young man, go West," and this Georgian wants to move to California. I don't understand why. But I want to thank you, Donald Grady, on behalf of our entire staff and our entire team for the work you have done for myself and for the Agriculture Committee. Thank you very much.

The CHAIRMAN. The chair would request that other Members submit their opening statements for the record so the witnesses may begin their testimony, and to ensure that there is ample time for questions.

I would like to recognize our witnesses at the table, and let me introduce them very briefly.

Dr. Gary Williams is Professor of Agricultural Economics and Co-Director of the Food, Agribusiness, and Consumer Economic Research Center at Texas A&M University. The Honorable Joseph Steinkamp, Director of the American Soybean Association, and here on behalf of the Coalition to Promote U.S. Agricultural Exports and the Agribusiness Coalition for Foreign Market Develop-

ment. Mr. Tim Hamilton, Executive Director of the Food Export—Midwest and Food Export—Northeast, Chicago, Illinois. Mr. Philip Seng, President and CEO, U.S. Meat Export Federation in Denver, Colorado. And Mr. Dean Alanko, Vice President of Sales and Marketing, Allegheny Wood Products, Petersburg, West Virginia, here on behalf of the Hardwood Federation.

And now I would like to recognize Mr. Costa to introduce the witness from California.

Mr. COSTA. Well, thank you again, Mr. Chairman.

We have a distinguished panel here, and we are looking forward to their testimony. One of those individuals is a gentleman who I have known for many years. He is a leader in American agriculture and he is the Chair and President of the California State Farm Bureau, my dear friend, Mr. Paul Wenger. He and his family have farmed in the great San Joaquin Valley for generations. He is serving his fourth term as the California Farm Bureau President; the largest state Farm Bureau, I believe, in the nation, and he has served in that capacity with distinction. We have a lot of diversity in California, and sometimes Paul's job is like herding squirrels, but he brings a great deal of knowledge and expertise as a third generation almond and walnut farmer in the great California Central Valley, and we thank you, Paul, for being here.

The CHAIRMAN. Dr. Williams, please begin when you are ready.

STATEMENT OF GARY W. WILLIAMS, PH.D., PROFESSOR OF AGRICULTURAL ECONOMICS AND CO-DIRECTOR, AGRIBUSINESS, FOOD, AND CONSUMER ECONOMICS RESEARCH CENTER, DEPARTMENT OF AGRICULTURAL ECONOMICS, TEXAS A&M UNIVERSITY, COLLEGE STATION, TX

Dr. WILLIAMS. Well, Chairman Rouzer, Ranking Member Costa, Members of the Subcommittee, thank you for the opportunity to be here today to testify to you as you consider the next farm bill and international market development programs.

Recently, we have all heard a great deal about the difficulties and uncertainties currently facing U.S. agriculture, policies that haven't worked as planned and new policies to consider. I am pleased to be here today to talk briefly about the USDA export market development programs which, according to recent research by my colleagues and I at Texas A&M University, Oregon State University, Cornell University, and Informa Economics, have worked consistently and effectively for over 50 years to bolster the profitability of not only production agriculture, but the broader U.S. economy as well.

Total annual spending of the two primary USDA export market development programs; the Market Access Program, or MAP, and the Foreign Market Development Program, or FMD, has risen sharply in recent years, but only because of the growing contributions from the private-sector which now account for over 70 percent of the total. The growth in contributions from industry demonstrates there is strong recognition of the effectiveness of the MAP and FMD programs in opening, expanding, and maintaining export markets.

In the recent study I mentioned, my colleagues and I subjected the USDA export market development programs to a rigorous economic analysis. Our research team devised a completely different and highly rigorous methodology to test whether the USDA export promotion programs were as effective in promoting U.S. agricultural exports, and as impactful on the U.S. economy as reported by previous studies. Frankly, I was skeptical of those studies, but then surprised by our own study results. We found that the programs, indeed, have been highly effective in boosting U.S. agricultural exports and export revenues. The study found that over their history, these programs have added an annual average of 15 percent to the value of U.S. agricultural exports, eight percent to the volume of U.S. agricultural exports, and nearly seven percent to the price of U.S. agricultural exports.

The study also concluded that over their history, the programs have generated a return of $28.30 in additional export revenue for every dollar invested in the programs. We also found that the programs have contributed importantly to the profitability of the U.S. farm sector, benefitted the entire U.S. economy, and created employment up to nearly 240,000 full- and part-time jobs across the entire economy.

And after we finished with that study, our team was asked to simulate two alternative scenarios of increased funding for MAP and FMD programs. In the first scenario, we doubled the MAP and FMD funding in each year by $46.9 million, to a total of $469 million over 5 years, with essentially no increase in cooperator contributions. In the second scenario, we again doubled MAP and FMD funding over 5 years, as in the first scenario, but this time we increased cooperative contributions by 50 percent, with increases of $46.9 million each year, to a total of $703.6 million by the end of the 5 year period.

Under both scenarios, we found that the additional investments would generate high returns in additional agricultural export revenue, about $18 of returns per additional dollar invested under the first scenario, and $16 in the second scenario. Export gains would also be substantial under both scenarios; a total of $17 billion of additional exports under the first scenario, and $22.5 billion of additional exports in the second. Now, what this means is that an increase in investment in these two programs would pay for itself many times over. Gains across the farm economy would be equally as substantial under both scenarios.

Importantly, the analysis demonstrated convincingly that the positive impacts of the programs on the farm sector would generate multiplier effects across the entire economy. For example, we found that U.S. output, or sales, would increase by a total of up to $53 billion in the first scenario, and $70 billion in the second. U.S. GDP would be higher by a total of up to $23 billion under the first scenario, and $30 billion under the second. U.S. employment would increase by up to 64,000 new jobs under that first scenario, nearly 85,000 jobs under the second scenario.

Now, in conclusion, our analysis demonstrated clearly that the investment in the FMD and MAP programs has been, and continues to be, a highly successful and cost-effective means of strengthening the profitability and maintaining the viability of the

U.S. farm economy. In addition, the programs are clearly pro-growth for the entire U.S. economy.

I would be hard-pressed to name any other U.S. farm program that has been as consistently effective over such a long period of time in working to support our farm sector, while supporting the growth of the entire U.S. economy, and at the same time generating a high return on the investment of farmer and taxpayer funds.

Thank you, Mr. Chairman. I would be glad to try to answer any questions.

[The prepared statement of Dr. Williams follows:]

PREPARED STATEMENT OF GARY W. WILLIAMS, PH.D., PROFESSOR OF AGRICULTURAL ECONOMICS AND CO-DIRECTOR, AGRIBUSINESS, FOOD, AND CONSUMER ECONOMICS RESEARCH CENTER, DEPARTMENT OF AGRICULTURAL ECONOMICS, TEXAS A&M UNIVERSITY, COLLEGE STATION, TX

Chairman Rouzer, Ranking Member Costa, and Members of the Subcommittee, thank you for the opportunity to testify today as you focus on the next farm bill and international market development programs. I am professor of Agricultural Economics and Co-Director of the Food, Agribusiness and Consumer Economics Research Center at Texas A&M University. Recently, we have all heard a great deal about the difficulties and uncertainties currently facing U.S. agriculture, policies that have not worked as planned, and new policies that need to be considered. I am pleased to be here today to talk briefly about the USDA Export Market Development Programs which have worked consistently and effectively over fifty years to bolster the profitability and viability of not only production agriculture but the broader U.S. economy as well, according to recent research by several of my colleagues at Texas A&M University, Oregon State University, Cornell University, Informa Economics and I ("Economic Impact of USDA Market Development Programs," available on-line at: *https://www.fas.usda.gov/sites/default/files/2016-10/2016econimpactsstudy.pdf*).

The primary components of USDA Export Promotion Programs are the Market Access Program (MAP) and the Foreign Market Development program (FMD). These two programs are public-private partnerships between USDA and nonprofit U.S. agricultural trade associations, farmer cooperatives, nonprofit state-regional trade groups and small businesses to conduct overseas marketing and promotional activities. The Foreign Agricultural Service (FAS) administers these programs within the USDA.

The total annual spending under the USDA Export Market Development Programs has risen sharply in recent years but not because of growing government spending on these programs. Rather, contributions from the private-sector, the program cooperators, have continued to rise from about 50% of the total spending in the late 1990s to currently over 70% (*Figure 1*). In terms of the cost share of the funds for export market promotion, the private-sector contributed a record average of 240% percent in 2014. The growth in industry contributions demonstrates the strong industry recognition of the effectiveness of the MAP and FMD programs in opening, expanding, and maintaining export markets.

In a recent study, my colleagues and I subjected the USDA Export Market Development Programs to a rigorous economic analysis to answer three critical questions. First, have the USDA Export Market Development Programs achieved their avowed objective of increasing the foreign demand for U.S. agricultural products and, as a result, supported the U.S. agricultural sector? Second, has any increase achieved in exports been sufficient to contribute more to the profitability of the agricultural sector than the cost of the programs? Third, have the programs contributed to the growth of the overall U.S. economy?

Two previous studies concluded that the USDA Export Market Development Programs have been highly effective in promoting exports with substantial benefits to the U.S. economy. I must say that I was skeptical of those results. So our research team devised a completely different and highly rigorous methodology to test whether those export promotion programs were as effective in promoting U.S. agricultural exports and as impactful on the U.S. economy as the previous studies purported.

I was personally surprised by the results of our study. In answer to the first two critical questions we posed at the beginning of our research, the study concluded that:

- *USDA Export Market Development Programs have been highly effective in boosting U.S. agricultural exports and export revenues.*

  The study found that over their history (1977–2014), USDA Export Market Development Programs have added an annual average of 15.3% ($8.15 billion) to the value of U.S. agricultural exports, 8.0% (11.5 million mt) to the volume of aggregate U.S. agricultural exports, and about 6.7% ($25.07/mt) to the aggregate price of U.S. agricultural exports.
- *USDA Export Market Development Programs generated a high benefit-to-cost ratio (BCRs) over history in line with what previous studies have found.*

  We calculated the undiscounted net export revenue BCR of the USDA Export Market Development Programs (including both USDA expenditures and cooperator contributions) to be 28.3. In other words, over their history, the programs have generated a net return of $28.30 in additional export revenue for every dollar invested in export promotion

In answer to the third critical question, the study concluded that the USDA Export Market Development Programs:

- *Contribute substantially to the profitability of the U.S. farm economy.*

  The study concluded that the USDA export promotion programs boosted annual average farm cash receipts by up to $8.7 billion (2.8%), net farm income by up to $2.1 billion (3.7%), farm asset value by up to $1.1 billion (0.1%), and employment in the agrifood sector by up to 93,900 jobs (2.4%).
- *Benefit the entire U.S. economy.*

  The study also concluded that the positive impact of the USDA Export Market Development Program on the agricultural sector has generated multiplier effects across the entire economy like the ripples you make in water after an initial splash. The results show that on average over the 2002–2014 period, the programs have added up to $39.3 billion in economic output, up to $16.9 billion in GDP, and up to $9.8 billion in labor income to the U.S. economy.
- *Create jobs.*

  Finally, the study also concluded that the USDA Export Market Development Programs have added up to an annual average of 239,800 full and part-time jobs across the entire economy, reducing unemployment by up to 3%.

After concluding that study, my colleagues and I were asked to use the models and analytical procedures we developed to provide guidance on the impacts of alternative increased funding scenarios for USDA's Foreign Market Development Program (FMD) and Market Access Program (MAP) and industry export market promotion contributions on export revenues, the farm economy, and the overall macro economy. Two future funding scenarios were simulated with our models:

- *Scenario 1:* Government expenditures for MAP and FMD were doubled over 5 years through annual increments of $46.9 million to a total of $469 million (double the base year) with cooperator contributions increasing approximately 10% in the first year to $515.6 million and then remaining flat at that level for the following 4 years.
- *Scenario 2:* Government expenditures for MAP and FMD were again doubled over 5 years as in the first scenario but cooperator contributions were increased by 50% over that period through annual increases of $46.9 million for a total of $703.6 million by the end of the 5 year period.

The analysis of these two future funding scenarios use the base starting point for MAP and FMD combined funding of $234.5 million and cooperator contributions of $468.7 million. The 50% increase in cooperator contributions in the second scenario is reasonable based on interviews that we conducted with MAP and FMD participants in the original study. All of those we interviewed indicated that they would expand their market promotion activities if funding for FMD and MAP programs was increased because of the effectiveness of their current activities. Some also responded that they would expand their market promotion offices overseas in that case.

The analysis concluded that the additional investments under both scenarios would generate high benefit-cost ratios (BCRs) of $18.2 for every additional dollar invested in export market development under Scenario 1 and $16 for every additional dollar invested under Scenario 2. In addition, as illustrated in *Figure 2* and shown in *Tables 1* and *2,* the future funding analysis concluded that:

- *Export gains would be substantial under both scenarios.*

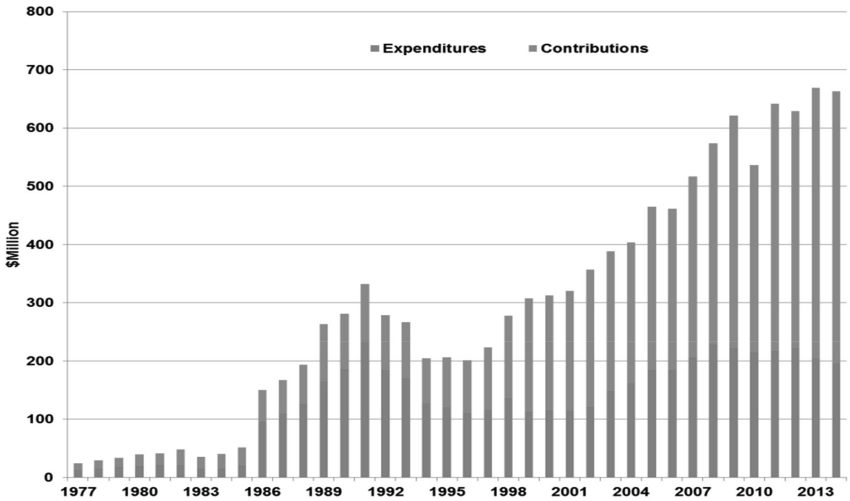
The value of U.S. agricultural exports would increase by an annual average of $3.4 billion and $4.5 billion under Scenarios 1 and 2, respectively (*Figure 2*). That would add up to an export value gain of $17.1 billion and $22.5 billion, respectively, under the two scenarios over the entire 5 year period.

- *Gains to the farm economy would be equally substantial under both scenarios.*
  - Farm cash receipts would increase by an annual average of up to $2.2 billion under Scenario 1 and up to $2.9 billion under Scenario 2. Over the entire 5 year period, the farm cash receipt gain would be up to $11.1 billion under Scenario 1 and $14.6 billion under Scenario 2.
  - Net cash farm income would increase by an annual average of up to $0.5 billion and $0.7 billion, respectively under the two scenarios for a 5 year gain of up to $2.7 billion and $3.5 billion under Scenarios 1 and 2, respectively.
  - Farm asset values would increase by an annual average of up to $0.29 billion and $0.4 billion and up to $1.5 billion (less) and $1.9 billion over the entire 5 year period.
  - Up to 24,200 new jobs would be added in the agrifood sector under [S]cenario 1 and up to 31,900 new jobs under Scenario 2.
- *The overall U.S. economy would experience a substantial multiplier effect from the farm economy boost under both scenarios.*
  - U.S. output (sales) would increase by an average annual of up to $10.6 billion and $14.0 billion under the Scenarios 1 and 2, respectively and by a total of up to $53.1 billion and $70.0 billion over the entire 5 year period of analysis.
  - U.S. GDP would be higher by up to $4.5 billion and $6.0 billion each year on average under Scenarios 1 and 2 for a total of up to $22.7 billion and $30.0 billion, respectively, over the entire 5 year period under the two scenarios.
  - U.S. labor income would be higher by up to $2.6 billion and $3.5 billion on average each year under Scenarios 1 and 2 and by up to $13.1 billion and $17.5 billion over the entire 5 year period.
  - U.S. employment would increase by up to 64,000 new jobs under Scenario 1 and up to 84,600 new jobs under Scenario 2.

In conclusion, our critical analysis of the USDA Export Market Development Programs demonstrated clearly that the public-private partnership to promote U.S. agricultural exports under the FMD and MAP programs has been and continues to be a highly successful and cost-effective means of strengthening the profitability and maintaining the viability of the U.S. farm economy. In addition, the USDA Export Market Development Programs are clearly pro-growth for the entire U.S. economy. The benefits of export promotion to the farm economy multiply through the economy adding importantly to our national output, GDP, labor income, and level of employment. An incremental increase of $46.5 million annually over the next 5 years to these historically successful programs along with an expected 50% increase in contributions to the program by private-sector cooperators would return $16 dollars in additional export revenue for every dollar invested and generate up to an additional $3.5 billion in net cash farm income, $30 billion in additional U.S. GDP, and up to 84,600 new jobs. I would be hard-pressed to name any other U.S. farm program that has been as consistently effective over such a long period of time in working to support our farm economy while supporting the growth of the entire U.S. economy and at the same time generating a high return on the investment of farmer and taxpayer funds.

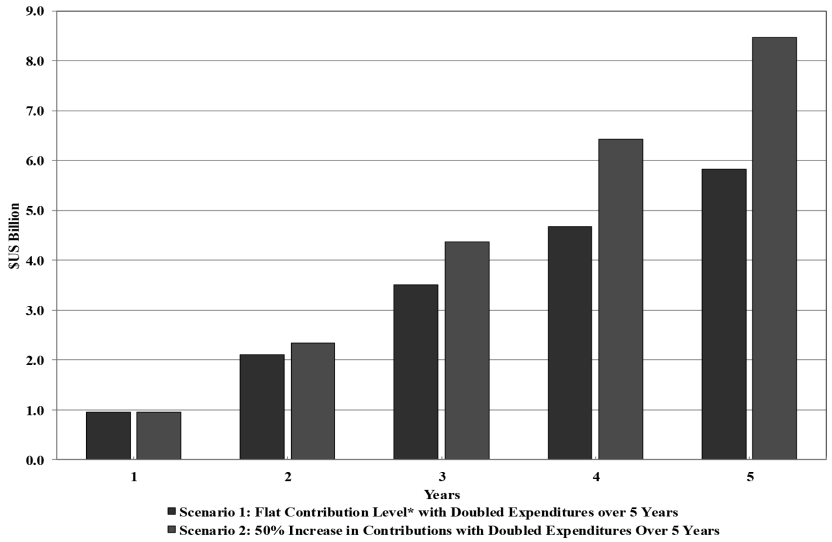
Thank you, Mr. Chairman. I would be glad to try and answer any questions.

Figure 1: USDA Export Market Development Programs Funding,[1] 1977–2014



Source: FAS/USDA.

Figure 2: Simulated Annual Changes in U.S. Export Revenue Achieved Under Agricultural Export Funding Scenarios 1 and 2



*10% increase in first year over baseline and then flat for next 4 years.

[1] Includes government expenditures on market promotion through the FMD and MAP Programs and industry contributions. All data converted to a calendar year basis.

Table 1: General Economy Impacts of the Funding Scenario 1 Relative to the Baseline Funding Scenario, Years 1–5

Variable	Flat Funding Base Value [a]	Less than Full Employment		Full Employment	
		Change	Percent Change	Change	Percent Change
Agriculture Sector	**$U.S. billions**	**$U.S. billions**	**%**	**$U.S. billions**	**%**
Farm cash receipts	321.2	2.2	0.7	1.8	0.6
Net cash farm income	63.9	0.5	0.8	0.5	0.9
Farm assets	2,161.4	0.29	0.01	0.19	0.01
	1,000 jobs	**1,000 jobs**		**1,000 jobs**	
Employment in agrifood sector [b]	3,900.4	24.2	0.6	17.2	0.4
U.S. Economy	**$U.S. billions**	**$U.S. billions**	**%**	**$U.S. billions**	**%**
U.S. Output (Gross Sales)	25,070.0	10.6	0.04	1.3	0.005
U.S. GDP	14,522.5	4.5	0.03	0.8	0.006
U.S. Labor Income	9,017.0	2.6	0.03	0.3	0.004
	1,000 jobs	**1,000 jobs**		[c] **1,000 jobs**	
U.S. Employment	173,414	64.0	0.04	—	—

Note: — = Not available as an output from this analysis.

[a] The base value is for the year 2010. The "base value" is the average annual level of a variable in the absence of the promotion program. Some variables such as U.S. economic welfare and labor wage do not have a base value because the models only calculate the change in those variables and not a base value.

[b] The base employment value is measured as actual 2010 jobs as reported in IMPLAN. In the full employment analysis, total U.S. employment is held fixed but labor is mobile across sectors of the economy.

[c] The assumption of full employment by definition means that all labor is fully employed so that any change in the economy cannot impact the level of employment.

Table 2: General Economy Impacts of the Increased Funding Scenario 2 Relative to the Baseline Funding Scenario, Years 1–5

Variable	Flat Funding Base Value [a]	Less than Full Employment		Full Employment	
		Change	Percent Change	Change	Percent Change
Agriculture Sector	**$U.S. billions**	**$U.S. billions**	**%**	**$U.S. billions**	**%**
Farm cash receipts	321.2	2.9	0.9	2.3	0.7
Net cash farm income	63.9	0.7	1.1	0.7	1.1
Farm assets	2,161.4	0.4	0.02	0.3	0.01
	1,000 jobs	**1,000 jobs**		**1,000 jobs**	
Employment in agrifood sector [b]	3,900.4	31.9	0.8	22.7	0.6
U.S. Economy	**$U.S. billions**	**$U.S. billions**	**%**	**$U.S. billions**	**%**
U.S. Output (Gross Sales)	25,070.0	14.0	0.06	1.7	0.007
U.S. GDP	14,522.5	6.0	0.04	1.1	0.007
U.S. Labor Income	9,017.0	3.5	0.04	0.4	0.005
	1,000 jobs	**1,000 jobs**		[c] **1,000 jobs**	
U.S. Employment	173,414	84.6	0.05	—	—

Note: — = Not available as an output from this analysis.

[a] The base value is for the year 2010. The "base value" is the average annual level of a variable in the absence of the promotion program. Some variables such as U.S. economic welfare and labor wage do not have a base value because the models only calculate the change in those variables and not a base value.

[b] The base employment value is measured as actual 2010 jobs as reported in IMPLAN. In the full employment analysis, total U.S. employment is held fixed but labor is mobile across sectors of the economy.

[c] The assumption of full employment by definition means that all labor is fully employed so that any change in the economy cannot impact the level of employment.

The CHAIRMAN. Thank you, Dr. Williams. That was impressive testimony, but even more impressive that you fit it in within 5 minutes.

Dr. WILLIAMS. I practiced it.

The CHAIRMAN. Mr. Steinkamp.

STATEMENT OF HON. JOSEPH E. STEINKAMP, MEMBER, BOARD OF DIRECTORS, AMERICAN SOYBEAN ASSOCIATION, EVANSVILLE, IN; ON BEHALF OF COALITION TO PROMOTE U.S. AGRICULTURAL EXPORTS, AGRIBUSINESS COALITION FOR FOREIGN MARKET DEVELOPMENT

Mr. STEINKAMP. Good afternoon, Chairman Rouzer, Ranking Member Costa, and Members of the Subcommittee.

I am Joe Steinkamp, a soybean farmer from Indiana, and member of the Board of Directors of the American Soybean Association. ASA is a trade association that represents U.S. soybean farmers on policy and international issues. I am testifying today on behalf of the Coalition to Promote U.S. Agricultural Exports and the Agribusiness Coalition for Foreign Market Development. These coalitions comprise over 75 organizations representing farmers, ranchers, fishermen, forest product producers, cooperatives, small businesses, regional trade organizations, and State Departments of Agriculture.

We commend you for holding this hearing to review the effectiveness of export promotion programs, and expanding exports for U.S. agricultural products.

Agricultural export market development depends on longstanding, successful partnerships between not-for-profit U.S. agricultural trade organizations, farmer cooperatives, and not-for-profit state-regional trade groups, small businesses, and with the use of the Foreign Agricultural Service of the USDA. These partnerships share the cost of overseas marketing, promotional activity such as market research, trade shows, trade servicing, and retail and education programs.

Under the Market Access Program and the Foreign Market Development Program, our private-sector groups contribute an estimated $469 million annually for international market development. These contributions, which are leveraged by FAS funding of $234.5 million, represent ⅔ of the combined buying power of the two programs. My written statement provides numerous examples of how the export promotion efforts under MAP and FMD have contributed to the phenomenal growth of exports of soybeans and soy products. Last year we exported a record $28 billion in soybeans, soybean oil, and soybean meal, representing an outstanding 62 percent of all soybean production.

Similar success stories can be cited from how MAP and FMD have been cost-effective in helping U.S. exports of other agricultural commodities, including corn, wheat, rice, cotton, livestock, meat products, dairy, forest products, peanuts, seafood, and a host of horticultural products. Agricultural exports are one of the brightest lights in the U.S. economy, with a strong multiplier effect that is especially pronounced in rural communities. According to the USDA Economic Research Service, $150 billion in U.S. agricultural exports that occurred in 2014 produced $190 billion in economic ac-

tivity, for a total of $340 billion of economic output. Those agricultural exports supported 1.1 million full-time U.S. civilian jobs, and importantly, 800,000 non-farm sector that were required to assemble and process, distribute the agricultural products for export. That represents 7,550 jobs for every $1 billion of agricultural export revenue.

Despite the growth in U.S. agricultural exports, the effective level of Federal funding that reaches agricultural cooperators carrying out market development has steadily eroded. Since the 2002 Farm Bill, inflation and depreciation of the U.S. dollar have reduced the promotional part of MAP and FMD by almost 30 percent. USDA administrative expenses for Fiscal Year 2016 further reduced available MAP and FMD funds by $6.6 million. In addition, sequestration in Fiscal Year 2016 reduced MAP funding by $13.6 million and FMD funding by $2.4 million. The result is fewer dollars of actual programs, even while the benefits that these programs provide keep increasing.

In order to bolster the U.S. international market development efforts, boost U.S. agricultural exports, and help U.S. agriculture and related businesses in rural America prosper, the Coalition to promote U.S. Agricultural Exports and the Agribusiness Coalition for Foreign Market Development strongly urge Congress to increase the funding of the Market Access Program to $400 million, and the Foreign Market Development Program to $69 million, with the increases phased-in, in the next farm bill.

Agricultural exports, for years, have been the strongest positive contributor to our nation's trade balance. I think that is worth repeating. Agricultural exports have been the strongest positive contributor to our nation's trade balance. Increasing exports is a significant tool to improve lives for American farmers and ranchers, while creating jobs and expanding the farm economy, and the larger economy as a whole, increasing revenues to the Treasury.

Finally, the FMD and MAP programs have been critically important to that success. ASA, along with the MAP and FMD Coalitions, hope this hearing will strengthen our support in Congress to not only maintain, but to increase funding for agricultural export programs as well as support for the Foreign Agricultural Service of the USDA.

Again, I would like to open myself up and say I would be glad to answer any questions the Committee may have.

[The prepared statement of Mr. Steinkamp follows:]

PREPARED STATEMENT OF HON. JOSEPH E. STEINKAMP, MEMBER, BOARD OF DIRECTORS, AMERICAN SOYBEAN ASSOCIATION, EVANSVILLE, IN; ON BEHALF OF COALITION TO PROMOTE U.S. AGRICULTURAL EXPORTS, AGRIBUSINESS COALITION FOR FOREIGN MARKET DEVELOPMENT

Opening Remarks

Good morning, Chairman Rouzer, Ranking Member Costa, and Members of the Subcommittee. My name is Joe Steinkamp, I am a soybean farmer from Evansville, Indiana. Since 2013 I have served as a Director for the American Soybean Association (ASA). Thank you for inviting me to testify before the Subcommittee today on the importance of export promotion programs including the Market Access Program (MAP) and the Foreign Market Development Program (FMD). My testimony today is on behalf of both the American Soybean Association as well as the Coalition to Promote U.S. Agricultural Exports (MAP coalition) and the Agribusiness Coalition for Foreign Market Development (FMD coalition).

ASA is the national, not-for-profit organization that represents U.S. soybean farmers on policy and international issues. The MAP and FMD coalitions embody over 75 organizations representing farmers and ranchers, fishermen and forest product producers, cooperatives, small businesses, regional trade organizations and the state Departments of Agriculture. We appreciate the opportunity to appear before you today, and commend you for holding this hearing to review export promotion programs and their effectiveness in expanding exports of U.S. agricultural products.

Importance of MAP/FMD

In order to bolster U.S. international market development efforts, further boost U.S. agricultural exports, and help U.S. agriculture and related businesses in rural America prosper, the Coalition to Promote U.S. Agricultural Exports and the Agribusiness Coalition for Foreign Market Development strongly believe that Market Access Program (MAP) funding should be increased to $400 million annually and Foreign Market Development (FMD) program funding to $69 million annually, with the increases phased in as part of the next farm bill.

Agricultural exports are one of the brightest lights in the U.S. economy, with a strong multiplier effect that is especially pronounced in rural communities. According to USDA's Economic Research Service (ERS):

- The $150 billion in U.S. agricultural exports that occurred in 2014 produced an additional $190 billion in economic activity for a total of $340 billion of economic output;
- Those agricultural exports supported 1.1 million full time U.S. civilian jobs, including 800,000 in the non-farm sector (73 percent of the total employment effect) required to assemble, process and distribute agricultural products for export; [and]
- This represents 7,550 jobs for every $1 billion of agricultural export revenue.

Agricultural export market development depends on long-standing, successful partnerships between nonprofit U.S. agricultural trade associations, farmer cooperatives, nonprofit state-regional trade groups, small businesses, and USDA to share the costs of overseas marketing and promotional activities such as market research, trade shows, trade servicing, and retail and educational promotions.

Under the MAP and the FMD program, administered by USDA's Foreign Agricultural Service (FAS), these private-sector groups contribute an estimated $468.7 million annually, primarily from farmer-funded check-off programs, into international market development and promotion. In fact, these "industry" contributions, which are leveraged by public funds, represent more than 70 percent of the buying power of the programs.

Nowhere is the importance of export promotion more evident than in the U.S. soybean industry. Soybeans and soybean products are our country's number one export commodity. Last year, we exported a whopping $28 billion in soybeans, soybean oil and soybean meal. This amount represents ⅕ of all U.S. agricultural exports and over 62 percent of U.S. soybean production.

A 2016 study commissioned by the U.S. Soybean Export Council showed that international marketing activities conducted on behalf of U.S. soybean growers increased soybean exports each year by an average of 993,600 metric tons (MT), or nearly five percent. For soybean meal and soybean oil, the average annual growth over that period was estimated to be somewhat larger at 15 percent (808,600 MT) and 24 percent (149,600 MT), respectively.

This translates to $29.6 of additional export revenue per dollar spent on international promotion. At the producer level, that additional export revenue translates into a cost benefit ratio of $10.1 in additional profit to grower per dollar spent on international promotion.

This impressive export growth could not have been achieved without the unique government-industry partnership that characterizes the market development and export promotion programs administered by the Foreign Agricultural Service (FAS) and carried out by organizations representing U.S. farmers and ranchers. By any measure, the Foreign Market Development "Cooperator" Program and the Market Access Program have been tremendously successful and extremely cost-effective in helping expand U.S. exports of soybeans and other agricultural commodities such as corn, wheat, rice, cotton, livestock and meat products, dairy, forest products, peanuts, seafood, and a host of horticultural products. I have been asked by the Subcommittee to concentrate my testimony on the Foreign Market Development Cooperator Program and its role in expanding U.S. agricultural exports.

The Foreign Market Development (Cooperator) Program

The Foreign Market Development (FMD) Program is a public-private partnership program dedicated to long-term market development of foreign markets for U.S. agricultural exports.

Under the FMD program, U.S. Government funding is leveraged with contributions by U.S. farmers, ranchers, and agri-industry to carry out targeted market development activities. Activities implemented under the FMD program are most often focused on opening and maintaining foreign markets, while working on long-term changes to key constraints affecting a market to allow for increased U.S. exports. FMD allows U.S. market development organizations that represent U.S. farmers and ranchers (referred to as "Cooperators" due to the cooperative private-public partnership they have with FAS) to establish an on-ground country or regional presence, identify new markets and address long-term foreign import constraints and export growth opportunities. The FMD Program provides cost-share assistance to allow market development cooperators to:

1. Conduct market research. This includes: investigating the volume of in-country product to meet demand in a market; the suitability/viability of in-country product; the compatibility of U.S. product; variables to market success; importance of exports from other competing countries; history of product domestically/internationally; competitiveness of U.S. product; infrastructure capabilities to import U.S. products; and access to importers/processors/retailers.
2. Carry out market analysis. This includes: determining the size of a current market; potential size of the market in the future if structural changes were made to allow for an improved market environment; the opportunity for U.S. exports and likely U.S. share; impediments to trade; political situation, demographics, and economic stability of the market; long-term viability of in-country demand; and government accessibility and regulatory environment for market access.
3. Implement long-term market development activities following up on favorable market research and analysis. Implementation of market development activities constitutes the bulk of funding and activities under the FMD program. Market development activities include: supporting the long-term presence of people and office facilities in key markets to develop sound and expanding trade relationships; providing technical assistance to buyers and users of the product; capacity building and education through seminars and one-on-one work that ensure market growth for participating commodities and products; facilitating trade teams to U.S. to see U.S. production standards and supply infrastructure; facilitating U.S. farmer, rancher, and industry visits to current and prospective markets to develop import networks and product specifications to meet local market needs.

Under the FMD program, private-sector Cooperators such as ASA, U.S. Wheat Associates, U.S. Grains Council, USA Rice Federation, Cotton Council International, National Peanut Council and others work with U.S. producers, exporters, and others in the industry to develop strategic marketing plans detailing market characteristics, constraints limiting U.S. exports, and proposed activities to overcome those constraints. These detailed marketing plans are submitted to FAS as a "Unified Export Strategy" for the U.S. commodity in question. FAS reviews all submitted Unified Export Strategies and makes FMD funding allocations based on criteria included in FMD program regulations that include cost-share contributions by U.S. industry, capabilities and experience of the Cooperator in successfully developing markets and increasing U.S. exports, importance of the commodity in overall U.S. agricultural trade, and anticipated increases in U.S. exports resulting from the FMD funding.

Examples of How ASA Has Utilized FMD Program Cost-Share Funding To Develop Foreign Markets for U.S. Soybeans and Products

ASA became the first USDA-funded Cooperator under the FMD program in 1956, when we opened a foreign market development program in Tokyo, Japan. At that time, Japan was importing only small quantities of U.S. soybeans, and the Japanese had expressed concerns about the quality of U.S. soybeans. During our first year, ASA participated in a series of trade fairs and partnered with a coalition of Japanese business interests in conducting market development activities. Our in-country staff worked closely with Japanese industry leaders at all stages, from buyer to retailer, as well as with university and research technicians, and the technical and popular news media.

Japan proved to be an ideal country to begin export promotion, becoming our largest foreign market in the 1970s, 1980s, and 1990s. Over the years ASA worked with

feed millers and the Japanese swine, dairy, and poultry industries to educate and demonstrate the value of putting high-quality soybean meal made from U.S. soybeans in feed rations. ASA collaborated with Japanese soybean processors and importers to develop close and outstanding trade relations and to increase the quality and demand for soybean oil made from U.S. soybeans, both in the human utilization market as well as in the industrial and printing ink markets. Additionally, ASA partnered with the Japanese tofu, natto, and miso industries to demonstrate the quality of U.S. food grade soybeans and to link Japanese importers with U.S. exporters. Our office in Tokyo continues to service this critical market today, and Japan remains a top market for U.S. soybean products, surpassed only by China and Mexico. U.S. exports of soybeans to Japan today are valued at $1.3 billion.

ASA went on to open other foreign offices and to conduct market development activities in other markets. From regional and country offices located in strategic areas, ASA International Marketing staff and consultants continue to implement market development activities with customers around the world that are increasing demand for U.S. soybeans and soy products today.

But while Japan represents our first success story, China is perhaps our most impressive. ASA opened an office in Beijing in 1982. At that time China did not have a vertically-integrated animal feed industry, and livestock production lacked health and nutritional standards. China has the largest swine herd on the planet, but much of it was backyard-based and did not include soybean meal in diets. Similarly, while China produces more fresh water aquaculture fish than the rest of the world combined, 20 years ago none of the fish feed included soybean meal. Through a long-term and comprehensive program to demonstrate the value of soy-based feeds, ASA helped build demand for soybeans to the level China imports today. Since 1995, while feed use in China grew 140 percent, soybean meal used in animal feed rose an astronomical 839 percent. And we've seen the amount of soybean meal used in aquaculture feeds grow from zero just 20 years ago to 7 million metric tons this year. The value of U.S. soybean exports to China has grown 26 fold, from $414 million in 1996 to over $14 billion in 2016.

Mexico is another example. With technical assistance and education and nutrition seminars sponsored by ASA International Marketing, Mexico has gained an appreciation of the benefits of soy for human consumption. Mexico's retailers now sell millions of liters of soy-fruit beverages, among other products. And U.S. soy exports have grown over the years from virtually zero in the late 1970's to the current value of $2.5 billion in 2016.

The FMD program provides cost-share assistance to ASA and our export arm, the U.S. Soybean Export Council, to implement activities that have set the stage for the growth of U.S. soybean exports. With the assistance of the FMD program, we have launched a large number of feeding and demonstration trials in key international markets. Through capacity-building activities such as training and on-farm consultations to promote improved swine and poultry practices, as well as education on the benefits of soy protein for human consumption, the FMD program has been extremely successful in helping us develop product specifications and the supply networks to build demand for our products and meet local market needs. More recently, we have engaged in market development activities to promote the use of soy for industrial products such soy ink, solvents, lubricants, and engine oils, to name just a few.

These FMD funds have been leveraged with contributions by U.S. soybean farmers themselves through the soybean check-off, as well as with contributions by U.S. exporters. Today, the FMD funds ASA receives are leveraged with soybean farmer and industry funding on a 2-to-1 basis—meaning that for every $1 invested in market development by the FMD program, U.S. soybean farmers and industry are investing $2 to more than match FMD funding.

Four Important Points about the FMD "Cooperator" Program

1. *FMD is* ***cost-effective.*** Funds are awarded on a competitive basis via a comprehensive industry strategy evaluated by FAS using a formula that takes into consideration export potential, experience with managing export programs as well as industry contributions. The process helps ensure that U.S. taxpayer's money is being invested in the agricultural sector and organization with the highest chance of success. Every organization that participates in the FMD program *must* contribute its industry's resources to the program. Thus, U.S. Government expenditures actually leverage more resources for foreign market development than American agriculture would be able to accomplish with only private-sector funds.
2. *The FMD program increases export of U.S. agricultural products.* I've highlighted just a few examples of how U.S. soybean farmers have successfully

utilized cost-share assistance provided under the FMD program to develop long-term markets and increase exports. Similar success stories can be told by the U.S. corn, rice, wheat, cotton, livestock, forestry, and horticultural product industries.

3. *The FMD program helps U.S. agriculture overcome the effects of foreign trade practices.* U.S. agricultural exports often face subsidized or otherwise unfair competition from foreign products. U.S. agricultural organizations utilize FMD resources to combat the multitude of challenges in the international marketplace.
4. *The FMD program helps keep U.S. agricultural exports strong, which in turn supports 1.1 million American jobs.* These jobs were on the farm, ranch, in the forest and on the water, as well as in banking, transportation, processing and other related industries. Every state and local economy in the U.S. has jobs that are dependent upon healthy exports of U.S. agricultural products.

Need for Funding Increase

A 2016 econometric study of export demand by Informa Economics IEG, working with Texas A&M University and Oregon State University economists, showed that between 2002 and 2014:

- a return on investment by MAP and FMD of a remarkable $24 in export gains for every additional $1 spent on foreign market development, consistent with results from several previous studies;
- a dramatic average annual increase in farm income of $2.1 billion because of program activities; [and]
- creation of 239,000 new full and part-time jobs related to the programs.

Federal funding for MAP was last increased in the 2002 Farm Bill, reaching $200 million annually in 2006. Federal funding for the FMD program was last increased in the 2002 Farm Bill to $34.5 million annually. *Since the last increases were approved, the size of the foreign agricultural market that those funds are meant to develop has more than tripled to more than $800 billion a year.*

Despite a tremendous growth in U.S. agricultural exports and opportunities for farmers and small businesses abroad, the real, effective Federal funding that reaches the agricultural cooperators carrying out market development work has steadily eroded even while international competitors continue to greatly outspend us.

Looking just at the FY16 FAS allocation of MAP and FMD funding, the factors that have caused the erosion include:

- Sequestration in FY16 reduced annual available MAP funding by $13.6 million and FMD funding by $2.4 million.
- USDA administrative expenses in FY16 reduced available MAP and FMD program funds by $6.6 million.
- Since the 2002 Farm Bill was enacted, inflation and a depreciated U.S. dollar have reduced the real, effective promotional power of U.S. agricultural market development programs by almost 30 percent.

The result is fewer dollars for actual programs, even while demand for the benefits these programs provide increases.

In FY17, just $173.5 of the $200 million MAP appropriation was allocated to the 68 nonprofit commodity organizations participating in the program. Just $26.6 million of the FMD appropriation was allocated to the 23 nonprofit commodity organizations participating in that program. Taking inflation into account, this means the $200.1 million total that FAS awarded for MAP and FMD in FY17 had an actual promotional power of only $140.1 million.

Other Important Considerations

- With growing global food demand, MAP and FMD participants have the opportunity to service more customers who seek to buy an increasing volume and variety of products. In fact, since the 2002 Farm Bill, overall agricultural imports of the overseas markets that U.S. exports are competing for rose by more than 330 percent, from $247 billion in 2002 to $834 billion. This significant increase in market size, combined with the diminished purchasing power of MAP and FMD funding since 2002, means that our producers are not well equipped to take on more aggressive foreign competition.
- New demands on MAP and FMD funding related to work on non-tariff trade barriers, while reflecting the collaborative work that cooperators often do to supplement efforts of FAS and other regulatory agencies, put greater strain on

funding that in the past went exclusively to market development and promotion activities.

- A 2015 survey of the cooperators showed that they could readily make effective use of a considerable increase in MAP and FMD funding. In addition, more non-profit producer groups are establishing national organizations and are anxious to apply for program funding. Greater demand will be placed on the fixed program funds as more organizations become eligible to apply for MAP and FMD.
- Competitors in foreign countries receive substantially more public support than is provided to U.S. agricultural exporters. A 2013 study showed that in 2011, competing government support for agricultural exports from just 12 countries and the EU Central Government (not including individual member states) was $700 million per year. For comparison, the U.S. budgets approximately $235 million annually in public funds through MAP and FMD for agricultural export promotion and market development. A 2016 study of competitive agricultural export market development investments showed that the EU allocates $255 million annually just to promote wine.

Conclusion

The FMD and MAP programs are among the few tools that help American agriculture and American farmers remain competitive in the global marketplace. They are considered to be non-trade distorting or "Green Box" programs under World Trade Organization (WTO) rules.

These cost-share market development and export promotion programs help keep U.S. agricultural exports strong, which in turn support over one million American jobs. These jobs are on U.S. farm and ranches, but also are in processing, transportation, financing, and other related industries. Every state and local economy in the U.S. has jobs that are dependent upon healthy exports of U.S. agricultural products.

Agricultural exports have for years been the strongest positive contributor to our nation's balance of trade. Increasing exports is a significant tool to improve the lives of America's farmers and ranchers while creating jobs, improving our balance of trade, expanding the farm economy and larger U.S. economy, and increasing receipts to the Treasury. The FMD and MAP programs have been critically important to this success. ASA and the MAP and FMD Coalitions hope this hearing will strengthen the resolve of Congress to not only maintain but to increase the support for agricultural export promotion programs, as well as strong support for the Foreign Agricultural Service of USDA. I would be happy to answer any questions the Subcommittee may have.

The CHAIRMAN. Thank you very much.

Mr. Hamilton.

STATEMENT OF TIM HAMILTON, EXECUTIVE DIRECTOR, FOOD EXPORT ASSOCIATION OF THE MIDWEST USA AND FOOD EXPORT USA—NORTHEAST, CHICAGO, IL

Mr. HAMILTON. Good afternoon, Mr. Chairman, and thank you, Members of the Subcommittee.

I am Tim Hamilton. I am the Executive Director of Food Export—Midwest and Food Export—Northeast. These are two of the state regional trade groups that some of the prior witnesses have mentioned. We help small and medium-sized companies to export their products to foreign markets.

Like our counterparts in the West and the South, we work with State Departments of Agriculture, using MAP funds to increase the number of food companies and agricultural companies that export, and to help those exporters increase their sales.

We focus almost exclusively on helping small companies. Many of these firms are family-owned. They are located in both rural and urban locations. What they all have in common is that they are exporting U.S. agricultural products.

Food and agricultural producers are challenged to find growth opportunities here at home. At the same time, emerging markets overseas offer huge growth potential. Even among the firms who

want to export, they are uncertain how to proceed. Small firms are often reluctant, unsure of how do business in another country. With support from MAP, we provide education and training to help them target their best markets, and overcome whatever hurdles they face.

Once export-ready, their first challenge is to find customers. We arrange meetings with qualified international buyers. We offer technical support at international trade shows, making sure companies are prepared with appropriate pricing, translations, market research, and competitor data. By preparing them ahead of time, we greatly improve their chances for success.

During 2015, with support from the MAP, Food Export—Midwest and Food Export—Northeast have assisted more than 1,400 different firms. They collectively reported more than $1.5 billion in new export sales, and project nearly double that in additional sales over the next year. These companies reported 563 new hires over that period of time, and we estimate that their total overall export sales supported nearly 12,000 jobs.

The American Popcorn Company was founded in 1914 in Sioux City, Iowa, and is still a family-owned and operated company today. Many of their competitors have been acquired by large food conglomerates. The company counts their 170 employees as part of their extended family, some dating back to the 1930s. Their growers are based in Iowa, Nebraska, and South Dakota, so their economic impact extends across the region. A main factor of the company's success has been exporting. With the support from the Market Access Program, their Jolly Time brand popcorn is now sold in 35 countries around the world, and their export sales have grown from $2 million to $11 million, and comprise over ten percent of their total revenue. That growth has led to a ten percent increase in their number of employees, and helped to support the construction of a new production facility.

In Philadelphia, the Bassetts Ice Cream Company is a fifth generation family business, dating back to 1861. In 2008, Bassetts was selling around $12,000 worth of ice cream in China. With help from MAP, Bassetts now generates nearly $2 million per year annually in export sales that accounts for 25 percent of their revenue. This export growth has led to hiring new staff and expansion of their production line. Purchases of milk and cream have grown by 25 percent, benefitting many Pennsylvania dairy farms. The first container of Bassetts Ice Cream just arrived in Korea this month, and they are having talks currently with buyers from the Middle East.

In our work with international customers, we are constantly reminded of the extensive and increasing support that our competitor nations offer. A 2013 study showed that government support for agricultural exports from just 12 European countries and the EU Central Government was $700 million per year. For comparison, the U.S. spends $235 million on MAP and FMD. An additional study in 2016 showed that the EU allocates $255 million per year just to promote their wine exports.

What we are doing is not enough. More than 95 percent of U.S. companies do not export. As our competitors ramp up their efforts, we need additional support. We are proposing that funding for MAP be increased to $400 million over the life of the next farm bill.

I have a statement from the Coalition to Promote Exports that I would like to introduce for the record that supports that request.

The rhetoric around trade has become complex and highly charged, but the simple fact is that export trade remains critically important to American agriculture. We need to market our farm products aggressively against broad foreign competition, and programs like MAP and the FMD are tools that we need to remain competitive.

Mr. Chairman, and Members of the Subcommittee, I encourage you to support efforts, including MAP and FMD, that continue to boost America's food and ag exports, that support our farmers, our small businesses, and the Americans that produce these outstanding products.

Thank you.

[The prepared statement of Mr. Hamilton follows:]

PREPARED STATEMENT OF TIM HAMILTON, EXECUTIVE DIRECTOR, FOOD EXPORT ASSOCIATION OF THE MIDWEST USA AND FOOD EXPORT USA—NORTHEAST, CHICAGO, IL

Good afternoon, Mr. Chairman. My name is Tim Hamilton, and I am Executive Director of Food Export—Midwest, and Food Export—Northeast. These are State Regional Trade Groups that offer services to help small and medium U.S. food and agricultural companies promote their products in foreign markets. We commend you, Mr. Chairman, and Members of the Committee, for holding this hearing and appreciate this opportunity to share our work.

The organizations I represent are associations of the 22 midwestern and northeastern state departments of agriculture. Like our counterparts in the West and South, we work with our member states using MAP Funds to increase the number of food and agricultural companies that export, and to help current exporters increase the volume and value of their sales.

We focus almost exclusively on helping small companies. Many of these firms are family owned. Most of them are food processors that use ag commodities as inputs which they turn into finished goods for export. They are located in both *rural and urban locations.* What they all have in common is that they are made from *U.S. agricultural products.*

Food and agricultural producers are challenged to find growth opportunities here at home. At the same time, emerging markets overseas offer tremendous growth potential for these U.S. producers, if only companies know about these markets and how to take advantage of them.

Even among firms who want to export, they are uncertain how to proceed. Small firms are often reluctant, unsure of how to do business in another language, another currency, another culture. With support from MAP, we provide education and training to help them target their best markets, and overcome whatever hurdles they face.

Once export ready, their first challenge is to find customers: We arrange meetings with qualified international buyers. We offer technical support at international trade shows, making sure companies are prepared with appropriate pricing, translations, market research, competitor data, and introductions to the right foreign customers. By preparing them ahead of time, we significantly improve their chances for success.

Like in the U.S., it is essential that exporters promote their products in these competitive markets. Our promotional support can help these firms get their products established and increase their market share. This support includes advertising, demonstrations, trade show costs, label modifications, and others. It is all made possible through MAP funding, and is done on a cost-share basis, with companies investing at least 50% of the costs.

During 2015, with support from MAP, Food Export—Midwest and Northeast have assisted 1,406 different firms, most of them small businesses. They reported more than $1.5 billion in new export sales, and project nearly double that in additional sales over the next year. These companies reported 563 new jobs because of this program, and we estimate that their overall export sales support nearly 12,000 new or existing jobs.

American Popcorn, Sioux City, Iowa

American Popcorn Company was founded in 1914 in Sioux Falls, IA and is still family owned and operated today. Many of their competitors have been acquired by large food conglomerates. The company counts their 170 employees and many multi-generational growers throughout the region as part of their extended family, some dating back to the 1930s. Their growers are based in Iowa, Nebraska and South Dakota so their economic impact extends across the region.

A main factor of their success has been exporting. With support from the MAP, their Jolly Time brand popcorn is now sold in 35 countries, and their export sales have grown from $2 million to $11 million, and comprises over 10% of their total revenue.

That growth had led to a 10% increase in their number of employees and helped support a new production facility. Their economic impact in western Iowa is significant, and they attribute their export success to support from the Market Access Program.

Bassetts Ice Cream, Philadelphia, PA

Bassetts Ice Cream is a fifth-generation family business and a Philadelphia tradition since 1861. In 2008 Bassets was selling around $12,000 of their ice cream in China. With help from Food Export—Northeast supported by MAP, Bassetts now generates $2 Million annually in export sales, accounting for 25% of their revenues.

This export growth has led to hiring new staff and expansion of their production line. Purchases of milk and cream have grown by 25%, benefitting many Pennsylvania dairy farms. The first container of Bassetts ice cream just arrived in Korea this month and they have talks taking place with buyers in the UAE and other [Middle Eastern] countries.

This is a prime example of the Market Access Program providing economic benefit for both rural and urban communities. As a small regional ice cream manufacturer, international sales would not be possible without the Market Access Program.

Schafer Fisheries, Thomson, Illinois

Schafer Fisheries, Inc., located in Northwestern Illinois' 17th Congressional District, is a wholesale/retail distributor of fresh fish and frozen seafood. This family owned business, established in 1954, purchases and processes fresh fish caught by over 100 commercial fishermen within a 1,000 mile radius. They have broad U.S. distribution and now sell internationally. Schafer has used services offered through Food Export—Midwest and funded by MAP to grow their export sales from $85,000 to $2,000,000 over the past decade.

Since they started exporting they have added six new employees and they are currently selling to 16 countries and considering expansion with a new plant. They attribute their export success to the Market Access Program.

U.S. Greens, Larned, KS

U.S. Greens is a family-owned and operated manufacturing company that has been producing and processing greens since 1946 in Larned, KS in the state's 1st Congressional District. They provide premier nutritional powdered greens for commercial resale and production included alfalfa, barley grass and wheat grasses. Four years ago with support from the Market Access Program they began to explore international markets and in a short time they have gained over $200,000 in export sales. This growth contributed to their need for a new milling center Bonner Springs, KS.

Many of the jobs that are supported by agricultural exports are intrinsically U.S. jobs. They cannot be outsourced overseas. They are tied to farm production in the U.S. The products are grown here, and they are processed here. If we are able to maintain our overseas markets, then these jobs will be held by Americans. If we lose these overseas markets, then we risk losing these jobs to our competitors in China, Europe and elsewhere.

In our work with international customers, we are constantly reminded of the extensive and increasing support that our competitor nations offer. Our competitors receive substantially more public support than do U.S. farmers. A 2013 study showed that in 2011, competing government support for agricultural exports from just 12 European countries and the EU Central Government was $700 million per year. For comparison, the U.S. budgets approximately $235 million annually in public funds through MAP and FMD for agricultural export development. A 2016 study of our competitors showed that the EU allocates $255 million annually *just to promote wine.*

But what we are doing is not enough. More than 95% of U.S. companies do not export. As our competitors ramp up their efforts, we need additional support. U.S.

food and agricultural products are recognized around the world for being safe, high quality and innovative. This is a real opportunity for our country.

Every day, we see small U.S. companies successfully entering that global marketplace that they were previously unaware of, or fearful of. And we hear from them day after day, that most of them could not have done it without the support made possible from the MAP program.

The rhetoric around trade has become complex and highly charged. But the simple fact is that **Export** trade remains critically important to American agriculture. We need to market our farm products aggressively against broad foreign competition, and export programs like the MAP are the tools that agriculture needs to remain competitive. Additional MAP resources can help us reach more firms, increase jobs in the U.S., become competitive overseas and maintain our market share.

U.S. agriculture must be aggressive in competing overseas in order to maintain our industry at home. Our nation's exports of food and agricultural products can continue to be a major success story. This is not the time to cut back on these efforts. It is a chance to take advantage of these global opportunities, and provide the support and incentive that companies, including small companies, need to pursue these markets, build sales, and put Americans to work.

Mr. Chairman and Members of the Committee, I encourage you to support efforts that continue to boost America's food and agricultural exports, including MAP, that support our farmers, our small businesses, and the Americans that produce these outstanding products. Thank you.

The CHAIRMAN. Thank you.

Mr. Seng.

STATEMENT OF PHILIP SENG, PRESIDENT AND CHIEF EXECUTIVE OFFICER, U.S. MEAT EXPORT FEDERATION, DENVER, CO

Mr. SENG. Yes. Good afternoon. My name is Philip Seng, President and CEO at the U.S. Meat Export Federation (USMEF). I am here today to speak on behalf of the interests of the U.S. red meat industry.

I would like to talk about the fact that the Market Access Program and the Foreign Market Development Program have worked very well for the U.S. Meat Export Federation to develop new markets, displace our worldwide competition, and defend American meat products' market share from aggressive competition throughout the world.

The Market Access Program and its predecessor, the Target Export Assistance Program and the Market Promotion Program, have been extremely strategic and successful export tools for the U.S. meat industry over the last 30 years. During this time, the U.S. has made great advancements in market access, but while market access played a part in our export growth, market access alone does not guarantee exports. Many times we have seen markets open, only to be confronted by consumers who are skeptical about our products, or simply unaware of the product's safety and quality. We must dignify trade access with sound marketing programs, and Market Access Program's funds have allowed us to address these challenges. Together, access and marketing are a proven recipe for success in the international marketplace.

Starting in Japan in the late 1980s, we have deployed Market Access Program funds to demonstrate the profitability and the quality of U.S. beef, pork, and lamb in supermarket shelves and restaurants throughout Japan. But, today's growing trade challenges are raising important new questions about how we maintain our export momentum, and continue to derive the benefits from

growing exports that have accrued to farmers, ranchers, and allied industries.

To provide the Committee with tangible examples of market development work, the U.S. Meat Export Federation has carried out using Market Access Program funds, I would like to quickly review some of these success stories. The Market Access Program was very significant to us as far as opening up the Japanese market back in 1987. That is when we first received our first *tranche* of funding. And at that time, the U.S. was a net importer both of beef and pork, and within 10 years we had basically successfully transitioned to become a net exporter of both beef and pork in that market.

As the U.S. red meat industry's first American representative stationed overseas, I was tasked with initiating the commercial links between beef and pork producers and processors in the United States and potential Japanese buyers. Utilizing the Market Access Program funds, we were able to build these sales channels and basically dignify the negotiations with sound marketing programs in Japan. These tactics included meat cutting seminars, sometimes offering samples to consumers, conducting cooking classes, not really rocket science, but these were collectively successful in generating visibility for American beef and pork in that market. And from 1995 through 2000, approximately $32 million in market promotion funding was basically utilized to build demand for U.S. beef and pork in Japan.

Another example of where this has been very successful is in South Korea. You only have to go back about 8 years to recognize when we were doing the KORUS negotiations for the free trade agreement with Korea, we had 100,000 people for 100 days in the streets in Seoul, and the chart in my testimony will show that we had consumer confidence in our product that was less than three percent. Today it is well over 50 percent. And just this last year, we exceeded our good friends from Australia in that market as the number one supplier, as we did last year, as well as Japan. Really, when we take a look at these programs, they have been very significant for us in what we are trying to do.

On a daily basis, they assess the opportunities and threats in the marketplace. I mean when we take a look at what we are trying to do in defending our market, we have to defend our methodology of production agriculture. Our presence in the markets, our offices in the markets, the people on the ground, the boots-on-the-ground, if you will, have been very effective as far as demonstrating our commitment from the U.S. meat industry as being a reliable supplier in the international marketplace.

While the benefits of the Market Access Program and Foreign Market Development Program are viewed in our industry as being well-established, the path forward is opaque and somewhat ominous. Challenges have never been so plentiful, ranging from growing protectionism and anti-trade sentiment, to animal disease threats and new export competition. The U.S. industry has to be ever vigilant as we address these, and the only way we can address these issues and these challenges is through the Market Access Program and the FMD program.

The other thing that we are trying to do constantly, and this has been 50 years, 60 years of U.S. efforts in the international marketplace, is to underscore our reliability as a U.S. supplier, that countries that are not food self-sufficient can be food-secure through imports and depending on U.S. agriculture. This is something that we have to continue to extol because right now, some of our markets that we are dealing in, I was just in Mexico last week, that is being called into question. The fact that the United States is a dependable supplier of product is one of the key cornerstones of our trade policy.

Also, I would be remiss if I didn't indicate the appreciation that I have for the Foreign Agricultural Service of the United States. They play a critical role around the world, and our communication with the cooperator program and with the Foreign Agricultural Service has been really a recipe for success for us.

So I say make America great, like U.S. agriculture. If you take a look at U.S. agriculture, we have 30 years of trade surpluses. One farmer feeds 155 people in the world, and we are made up of small holders as well as large holders, it is the best diplomatic tool that we have. And I really support increases to the MAP program as well as to the FMD program, as my colleagues have indicated.

Thank you.

[The prepared statement of Mr. Seng follows:]

PREPARED STATEMENT OF PHILIP SENG, PRESIDENT AND CHIEF EXECUTIVE OFFICER, U.S. MEAT EXPORT FEDERATION, DENVER, CO

Good afternoon. My name is Philip Seng, President and CEO at the U.S. Meat Export Federation (USMEF). I am here today to speak on behalf of the interests of the U.S. red meat industry and to explain how we utilize funding from the USDA Market Access Program and the Foreign Market Development Program to develop new markets, displace our formidable, worldwide competition, and defend American meat products' market share from aggressive competitors.

For our industry, the Market Access Program and its predecessors, the Targeted Export Assistance Program and the Market Promotion Program, have been extremely strategic and successful export tools over the last 30 years. During this time, the U.S. has entered a number of free trade agreements and made great advancements in market access. But while market access played a part in our export growth, market access alone does not guarantee exports. How many times have we been elated about newly opened markets, only to be confronted by consumers who are skeptical or simply unaware of our products' safety and quality? We must dignify trade access with sound marketing programs, and Market Access Program funds have allowed us to address these challenges. Together, access and marketing are a proven recipe for success.

In market after market, starting in Japan in the late 1980s, we have deployed Market Access Program funds to demonstrate the profitability of featuring U.S. beef, pork and lamb on supermarket shelves and restaurant menus, while simultaneously building consumer demand and sales. But we are not alone in these efforts, and the international marketplace is increasingly crowded with competitors. Ironically, many are mimicking our strategies and tactics initiated under the Market Access Program. But the growing trade challenges are raising important new questions about how we maintain our export momentum and continue to derive the benefits from growing exports that have accrued to farmers, ranchers and the allied industries associated with producing and exporting red meat.

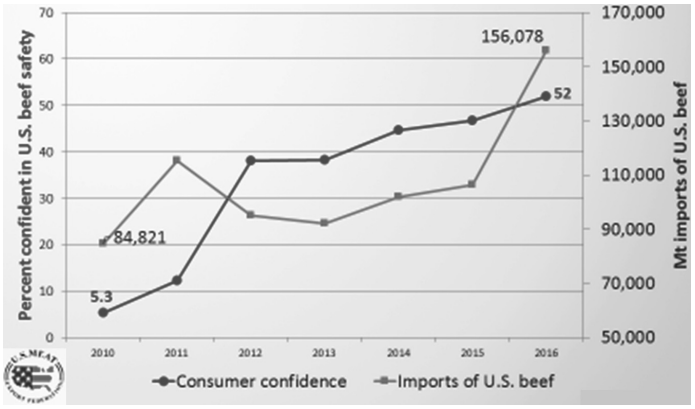
To provide the Committee with tangible examples of market development work the U.S. Meat Export Federation has carried out using Market Access Program funds, I would like to quickly review some success stories before discussing my vision for the future. When Market Access Program funding first became available in 1987, the export side of our industry was in start-up mode. Exports were largely an afterthought, and there was little understanding in the industry of the meat consumption habits of any foreign market or of the growth potential of these markets. The U.S. was a net importer of both beef and pork, with pork imports nearly double

our export volumes. But just 8 years later, the U.S. had successfully transitioned to a net exporter of both pork and beef.

As the U.S. red meat industry's first American representative stationed overseas, I was tasked with initiating commercial links between beef and pork producers and processors in the U.S. and potential Japanese buyers. Utilizing Market Access Program funds, the U.S. industry began to build sales channels. First, these were with importers, distributors, processors and food service representatives, then we began working with supermarket chains, such as Aeon, and restaurants, such as Ito Yokado. The tactics, which included meat-cutting seminars, offering meat samples to consumers and conducting cooking classes, were straightforward—not rocket science—but they were collectively successful in generating visibility and sales of American beef and pork. Like the launch of any new brand, resource needs were substantial, and individual companies—especially the smaller ones that were a major part of the early marketing efforts—were justifiably reticent to invest in what was then a risky undertaking. From 1995 through 2000, approximately $32.5 million in Market Promotion Program and Market Access Program funding was utilized to build demand for U.S. beef and pork in Japan. During this period, U.S. beef and pork exports increased by approximately $1 billion, a 30-to-1 return.

Another success story is the rebuilding of consumer confidence in U.S. beef in South Korea, which last year became a $1 billion market for U.S. beef exports for the very first time. At the beginning of this decade, only five percent of Korean consumers were confident in the safety of U.S. beef. Although a free trade agreement between the U.S. and Korea was about to be finalized, how could we possibly capitalize without addressing this situation? Market Access Program funding played a critical role in restoring faith in the safety of our product, and exports grew accordingly—as evidenced by this graphic:

Consumer Confidence on U.S. Beef Safety and Korea's Imports of U.S. Beef



Source: USMEF-Gallup and GTA import data. *www.USMEF.org*.

The basic market development template that was developed and utilized in Japan has been successfully utilized in other markets, including Korea (as noted above), Mexico, Taiwan, Hong Kong, the European Union and the Middle East. In addition to supporting our marketing work, Market Access Program and Foreign Market Development Program funding has also allowed us to maintain a network of foreign offices staffed by technical and marketing experts who serve as boots-on-the-ground representatives of the U.S. red meat industry. On a daily basis, they assess the opportunities and threats in the marketplace, while building relationships that are vital to our ability to provide accurate and timely intelligence on developments in the markets. The U.S. Meat Export Federation's presence in the markets also has proven to be an extremely effective means of demonstrating the U.S. red meat industry's long-term commitment as a reliable supplier of beef, pork and lamb.

It is important to also highlight the role the Market Access Program has played in jump-starting the interest and resource participation by our industry in the effort to expand exports. As success stories started to impact the bottom line of our industry—from ranchers to exporters and all the allied industries in between—stakeholders began to invest. We estimate that for every dollar the Market Access Program invested with the U.S. Meat Export Federation, we are now able to generate

at least $3 to $4 more from U.S. industry contributions and from in-market partners and customers.

While the benefits of the Market Access Program and the Foreign Market Development Program are viewed in our industry as being well established, the path forward is opaque and some argue, ominous. Challenges have never been so plentiful, ranging from growing protectionism and anti-trade sentiment, to animal disease threats and the rise of new export competitors. On the latter, the U.S. industry, which spent the past few decades developing and displacing our competition, now has to devote more resources to defending our market position. A tremendous amount of effort has been expended by the U.S. Government and Market Access Program participants to build international confidence in our ability to be a reliable exporter of U.S. agriculture products, but fresh doubts are arising about our commitment to free and unencumbered trade.

This comes at an inauspicious time, because in many ways, opportunities have never been greater. From a supply perspective, exports have room to grow. For U.S. beef and pork, we export just 15 percent and 26 percent, respectively, of our annual production. On the demand side, new import markets are emerging that hold great potential. A generation ago, China was a major meat exporter, but now it has become the world's largest importer of both beef and pork. However, developing a loyal customer and consumer base for U.S. red meat in China will still be extremely complex and command substantial resources. Starting at the border, import conditions are strict; for example, U.S. beef is still banned from importation. Distribution infrastructure is still developing, and the sheer size of the potential consumer base is daunting. With major regional differences in eating habits and cuisines, marketing approaches need to be tailored to each particular geographical area. Most importantly, our major competitors in Europe, South America and Oceania are all spending heavily to build their own presence in the market. In some cases, they are being aided by favorable import conditions and low duty rates gained through free trade agreements. If one considers China a frontier marketplace, the U.S. is one of many homesteaders.

Other emerging markets beckon, such as Indonesia, where huge opportunities exist for increased beef consumption. Potential also exists in markets that were traditionally viewed only as competitors. There is unfilled demand in Brazil that can be met by U.S. beef exports now that that market is open, and our comparative advantage in pork production allows us to export to countries like Australia, Guatemala and—possibly in the future—to African markets. And despite claims that markets like Japan are developed, they continue to evolve and hold great growth potential. For example, U.S. pork captures only a 20 percent share of Japan's total consumption, and purchases by Japanese consumers of U.S. fresh chilled product reached record levels last year.

Holding our own in traditional markets while also exploring new ones requires an increase of resources. But perhaps even more importantly, the Market Access Program and the Foreign Market Development Program funding signal the commitment of the U.S. red meat industry—and U.S. agriculture overall—to being a consistent and reliable global supplier of high-quality, safe and affordable foodstuffs. This Committee understands that U.S. agriculture and the U.S. red meat export industry have worked diligently to demonstrate to countries that are not 100 percent self-sufficient in food production that they can still be 100 percent "food-secure" with dependable import sources, especially the United States. We take very seriously our responsibility, not only to the hundreds of thousands of farmers and ranchers who are now producing ever-larger quantities of products for foreign customers, but also to those foreign customers themselves, who benefit and rely on our ability to supply them.

Thank you for the opportunity to provide a red meat industry perspective on exports and to discuss the critical importance of the Market Access Program and the Foreign Market Development Program to our success in international markets.

The CHAIRMAN. Thank you.

Mr. Alanko.

STATEMENT OF DEAN ALANKO, VICE PRESIDENT OF SALES AND MARKETING, ALLEGHENY WOOD PRODUCTS, PETERSBURG, WV; ON BEHALF OF HARDWOOD FEDERATION

Mr. ALANKO. Yes, good afternoon. Thank you, Chairman Rouzer, Ranking Member Costa, and Members of the Subcommittee for inviting me to testify before you today.

My name is Dean Alanko and I am the Vice President of Sales and Marketing for Allegheny Wood Products, headquartered in Petersburg, West Virginia.

Allegheny Wood Products was formed in 1973, and continues to be a family-owned and operated company, directly employing over 900 people at nine sawmills, five drying facilities, one hardwood pellet mill, and a dimension plant. There are also hundreds of additional jobs created in support industries for our manufacturing operations, such as loggers and truckers, to name a few. We sell products worldwide, with export sales in excess of $63 million in 2016. We have shipped products to over 28 countries.

My focus today is on the hardwood lumber and veneer industries, and while not an edible, agricultural product, it is an important agricultural product to rural America just the same. The U.S. hardwood lumber industry produced more than 8.3 billion board-feet in 2016. For some perspective, 8.3 billion board-feet is equivalent to about one million truckloads of hardwood lumber.

The U.S. hardwood industry is not made up of large Fortune 500 companies. It is very much a rural-based industry made up mostly of small and medium-sized family-owned operations. A great example of this highly fragmented industry is my own company. While we are one of the three largest manufacturers volume-wise of hardwood lumber, we represent less than two percent of total production.

In addition to sawmillers such as myself, this industry also represents millions of private, non-industrial forest owners. Strong markets for hardwood lumber products help maintain strong ties between the hardwood industry and these private forest owners. The revenue stream resulting from harvesting of mature trees creates the economic incentive to maintain forestland as forestland.

Many hardwood companies are heavily reliant on exports for their livelihood. Approximately 40 percent of all hardwood lumber production, and nearly 60 percent of the highest value-added grades of hardwood are now exported, totaling $2.4 billion in 2016. Exports of hardwood veneer totaled $280 million in 2016, which is more than 55 percent of domestic production. The U.S. also enjoys a healthy trade surplus of $1.3 billion in hardwood lumber, up from $1.1 billion in 2015.

It is vital that the markets remain open and continue to expand for these businesses and the men and women they employ. This is where the work of the American Hardwood Export Council, or AHEC, jointly funded by the Market Access Program, Foreign Market Development Program, and industry dues, play such an important role. AHEC has laid out a four-part strategy designed to grow overseas markets. Adequate funding from the MAP and FMD programs is essential to our success. With continued and hopefully increased funding, AHEC will do the following to promote U.S. hardwoods overseas. First, seek out new markets for hardwood products. In areas of the world where there is limited understanding of U.S. hardwoods, most notably inland China, India, and the Middle East, AHEC will continue to increase demand by providing technical information, trade servicing, and technical seminars to the importing and manufacturing industries overseas. Second, promote new uses and applications for hardwood within existing markets.

In 2017, AHEC will continue to be actively involved in identifying and growing potential new market segments, such as hardwood use and structural applications found in high-rise building construction. Third, continue to extol the environmental credentials of U.S. hardwoods. With the introduction of illegal logging and trade policies across the globe, and the development of policies to reduce CO_2 emissions, especially in the building sector, the need to promote the strong environmental benefits of U.S. hardwoods is more important than ever. Fourth, create networking opportunities for U.S. exporters. In 2017, AHEC will create a number of opportunities for U.S. exporters to engage with overseas buyers, manufacturers, and specifiers in more than 20 building, furniture, and design trade shows around the globe.

Let me say again how critical exports and export markets are to my company, to rural communities, and to the hardwood industry as a whole. This industry benefits significantly from the MAP and FMD programs every day. It is vital MAP and FMD continue to be available, and that funding increase to meet the expanding needs of this industry. I can say without hesitation that without these programs, our businesses would be smaller, produce fewer goods, and employ less people.

Thank you for allowing me to address the Committee. I am happy to respond to questions either today or in writing.

[The prepared statement of Mr. Alanko follows:]

PREPARED STATEMENT OF DEAN ALANKO, VICE PRESIDENT OF SALES AND MARKETING, ALLEGHENY WOOD PRODUCTS, PETERSBURG, WV; ON BEHALF OF HARDWOOD FEDERATION

Good afternoon. Thank you Chairman Rouzer, Ranking Member Costa, and Members of the Subcommittee for inviting me to testify before you today. My name is Dean Alanko and I am the Vice President of Sales & Marketing of Allegheny Wood Products Headquartered in Petersburg, WV. Allegheny Wood Products was founded in 1973 by John and Patricia Crites and continues to be a family owned and operated company, directly employing over 900 people at nine sawmills, five drying facilities one hardwood pellet mill, and a dimension plant. There are additional jobs created in support industries for our manufacturing operations . . . loggers, truckers, and construction workers to name a few. We sell products worldwide, with export sales in excess of $63 million in 2016. We have shipped products to over 28 countries.

The U.S. wood products industry, including hardwood, softwood and paper products is an important contributor to the U.S. economy, accounting for approximately four percent of the total U.S. manufacturing GDP. Wood products companies are among the top ten manufacturing sector employers in 47 states, producing $210 billion in products annually. The industry as a whole employs nearly 900,000 people; more than the automotive, chemicals and plastics industries. And most of them are in rural areas where employment opportunities can be limited.

My focus today is on the hardwood lumber and veneer industries. The U.S. hardwood lumber industry produced more than 8.3 billion board-feet in 2016, a solid number for this industry, but still well below our 1999 peak of 12.6 billion. For some perspective, that is approximately one million truckloads of hardwood lumber.

The U.S. hardwood industry is not made up of big Fortune 500 companies. It is very much a rural based industry made up of small and medium sized family-owned operations, on both the resources and manufacturing sides of the business. A great example of this highly fragmented industry is my own company . . . while we are one of the top three volume producers of U.S. hardwoods, we represent **Less Than** 2% of the total market.

In addition to the saw-millers such as myself, this industry also represents millions of private, non-industrial forest owners. Strong markets for hardwood lumber products help maintain strong ties between the hardwood industry and these private forest owners. The revenue stream resulting from limited, selective harvesting of mature trees creates the economic incentive to maintain forestland as forestland.

Many hardwood companies are heavily reliant on exports for their livelihood. Approximately 40% of all hardwood lumber production and nearly 60% of the highest value-added grades of hardwood are now exported, totaling $2.4 billion in 2016. Exports of hardwood veneer totaled $280 million in 2016, which is more than 55% of domestic production. The U.S. also enjoys a healthy trade surplus of $1.3 billion in hardwood lumber, up from $1.1 billion in 2015.

With the migration of the U.S. domestic furniture and wood products manufacturing industries, and less than robust new housing demand, international promotion has never been more important to the U.S. hardwood industry. The U.S. is by far the world's largest exporter of hardwoods, accounting for nearly ¼ of all global trade. U.S. hardwood exports have more than *doubled* in the past 5 years.

For the U.S. hardwood industry, "globalization" is much more than just an abstract concept; it is a concrete reality that influences business decisions on a daily basis. However, globalization has meant not only the migration of manufacturing, but has also led to unprecedented growth in global purchasing power. Indeed, it has now become clear that much of the increased *demand* for hardwood products—including finished products—is coming from outside the U.S., especially in the rapidly growing economies of Asia. In terms of promotion, therefore, it is very important that our industry recognize and target not only the high-volume re-export manufacturing sectors of today and tomorrow, but we must also identify new market opportunities and niches within well-established, so-called "mature" markets such as the EU. With the help of MAP and FMD, the American Hardwood Export Council (AHEC) programs are designed to do both, by providing a wide array of information to overseas importers, distributors, specifiers and end users of wood products.

It is vital that markets remain open for these businesses and the men and women they employ. This is where the work of the American Hardwood Export Council, or AHEC, jointly funded by the Market Access Program (MAP), Foreign Market Development (FMD) program and industry dues plays such an important role.

AHEC has laid out a four-part strategy designed to "grow the pie" in overseas markets for U.S. hardwood exporters. Adequate funding from the MAP and FMD programs is essential to our success. With continued and hopefully increased funding, AHEC will do the following to promote U.S. hardwood products to the world:

(1) **Seek out new markets for hardwood products:**

In areas of the world where there is limited understanding of U.S. hardwoods, most notably inland China, India and the Middle East, AHEC will continue to increase demand by providing technical information, trade servicing and technical seminars to the importing and manufacturing industries overseas. In more mature markets, the focus will be on demonstration projects, design/architectural seminars, and a targeted PR campaign.

(2) **Promote new uses and applications for hardwood within existing markets:**

In 2017 AHEC will continue to be actively involved in identifying and growing potential new market segments, such as hardwood use in structural applications found in high rise building construction—most notably Cross-Laminated Timber (CLT) engineering, or the potential for thermally-modified or treated hardwoods to gain a foothold in the exterior applications market.

(3) **Continue to exto[l] environmental credentials:**

With the introduction of illegal logging and trade policies across the globe and the development of policies to reduce CO_2 emissions, especially in the building sector, the need to promote the strong environmental benefits of American hardwoods is more important than ever. 2017 marked the official launch of the American Hardwood Environmental Profile (AHEP), an environmental profiling tool that will combine legality information, sustainability data from the U.S. Forest Service and LCA impacts from MAP-funded research.

(4) **Create Networking Opportunities for U.S. Exporters:**

In 2017 AHEC will create a number of opportunities for U.S. exporters to engage with overseas buyers, manufacturers and specifiers in more than 20 building, furniture and design trade shows around the globe. USDA funds help to offset the booth costs but each U.S. company is responsible for their own travel expenses creating direct industry contributions to the programs. AHEC will also sponsor Conventions in China and Mexico and host dozens of seminars and strategic networking opportunities tied to major target market industry events.

Let me reiterate, how critical exports and export markets are to my company, to rural communities and to the hardwood industry as a whole. Companies like Allegheny Wood Products benefit significantly from the MAP and FMD program every day. I can say without hesitation that without these programs our business would be smaller, produce fewer goods and employ less people.

One important concrete example of where MAP funding has proven absolutely critical to my company as well as the rest of our industry was the *U.S. Illegal Logging Risk Assessment* study commissioned by AHEC. Recent legislation to combat illegal logging in the EU, Japan and Australia require wood suppliers to show that that their raw material was legally sourced—a difficult task for a fragmented industry that purchases logs from millions of private landowners. The peer-reviewed study showed that on a national level the risk of U.S. hardwood being illegally harvested was negligible. This has provided reassurance to foreign governments and has kept open many of the world's highest-value markets to U.S. exporters. As a private company, it would have been next to impossible to produce such credible reassurance.

Thank you for allowing me to address the Subcommittee. I am happy to respond to questions either today or in writing.

The CHAIRMAN. Mr. Wenger.

STATEMENT OF PAUL J. WENGER, ALMOND PRODUCER, WOOD COLONY NUT CO.; PRESIDENT, CALIFORNIA FARM BUREAU FEDERATION, SACRAMENTO, CA

Mr. WENGER. Good afternoon. Thank you, Mr. Chairman, Ranking Member Costa, and Members of the Committee. I really appreciate the opportunity to testify on the trade title for the farm bill.

I am Paul Wenger, President of the California Farm Bureau, third generation, and I will tell you now that I am bilingual and I will use the term *amond* and *almond* interchangeably. And I am a member of the Blue Diamond Growers.

As the largest agricultural organization in California, the California Farm Bureau is a statewide, nonprofit, membership organization representing 53 counties that include over 28,000 producers of more than 400 commodities. For nearly a century, Farm Bureau has worked to preserve, protect, and promote family farms and ranches.

Like the California Farm Bureau, Blue Diamond Growers has a more than 100 year history of serving California almond farmers. Blue Diamond is a nonprofit, farmer-owned, marketing cooperative owned by over ½ of the almond growers in California. It is also the world's largest processor and marketer of almonds.

The almond industry is particularly relevant for today's hearing as over 80 percent of the world's almonds are grown in California, and almonds are the largest agricultural export for our state. Blue Diamond exports almonds and almond ingredients to more than 90 countries. Overall, the almond industry contributes $11 billion to California's economy, creating over 100,000 jobs in the state, as well as more than 37,000 export-related jobs.

As discussion of the new farm bill begins, I will share the positive impact three of the programs in the bill's trade title have on California farmers and ranchers.

I would like to begin with the Market Access Program. Its purpose is to expand agricultural export markets overseas. Agricultural exports are critical to the American economy. According to the USDA's Economic Research Service, in 2014 ag exports produced a total of $340 billion in economic output. Those exports supported 1.1 million full-time U.S. civilian jobs; approximately

800,000 of which were jobs to the non-farm sector. Consequently, for every $1 billion of agricultural export revenue, it would create 7,550 jobs.

Many commodities in California benefit from the Market Access Program, including, but not limited to, dairy, pistachios, cherries, peaches, table grapes, pears, prunes, strawberries, cotton, rice, wine, citrus, and walnuts. The program ensures that these and other participating commodities can, on a cost-share basis, achieve maximum opportunity when developing markets overseas.

While I could share details of each California commodity benefitting from the Market Access Program, as an almond grower, I comment today on how my cooperative, Blue Diamond, utilizes Market Access Program funds provided by the 2014 Farm Bill to improve international demand for domestically produced almonds. These efforts continue to offer a destination for the almonds I and my fellow California growers produce. They support U.S. jobs by improving export markets around the world.

In my written testimony, I have included as an exhibit six specific success stories documenting recent examples of where the MAP program has been used effectively to build consumer demand for Blue Diamond almonds. Let me briefly highlight one of those to just give you a sense of how these funds are being utilized.

In Canada last year, Blue Diamond used Market Access Program funds to partner with a large retailer to stock for the first time North American-labeled almond product at six of the chain's large supermarket locations in the greater Vancouver region. A 2 day in-store sampling program was conducted which focused on Blue Diamond's superior taste consistency, high quality, and nutritious attributes. During the demo week alone, the supermarket sold 60 percent of the initial product cases purchased. As sampling programs continue at this new account, Blue Diamond anticipates even greater purchase quantities and sales figures.

As you can see, the efforts of just one Market Access Program participant are generating solid results. Blue Diamond has a successful track record of launching new and innovative almond products in markets around the world, leading the development of new sources of revenue for thousands of U.S. almond growers, as well as thousands of non-farm employees who help process and deliver our various products. MAP funds remain essential. Part of this strategy is for Blue Diamond to establish critical footholds in new markets.

The 21st century global market remains an extremely challenging one. Markets do not just open, build and sustain themselves. Consumer awareness, acceptance, and preferences do not just happen. The target is a continually moving one. Success in establishing and growing markets for U.S. agricultural products is best achieved through focused and coordinated efforts by all parties involved to have a stake in achieving success. This most certainly includes the critically important partnership of U.S. Government and agricultural stakeholders.

You can be assured that America's competitors are also approaching this challenge in a similar manner. One quick example, in 2016, the European Union allocated $255 million annually for the promotion of wine alone. This is more than the total amount

that we allocate for all agricultural commodities. The Market Access Program is a model of innovative and effective government-industry relationship. The synergies produced through the program are compelling and well-documented.

In today's increasing challenging environment for America's farmers and ranchers, the need for expanding the program has never been greater. We would encourage you to look to expanding not only this, but sustaining the TASC, the Technical Assistance for Specialty Crops, at its current levels, and also increase FMD funding from its current levels.

I would be more than willing to answer any questions you might have.

[The prepared statement of Mr. Wenger follows:]

PREPARED STATEMENT OF PAUL J. WENGER, ALMOND PRODUCER, WOOD COLONY NUT CO.; PRESIDENT, CALIFORNIA FARM BUREAU FEDERATION, SACRAMENTO, CA

Good afternoon, Mr. Chairman and Members of the Committee. Thank you for the opportunity to testify on the trade title of the farm bill.

I am Paul Wenger, the President of California Farm Bureau Federation. I am also a third-generation almond farmer and a member of Blue Diamond Growers.

The California Farm Bureau Federation is a state-wide nonprofit organization representing 53 counties that include over 28,000 producers of more than 400 commodities. For nearly a century, Farm Bureau has worked to preserve, protect and promote family farms and ranches.

Like the California Farm Bureau Federation, Blue Diamond Growers has a more than 100 year history of serving California almond farmers. Blue Diamond is a nonprofit, farmer-owned marketing cooperative owned by over ½ of the almond growers in California. It is also the world's largest processor and marketer of almonds.

The almond industry is particularly relevant for today's hearing as over eighty percent of the world's almonds are grown in California, and almonds are the largest agricultural export from the state. Blue Diamond exports almonds and almond ingredients to more than 90 countries. Overall, the almond industry contributes $11 billion to California's economy creating over 100,000 jobs in the state, as well as more than 37,000 export related jobs.

As discussion of the new farm bill begins, I will share the positive impact three of the programs in the bill's trade title have on California farmers and ranchers.

Market Access Program (MAP)

I would like to begin with the Market Access Program. This program is overseen by USDA's Foreign Agricultural Service, (FAS). Its purpose is to expand agricultural export markets overseas. Agricultural exports are critical to the American economy. According to USDA's Economic Research Service (ERS), in 2014 agricultural exports produced a total of $340 billion in economic output. Those exports supported 1.1 million full time U.S. civilian jobs. Approximately 800,000 of the jobs were non-farm sector. Consequently, for every $1 billion of agricultural export revenue there are 7,550 jobs (*https://www.ers.usda.gov/data-products/agricultural-trade-multipliers/2014-data-overview.aspx*).

Over the years, we have seen extremely successful results from the Market Access Program. A recent study by Informa Economics IEG, working with Texas A&M University and Oregon State University economists, showed a return of $28 in export gains for every $1 spent on export promotion programs. The study also showed an average annual increase in farm income of $2.1 billion resulting from the Market Access Program activities. In addition to the high return rate and the increase in farm income, the program resulted in the creation of 239,000 new full and part-time jobs (*http://www.uswheat.org/newsMeetings/emd-1a*) [Attachment].

Many commodities in California benefit from the Market Access Program, including but not limited to dairy, pistachios, cherries, peaches, table grapes, pears, prunes, strawberries, cotton, rice, wine, citrus, and walnuts. The program ensures that these and other participating commodities can, on a cost-share basis, achieve maximum opportunity when marketed overseas.

While I could share details of each California commodity benefiting from the Market Access Program, as an almond grower, I will comment today on how Blue Diamond utilizes Market Access Program funds provided by the 2014 Farm Bill to improve international demand for domestically produced almonds. These efforts con-

tinue to offer a destination for the almonds I produce. They support U.S. jobs by improving U.S. economic output. (Please see *Exhibit A* for Blue Diamond Growers Market Access Program success stories).

In my written testimony submission, I have included as an exhibit six specific success stories documenting recent examples of where the Market Access Program has been used effectively to build consumer demand and preference for Blue Diamond almonds. Let me briefly highlight a couple of these just to give you a sense of how these funds are being utilized.

In Canada last year, Blue Diamond used Market Access Program funds to partner with a large retailer to stock for the first time North American labeled almond product at six of the chain's large supermarket locations in the greater Vancouver region. A 2 day in-store sampling program was conducted which focused on Blue Diamond's superior taste consistency, high quality, and nutritious attributes. During the demo week alone, the supermarket sold 60 percent of the initial product cases purchased. As sampling programs continue at this new account, Blue Diamond anticipates even greater purchase quantities and sales figures.

In another case, during the period May–June 2016, Blue Diamond conducted an in-store marketing campaign for snack almonds at 960 7-Eleven outlets in Hong Kong. This promotion targeted health conscious consumers seeking a nutritious and convenient snack that is ideal for active kids and families. Using Market Access Program funds, Blue Diamond supported development of creative advertising materials and off-shelf product positioning with acrylic racks. The promotions also highlighted that Blue Diamond snack almonds are a great accompaniment for watching summer soccer games and other popular sporting events. By locating Blue Diamond products off-shelf, the promotion reached new consumers and generated additional brand awareness and interest. This effort generated a significant increase in sales, achieving twice the average sales per month compared to the prior period.

As you can see, the efforts of just one Market Access Program participant are generating solid results. Blue Diamond has a successful track record of launching new and innovative almond products in markets around the world, leading the development of new sources of revenue for thousands of U.S. almond growers. These funds remain an essential part of this strategy, supporting Blue Diamond to establish critical footholds in new markets. Blue Diamond will continue to rely on the Market Access Program funds to support successful product launches through strategic product campaigns.

The 21st century global market remains an extremely challenging one. Markets do not open, build and sustain themselves. Consumer awareness, acceptance and preferences do not just happen. The target is a continually moving one. Success in establishing and growing markets for U.S. agricultural products is best achieved through focused and coordinated efforts by all involved parties with a stake in achieving success. This most certainly includes the critically important partnership of the U.S. Government and U.S. agricultural stakeholders. You can be assured that America's competitors in the global market place are approaching the challenge in a similar manner. For example, a 2016 study showed that the European Union allocates $255 million annually for the promotion of wine alone. This is more than the total amount we allocate for all U.S. agricultural commodities.

The Market Access Program is a model of innovative and effective government-industry partnership. The synergies produced through the program are compelling and well-documented. In today's increasingly challenging environment for America's farmers and ranchers, the need for expanding the program has never been greater. Currently, the program receives $200 million in funding. Blue Diamond is asking for an increase to $400 million in funding and Farm Bureau also supports an increase. The last increase in Market Access Program funds occurred in the 2002 Farm Bill reaching the current level of funding in 2006. (For additional success stories please see: *http://www.agexportscount.com/value-of-ag-exports/*).

The Technical Assistance for Specialty Crops (TASC) Program

Another USDA program that has significantly benefitted U.S. specialty crop producers, including almond growers, is the Technical Assistance for Specialty Crops program, or TASC. Currently funded at $9 million annually, TASC provides grants to eligible U.S. organizations to address sanitary, phytosanitary, and technical barriers in targeted foreign countries that prohibit, constrain, or threaten market access for U.S. specialty crops.

USDA's Foreign Agricultural Service reviews TASC proposals on a competitive basis, approving those that both meet the program's requirements and clearly demonstrate how the activity will address and resolve the identified barrier or constraint. Awards are for a maximum of $500,000 per year and for projects of up to 5 years. These funds help support such critical activities as pest and disease re-

search, technical exchanges, field trials and pre-clearance programs, all with a view to resolve trade barriers and expand U.S. exports of specialty crops.

Blue Diamond used this program for the almond industry to obtain technical assistance to obtain reinstatement of the Indian Government's previous approval of the use of Phosphine as an acceptable fumigant for almonds. $80,000 was approved for this and a successful result was obtained. This is our industry's second largest market, after Spain. The U.S. Census Bureau data reports that U.S. almond exports to India were valued at over $490 million in 2016. Last year, the California almond industry again utilized TASC to support exchanges with key Government of India officials aimed at raising awareness and understanding of supply channel practices, and labeling, certification, and export procedures.

TASC is yet another example of how the industry-government partnership can be effectively leveraged to the benefit of America's farmers, and the U.S. economy.

Foreign Market Development Program (FMD)

The third program is the Foreign Market Development Program (FMD). FMD benefits the U.S. economy and creates jobs by assisting U.S. farmers, processors, and exporters in developing new foreign markets and increasing market share in existing markets. The program focuses on generic U.S. commodities and lays the groundwork for commercial sales by establishing long-term relationships.

These efforts under FMD might include such activities as addressing infrastructure constraints, modifying codes or standards, and identifying new end-uses for the commodity or product.

The partnership between USDA and industry participants under the FMD program has proven to be an effective component in the overall trade development toolbox.

In closing, agricultural exports are vital to preserving, protecting, and promoting California agriculture, accounting for over $20 billion in value out of the state's $47 billion in production. The trade title of the farm bill should continue to provide these essential trade-promoting programs.

Thank you very much for allowing me to testify today on this very important subject. I will be pleased to answer any questions that you may have.

Respectfully Submitted,

PAUL WENGER.

EXHIBIT A

1. Blue Diamond Growers Gain Retail Distribution for Flavored Snack Nuts in Canada

In 2016, Blue Diamond used Market Access Program funds to support in-store sampling demonstrations at grocery retailers throughout Canada. As a core part of Blue Diamond's strategy in Canada, in-store sampling allows shoppers at major retail chains to taste Blue Diamond's flavored snack nut products while receiving literature and information about the Blue Diamond brand, as well as the premium, value-added almond products. This has a significant impact on convincing consumers to become regular almond consumers, and provides strong sales to major retail partners. Furthermore, Market Access Program activities in 2016 continue to be an essential support for Blue Diamond in Canada where difficult price increases and limited expansion due to rising commodity prices proved challenging during the prior year. In-store sampling programs are a cost-effective activity that positively impact distribution and consumer awareness. In this way, Market Access Program funds remain vital to Blue Diamond's efforts in Canada to increase visibility, generate consumer trial and purchase for snack nuts, and maintain and expand key retail account listings.

Blue Diamond's in-store sampling demonstrations have already generated good returns this year. T&T Supermarkets in Western Canada is a new retail account listing for Blue Diamond in 2016, where Blue Diamond flavored snack nuts are the first North American labeled almond product stocked at six of their large supermarket locations in the greater Vancouver region. T&T Supermarkets caters to a predominantly Asian customer base, representing a new opportunity for Blue Diamond to expand. During the last week of May, Blue Diamond conducted a 2 day in-store sampling program at all six T&T Supermarket locations featuring three different flavors of Blue Diamond's signature snack almonds. Point of Sale (POS) materials were visible at each store, and brand literature highlighting Blue Diamond's superior taste consistency, high quality, and nutritious attributes were distributed to shoppers. During the demo week alone, T&T sold 60% of the initial product cases purchased. Since the promotion, T&T Supermarkets have purchased an additional 55% of product for regular sales. As sampling programs continue at this new ac-

count, Blue Diamond anticipates even greater purchase quantities and sales figures. Market Access Program funds remain an essential foothold for Blue Diamond in this market, where Blue Diamond is consistently seeking to expand market opportunities and reach new customer demographics. Furthermore, these activities support increased product recognition, ensuring good returns for all U.S. almond growers.

2. MAP Funds Support Blue Diamond Promotion at 7-Eleven Stores in Hong Kong

To encourage increased consumption of snack almonds during the pre-summer period in Hong Kong, Blue Diamond conducted an in-store marketing campaign at 960 7-Eleven outlets from mid-May through June 2016. The widespread convenience store promotion targeted health conscious consumers seeking a nutritious and convenient snack that is ideal for active kids and families. Using Market Access Program funds, Blue Diamond supported development of creative advertising materials and off-shelf product positioning with acrylic racks. The promotions also highlighted that Blue Diamond snack almonds are a great accompaniment for watching summer soccer games and other popular sporting events. By locating Blue Diamond products off-shelf, the promotion was able to reach new consumers and generate additional brand awareness and interest.

Blue Diamond's aggressive advertising and eye-catching Point of Purchase materials allowed for a successful increase in sales, achieving twice the average sales per month compared to the prior period. This was despite an overall weak sales environment seen throughout the rest of the retail sector in Hong Kong. Market Access Program funds played a critical part in supporting the success of this promotion, ultimately enabling a key C-store retailer in the market, 7-Eleven, to remain confident in the profitability of the Blue Diamond brand and products. Through Market Access Program funds, Blue Diamond is able to conduct targeted promotions with important retailers, supporting continued distribution and consumption in the market.

3. MAP Funds Support Blue Diamond Social Media Campaign in Japan

In 2016, Blue Diamond utilized Market Access Program funds to support targeted social media promotions for the beverage Almond Breeze in Japan. Blue Diamond launched Original and Unsweetened Almond Breeze in Japan in 2013. In years since, Blue Diamond has conducted aggressive product and brand promotions necessary to establish and grow this new category. Moreover, Japan represents a challenging market for Almond Breeze to penetrate given the significant annual influx of new products in the beverage sector. A strong and active social media presence for Blue Diamond Almond Breeze in Japan is a key component of the marketing strategy. Social media sites including Facebook and Instagram are widely used by Blue Diamond's target consumers and act as a hub for raising brand awareness, educating on product use in recipes, directing users to the Blue Diamond website, and allowing consumers to interact and provide feedback to posted content. Blue Diamond Japan posts weekly updates of recipes and photos, along with messaging around healthy and active lifestyles to target key consumer groups.

So far in 2016, Blue Diamond has achieved 42% aided awareness among social media users through this platform, with a target goal of achieving 50% awareness by the end of the year. Heightened awareness on social media continues to support strong sales. Overall, Blue Diamond Almond Breeze now holds around 45% market share in Japan; sales in 2015 were up 102% for Almond Breeze over 2014; and projected sales for Almond Breeze over the next 5 year period are anticipated to average 40% growth annually. Given that the brand was only introduced 3 years prior, Blue Diamond is making positive gains in a difficult market. Future promotions and social media activity that build on this momentum are critical to ensure long-term market success. Furthermore, Blue Diamond is leading the development and growth of an entire new product category—Almond Breeze—and providing a new source of sales and revenue for the U.S. almond industry. As such, the support of Market Access Program funding remains an important foothold for Blue Diamond and U.S. almonds in Japan.

4. Blue Diamond Growers Sees Increased Sales for Almond Breeze in the United Kingdom

Blue Diamond utilizes Market Access Program funds to support key product launches in new markets around the globe. In 2012, the United Kingdom (UK) was one of the first international markets where Blue Diamond launched their Almond Breeze product. In the few years since launching, Almond Breeze has achieved success as both sales and distribution continue to expand. In order to differentiate product, Blue Diamond's marketing and promotions in 2016 prominently emphasize that Blue Diamond is based in the U.S. and grows all their own almonds used to make Almond Breeze products. This message highlights Blue Diamond as the "al-

mond experts," and allows consumers to connect with the popular "farm-to-table" trend. This marketing message is communicated through a comprehensive, multimedia marketing campaign in the UK that includes print and online advertising, active social media (Instagram and Facebook), blogger partnerships, in-store demonstrations, and trade show participation.

As of May 2016, sales for Almond Breeze in the UK are tracking at 44% higher than the same month in 2015. Similarly, overall category growth in the UK has expanded by 47% over the last 52 weeks, indicating further opportunity for additional sales growth going forward. In light of the trending success with Original and Unsweetened Almond Breeze, Blue Diamond utilized Market Access Program funds to support the launch of the new product, Almond Breeze Barista Blend, an almond beverage formulated specifically for use in coffee beverages. Barista Blend premiered at the London Trade Show for Foodservice, a key event for the café and foodservice sector in the market. Barista Blend will continue to be targeted towards both the foodservice and consumer sectors. By launching new and innovative products in international markets, Blue Diamond remains committed to opening and developing new sources of product revenue for the entire U.S. almond industry.

5. Blue Diamond Growers Sees Early Success for Almond Breeze in Finland with Support from Advertising and Blog Campaigns

Blue Diamond launched Almond Breeze in Finland during 2015. To ensure a successful first year, in 2016 Blue Diamond continued to utilize Market Access Program funds to support print and online advertising, as well as important blogger partnerships. These outlets continue to be extremely effective in promoting Almond Breeze products available in the market—Original, Unsweetened, and Barista Blend. Blue Diamond's marketing program for Almond Breeze in Finland targets and appeals to female consumers aged 20+ as a nutritious, flavorful, and versatile almond beverage, ideal for use in coffee beverages, smoothies, cooking recipes, and on its own. By securing consistent almond product awareness and coverage through advertising and blogger features on popular fashion and lifestyle platforms, Blue Diamond is successfully reaching their target market.

During 2016, Market Access Program funds supported the development and placement of half-page, color print advertisements with nine different Finnish fashion, fitness, and lifestyle magazines. Ads highlighted the health benefits of Almond Breeze Unsweetened—a naturally light almond beverage containing calcium, while also naturally free of gluten, dairy, lactose, and soy. Additionally, two of Finland's leading online fashion and lifestyle blog sites—Lily.fi and Mona's Daily Style—have each featured the newest product, Almond Breeze Barista Blend, in their blog content with various recipes. Almond Breeze Barista Blend photos and blogger reviews remain active on both sites. Finland has witnessed a surge in home-barista trends, so the timing of Blue Diamond's Almond Breeze Barista Blend launch, supported through coordinated print and online promotions, has provided Blue Diamond with ample opportunity to capture additional market share. In fact, Barista Blend has already expanded distribution significantly, covering both foodservice and the traditional grocery aisle. Sales for Barista Blend are now on-par with Blue Diamond's second-leading product, Almond Breeze Original, which is up 67% in sales and 24% in distribution over the year prior. Almond Breeze Unsweetened remains the leading Blue Diamond product in the Finnish market, with sales up 80% and distribution up 59% over the year prior.

6. MAP Funds Support Blue Diamond Branded Caravan Promoting Almond Breeze Throughout Japan

In June 2016, Blue Diamond utilized Market Access Program funds to support the Almond Breeze caravan tour promoting Almond Breeze throughout Japan. This marks the third year that Almond Breeze has utilized a branded caravan in Japan to conduct outreach to consumers. The branded caravan strategically visits Blue Diamond listed account retailer parking spaces, farmers markets, and other consumer events to distribute samples of Almond Breeze in smoothies, lattes, and on its own. Supplementary communication tools distributed include recipes, almond information fact sheets, and directives to visit the Almond Breeze Japan website and social media sites (Facebook and Instagram). By positioning the caravan outside of retailer and consumer food or shopping locations, and by demonstrating the use of Almond Breeze in various recipes, Blue Diamond is generating both increased awareness and consumer product trial. Additionally, the activity reinforces distribution at both listed and targeted accounts by demonstrating the success of Blue Diamond products at key retailers. Japan continues to be a large and dynamic market to penetrate, so Blue Diamond's consistent marketing efforts over the first 3 years there are both necessary and effective.

Blue Diamond launched Original and Unsweetened Almond Breeze in Japan in 2013 as the first such nationally supported product in the market. In years since, Blue Diamond has conducted aggressive product and brand promotions to establish and grow this new category. The Japanese market is one of the most dynamic and difficult markets to penetrate with new beverage products, and Blue Diamond has achieved early success in its first 3 years: Blue Diamond Almond Breeze holds around 45% market share in Japan; sales for Almond Breeze during 2015 were up 102% over 2014; and sales for Almond Breeze are projected to hit an average of 40% growth annually over the next 5 year period. Part of Blue Diamond's early success with Almond Breeze can be attributed to favorable consumer trends around health and wellness, particularly among Japan's large aging population and working-age consumers who continually seek nutritional or niche dietary products to fit modern tastes and lifestyles.

Market Access Program funding remains critical to establishing Almond Breeze and expanding awareness of U.S. almond products throughout Japan. Through the support of these promotional activities, Japanese consumers are now consuming Almond Breeze on a daily basis, driving exports of U.S. almonds.

ATTACHMENT

USDA Export Promotion Programs Boost U.S. Farm Export Value by 15 Percent, Create Thousands of Jobs

Revised 10/11/16

Agricultural export market development programs funded through the farm bill have contributed an average of $8.2 billion per year, a total of more than $309 billion, to farm export revenue between 1977 and 2014 according to a new study conducted by noted land grant university economists.

"In other words, these programs have accounted for 15 percent of all the revenue generated by exports for U.S. agriculture over that time. To me, such a positive result is just stunning," said Dr. Gary Williams, Professor of Agricultural Economics and Co-Director of the Agribusiness, Food, and Consumer Economics Research Center at Texas A&M University, who led the study.

The study examined the effectiveness of the Market Access Program (MAP) and the Foreign Market Development (FMD) program. They are part of a public-private partnership that provides competitive grants for export development and promotion activities to nonprofit farm and ranch organizations that contribute funds from check-off programs and industry support.

As a result of MAP and FMD funding, average annual farm cash income was $2.1 billion higher, and annual average farm asset value was $1.1 billion higher over 2002 through 2014. The programs increased total average annual U.S. economic output by $39.3 billion, GDP by $16.9 billion and labor income by $9.8 billion over the same time. The study results also showed that the economic lift created by these programs directly created 239,000 new jobs, including 90,000 farm sector jobs.

By testing what would happen if Federal MAP and FMD funding were eliminated, the study showed that average annual agricultural export revenue would be lower by $14.7 billion, with corresponding annual average declines in farm cash income of $2.5 billion and significant drops in GDP and jobs.

"I would say these are very successful economic development programs based on their impact to the farm and general U.S. economy," Dr. Williams concluded.

The nonprofit agricultural organizations that participate in MAP and FMD contributed about $470 million dollars per year to the programs in 2014. That was more than 70 percent of total funding. The Federal budget for MAP has been fixed at $200 million per year since 2006 and FMD's $34.5 million annual budget has not changed since 2002. The Commodity Credit Corporation programs are administered by USDA's Foreign Agricultural Service (FAS), which is required to report to Congress periodically on program effectiveness.

This is the third study of FAS export promotion programs since 2007 but the first to use an export demand analysis to measure their effectiveness. MAP and FMD participating organizations U.S. Wheat Associates, USA Poultry & Egg Export Council and Pear Bureau Northwest sponsored the new study, which was funded by USDA FAS. Informa Economics assembled data to support the study, recruited the team of five agricultural economists from Texas A&M, Oregon State University and Cornell University, interviewed dozens of MAP and FMD participants and reported on results.

The new study identified a return on investment from these programs between 1977 and 2014 of 28-to-1, which Dr. Williams considers quite strong and showing consistent results with the two other MAP and FMD studies.

"The average return on investment, or benefit to cost ratio, for 27 previous industry specific export promotion studies is just under 11-to-1," Dr. Williams said. "So I was, frankly, quite surprised that the return was this high. The previous MAP and FMD studies showed returns of 25-to-1 in 2007 and 35-to-1 in 2010."

Informa's report concluded that no matter what type of analysis is used or what time period is considered, "the results of this study and previous studies all demonstrate the importance and effectiveness of market promotion funding on exports, the farm economy and the overall macro economy."

USDA Cost-Benefit Study Contributors:

Dr. Gary Williams is Professor of Agricultural Economics and Co-Director of the Agribusiness, Food, and Consumer Economics Research Center (AFCERC) at Texas A&M University, College Station, Tex. He is the AFCERC chief operations officer responsible for managing the research program of the Center and leads AFCERC research and outreach projects relating to commodity and agribusiness markets and policy and international trade and policy. He is also an Associate Faculty Member of the Department of International Affairs in the Bush School of Government and Public Service at Texas A&M University. His areas of teaching and research emphases include commodity promotion programs, international agricultural trade and development, agricultural policy, and marketing and price analysis. Dr. Williams was raised in Lubbock, Texas and holds a Ph.D. and an M.S. degree in Agricultural Economics from Purdue University and a B.S. in Economics from Brigham Young University. Prior to joining the faculty at Texas A&M University in 1988, he gained experience as a professor and Assistant Coordinator of the Meat Export Research Center at Iowa State University, Senior Economist at Chase Econometrics, agricultural economist for the USDA, and Special Assistant to the U.S. Deputy Under Secretary of Agriculture for International Affairs and Commodity Programs at USDA. In recent years, he has become particularly well known for his research on the economic effectiveness of commodity check-off programs, including those for soybeans, cotton, lamb, dairy, Florida orange juice, Texas citrus, Texas pecans, and others. He is also well known for his research on U.S. and world oilseed and oilseed product markets and the U.S. livestock industry including issues related to sheep and lamb markets and the effects of concentration in the beef packing industry. He recently served as Chair of a National Academy of Science Committee on the Status and Economic Performance of the U.S. Sheep and Lamb Industry. He also recently served as a member of a National Academy of Science Committee on the Future of Animal Science Research.

Dr. Jeff Reimer, Associate Professor, College of Agricultural Sciences, Oregon State University, Corvallis, Ore. Dr. Reimer has been with Oregon State University since 2005. His research program concerns topics in international trade, the economics of food and agriculture, and general equilibrium modeling. Dr. Reimer teaches courses in agricultural price and market analysis, microeconomic theory, and international trade. Dr. Reimer grew up on a farm in Illinois before receiving a bachelor's degree from the University of Illinois and spending 3 years working in agricultural development in rural Bangladesh. After completing his doctorate in Agricultural Economics from Purdue University in 2003, he spent 2 years as a research associate at the University of Wisconsin-Madison. At Oregon State University he has been major advisor for ten graduate students and been the recipient of more than a dozen grants and contracts. He has published more than 30 journal articles and book chapters, including in the *Journal of International Economics, Economic Inquiry,* and the *American Journal of Agricultural Economics.*

Dr. Rebekka M. Dudensing, Assistant Professor and Extension Specialist, Department of Agricultural Economics, Texas A&M University. Dr. Dudensing's responsibilities include the analysis of economic and fiscal impacts. She also studies economic responses to natural disasters and the roles of business and social structures in community economic development. She has done extensive economic impact modeling including IMPLAN I–O approaches. Much of her research is driven by the concerns of Extension clientele with objectives to find solutions to those local concerns and to project these issues to a wider audience though applied research and methodological improvements. Dr. Dudensing is particularly interested in the sustainability of agriculture- and natural resource-dependent rural communities.

Dr. Bruce A. McCarl, University Distinguished Professor and Regents Professor of Agricultural Economics at Texas A&M University. He received his B.S. in Business Statistics at the University of Colorado and Ph.D. in Management Science from Pennsylvania State University. His recent research efforts have largely involved policy analysis (mainly in climate change, climate change mitigation, water economics, and biosecurity) as well as the proper application of quantitative methods to such analyses. He teaches graduate courses in applied mathematical programming and applied risk analysis. He was part of the 2007 Nobel Peace Prize winning Intergovernmental Panel on Climate Change.

Dr. Harry M. Kaiser, Gellert Family Professor of Applied Economics and Management, Cornell University, Ithaca, N.Y. Dr. Kaiser teaches and conducts research in the areas of price analysis, marketing, and quantitative methods. Professor Kaiser has written 114 refereed journal articles, four books, 17 book chapters, over 150 research bulletins, and received $8 million in research grants in these areas. Since 1994, Professor Kaiser has been the director of the Cornell Commodity Promotion Research Program. Much of his research focuses on the market-wide economic effects of commodity advertising and promotion programs. Currently, Professor Kaiser and his staff annually conduct the economic analysis required by the U.S. Congress for the national dairy and fluid milk processor advertising programs.

Joe Somers, Vice President, Informa IEG, Washington, D.C. Somers is responsible for economic analyses and agricultural policy consultancy work. He brought to Informa more than 25 years of experience with USDA's Foreign Agricultural Service (FAS) as a Foreign Service officer and has been a member of Informa's staff since 2002. While at FAS, he served in Brazil and Argentina and traveled on official USDA fact-finding trips. In Washington, D.C., he supervised and conducted world supply/demand and trade policy analyses for a wide range of commodities and managed publication of several analytic circulars. He also was director of research and marketing for the GIC Group, Alexandria, Virginia, where he was responsible for business development and economic and market analyses. He received his bachelor's degree in political science from Northeastern University, Boston and master's in agricultural economics from the University of Massachusetts, Amherst.

http://www.fas.usda.gov/programs/market-access-program-map
http://www.fas.usda.gov/programs/foreign-market-development-program-fmd

The CHAIRMAN. Thank you, Mr. Wenger. I am glad that you clarified that almond can be pronounced *almond* or *amond*.

Mr. WENGER. Yes.

The CHAIRMAN. All this time I thought my friend and colleague, Jeff Denham, was just talking funny. And you can tell him I said that.

Mr. WENGER. Well, they are *almonds* on the tree. You have to knock the *L* out of them to get them on the ground, and then they become *amonds.*

The CHAIRMAN. I appreciate that clarification.

The chair would like to remind Members that they will be recognized for questioning in order of seniority for Members who were

here at the start of the hearing. After that, Members will be recognized in order of arrival. I appreciate Members' understanding.

I now recognize myself for 5 minutes.

Thank you all. That was very, very informative testimony from each of you. There was a common theme throughout, obviously, and I want to drill-down on that just a little bit and maybe frame the question this way.

When you have declining Federal investment in these programs, or let's just say, for example, these programs get zeroed-out, obviously we are all going to fight against that, but should that be the case, talk about the impact that that would have. What is it about the Federal investment that leverages these private dollars to the degree that it does? And I might add, I have been very, very impressed with the amount of increase in the private-sector dollars put towards these promotion efforts. But obviously, there is a catalyst there. That seed money on the Federal side is so critically important. Drill-down on that just a little bit for us if you can, any one of you.

Mr. WENGER. Maybe I will start. It is your responsibility to utilize wisely taxpayer dollars. It comes from a broad section of American taxpayers, not just in agriculture, as we look at the farm bill, and certainly safety net-type programs are very important. The uniqueness of MAP funding and FMD funding is well beyond the farm. Whether I as a producer am profitable at the end of the year, as a grower all those people who are on the upside side for the suppliers of my inputs, they have a place that I can utilize monies to pay for them, but more the downside, the marketing side. You think whether it is Blue Diamond and others, all the people from the janitors to the clerks, and everybody else that made the packaging, the shipping to the ports, the longshoremen, everybody is put to work. It creates an awful lot of economic activity and wealth for other people far beyond. I can't think of a better investment that isn't targeted just to one individual part of our social fabric, but it goes everywhere.

And I will just give you a quick example. Port of Oakland, 58 percent of the products, the containers going out of the Port of Oakland, are agriculturally generated. Of that, 70 percent comes out of the farms and the fields in California. When you think about the truckers and the longshoremen, they are put to work because of things that you are doing with MAP and FMD.

Mr. ALANKO. I would like to follow up on that next.

The CHAIRMAN. Yes, sir.

Mr. ALANKO. There are two areas that quickly come to mind with me in the hardwood industry. One is the technical support that we are given by AHEC. The American hardwood grading system is very technical, and it is only used on American hardwoods. People around the world that would utilize our hardwoods need to be educated not only on the grades of hardwoods and how they can be utilized, but on the various species that we have. We have over 12 species that are commercially used around the world.

The other is access. As I had stated earlier, with so many new policies around the world, trade policies and regulations on illegal logging and timber being imported into places, the American Hardwood Export Council, the use of these funds, has put in place some

programs that allow our wood access into areas that we could not come up with these programs without that funding.

Mr. SENG. The area that concerns me probably the most would be the role of the competition in the markets. There are 25 countries supplying pork to Japan today. There was a time where we were primarily the only supplier, and maybe one from Denmark or Canada. There are 72 countries supplying pork and beef to China today. The European COFFERS (Combating Fiscal Fraud and Empowering Regulators), you heard about wine here, but if you look at their subsidy equivalence for exports, it is close to $1.8 billion. We cannot compete if we don't have these programs in these markets. It is as simple as that. And they compete with us not only on quality of the product, *et cetera,* but we deal with the Europeans with animal welfare issues, when it comes to sustainability issues. There are all these other issues that we are dealing with as far as trying to sell our product, and our way of producing our agriculture.

To me, the role of competition, the unlevel playing field, that is getting more unlevel as we speak, these are probably some of the key areas that the MAP program and the FMD program work. It gives us a chance.

The other thing, if I look at just the U.S. Meat Export Federation, the composition of the exporting companies in our organization, there are maybe eight companies that are over $1 billion as far as total size. This is a program for the small holders. And we have so many companies that are just family companies that are exporting and doing very well at it.

This is an enabling program for us to get into new markets, not just the existing markets but new markets, and it has been very successful. So the competition is intense. Both competition from the private-sector and competition from governments who are very, and more than willing to subsidize their exporters in these endeavors.

The CHAIRMAN. Pardon me. If you had to list two countries that are our top two competitors, those who have really amped up their game on this front, who would that be?

Mr. SENG. Well, I would say right now, the European Union, as a result of the closure of the Russian market, has taken new steps as far as their entrée into Asia. They have displaced the United States, they have displaced other competitors, the Canadians, *et cetera,* Japan, Korea, Philippines, Vietnam. They have 80 percent market share in Vietnam as far as pork. I would say also Australia has been a very formidable competitor to us as well. They are not open to U.S. beef at this point in time, after 13 years, but they compete very handsomely with us in a lot of these markets.

So I would say those two countries; Australia and probably the European Union, are two very formidable competitors right now.

The CHAIRMAN. Thank you. My time has expired.

Mr. Costa.

Mr. COSTA. Thank you very much, Mr. Chairman. I want to make note that I concur with the comments you made earlier in terms of the challenge that we have before us as we write the new farm bill.

I want to, Mr. Seng, underline the comment you just made because some of this debate here doesn't square with the facts. The

European Union is doing precisely what you said, and they negotiate as a common market as the Union. They are not allowed to do bilateral agreements. And by the way, our trade with the European Union constitutes almost ½ of the world's trade. We will see what happens with the UK and what terms they end up breaking away, if, in fact, they do, there is some debate about that. But the fact of the matter is that we have to recognize that different blocks around the world negotiate treaties on that basis.

Let me just be frank with all of you. You are preaching to the choir here with this Subcommittee and the Agriculture Committee. We are going to need your efforts, your organizations' efforts, and all the folks you represent out there as we try to put this farm bill together. That is just the bottom line. And your testimony, obviously, substantiates the large degree of economic benefits that accrue, not just to American agriculture, but to America's entire economy. We have to be able to make that statement much more succinctly and clearer.

Mr. Wenger, you did a good job in talking about some examples in California, and we have talked many times about this, but how do we explain in that sense to urban dwellers in America, when we are looking at our budget this year and we are looking at the farm bill, who might wonder what are the benefits from using taxpayer dollars to fund these programs?

Mr. WENGER. Thank you, Mr. Costa. Just to reiterate what I said before, as we talk about the farm bill in general, and I say I am from agriculture, and they talk about subsidies and other things, and this has come up from time to time to folks, but——

Mr. COSTA. It is called a subsidy by many.

Mr. WENGER. Pardon me?

Mr. COSTA. It is called a subsidy by many.

Mr. WENGER. Yes, it is. And I say, well, it is interesting that, as I said earlier, once the almonds and the walnuts leave my farm, there are a lot of people put to work; people that are trucking, that are processing, and the folks that work in the different processing plants. And certainly, Blue Diamond is a major contributor and component of our almond industry, but there is a lot more, and those put an awful lot of people to work every single day. And so they come to work for a salary, and so their tax dollars, what little bit of it would go into this type of a program for MAP funding or to help develop under FMD, those are coming back to them, because if we take those products and market them around the world, we are helping the rest of the world grow richer by imports that we bring into here. But as we see the growing middle class around the world, the one thing that they want is agricultural products from the United States, especially the Pacific Rim, California.

Mr. COSTA. They want better nutrition, higher protein, and we do that well.

In this highly competitive global marketplace that we live in today, where I stated in my opening comments that the trade is not always fair, what would be the consequences do you think if, in the farm bill, these programs were further reduced or eliminated? And you can all comment, Paul, but please, anyone.

Dr. WILLIAMS. I can answer some of that, at least with numbers. We actually did that particular analysis in our study. We simulated what would happen, what would the world look like if these programs did not exist. And the answer is that we would lose 240,000 jobs in any particular year, we would lose about $39.3 billion in output in this country, $16, $17 billion in GDP, and labor income would drop by about $10 billion. So just on the economy side, it would be fairly devastating.

Mr. COSTA. Mr. Williams, would you provide that information to all the Members of the Subcommittee and full Committee? We can use that to substantiate our case and enter it into the record.

Dr. WILLIAMS. Yes, sir, I would be happy to, Mr. Costa.

[The information referred to is located on p. 107.]

Mr. COSTA. Yes. The final comment or question, I don't know who would like to take it on, but we can talk about the European Union and how they exceed our levels in terms of changing the level of competition, unfairly I might add. I mean really, what a lot of these agreements are all about is trying to level the playing field. Right? Level the playing field. So what would you suggest as we look upon the farm bill and future trade agreements?

Mr. WENGER. Try to be more specific. I guess we are having a little trouble understanding. As far as this funding?

Mr. COSTA. Well, as far as the funding, we are going to have to have future trade agreements, right? I mean without them it becomes a leverage game, and we get retaliatory tariffs and then we get into a trade war, and that is my greatest fear.

Mr. WENGER. Well, certainly, it is a fear of all of us, in particular in California with the various commodities we have. Again, we have been very supportive of TPP. NAFTA, while it has had its issues, it has still been a good trade agreement. Certainly, TPP even fixed a few of the things that needed to be fixed from agriculture's perspective, had TPP passed. It is great to be able to do bilaterals, but we all know that once you get two people together and now you try to bring in a third, how are you are going to be able to settle that, because everybody wants the better deal with the other one. And so in our view, multilateral trade agreements are better. No matter what, we have seen that because of some of the phytosanitary issues, and nontariff trade barriers that we have been able to use some of the TASC funds for the specialty crops to be able to get around some of those.

So that is why, no matter what happens here in the next few months or next couple of years on trade agreements, these kind of funds are very, very important.

Mr. COSTA. Well, and my time has expired, Mr. Chairman, but you point out something that we all ought to keep in mind; the nontariff trade barriers are a big, big part of facilitating trade agreements. And that is part of the handicap that American agriculture too often has.

The CHAIRMAN. The gentleman from Tennessee, Mr. DesJarlais.

Mr. DESJARLAIS. Thank you, Mr. Chairman. I appreciate all you gentlemen being here today and giving your testimony.

Mr. Seng, I had a few questions for you. The U.S.'s ability to work its way into the beef market in South Korea is certainly a success story about our capabilities in becoming a key player in for-

eign markets that were initially reluctant to importing U.S. products. Following the 2008 protest in Seoul, South Korea, against the importation of U.S. beef, we became the top supplier by 2016. These sales even exceeded $1 billion in 2016, which is a substantial increase over the pre-Korea Free Trade Agreement sales levels. How are you investing in market development in Korea, and how has that investment helped build consumer confidence in U.S. beef?

Mr. SENG. Yes. In Korea, we work it basically from the left to the right, if you will. There are importers, and then we work through the whole food service establishments, and as far as Korea, we work it to the retail, and we work it right down to the consumers. Our programs basically are pretty profound at the fact that they reach from the border all the way to the consumer. And we recognize consumers vote every day, and that was one of the issues that we had in Korea, as you know, back in 2008. But initially in 2008, we couldn't even get an advertising agency to say we would want to promote U.S. beef in the market. They thought that was such a negative.

And so there has been a tremendous amount of work that was done, and all this was done through working through the channels, working through very judiciously developed supply chains, which was done with the MAP program and FMD program and industry dollars that were attracted because of those programs. And after about 10 years of this steady persistence in the market, that is how we did achieve this, but it is a long pull.

But, trade access, and this goes back to the earlier question, is very important, but trade access does not guarantee, for example, market share. Trade access does not help remove some of the SPS barriers that we deal with that surface when we are working in these markets. It doesn't qualify customers, it doesn't build supply chains. All these types of things that we are doing, you can call it soft marketing, if you will, but these things are really what dignify trade negotiations. And that was proven to us in Korea, we proved the same thing in Japan, and this is really the importance of the MAP and the FMD program is that it is that constant commitment to the market that is unwavering, and that is very important in the international marketplace.

Mr. DESJARLAIS. Okay, thank you. And most U.S. beef though is consumed domestically. It is my understanding that Japan and other countries in Asia have proven to be growing premium markets for beef cuts that Americans find less desirable. What are these cuts and what are we doing to promote them in Japan and other Asian markets?

Mr. SENG. Well, that is what we call the fifth quarter. There is a lot of work that has been done, for example, like beef tongue in the United States sells for three times more than it will in the United States. I think that is the beauty of the export market; every pound of meat that we export is sold for more in the international marketplace than it would be sold here. And so what we have taken as an example is Mountain Chain Tripe; tripe that we don't eat much in this country. It is valued in Japan, and we will get, again, a premium of two to three times what it costs in the United States.

So we take a look at a market, and we look at the international marketplace like it is a mosaic, and as we look at different countries, what kinds of products will apply to these different countries. And this is the export success that we have is, we have a diversified portfolio, going to almost 100 countries and maximizing the value of each cut of each item that goes into these various markets. And that has really been the success.

So today, the average producer in the United States that is producing beef receives about a $275 export dividend. That is the premium you get from the export market. It is $60 on a market hog.

Mr. DESJARLAIS. Okay. And finally, in our last minute here, China is the fastest growing beef market in the world, and we are missing out on a crucial market share with the current ban. Aside from market share programs, what are some other means available so that we can continue to restore international confidence in our beef exports to increase the likelihood China reopens its market to U.S. beef?

Mr. SENG. That is a very tough question, because for 13 years now we have been denied access to the Chinese market. I think that we are always trying to figure out how we can work with the Chinese. We are working—let's say there is the closed market of China, but the USMEF with our industry partners, are working behind the wall, if you will. We are trying to build clientele, we are trying to develop supply chains, we are trying to create a demand pool from within the market, so once that market does open up we are ensconced already in the market. That is the same kind of example we did in Japan 30 years ago, but we think that is going to be the recipe for success. We have to have some demand pool from the Chinese themselves. And you are right, it is the fastest growing market in the last 10 years; last year over $1.2 billion, 1.2 million metric tons were exported to China.

Mr. DESJARLAIS. Thank you, Mr. Seng.

Mr. SENG. You bet.

Mr. DESJARLAIS. I yield back.

The CHAIRMAN. Thank you. I now want to move to Dwight Evans, a new Member from Pennsylvania. Welcome to the Subcommittee.

Mr. EVANS. Thank you, Mr. Chairman. Mr. Chairman, I would like to pick up a little bit on the question around the jobs. I heard that you mentioned over 240,000 jobs could be effected. When you say the 240,000 jobs, is that the jobs beyond the agricultural sector too?

Dr. WILLIAMS. Yes. Mr. Evans, in the ag sector, and this is agriculture and agrifood, it is 94,000 jobs, but overall through the entire economy we are talking up to 240,000. Yes, sir.

Mr. EVANS. I also heard a question, can you speak to the current technical assistance provided by the Technical Assistance for Specialty Crops program that is being provided, and the benefits of an increase in this program, can you speak to that issue, Mr. Wenger?

Mr. WENGER. Yes, most consider that as far as the Technical Assistance for Specialty Crops, probably if we could maintain funding there, there is not as big of a need to increase that funding as what we would like to see increase in MAP funding and FMD funding.

Usually, when you take care of a sanitary/phytosanitary, nontariff trade barrier, usually it is around inspections, pests, and things like that, then you have solved that problem. It is not an ongoing issue. So from our standpoint, when you are looking at the challenged financial situation where you get the best bang for the buck, we would say MAP funding and FMD funding.

Mr. EVANS. I would like to go back again about the jobs. When you talk about the jobs, you talked about the aspect of terms of the dollar impact, and repeat that again in terms of the impact, in terms of cost aspect of what it can mean in loss.

Dr. WILLIAMS. Jobs as well as the other impacts? Across the entire economy, this is a multiplier effect that happens. First, you have the impact in the ag community because there are more exports, right, and that generates revenue within the ag community. And then there is spending on input suppliers as well as household spending, as well as up and down the supply chain there is additional spending. We have more transportation, more transportation needs more fuel, more fuel means others working. So all the way along the supply chain that additional revenue coming in generates jobs up and down the supply chain. And so when I tell you there are 240,000 more jobs, I am talking not just in agriculture, and not only up and down the supply chain, but across the economy as that multiplies out from agriculture through everything from transportation to even consumer goods, because the people that earn money as a result of that go out and spend money for Christmas for toys and other things. So there is a whole multiplier effect throughout the whole economy. So that is where those jobs come from, and that is where the additional sales output number I told you of $39.3 billion in additional gross sales or output, because of that, all those additional sales that happen both sort of backward linkages from agriculture into the input industry, and forward linkages into the rest of the economy. And GDP, that is an additional $16.9 billion in additional gross domestic product being generated as a result of that.

So this is a phenomenon that happens not just in agriculture, but radiates out from agriculture through the economy as a result of spending, and additional spending, and re-spending as those dollars multiply through and generate jobs through the economy.

Mr. EVANS. Mr. Chairman, I yield back the balance of my time.

The CHAIRMAN. Thank you.

Mr. Marshall.

Mr. MARSHALL. Yes, thank you, Mr. Chairman.

I was invited last week to go back to the first farm bill ag hearing in my home state with Senator Roberts. I was expecting to talk about the farm bill. Probably the biggest feverish issue was trade though. I mean it reached a fever pitch that my ag producers are just, I hate to say panicked, but were very, very concerned.

So I guess my first question to Dr. Williams, those finite resources, I am trying to figure out how much money to allocate towards Title I, towards crop insurance *versus* these programs. How would you help me prioritize a little bit where to place those monies?

Dr. WILLIAMS. Mr. Marshall, I wouldn't presume to tell you how to spend my money——

Mr. MARSHALL. Yes, sir.

Dr. WILLIAMS.—but I can tell you that these particular programs are different in the sense that not only did they help support the ag economy and the rest of the economy, they also return money back, so there is a return on the investment. So these other programs, they spend and you generate some incomes there, but this is actually a sort of investment. I think about this as being an investment kind of program.

I believe in crop insurance. It is a critical program for our country. I believe in the safety net programs. They are critical for the country. But, as an important component of all of that, you also have to have the trade aspect of our programs working, and FMD and MAP are a critical component, according to our research, of maintaining a viable agricultural community.

So I wouldn't say that you need to shift money out of FMD. In fact, in my view, from my research and my background, we are spending too little. Let me tell you why. That $28 per $1 spent that we return back, that tells you actually that we are spending too little. What that says is that we are leaving $28 out there that we are not getting for every $1 we are not spending. For every $1 additional we spend, we are going to get another $28.

Mr. MARSHALL. Yes. Okay. I think there is obviously some saturation there eventually.

My next question is for Mr. Seng. Mr. Seng, we don't have a Secretary of Agriculture confirmed, we don't have a Trade Ambassador confirmed, and our President says we have good trade agreements, he wants better, that he wants bilateral trade agreements. The people that are out there in the trenches that are in these foreign countries working for us, doing this, how much are they being impacted by the lack of these people in position, and how do you feel going to these bilateral trade agreements will impact agriculture and what your people do out there in the field?

Mr. SENG. Right. Well, it is really hard at this point in time to understand exactly what direction the President is leading us as far as these bilateral agreements. A lot of us spend a lot of time, and we work with some very fine people who worked very hard on TPP, and we could see that there was one chapter on market access but there were 27 other chapters in TPP.

What we are concerned about is this: And I was just in Mexico a week ago, and what I am picking up in Mexico both from the trade, from organizations, and from the government, is this big area of uncertainty. People don't know what is coming.

Mr. MARSHALL. Right.

Mr. SENG. And without a Secretary of Agriculture, without leadership on agriculture at this point in time, and I say that very carefully, our buyers around the world are becoming insecure. The hallmark of U.S. trade policy and of U.S. diplomatic policy has always been that we look at agriculture as probably the most important diplomatic tool that we have. And we have said for years, going back to Kika de la Garza and way back even before him, we have said for years that even though you are not self-sufficient, you can be food-secure because you can depend on the United States as a supplier. What is being called into question now is with this uncertainty, with what is going on especially south of the border,

where Mexico at one point in time looked north for all the sources of their corn, soybeans, wheat, you name it, beef, pork, now they are starting to look south. And that is the government policy of diversification, but we are seeing the same thing when it comes to the private-sector. And from their standpoint, it is a food security issue.

And so all of a sudden, issues that become a question of—it is not so much whether we sell more product here or there, but it is a food security issue for a lot of these countries.

Mr. MARSHALL. Okay.

Mr. SENG. And this is something that we need to really take into consideration.

Mr. MARSHALL. Okay. Border adjustment tax, is that impacting anybody out in the field, that conversation. Does anyone want to grab that one real quick? The concept of a border adjustment tax, is that scaring people out in the fields?

Mr. WENGER. Well, it is a double-edged sword, but certainly, for a lot of folks, some of the criteria we have to produce under, I don't think they are quite so worried about that because with the regulations, especially in California, that we have to deal with today when we see that we now have an 8 hour workday, 40 hour workweek in agriculture coming up, it is mindboggling. Weather doesn't dictate an 8 hour workday, 40 hour workweek. But we see a lot of producers going to Mexico, and so we would be competing with that product. So I would think some people would probably relish the idea that there would be some leveling playing field for producers who go to Mexico, and want to bring that product in here and compete with domestic producers.

The CHAIRMAN. Thank you, Mr. Marshall.

We are going to have votes coming up here before long, so we are going to wrap it up here. But I want to offer an opportunity for Mr. Costa to make any closing remarks he may have, and then I have a few remarks myself.

Mr. COSTA. Well, thank you again, Mr. Chairman, Members of the Subcommittee. I am looking forward to this year as we reauthorize the farm bill. And as I said to you a moment ago, today's hearings begin to draw a line in the sand, but we certainly cannot do this by ourselves. There is going to be heavy lifting and a lot of these programs we understand the validity and the importance of, but a lot of other folks do not. And, therefore, we are going to insist in your help big time if we are going to be successful. And I will work, in a bipartisan way, every day I can with the Chairman of this Subcommittee and with my colleagues on both sides of the aisle to produce a farm bill in this Congress, because that is the goal line.

The CHAIRMAN. Thank you, Mr. Costa.

I want to thank all the witnesses for your testimony today. It has really, really been great. You have certainly helped to beef-up the record on this particular issue.

And in closing, I want to share a little example. As some of you may know, I served in the state legislature, in the State Senate specifically, for two terms. I was in the Minority my first term, in the Majority my second term. And the second term in the Majority, I co-chaired what was known as the NAR Subcommittee, which

those of you up here would know as Agriculture Appropriations in Washington, D.C., here on Capitol Hill. When I was Chairman, we included $300,000 of seed money for market promotion for sweet potatoes, specifically in Europe. And we went from roughly, I believe, $42 million exported to Europe, to now today with that recurring funding of $300,000 to $500,000, I believe the total exports are about $124 million or so. That is a substantial return on investment that is really just a microcosm or small example of the much bigger picture here. And so we need to do everything we can to ensure that these programs remain funded, and hopefully increase the amount of mandatory funding that we can get to them, because we are going to reap the results and the benefits many times over the investment. And so anything and everything that you all can do, outside groups and farmers and ranchers all across the country, even those who pronounce *almond amond,* we need everybody's help. And I implore you to do everything possible to maximize our leverage on that front.

With that, under the Rules of the Committee, the record of today's hearing will remain open for 10 calendar days to receive additional material and supplementary written responses from the witness to any question posed by a Member.

This hearing of the Subcommittee on Livestock and Foreign Agriculture is adjourned.

[Whereupon, at 3:41 p.m., the Subcommittee was adjourned.]

[Material submitted for inclusion in the record follows:]

SUPPLELMENTARY INFORMATION SUBMITTED BY GARY W. WILLIAMS, PH.D., PROFESSOR OF AGRICULTURAL ECONOMICS AND CO-DIRECTOR, AGRIBUSINESS, FOOD, AND CONSUMER ECONOMICS RESEARCH CENTER, DEPARTMENT OF AGRICULTURAL ECONOMICS, TEXAS A&M UNIVERSITY

In the hearing of the Subcommittee on Livestock and Foreign Agriculture on February 28 (*The Next Farm Bill: International Market Development*), Ranking Member Costa requested additional information on the likely consequences of eliminating or substantially reducing the funding for the USDA MAP and FMD programs. In response, I have attached the results of our analysis of the consequences of eliminating those programs for U.S. agricultural exports, the U.S. farm economy, and the overall general U.S. economy entitled: "Economic Consequences of Eliminating Funding for USDA Export Market Development Programs".

To help respond to questions by other Subcommittee Members, I have attached two more files summarizing other key results from our study of the USDA Export Market Development Programs:

- "Economic Consequences of Increased Funding for the USDA Export Market Development Programs"[; and]
- "Historical Benefits of USDA Export Market Development Programs".

Please let me know if I can be of further service to the Subcommittee.

Dr. WILLIAMS.

Insert 1

Dr. WILLIAMS. I can answer some of that, at least with numbers. We actually did that particular analysis in our study. We simulated what would happen, what would the world look like if these programs did not exist. And the answer is that we would lose 240,000 jobs in any particular year, we would lose about $39.3 billion in output in this country, $16, $17 billion in GDP, and labor income would drop by about $10 billion. So just on the economy side, it would be fairly devastating.

Mr. COSTA. Mr. Williams, would you provide that information to all the Members of the Subcommittee and full Committee? We can use that to substantiate our case and enter it into the record.

Dr. WILLIAMS. Yes, sir, I would be happy to, Mr. Costa.

Economic Consequences of Eliminating Funding for the USDA Export Market Development Programs

U.S. economic losses that would occur from completely eliminating USDA Market Development Programs (FMD/MAP funding) with cooperators responding by cutting their funding of export promotion by 50% (see *Tables 1* and *2*)[1] based on recent research study:[2]

U.S. Agricultural Export Losses

- Annual average loss of $14.7 billion (7.9%) in U.S. agricultural export value.
- Loss of $235.2 billion in export value over a 15 year period.

U.S. Agricultural Sector Losses[3]

- Annual average losses:
  - *U.S. farm cash receipts:* Between $7.0 billion (2.2%)–$9.9 billion (3.1%)
  - *U.S. net cash farm income:* Between $2.4 billion (3.7%)–$2.5 billion (3.8)
  - *U.S. farm asset value:* Between $0.7 billion (0.03%)–$1.3 billion (0.1%).
- Losses in employment (full and part-time jobs) in the agrifood sector (food product processing as well as production agriculture):
  - 64,400 jobs (1.7%)—102,800 jobs (2.6%)

[1] All changes relative to flat funding over 5 years (continued current levels of authorized funding over 5 years).

[2] Williams G.W., J.J. Reimer, R.M. Dudensing, B.A. McCarl, H.M. Kaiser, J. Somers, "Economic Impact of USDA Market Development Programs," Informa Economics, IEG, Prepared for U.S. Wheat Associates, USA Poultry & Egg Export Council, Pear Bureau Northwest, and the USDA Foreign Agriculture Service, June 2016. Available on-line at: *http://www.agexportscount.com/developing-markets/*.

[3] The range of losses refers to the results from conducting the analysis under two alternative assumptions—full employment and less than full employment. The smaller losses are generally associated with the full employment assumption.

U.S. Economy Losses

- Average annual losses:
  - *U.S. economic output (sales):* Between $3.6 billion (0.01%)–$45.3 billion (0.2%)
  - *U.S. GDP:* Between $2.6 billion (0.02%)–$19.5 billion (0.1%)
  - *U.S. labor income:* Between $0.9 billion (0.01%)–$11.3 billion (0.1%).
- Losses in U.S. employment (full and part-time jobs):
  - Up to 278,600 full- and part-time jobs across the entire economy (0.2%).
- U.S. regional annual average losses (see *Table 2*):
  - *Northeast:* $2.02 billion in sales, $841.5 million in GDP, and $483.1 million in labor income
  - *South:* $8.85 billion in sales, $3.48 billion in GDP, and $2.05 billion in labor income
  - *Midwest:* $15.93 billion in sales, $6.43 billion in GDP, and $3.68 billion in labor income
  - *West:* $6.97 billion in sales, $3.25 billion in GDP, and $1.97 billion in labor income
- U.S. regional average employment losses (see *Table 2*):
  - *Northeast:* 10,800 jobs
  - *South:* 64,500 jobs
  - *Midwest:* 94,100 jobs
  - *West:* 44,700 jobs

Table 1: Average Annual Losses by the U.S. Farm Sector and General Economy from Eliminating USDA Export Market Development Funding [a]

Sector	Less than Full Employment		Full Employment	
	Average Annual Loss	Percent Loss	Average Annual Loss	Percent Loss
Agriculture Sector	**$U.S. billions**	%	**$U.S. billions**	%
Farm cash receipts	9.9	3.1	7.0	2.2
Net cash farm income	2.5	3.8	2.4	3.7
Farm assets	1.3	0.1	0.7	0.03
	1,000 jobs		**1,000 jobs**	
Employment in agrifood sector [b]	102.8	2.6	64.4	1.7
U.S. Economy	**$U.S. billions**	%	**$U.S. billions**	%
U.S. Output (Gross Sales)	45.3	0.2	3.6	0.01
U.S. GDP	19.5	0.1	2.6	0.02
U.S. Labor Income	11.3	0.1	0.9	0.01
	1,000 jobs		**1,000 jobs**	
U.S. Employment [b]	278.6	0.20	—	—

Note: — = No change since labor is always fully employed. See Note b.

[a] Assumes that cooperator groups respond by cutting back their funding of export promotion by 50%. All changes shown are averages over a 5 year period relative to the flat funding base value (2010) which is the average annual level of a variable in the absence of the promotion program.

[b] In the full employment analysis, by definition all labor is always fully employed so while labor can be shifted from one industry to another, the total employment is not allowed to change. In the less-than-full-employment scenario, employment can increase as labor shifts among industries but also because labor can be hired from the ranks of the unemployed.

Table 2: Average Annual Losses by the U.S. Farm Sector and General Economy from Eliminating USDA Export Market Development Funding by Census Region [a]

	Northeast	South	Midwest	West
	millions of $U.S. (2010)			
Output (Gross Sales)	2,022.8	8,845.5	15,931.6	6,969.1
GDP	841.5	3,480.7	6,432.2	3,248.0
Labor Income	483.1	2,051.6	3,679.0	1,965.0
	thousands of jobs			

Table 2: Average Annual Losses by the U.S. Farm Sector and General Economy from Eliminating USDA Export Market Development Funding by Census Region [a]—Continued

	Northeast	South	Midwest	West
Employment (thousands of jobs)	10.8	64.5	94.1	44.7

[a] Assumes that cooperator groups respond by cutting back their funding of export promotion by 50%. Analysis assumes less than full employment. Full employment is not necessarily a useful concept in a regional context since labor can flow from one region to another easily given a change in demand in some region.

Insert 2

Economic Consequences of Increased Funding for the USDA Export Market Development Programs

U.S. economic benefits that would occur from increasing funding for the USDA Market Development Programs (FMD/MAP funding) over a 5 year period under two alternative increased funding scenarios as reported in a recent research report [1] are listed below.

The two future funding scenarios simulated:

- *Scenario 1:* Government expenditures for MAP and FMD doubled over 5 years through annual increments of $46.9 million to a total of $469 million (double the base year) with cooperator contributions increasing approximately 10% in the first year to $515.6 million and then remaining flat at that level for the following 4 years.
- *Scenario 2:* Government expenditures for MAP and FMD again doubled over 5 years as in the first scenario but cooperator contributions increased by 50% over that period through annual increases of $46.9 million for a total of $703.6 million by the end of the 5 year period.

Economic benefits that would accrue under the two scenarios as illustrated in *Figure 1* and shown in *Tables 1* and *2:* [2]

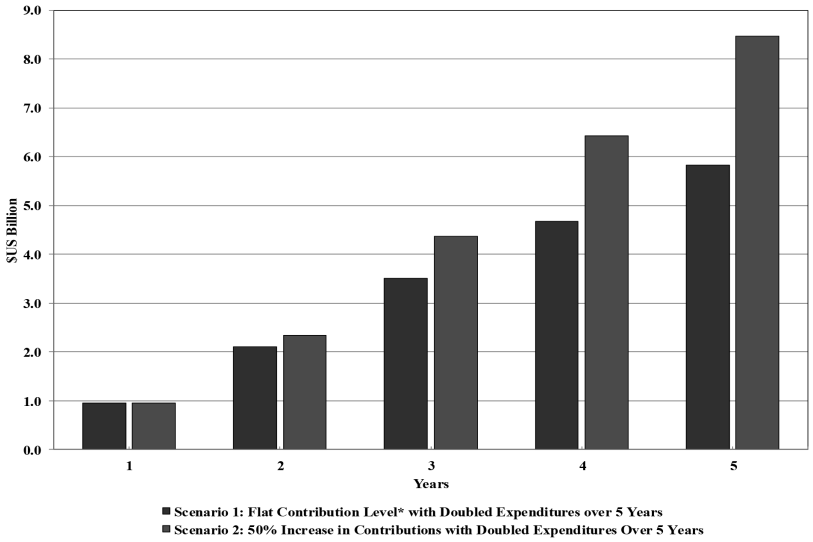
- *Export gains would be substantial under both scenarios.*
  - *Average annual gain in U.S. agricultural exports:* $3.4 billion and $4.5 billion under Scenarios 1 and 2, respectively (*Figure 1*). Five year gain of $17.1 billion and $22.5 billion, respectively, under the two scenarios.
- *Returns to farmer and taxpayer dollars invested would be high:*
  - *Scenario 1:* Benefit-cost ratio (BCR) of $18.2 for every additional dollar invested in export market development.
  - *Scenario 2:* BCR of $16 for every additional dollar invested in export market development.
- *Gains to the farm economy would be equally substantial under both scenarios.*
  - *U.S. farm cash receipts:* Average annual gains of up to $2.2 billion under Scenario 1 and up to $2.9 billion under Scenario 2. Total contribution over 5 years of up to $11.1 billion under Scenario 1 and $14.6 billion under Scenario 2.
  - *U.S. net cash farm income:* Average annual gains of up to $0.5 billion and $0.7 billion, respectively, under the two scenarios. Five year gains of up to $2.7 billion and $3.5 billion under the two scenarios, respectively.
  - *U.S. farm asset values:* Average annual gains of up to $0.29 billion and $0.4 billion, respectively, under the two scenarios, Five year gains of up to $1.5 billion and $1.9 billion, respectively.
  - *Agrifood Sector Employment:* A contribution of up to 24,200 new jobs under Scenario 1 and up to 31,900 new jobs under Scenario 2.
- *The overall U.S. economy would experience a substantial multiplier effect from the farm economy boost under both scenarios.*

[1] Williams G.W., J.J. Reimer, R.M. Dudensing, B.A. McCarl, H.M. Kaiser, J. Somers, "Economic Impact of USDA Market Development Programs," Informa Economics, IEG, Prepared for U.S. Wheat Associates, USA Poultry & Egg Export Council, Pear Bureau Northwest, and the USDA Foreign Agriculture Service, June 2016. Available on-line at: *http://www.agexportscount.com/developing-markets/*.

[2] All changes are relative to flat funding over 5 years (continued current levels of authorized funding). Also, changes in text refer to an assumption of less than full employment. *Tables 1* and *2* show the changes under the assumptions of both full and less-than-full employment.

- *U.S. economic output (sales):* Average annual gains of up to $10.6 billion and $14.0 billion under the two scenarios, respectively. Five year gains of up to $53.1 billion and $70.0 billion under the two scenarios, respectively.
- *U.S. GDP:* Average annual gains of up to $4.5 billion and $6.0 billion under the two scenarios, respectively. Five year gains of up to $22.7 billion and $30.0 billion, respectively, under the two scenarios.
- *U.S. labor income:* Average annual gains of up to $2.6 billion and $3.5 billion under the two scenarios, respectively. Five year gains of up to $13.1 billion and $17.5 billion under the two scenarios, respectively.
- *U.S. employment (full and part-time jobs):* Contribution of up to 64,000 new jobs under Scenario 1 and up to 84,600 new jobs under Scenario 2.

Figure 1: Simulated Annual Gains in U.S. Export Revenue Achieved Under USDA Export Market Development Funding Scenarios 1 and 2 [a]



* 10% increase in first year over baseline and then flat for next 4 years.

[a] Changes relative to flat funding over 5 years (continued current levels of authorized funding).

Table 1: Scenario 1—Average Annual Gains by the U.S. Farm Sector and General Economy from Increased USDA Export Market Development Funding [a]

Variable	Less than Full Employment		Full Employment	
	Average Annual Gain	Percent Gain	Average Annual Gain	Percent Gain
Agriculture Sector	**$U.S. billions**	%	**$U.S. billions**	%
Farm cash receipts	2.2	0.7	1.8	0.6
Net cash farm income	0.5	0.8	0.5	0.9
Farm assets	0.29	0.01	0.19	0.01
	1,000 jobs		**1,000 jobs**	
Employment in agrifood sector [b]	24.2	0.6	17.2	0.4
U.S. Economy	**$U.S. billions**	%	**$U.S. billions**	%
U.S. Output (Gross Sales)	10.6	0.04	1.3	0.005
U.S. GDP	4.5	0.03	0.8	0.006
U.S. Labor Income	2.6	0.03	0.3	0.004
	1,000 jobs		**1,000 jobs**	
U.S. Employment [b]	64.0	0.04	—	—

Note: — = No change since labor is always fully employed. See Note b.

[a] All changes shown are averages over a 5 year period relative to the flat funding base value (2010) which is the average annual level of a variable in the absence of the promotion program.

[b] In the full employment analysis, by definition all labor is always fully employed so while labor can be shifted from one industry to another, the total employment is not allowed to change. In the less-than-full-employment scenario, employment can increase as labor shifts among industries but also because labor can be hired from the ranks of the unemployed.

Table 2: Scenario 2—Average Annual Gains by the U.S. Farm Sector and General Economy from Increased USDA Export Market Development Funding [a]

Variable	Less than Full Employment		Full Employment	
	Average Annual Gain	Percent Gain	Average Annual Gain	Percent Gain
Agriculture Sector	**$U.S. billions**	%	**$U.S. billions**	%
Farm cash receipts	2.9	0.9	2.3	0.7
Net cash farm income	0.7	1.1	0.7	1.1
Farm assets	0.4	0.02	0.3	0.01
	1,000 jobs		**1,000 jobs**	
Employment in agrifood sector [b]	31.9	0.8	22.7	0.6
U.S. Economy	**$U.S. billions**	%	**$U.S. billions**	%
U.S. Output (Gross Sales)	14.0	0.06	1.7	0.007
U.S. GDP	6.0	0.04	1.1	0.007
U.S. Labor Income	3.5	0.04	0.4	0.005
	1,000 jobs		**1,000 jobs**	
U.S. Employment [b]	84.6	0.05	—	—

Note: — = No change since labor is always fully employed. See Note b.

[a] All changes shown are averages over a 5 year period relative to the flat funding base value (2010) which is the average annual level of a variable in the absence of the promotion program.

[b] In the full employment analysis, by definition all labor is always fully employed so while labor can be shifted from one industry to another, the total employment is not allowed to change. In the less-than-full-employment scenario, employment can increase as labor shifts among industries but also because labor can be hired from the ranks of the unemployed.

Insert 3

Historical Benefits of USDA Export Market Development Programs

The benefits of the USDA Export Market Development Programs (FMD/MAP) over history on U.S. agricultural exports, the U.S. agricultural sector, and the broader U.S. economy according to a recent study [1] are listed below and summarized in *Tables 1* and *2:*

U.S. Agricultural Export Benefits (1977–2014)

- Annual average addition of 15.3% ($8.15 billion) to the value of U.S. agricultural exports, 8.0% (11.5 million mt) to the *volume* of aggregate U.S. agricultural exports, and about 6.7% ($25.07/mt) to the aggregate *price* of U.S. agricultural exports.
- A total of $309.7 billion in additional export revenues and 437 million metric tons of additional export volume over the entire period.
- Net export revenue *benefit-cost ratio (BCR)* of 28.3. That is, over their history, the programs have generated a net return of $28.30 in additional export revenue for every dollar invested in export promotion.

U.S. Agricultural Sector Benefits (2002–2014)

Two scenarios were considered: (1) full employment (full) and (2) less than full employment (less). Benefits of the USDA Export Market Development Programs under the two scenarios:

- Annual average additions:
  - *U.S. farm cash receipts:* $8.4 billion (2.7%) (full) and $8.7 billion (2.8%) (less).
  - *U.S. net cash farm income:* $1.1 billion (1.8%) (full) and $2.1 billion (3.7%) (less).
  - *U.S. farm asset value:* $1.0 billion (0.05%) (full) and $1.1 billion (0.1%) (less).
- Total additions over the entire 2002–14 period:
  - *U.S. farm cash receipts:* $109.2 billion (full) to $113.1 billion (less)

[1] Williams G.W., J.J. Reimer, R.M. Dudensing, B.A. McCarl, H.M. Kaiser, J. Somers, "Economic Impact of USDA Market Development Programs," Informa Economics, IEG, Prepared for U.S. Wheat Associates, USA Poultry & Egg Export Council, Pear Bureau Northwest, and the USDA Foreign Agriculture Service, June 2016. Available on-line at: *http://www.agexportscount.com/developing-markets/*.

- *U.S. net cash farm income:* $14.3 billion (full) and $27.3 billion (full)
- *U.S. farm asset value:* $13.0 billion (full) and $14.3 billion (less).

- Contribution to employment (full and part-time jobs) in the agrifood sector (food product processing as well as production agriculture):
  - 93,900 (2.4%) jobs (less) and 90,000 (2.3%) jobs (full)

U.S. Economy Benefits (2002–2014)

The full employment (full) and less than full employment (less) scenarios considered here as well. Benefits of the USDA International market Development Programs under the two scenarios:

- Average annual additions of U.S. economic activity:
  - *U.S. economic output (sales):* $7.1 billion (full) and $39.3 billion (less)
  - *U.S. GDP:* $4.4 billion (full) and $16.9 billion (less)
  - *U.S. labor income:* $1.7 billion (full) and $9.8 billion (less).
- Total additions to the U.S. economy over the entire 2002–14 period:
  - *U.S. economic output (sales):* $510.9 billion (full) and $92.3 billion (less)
  - *U.S. GDP:* $219.7 billion (full) and $92.3 billion (full)
  - *U.S. labor income:* $22.1 billion (full) and $127.4 billion (less)
- Contributions to U.S. employment (full and part-time jobs):
  - Up to 239,800 full- and part-time jobs across the entire economy.
  - Reduction in U.S. unemployment by up to 3.0%.
- GDP contribution (average annual) by industry (*Table 2*):
  - Service industry: $1.89 billion (full) and $7.20 billion (less)
  - Agriculture and agribusiness: $1.47 billion (full) and $5.62 billion (less)
  - Wholesale and Retail trade: $0.37 billion (full) and $1.40 billion (less)
  - Other: $0.70 billion (full) and $2.68 billion (less)

Table 1[a]: Average Annual Historical Gains by U.S. Agriculture Sector and General U.S. Economy from the USDA Export Market Development Programs, 2002–2014

Sector	Less than Full Employment		Full Employment	
	Average Annual Gain	Percent Change	Average Annual Gain	Percent Change
Agriculture Sector	**$U.S. billions**	%	**$U.S. billions**	%
Farm cash receipts	8.4	2.7	8.7	2.8
Net cash farm income	2.1	3.7	1.1	1.8
Farm assets	1.1	0.1	1.0	0.05
	1,000 jobs		**1,000 jobs**	
Employment in agrifood sector[b]	93.9	2.4	90.0	2.3
U.S. Economy	**$U.S. billions**	%	**$U.S. billions**	%
U.S. Output (Gross Sales)	39.3	0.2	7.1	0.03
U.S. GDP	16.9	0.1	4.4	0.03
U.S. Labor Income	9.8	0.1	1.7	0.02
	1,000 jobs		**1,000 jobs**	
U.S. Employment[b]	239.8	0.14	—	—

Note: — = No change since labor is always fully employed. See Note b.

[a] All changes shown are annual average contributions to the historical average value over the period of 2002–2014.

[b] In the full employment analysis, by definition all labor is always fully employed so while labor can be shifted from one industry to another, the total employment is not allowed to change. In the less-than-full-employment scenario, employment can increase as labor shifts among industries but also because labor can be hired from the ranks of the unemployed.

Table 1[b]: Average Annual Historical Contributions of USDA Export Market Development Programs to the U.S. Agriculture Sector and General U.S. Economy, 2002–2014

Variable	Base average value [a] (2002–2014)	Less than Full Employment		Full Employment	
		Change	Percent Change	Change	Percent Change
Agriculture Sector	**$U.S. billions**	**$U.S. billions**	**%**	**$U.S. billions**	**%**
Farm cash receipts	310.2	8.4	2.7	8.7	2.8
Net cash farm income	58.0	2.1	3.7	1.1	1.8
Farm assets	2,081.2	1.1	0.1	1.0	0.05
	1,000 jobs	**1,000 jobs**		**1,000 jobs**	
Employment in agrifood sector [b]	3,900.4	93.9	2.4	90.0	2.3
U.S. Economy	**$U.S. billions**	**$U.S. billions**	**%**	**$U.S. billions**	**%**
U.S. Output (Gross Sales)	25,070.0	39.3	0.2	7.1	0.03
U.S. GDP	14,785.6	16.9	0.1	4.4	0.03
U.S. Labor Income	9,017.0	9.8	0.1	1.7	0.02
	1,000 jobs	**1,000 jobs**		**1,000 jobs**	
U.S. Employment [b]	173,414.20	239.8	[c] 0.14	—	—

Note: — = Not available as an output from this analysis. See Note a.

[a] The "base value" for a variable is the average annual level of that variable in the absence of the promotion program.

[b] In the full employment analysis, by definition all labor is always fully employed so while labor can be shifted from one industry to another, the total employment is not allowed to change. In the less-than-full-employment scenario, employment can increase as labor shifts among industries but also because labor can be hired from the ranks of the unemployed.

Table 2: Average Annual Historical GDP Contribution of USDA Export Market Development Programs by Sector, 2002–2014 [a]

Sector	Less than full employment	Full employment
	$U.S. billions (2010)	
Production Agriculture and Support Industries	$4.10	$1.07
Food Processing	$1.50	$0.39
Other Agriculture Product Processing	$0.02	$0.01
Mining, Energy, and Utilities	$0.80	$0.21
Construction and Maintenance	$0.10	$0.03
Other Manufacturing	$1.10	$0.29
Wholesale and Retail Trade	$1.40	$0.37
Transportation and Warehousing	$0.60	$0.16
Services	$7.20	$1.89
Total	$16.90	$4.43

[a] In the full employment analysis, by definition all labor is always fully employed so while labor can be shifted from one industry to another, the total employment is not allowed to change. In the less-than-full-employment scenario, employment can increase as labor shifts among industries but also because labor can be hired from the ranks of the unemployed.

SUPPLELMENTARY INFORMATION SUBMITTED BY TIM HAMILTON, EXECUTIVE DIRECTOR, FOOD EXPORT ASSOCIATION OF THE MIDWEST USA AND FOOD EXPORT USA—NORTHEAST

The Case for Increased Funding for USDA Foreign Agricultural Service (FAS) Export Market Development Programs

January 2017

In order to bolster U.S. international market development efforts, further boost U.S. agricultural exports, and help U.S. agriculture and related businesses in rural America prosper, **the Coalition to Promote U.S. Agricultural Exports and the Agribusiness Coalition for Foreign Market Development strongly believe that Market Access Program (MAP) funding should be increased to $400 million annually and Foreign Market Development (FMD) program funding to $69 million annually, with the increases phased in as part of the next farm bill.**

Agricultural exports are one of the brightest lights in the U.S. economy, with a strong multiplier effect that is especially pronounced in rural communities. According to USDA's Economic Research Service (ERS):

- The $150 billion in U.S. agricultural exports that occurred in 2014 produced an additional $190 billion in economic activity for a total of $340 billion of economic output;

- Those agricultural exports supported 1.1 million full time U.S. civilian jobs, including 800,000 in the non-farm sector (73% of the total employment effect) required to assemble, process and distribute agricultural products for exports; [and]
- This represents 7,550 jobs for every $1 billion of agricultural export revenue.

Agricultural export market development depends on long-standing, successful partnerships between nonprofit U.S. agricultural trade associations, farmer cooperatives, nonprofit state-regional trade groups, small businesses, and USDA to share the costs of overseas marketing and promotional activities such as market research, trade shows, trade servicing, and retail and educational promotions.

Under the MAP and the FMD program, administered by USDA's Foreign Agricultural Service (FAS), these private-sector groups contribute an estimated $468.7 million annually, primarily from check-off programs, into international market development and promotion. In fact, industry contributions, which are leveraged by public funds, represent more than 70% of the buying power of the programs.

Highly Successful Investments

A 2016 econometric study of export demand by Informa Economics IEG, working with Texas A&M University and Oregon State University economists, showed that between 2002 and 2014:

- A return on investment by MAP and FMD of a remarkable $24 in export gains for every additional $1 spent on foreign market development, consistent with results from several previous studies;
- A dramatic average annual increase in farm income of $2.1 billion because of program activities; [and]
- Creation of 239,000 new full and part-time jobs related to the programs.

Federal funding for MAP was last increased in the 2002 Farm Bill, reaching $200 million annually in 2006. Federal funding for the FMD program was last increased in the 2002 Farm Bill to $34.5 million annually. **Since the last increases were approved, the size of the foreign agricultural market that those funds are meant to develop has more than tripled to more than $800 billion a year.**

Diminished Buying Power at a Crucial Time for Agriculture

Despite a tremendous growth in U.S. agricultural exports and opportunities for farmers and small businesses abroad, **the real, effective Federal funding** that reaches the agricultural cooperators carrying out market development work **has steadily eroded even while international competitors continue to greatly outspend us.**

Looking just at the FY16 FAS allocation of MAP and FMD funding, the factors that have caused the erosion include:

- Sequestration in FY16 reduced annual, available MAP funding by $13.6 million and FMD funding by $2.4 million.
- USDA administrative expenses in FY16 reduced available MAP and FMD program funds by $6.6 million.
- **Since the 2002 Farm Bill was enacted, inflation and a depreciated U.S. dollar have reduced the real, effective promotional power of U.S. agricultural market development programs by almost 30 percent.**
- FAS reserves $3.5 million for Global Broad-based Initiatives (GBIs) involving multiple cooperators. While extremely valuable and strongly supported by cooperators, GBIs nonetheless reduce the total available MAP funding for individual cooperator programs.

The result is fewer dollars for actual programs, even while demand for the benefits these programs provide increases.

In FY17, just $173.5 of the $200 million MAP appropriation was allocated to the 68 nonprofit commodity organizations participating in the program. **Just $26.6 million of the FMD appropriation was allocated** to the 23 nonprofit commodity organizations participating in the program. Taking inflation into account, that means the $200.1 million total that FAS awarded for MAP and FMD in FY17 had **an actual promotional power of only $140.1 million.**

Other Important Considerations

- With growing global food demand, MAP and FMD participants have the opportunity to service more customers who seek to buy an increasing volume and variety of products. In fact, since the 2002 Farm Bill, overall agricultural imports of the overseas markets that U.S. exports are competing for rose by more than

330 percent, from $247 billion in 2002 to $834 billion. This significant increase in market size, combined with the diminished purchasing power of MAP and FMD funding since 2002, means that our producers are not well equipped to take on more aggressive foreign competition.

- New demands on MAP and FMD funding related to work on non-tariff trade barriers, while reflecting the collaborative work that cooperators often do to supplement efforts of FAS and other regulatory agencies, puts greater strain on funding that in the past went exclusively to market development and promotion activities.
- A 2015 survey of the cooperators showed that they could readily make effective use of a considerable increase in MAP and FMD funding. In addition, more non-profit producer groups are establishing national organizations and are anxious to apply for program funding. Greater demand will be placed on the fixed program funds as more organizations become eligible to apply for MAP and FMD.
- Competitors in foreign countries receive substantially more public support than is provided to U.S. agricultural exporters. A 2013 study showed that in 2011, competing government support for agricultural exports from just 12 countries and the EU Central Government (not including individual member states) was $700 million per year. For comparison, the U.S. budgets approximately $235 million annually in public funds through MAP and FMD for agricultural export promotion and market development. A 2016 study of competitive agricultural export market development investments showed that the EU allocates $255 million annually just to promote wine.

Greater Investment Is Needed

Dr. Gary Williams of Texas A&M University, the lead economist of the 2016 study measuring the effectiveness of MAP and FMD, said the data indicated that additional funding for these programs would generate incremental positive gains. As cooperators look at how best to leverage limited funds, MAP and FMD are considered an excellent match to their industry dollars and, if increased, would likely lead to increased investment from industry, thus further enhancing the overall reach and impact of the program.

SUBMITTED QUESTION

Response from Gary W. Williams, Ph.D., Professor of Agricultural Economics and Co-Director, Agribusiness, Food, and Consumer Economics Research Center, Department of Agricultural Economics, Texas A&M University *

Question Submitted by Hon. Stacey E. Plaskett, a Delegate in Congress from Virgin Islands

Question. Last year, the Department of Agriculture requested a $1.5 million appropriation for Foreign Agricultural Service staffing at the United States Embassy in Havana, Cuba. This was approved by the Senate Appropriations Committee in their bill to fund Agriculture Department activities over this fiscal year.

To the knowledge of your research center, what restrictions currently apply to the Market Access Program and the Foreign Market Development Program regarding use of their funding to promote agricultural exports to Cuba?

Answer.

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* There was no response from the witness by the time this hearing was published.

THE NEXT FARM BILL

(RURAL DEVELOPMENT AND ENERGY PROGRAMS)

THURSDAY, MARCH 9, 2017

HOUSE OF REPRESENTATIVES,
SUBCOMMITTEE ON COMMODITY EXCHANGES, ENERGY, AND CREDIT,
COMMITTEE ON AGRICULTURE,
Washington, D.C.

The Subcommittee met, pursuant to call, at 10:00 a.m., in Room 1300 of the Longworth House Office Building, Hon. Austin Scott of Georgia [Chairman of the Subcommittee] presiding.

Members present: Representatives Austin Scott of Georgia, Goodlatte, Davis, Comer, Marshal, Faso, David Scott of Georgia, Kuster, Plaskett, O'Halleran, Soto, and Peterson (*ex officio*).

Staff present: Darryl Blakey, Emily Wong, Haley Graves, John Weber, Josh Maxwell, Paul Balzano, Stephanie Addison, Evan Jurkovich, Liz Friedlander, Troy Phillips, Faisal Siddiqui, John Konya, and Carly Reedholm.

OPENING STATEMENT OF HON. AUSTIN SCOTT, A REPRESENTATIVE IN CONGRESS FROM GEORGIA

The CHAIRMAN. Well, good morning everyone. Welcome to the Commodity Exchanges, Energy, and Credit Subcommittee's first hearing of the new Congress. Today's hearing is part of an ongoing series where each Subcommittee is holding at least two hearings to discuss the farm bill programs and issues under its respective jurisdiction.

Before I go any further, I would like welcome Mr. Comer to his first meeting of the Subcommittee, and to the Subcommittee. David, were all of your people on the Subcommittee last year?

Mr. DAVID SCOTT of Georgia. No, we have two new Members, Mr. Chairman. And I would like to welcome our new Members who are on their way to our hearing. First, Tom O'Halleran from Arizona. He serves in Arizona's First Congressional District. It is good to know a little about his background. He is a former homicide detective, small business owner, what a combination, and served three terms in the Arizona House of Representatives and one in the Senate.

We also have Mr. Darren Soto from Florida, District Nine. Serves Florida's Ninth Congressional District, which is a prominent citrus and cattle district. He served in the Florida Legislature for a decade before coming to Congress.

And so we welcome all our new Members, and look forward to working with each and every one of them.

The CHAIRMAN. I want to thank you, Ranking Member Scott, for again agreeing to serve in the leadership of this Subcommittee. I look forward to working with you again. We have had a good relationship for many years, long before I came to Congress, going back to our time together in the state legislature.

Mr. DAVID SCOTT of Georgia. Absolutely.

The CHAIRMAN. We have a couple of other Members that will be joining us later. I know we have Representative Roger Marshal from Kansas' First District, and Representative John Faso from New York's 19th District on the Republican side.

Today, we are going to be reviewing the rural development and energy programs in the 2014 Farm Bill. These programs support infrastructure construction, encourage capital formation, and help to promote economic development across rural America.

It is appropriate that this is the topic of the first hearing in support of the next farm bill. So much of what rural America will be able to accomplish over the next decade will be tied to how well these programs work.

Every day our young rural citizens look around them, assess their lives, and try to make the best choices they can about their future. Unfortunately, too many feel that they have more opportunities somewhere else, and when they leave, they leave behind hollowed-out communities that grow older, that become less adaptable, and that are unable to maintain their quality of life that so many of us has enjoyed.

With today's hearing, we will begin to examine ways we can reverse that cycle.

For many rural communities, rural development initiatives help to offset the high fixed costs of providing basic services like clean water, reliable electricity, and universal phone service. Residents of these communities simply would not be able to afford to live there without these key investments. Federal support for infrastructure remains a key part of our commitment to rural America. But, our commitment to rural America is not just about new pipes and wires. While we often think of progress as a new powerline, a new water treatment plant, or a new broadband connection, real progress is about expanding opportunities. We must use these programs to narrow the divide between rural and urban America.

Upgrading water and energy infrastructure can improve quality of life, while bringing new employment opportunities. Building a new health center can bring new care for families. Installing broadband can bring new ideas to students and innovation to farmers and ranchers. Renewable energy development can create valuable markets and income opportunities for farmers, keeping them on the land, and viable domestic energy policies can create new job opportunities in rural communities. Providing investment capital can further link agricultural producers with the global economy. The jobs, the health care, the ideas, and the market access are the real measures of progress for rural America.

For almost 90 years, USDA's Rural Development office and its predecessors have been working to bring opportunities to rural residents. As we begin work on the next farm bill, I am looking for-

ward to hearing from our witnesses about how Congress can improve the initiatives we have in place. Rural development and energy programs in the farm bill will need to find ways to do more with less due to budget constraints. I look forward to the creative ideas from our witnesses about how we can grow opportunities and rebuild rural communities.

[The prepared statement of Mr. Austin Scott follows:]

PREPARED STATEMENT OF HON. AUSTIN SCOTT, A REPRESENTATIVE IN CONGRESS FROM GEORGIA

Good morning everyone. Welcome to the Commodity Exchanges, Energy, and Credit Subcommittee's first hearing of the new Congress. Today's hearing is part of an ongoing series where each Subcommittee is holding at least two hearings to discuss the farm bill programs and issues under its respective jurisdiction.

Before I begin, I'd like to thank Ranking Member Scott for again agreeing to serve with me in the leadership of this Subcommittee. I am looking forward to working with you again this Congress.

In addition I want to welcome our new Members to the Subcommittee. On the Republican side we have: Representative James Comer from Kentucky's First District, Representative Roger Marshal from Kansas' First District, and Representative John Faso from New York's Nineteenth District.

I yield to Ranking Member David Scott to introduce his new Members.

Today, we're going to be reviewing the rural development and energy programs in the 2014 Farm Bill. These programs support infrastructure construction, encourage capital formation, and help to promote economic development across rural America.

It is appropriate that this is the topic of our first hearing in support of the next farm bill. So much of what rural America will be able to accomplish over the next decade will be tied to how well these programs work.

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But, our commitment to rural America is not just about new pipes and wires. While we often think of progress as a new powerline, a new water treatment plant, or a new broadband connection, real progress is about expanding opportunities. We must use these programs to narrow the divide between rural and urban America.

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For almost 90 years, USDA's Rural Development office and its predecessors have been working to bring opportunities to rural residents. As we begin work on the next farm bill, I am looking forward to hearing from our witnesses about how Congress can improve on the initiatives we have in place.

Rural development and energy programs in the farm bill will need to find ways to do more with less. I look forward to creative ideas from our witnesses about how we can grow opportunities and rebuild rural communities.

With that, I will turn it over to our Ranking Member, Mr. David Scott, for any comments he would like to make.

The CHAIRMAN. With that, I will turn it over to our Ranking Member, Mr. David Scott, for any comments he would like to make.

OPENING STATEMENT OF HON. DAVID SCOTT, A REPRESENTATIVE IN CONGRESS FROM GEORGIA

Mr. DAVID SCOTT of Georgia. Thank you, Mr. Chairman, and thank you for holding this important hearing today. It is a very, very important topic for so many of our American citizens.

And I would like to extend a warm welcome to all of our witnesses. They are very distinguished and knowledgeable. We look forward to hearing from them. And I especially want to send a very warm greeting to Mr. Dennis Chastain. Mr. Dennis Chastain is the President and the CEO of Georgia EMC, from Tucker, Georgia. We are delighted to have you. Welcome, and I look forward to your testimony.

Mr. Chairman, rural development and energy programs that we are going to take a look at today are, in many respects, what I call the unsung heroes of the farm bill. While all of our farm bill programs are good and very much needed for rural America, these programs in rural development and energy specifically aim to help keep our rural economies' engines running by providing new opportunities, continued progress, and assisting our most vulnerable populations.

And I am always amazed at the breadth of our rural development programs, when I look at them or hear about them from my constituents in Georgia. These programs; rural development and energy, help keep the lights on for our rural residents by doing four, four, very important things. First, they provide broadband access; second, they give our rural businesses and entrepreneurs access to hard-to-find capital; third, they help our farmers' bottom lines; and fourth, they help provide the essential community facilities that keep a community going and viable, like emergency response, schools, hospitals, roads, and long-term care housing. It is really remarkable when you think about all that we ask the Department of Agriculture to do, and the vision needed to make these very important programs work.

Our witnesses today are going to touch on some of the most important rural development and energy programs that the USDA is administering, and how these programs are working on the ground. Even with the remarkable scope of these programs, it is very critical, Mr. Chairman, that our Committee take a hard look to make sure that they are working the way they are intended to. And hopefully we can get some feedback from our distinguished guests on how we can make sure the programs are working as they are intended to, and if there is anything that we can do to improve the situation, to do differently, to help these programs work better for the folks who use them, and help better accomplish priorities on the ground.

Rural development touches every state in our country, and is absolutely critical to the health of our nation's economy.

Mr. Chairman, I look forward to hearing from our witnesses today and delving into these challenges rural development is facing, and the success that we have seen.

Thank you, Mr. Chairman.

The CHAIRMAN. Thank you, Ranking Member Scott.

I also have a letter from Farm Credit that I understand that you would like to submit on behalf of both of us, and without objection, we will accept that letter.

Mr. DAVID SCOTT of Georgia. Yes, I do.

[The letter referred to is located on p. 169.]

Mr. DAVID SCOTT of Georgia. Here it is.

The CHAIRMAN. Thank you.

The chair would request that other Members submit their opening statements for the record so the witnesses may begin their testimony, and to ensure that there is ample time for questions.

The witnesses for panel one, one, I would like to welcome you to the table, the Honorable Bob Fox, Chair of Renville County Board of Commissioners, Franklin, Minnesota, on behalf of the National Association of Counties. Mr. Dennis Chastain, President and CEO of Georgia EMC, Tucker, Georgia, on behalf of the National Rural Electric Cooperative Association. Mr. Steve Fletcher, Manager and Operator, Washington County Water Company, Nashville, Illinois, on behalf of the National Rural Water Association. Mr. Craig Cook, Chief Operating Officer, Hill Country Telephone Cooperative, Inc., Ingram, Texas, on behalf of NTCA—The Rural Broadband Association. Mr. John Duff, Strategic Business Director, National Sorghum Producers, Lubbock, Texas. The Honorable Jim Greenwood, CEO, Biotechnology Innovation Organization, Washington, D.C.

Congressman Greenwood, welcome back to Washington.

Chairman Fox, please begin when you are ready.

STATEMENT OF HON. BOB FOX, CHAIR, BOARD OF COMMISSIONERS, RENVILLE COUNTY, MN; MEMBER, BOARD OF DIRECTORS, NATIONAL ASSOCIATION OF COUNTIES, FRANKLIN, MN

Mr. FOX. Chairman Scott, Ranking Member Scott, and Members of the Subcommittee, thank you for the opportunity to join you today.

My name is Bob Fox, and I serve on the Board of County Commissioners for Renville County, Minnesota, and I am also here today representing the National Association of Counties.

Renville County is located 90 miles west of Minneapolis, with a population of almost 16,000. As a key member of intergovernmental partnership, counties are responsible for making significant investments in our nation's essential infrastructure, maintaining our nation's justice and public safety, and investing in community health systems.

Every day, county leaders make decisions to influence both local and national prosperity, while shaping the quality of life in America. Counties play a pivotal role in rural economic development, but face increasing challenges to provide critical programs and services to American families. Despite the critical role our counties play in our nation's economy, too many Americans in rural areas are not sharing in our nation's economic growth. Rural America is still feeling the effects of the Great Recession. Like many rural counties around the country, our farm-based economy in Renville County has suffered a long economic downturn. After 9 years of decline, we lost close to ten percent of our jobs we had in 2002. Today, many rural counties are experiencing a strain on local funding options

due to declining populations, stemming from aging, out-migration, and job loss. Ongoing population losses reduce tax base which has a direct effect on our ability to fund and finance programs and services. Additionally, 42 states impose some type of limitation on the counties to increase property taxes, restricting our ability to raise revenue.

Rural counties are also experiencing a rising cost of construction. In Renville County, our ag industry requires a 10 ton road system to allow five-axel semi-trailer trucks to move crops to market. In 2004, it cost less than $300,000 to build a 1 mile, 10 ton road. Today, the cost for that same road is $1 million per road mile.

With these challenges in mind, we have specific recommendations on how to use the next farm bill to ensure the vitality of our under-served counties, while positioning rural America to compete in an ever-expanding global market.

First, the entire Rural Development portfolio is critical for ensuring long-term economic competitiveness of our rural counties and nation at large. USDA's Rural Utilities Service invests billions to help counties to provide safe water, high-speed broadband Internet, while programs like Rural Business Development Grant Program, and Intermediary Relending Program under the Rural Business—Cooperative Service provides grants and competitive direct loans to counties to help expand small businesses and business facilities.

And under the Rural Housing Service, which brings me to my second point, the Community Facilities Direct Loan and Grant Program is an essential tool for counties to address the unique needs of rural communities. The Community Facilities Program provides counties with flexible, affordable funding, and financing to help develop essential community facilities. We use these funds to purchase, construct, improve essential facilities like hospitals, childcare centers, assisted living facilities. Additionally, these funds can be used to purchase equipment and pay for project expenses.

In my county, our aging critical access hospital was unable to meet the increasing demand for outpatient care. Through the Community Facilities Program, in 2015, Renville County was able to build the Renville County Medical Center, a 65,000′2 facility, which includes 18 exam rooms, 16 inpatient suites, outpatient and specialty clinics, and a telemedicine suite. This investment through the Community Facilities Program helped to change our overall outlook on the health of our community and economy.

Last, the Strategic Economic and Community Development Program incentivizes regional collaboration, and should remain a priority in the new farm bill. This program allows USDA to direct investments toward projects that support strategic, economic development plans across multi-jurisdictional areas. Thus, rural counties are now able to increase the likelihood of funding key economic development projects through regional collaboration. This program is a positive step for our nation's rural counties and should continue to be a priority in our next farm bill.

In closing, counties need a strong Federal, intergovernmental partner, and a robust rural development title in the next farm bill to help serve America's rural communities. Your support for these programs will not only ensure the vitality of under-served counties, but also position rural America to compete in a global market.

Thank you, Mr. Chairman, and Members of the Committee for the opportunity to testify today, and I look forward to your questions.

[The prepared statement of Mr. Fox follows:]

PREPARED STATEMENT OF HON. BOB FOX, CHAIR, BOARD OF COMMISSIONERS, RENVILLE COUNTY, MN; MEMBER, BOARD OF DIRECTORS, NATIONAL ASSOCIATION OF COUNTIES, FRANKLIN, MN

Chairman Scott, Ranking Member Scott, and Members of the Subcommittee, thank you for the opportunity to join you today to discuss the challenges and opportunities counties face in delivering critical programs and services to rural communities and the pivotal role the next farm bill will play in helping to address development in rural America.

My name is Bob Fox and I have served on the Board of County Commissioners for Renville County, Minnesota since 2002. I am also here today representing the National Association of Counties (NACo) where I serve on the NACo Board of Directors, the Agriculture and Rural Affairs Policy Steering Committee and Rural Action Caucus. I live on a fourth-generation farm that has been in my family for over 100 years.

Renville County is a very rural county located 90 miles west of Minneapolis with a population of almost 16,000 residents. Renville County has a diverse agricultural economy—producing corn, soybeans, edible beans, peas, sweet corn, and sugar beets. On our southern border we also have the Minnesota River Valley and some of the oldest granite deposits in North America.

Founded in 1935, NACo is the only national organization that represents our nation's 3,069 counties. NACo brings together county officials from across the country to advocate with a collective voice on national policy, exchange ideas and build new leadership skills, pursue transformational county solutions, enrich the public's understanding of county government and exercise exemplary leadership in public service.

About Counties

As key intergovernmental partners with the states and Federal Government, counties are responsible for delivering a broad array of programs and services that provide a foundation for prosperous communities with strong and stable economies. To achieve this foundation, counties make significant investments in our nation's essential infrastructure; maintain our nation's justice and public safety system; and invest in community health systems, including hospitals, nursing homes, public health, mental health and substance abuse programs.

Transportation and infrastructure are core public-sector responsibilities and the driving force for connecting communities and strengthening our economy. Counties are the single largest stakeholder in our nation's transportation infrastructure system—owning and maintaining over 45 percent of our nation's roads and 40 percent of our nation's bridges. Collectively, counties annually invest over $550 billion in our nation's essential infrastructure including more than $100 billion each year on roads, bridges, transit and water systems.

Counties are also responsible for the health and well-being of our communities. We invest over $83 billion each year to support over 1,900 public health departments, nearly 1,000 county-owned hospitals, 900 nursing homes and 750 behavioral health authorities.

Additionally, counties play a major role in two main areas of justice and public safety: emergency response and preparedness and the criminal justice system. Each year, counties invest almost $93 billion for justice and public safety services including the operation of 3,041 police and sheriff departments and 2,785 jails.[1]

The decisions that county leaders make every day influence both local and national prosperity while shaping how communities grow and contribute to Americans' quality of life.

Today, I would like to discuss some of the primary challenges for counties to fund and finance rural economic development projects and highlight how Congress can help us tackle these challenges. Throughout my testimony today, I will underscore two main points for the Committee to consider as you begin work on the next farm bill. These points include:

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[1] *http://www.naco.org/counties-matter*.

- **Counties play a pivotal role in rural economic development but face increasing challenges to provide critical programs and services to America's families.**
- **The farm bill is imperative to ensuring the vitality of our under-served communities, but also positioning rural America to compete in an ever-expanding global economy.**

The farm bill is a major priority for all our nation's counties—rural and urban alike. As the governing authority over the U.S. Department of Agriculture, the farm bill is critical for counties who are responsible for delivering and administering vital services to many of our nation's under-served families. From clean water and broadband infrastructure to nutrition assistance and energy conservation—the farm bill helps all of America's counties provide a strong foundation for a better tomorrow.

While the farm bill has an impact on the daily lives of all Americans, it is particularly important for our nation's rural families. Roughly ⅔ of the nation's 3,069 counties are considered rural with a combined population of 60 million. Rural counties are responsible for the vast majority of food, energy, and environmental benefits for the rest of the country. Additionally, rural communities are the source of nearly 90 percent of renewable water resources, and home to important service sector and manufacturing hubs.

Counties Play a Pivotal Role in Rural Economic Development But Face Increasing Challenges To Provide Critical Programs and Services to America's Families

Despite the critical role rural counties play in our nation's economy, too many Americans in rural areas are not sharing in our nation's economic growth.

To help provide a national perspective on how county economies are faring from year to year, NACo releases *County Economies,*[2] an annual report examining economic recovery and growth patterns across the nation's 3,069 county economies. The report is developed from an analysis of data from Woods and Poole Economics and focuses on the annual changes in four economic performance indicators in each county: economic output (GDP), employment, unemployment rates and home prices.

According to our analysis, Rural America is still feeling the effects of the Great Recession. After a decade, almost ½ of small county economies have yet to return to pre-recession jobs levels compared to only 13 percent of large county economies. My own county economy, Renville County, Minnesota, has yet to recover all the jobs lost during the last recession. Like many rural counties around the country, our farm-based economy has suffered a long economic downturn. After 9 years of decline, we lost close to ten percent of the jobs we had in 2002.

Economic growth is also slowing down across rural counties. The overwhelming majority of rural county economies added jobs at a slower pace in 2016 relative to 2015. In my home state of Minnesota, job growth accelerated in only seven percent of county economies last year.

Last, Americans are feeling it in their pocketbooks as well. Wages in most rural county economies are growing slower than last year.[3]

Rural counties also face numerous challenges that strain local funding options.

Today, many rural counties are experiencing declining populations due both to aging and out-migration. Ongoing population losses reduce our tax base, which has a direct effect on our ability to fund and finance programs and services within our communities.

Local property taxes remain the major source of revenue for counties. Thus, trends in property values can significantly impact county revenues and expenditures.

Additionally, 42 states impose some type of limitation on counties' ability to increase property taxes, further exacerbating the situation. Only 12 states authorize counties to collect their own local gas taxes, which are limited to a maximum rate in most cases and often require additional citizen and/or state approvals for implementation.

These hurdles significantly impact counties' ability to effectively raise additional revenue to pay for services and infrastructure. Due to these state and focal funding

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[2] *http://www.naco.org/resources/county-economies-2016-widespread-recovery-slower-growth.*
[3] *http://www.naco.org/resources/county-economies-2016-widespread-recovery-slower-growth.*

constraints, rural counties depend on a strong state and Federal partnership to deliver critical investments to help bolster our local and national economy.

Rural counties are also experiencing rising costs of construction projects.

In addition to numerous limitations on local revenue sources, counties are facing rising costs for infrastructure projects. Based on the American Road and Transportation Builders Association's highway construction price index, the cost of construction, materials and labor for highway and bridge projects increased 44 percent between 2000 and 2013, outpacing the 35 percent increase in general inflation.

In my county, we own and maintain 711 road miles and 218 bridges which are critical to not only our local communities, but to our overall economy and our shipment of goods to market. This critical infrastructure has become more expensive to repair and upgrade. Over the next 7 years, Renville County has over 50 bridges that will require additional maintenance costing the county an estimated $12 million. Our county requires a 10 ton road system to allow for the five-ax[le] semi-trailer trucks to move crops to market. To support the necessary investments in our ailing infrastructure, in 2012, we made the difficult decision to raise property taxes and to bond for the needed improvements.

Our greatest challenge is ensuring that we can build and maintain a safe, robust and efficient infrastructure system that allows Renville County and Minnesota to remain competitive in an increasingly global marketplace.

The farm bill is imperative to ensuring the vitality of our under-served counties, but also positioning rural America to compete in an ever-expanding global economy.

Unfortunately, rural counties today face many challenges that further diminish our ability to deliver critical infrastructure and economic development projects. As we look ahead to the next farm bill, it is imperative that we strengthen the U.S. Department of Agriculture's (USDA) Rural Development programs and streamline the application process while providing the flexibility for local governments to leverage funding and financing to fit the unique needs of our nation's rural communities. Therefore, there are three main points I would like to make as the Committee develops a comprehensive rural development title as part of the next farm bill.

First, the overall USDA Rural Development portfolio of programs should continue to help to ensure the long-term economic competitiveness of our rural counties and the nation at-large. The continued commitment to our nation's rural communities through USDA's Rural Development Programs help strengthen the intergovernmental partnership and our shared goals of promoting economic prosperity and opportunity across the country.

In 2016, USDA's Rural Utilities Service (RUS) invested more than $13.9 billion to help counties provide safe water to over 19.5 million residents and brought high-speed broadband Internet to over six million new users.[4]

Under the Rural Business—Cooperative Service (RBS), USDA created more than 791,000 jobs through rural business grants and loans in 2016. Since FY 2009, RBS has invested more than $11.5 billion—including $1.2 billion in Fiscal Year 2016 alone—to support rural businesses. The RBS helps provide capital, technical support and educational opportunities to spur growth in the rural workforce.[5]

Programs like the Rural Business Development Grant Program and the Intermediary Relending Program promote rural economic growth by providing grants and competitive direct loans to counties to help start or expand small businesses and business facilities.

USDA's Rural Housing Service (RHS) helps counties obtain grants, loans and loan guarantees for multi-family housing, child care centers, emergency and first-responders stations, schools and hospitals. Since 2009, RHS has helped approximately 1.2 million rural Americans buy, refinance or repair their homes and invested more than $12 billion in essential community projects.[6]

Second, the Community Facilities Direct Loan and Grant Program—under RHS—should continue to serve as an essential tool for counties to fund and finance critical programs and services to fit the unique needs of rural communities. Through the Community Facilities program, rural counties are provided flexible and affordable funding and financing to help develop essential community facilities. These funds can be used to purchase, construct or improve essential facilities like hospitals, child care, assisted living facilities, courthouses and transitional housing. Additionally, these funds can be used to purchase equipment

[4] *https://www.rd.usda.gov/files/USDARDProgressReport2016.pdf.*
[5] *https://www.rd.usda.gov/files/USDARDProgressReport2016.pdf.*
[6] *https://www.rd.usda.gov/files/USDARDProgressReport2016.pdf.*

and pay for related project expenses. This program is relevant to rural communities with less than 20,000 residents per the latest U.S. Census Data.

The Community Facilities Program uses a combination of grants, direct loans and guaranteed loans to help fund and finance critical infrastructure projects in rural counties. Applications for funds are graded on a point system using a combination of population and median household income levels.

For direct loans under the Community Facilities Program, the interest rates are set by USDA Rural Development—typically around 2.3 percent—and remain fixed for the entire term of the loan. Additionally, loan amortization terms must not exceed the "useful life of the facility," the applicant's authority, or 40 years—whichever is less.

Additionally, applicants must be *unable* to finance the project from their own resources or through commercial credit at reasonable rates and terms. This is an important distinction to make as the Community Facilities Program is oftentimes the only option for rural communities in need of providing critical programs or services that are otherwise out of the fiscal reach of the county.

In 2016 alone, the Community Facilities Program invested approximately $2.5 billion in 1,354 community infrastructure projects to help serve approximately 26.4 million rural residents including over $875 million in 134 rural health care facilities, and over $862 million for 257 rural education infrastructure projects.

Since 2008, the Community Facilities Program has invested over $648 million in Minnesota to support over 430 essential community facilities serving 1.95 million residents.

In my county, increased demand for outpatient care required more preventative and diagnostic care spaces. Unfortunately, our aging critical access hospital was unable to meet the increasing demands of our county's healthcare needs.

Through the Community Facilities program, in 2015 Renville County was able to build the Renville County Hospital and Clinic Medial Center—a 65,000′2 facility which includes 18 exam rooms and a procedure room in the ambulatory clinic; 16 inpatient suites; lab, radiology, therapy, outpatient and specialty clinics; two operating rooms and an educational center. The program provided a direct loan of $18.9 million and a guaranteed loan of $4.7 million to help replace a county-owned critical access hospital.

As a result of this funding, the new facility has driven our physician recruitment efforts over the past 3 years at Renville County Hospital and Clinic. New physicians are being drawn to work at a state-of-the-art medical center which has been critical in meeting the increasing demands on patient care services.

The USDA Community Facilities Program has helped change our overall outlook on the health of our community and economy. USDA has long been considered a trusted partner to Renville County. This familiarity and willingness to work together served as a catalyst to launch the development of our new Renville County Hospital and Clinics medical center.

Third, the Strategic Economic and Community Development program should remain a priority in the new farm bill for incentivizing regional collaboration. Commonly referred to as the "regional language," Section 6025 of the 2014 Farm Bill created the Strategic Economic and Community Development (SECD) program which allows USDA Rural Development to direct investments towards projects that support strategic economic and community development plans across multi-jurisdictional areas.

Through the new provision, individual projects can receive additional priority funding points by meeting a few criteria that demonstrate its role as part of a larger regional economic development plan. Thus, rural counties are now able to increase the likelihood of funding key economic development projects through regional collaboration.

The SECD Program created a ten percent set-aside under four Rural Development programs across the entire agency to help support the new provision. These programs included the Community Facilities Program under RHS, the Water and Waste Disposal Program under RUS, and both the Rural Business Development Grants Program, and the Business & Industry Guaranteed Loans Program under RBS.

In 2016, 114 applicants were given the "Regional Development Priority" consideration for a combined total of over $85 million in funding and financing.[7]

Rural counties can no longer plan inside a silo. We must look to our regional partners to identify and leverage our collective assets to ensure the long-term vitality and stability of our local economy. Through the SECD Program, counties are able to invest in local economic development efforts that serve as a foundation for future

[7] *https://www.rd.usda.gov/files/USDARDProgressReport2016.pdf*.

investments to help better promote our regional assets. This program is a positive step for our nation's rural counties and should continue to be part of the rural development title as you begin developing our next farm bill.

In closing, counties need a strong Federal intergovernmental partner—and a robust rural development title in the next farm bill—to help deliver critical programs and services to America's rural communities. USDA rural development programs—like Community Facilities and the Strategic Economic and Community Development program—help counties make essential investments in rural communities which subsequently strengthen both the local and national economy. Your support for these programs will not only ensure the vitality of our underserved counties, but also position rural America to compete in an ever-expanding global market.

Thank you, Mr. Chairman and Members of the Committee for the opportunity to testify today and I look forward to your questions.

The CHAIRMAN. Mr. Fox, you did an exceptionally good job. Four minutes and 19 second on that timer up there works just right, if the rest of you can do the exact same thing, it would be perfect.

Thank you, Mr. Fox. Mr. Chastain.

STATEMENT OF DENNIS L. CHASTAIN, PRESIDENT AND CHIEF EXECUTIVE OFFICER, GEORGIA ELECTRIC MEMBERSHIP CORPORATION, TUCKER, GA; ON BEHALF OF NATIONAL RURAL ELECTRIC COOPERATIVE ASSOCIATION

Mr. CHASTAIN. Thank you, Chairman Scott, and Ranking Member Scott, for inviting me to testify today. It is an honor to be here to help lay the groundwork for the next farm bill. And I am proud that two fellow Georgians are in leadership positions that have influence over a bill that is vitally important to the electric cooperatives in Georgia and across the nation.

I am the President and CEO of Georgia EMC. Georgia EMC is the trade association that represents the 41 not-for-profit electric distribution cooperatives in the State of Georgia, as well as our state's power generation and transmission cooperatives. Collectively, Georgia's 41 EMCs serve about ½ the population of Georgia, over 75 percent of the land area of Georgia, and we employ over 5,000 Georgians in our operations.

I am here today not only representing the electric cooperatives in Georgia, but I am also here representing the National Rural Electric Cooperative Association that represents all of America's electric cooperatives.

While our first business priority is to deliver reliable, affordable electricity to our members, our purpose is much greater than that. We exist to benefit the communities we serve. We are more than just poles, wires, transformers, and electrons. Electric cooperatives are the engines that drive economic opportunity across the heartland and rural areas of America. That is why the farm bill is essential for electric cooperatives, for Georgia, and for the nation. The farm bill contains important rural development tools that support our efforts to strengthen our communities, and I would like to talk about just a few.

Since 1936, loans from the REA, now the Rural Utilities Service at USDA, have helped build, expand, and improve the infrastructure across rural America necessary to deliver power, clean water, and other critical services. That public-private partnership has been, in my opinion, the greatest single rural economic development program of the 20th century. It made farms more productive

and rural life more desirable. Rural electrification attracted new business to rural areas, brought modern medicine where it couldn't reach before, and improved the overall quality of life in rural America. That fundamental task of improving the lives of our nation's rural citizens is as important now as it has ever been.

The RUS depends on the yearly appropriations from the Agriculture Appropriations bill. We are grateful that Chairman Conaway and Ranking Member Peterson have consistently led a bipartisan letter with several hundred other Congressional signatures to appropriators advocating for robust RUS funding.

Part of our support comes from the fact that we are such a good investment for the Federal Government. The President's budget request for 2017 estimates that the Federal Government could earn up to $300 million in net revenue from RUS loans in this year alone. We thank you for your past support of RUS, and ask that you please continue to provide that support.

In addition to investing in the electric cooperative network, the fees paid on RUS loans are used to fund Rural Economic Development Loans and Grants, known as the REDL&G Program. In Georgia and around the country, this program has helped expand businesses, renovate hospitals, and improve essential infrastructure in rural communities. We believe the REDL&G Program is a valuable tool in offsetting population flight and job losses in rural Georgia and around the country.

For years, electric cooperatives across the country have provided information and advice to consumers to help them use electricity more efficiently and cost-effectively. The Rural Energy Savings Program Act included in the last farm bill was modeled in part on a program at Habersham EMC in northeast Georgia. This unique program that allows co-op homeowners to finance energy efficiency upgrades in their homes, and then pay those loans back on their monthly power bills. The efficiency gains resulted in a net savings to the consumer.

We encourage you to maintain the Rural Energy Savings Program and the Energy Efficiency and Conservation Loan Program. We believe these programs can help others around the country replicate Georgia's successes in saving energy and saving our member owners money.

Just as with other types of infrastructure, rural America can't be competitive without access to high-speed broadband service. Some electric co-ops around the country are interested in helping connect rural customers to those services. While we are not a silver bullet by any means, we understand these rural communities, want to see them succeed, and know that adequate broadband service is a key to their future competitiveness in our modern global economy. As Congress contemplates telecommunication and infrastructure policies in the farm bill and other legislative packages, we believe that all potential providers, including electric cooperatives, should be eligible for programs designed to bridge the digital divide.

Electric cooperatives enjoy a productive partnership with the Federal Government and with the communities we serve to promote the health of rural America. We look forward to continuing to work with you towards that important goal.

Thank you, and I am happy to answer any questions you may have.

[The prepared statement of Mr. Chastain follows:]

PREPARED STATEMENT OF DENNIS L. CHASTAIN, PRESIDENT AND CHIEF EXECUTIVE OFFICER, GEORGIA ELECTRIC MEMBERSHIP CORPORATION, TUCKER, GA; ON BEHALF OF NATIONAL RURAL ELECTRIC COOPERATIVE ASSOCIATION

Thank you, Chairman Scott and Ranking Member Scott, for inviting me to testify. It's an honor to be here today to help lay the groundwork for the next farm bill. I'm proud that two fellow Georgians have such influence over a bill that is so important to electric cooperatives.

My name is Dennis Chastain. I am the current President and CEO of the Georgia Electric Membership Corporation, but I've worked for electric co-ops for 30 years in a variety of economic development roles. I am here today representing Georgia EMCs and the National Rural Electric Cooperative Association.

Georgia EMC is a statewide trade association representing the state's 41 EMCs, Oglethorpe Power Corporation, Georgia Transmission Corporation, and Georgia System Operations Corporation. Altogether, customer-owned EMCs provide electric power and related services to over 4.5 million people in Georgia—nearly ½ the population—across 73 percent of the state's land area. And we employ over 5000 people.

While our first business priority is to deliver reliable, affordable electricity to our members, our purpose is much greater than that. We exist to benefit the communities we serve. We are more than just a poles, wires, and electrons company. Our broader purpose is to provide the power that empowers our communities to thrive. We are much more than just small electric utilities—we are the engines that drive economic opportunity across the heartland and rural areas everywhere.

Co-ops have been supporting rural America for almost 80 years, and in many ways that job is more important now than it ever has been. Rural areas still grow most of the food, generate most of the power, and manufacture most of the goods that this country consumes. When rural areas suffer, electric cooperatives suffer and, more importantly, the country as a whole suffers. That is why the farm bill is *essential* for co-ops, for Georgia, and for the country. The farm bill contains important rural development tools that support our efforts to strengthen our communities.

I'd like to start by asking you to think broadly about what rural economic development is. There were few greater developments in our country's history than the electrification of rural America. It made farms more productive and rural life more desirable. It allowed kids to go to school, attracted new business, and brought in modern medicine where it couldn't reach before.

While the lights came on nearly 80 years ago, rural development is just as essential in 2017. For example, in some areas of the country, we are today with Internet access where we were with electricity at the beginning of the last century. Without access to high speed Internet, rural America won't be able to compete. I would also argue that efforts to modernize the grid and improve energy efficiency are important for rural development because they make life more affordable, secure and convenient for the people who live there. In all these cases, electric cooperatives will continue to play instrumental and innovative roles in keeping rural America vibrant in the 21st century.

Rural Utilities Service (RUS)

In the early 1900's, as urban areas began to electrify, rural areas lagged behind. Eventually, farmers and ranchers in remote areas took the initiative to form electric cooperatives and did the work themselves. As a Georgian, I have to note that it was at Warm Springs, in my home state, that President Franklin Roosevelt saw firsthand the access and cost challenges faced by rural electricity consumers and recognized the important role of the electric cooperative. That's why, on May 11, 1935, he signed an executive order creating the Rural Electrification Administration and supported subsequent legislation to formalize the partnership that allowed electric cooperatives to access affordable credit from the Federal Government to finance that infrastructure.

In the past 80 years, a lot has changed, but the same fundamental challenge still exists—how to affordably connect those few customers in high cost rural areas. What was then called the Rural Electrification Administration is now the Rural Utilities Service and it's as relevant today as it was back then. REA and RUS loans have helped build, expand and improve the infrastructure across rural America necessary to deliver power, clean water, and other necessities. It has been the most suc-

cessful public-private infrastructure investment program in the history of the country.

RUS loans help electric co-ops reduce costs and improve reliability for our members by financing basic maintenance like replacing poles and wires. But it also helps us fund projects to make our systems more modern, efficient, and secure.

RUS depends on a yearly appropriation from the Agriculture Appropriations bill. We are grateful that Chairman Conaway and Ranking Member Peterson have consistently led a bipartisan letter with several hundred signatures to appropriators advocating for robust RUS funding. Part of our support comes from the fact that we are such a good investment for the Federal Government. The President's Budget request for 2017 estimated that the Federal Government could earn up to $300 million in net revenue from RUS loans. We thank you for your past support of RUS, and ask that you please continue to provide that support.

We also ask that you support policies that allow us to use RUS loans to address a broad set of co-op needs—whether for generation, transmission and distribution of baseload power, for integration of renewables, for making environmental upgrades to existing generation, or for adopting new technologies that make the grid "smarter."

Just as the times have changed and the needs of rural America have changed, so too has the RUS loan program. We have appreciated working with the Committee over the years to help make the program more streamlined and efficient, and we look forward to exploring new ways to continue to improve the program. Modernizing the RUS loan program is good for borrowers (electric co-ops) and taxpayers. The RUS annually reviews and approves billions of dollars of loans, and finding ways to more efficiently process those loans reduces burdens on taxpayers while meeting borrowers' needs more quickly as well.

Guaranteed Underwriter Program

Another important financing option available to electric cooperatives is loans from cooperative banks. Cooperative lenders add healthy competition to the marketplace. The farm bill contains a provision that allows those loans to be guaranteed by RUS for cooperative business purposes. We encourage the Committee to continue that policy.

In addition to investing in the electric cooperative network, the fees paid on Guaranteed Underwriter Loans can be used to fund Rural Economic Development Loans and Grants—known as the REDL&G program.

Rural Economic Development Loans and Grants (REDL&G)

Under the REDL&G program, USDA provides zero-interest loans to utilities (including electric co-ops), which, in turn, pass the funds through to local businesses and other groups that create jobs in rural areas. This positive cycle of business development can strengthen both the co-op and the local communities by helping stabilize populations and the co-op's customer base.

Since 2011, Georgia co-ops have conducted around $6 million in REDL&G projects. Included among those projects are the renovation of a hospital and the construction of a new cattle feed operation to support local agribusiness. We believe the REDL&G program is a valuable tool in offsetting population flight and job losses in rural Georgia and around the country.

Energy Efficiency

For years, electric co-ops across the country have provided information and advice to consumers to help them use electricity more efficiently and cost-effectively. The wide range of assistance includes rebates for energy-efficient appliances, switching to more energy efficient light bulbs and time of day rates to encourage off-peak usage.

The Rural Energy Savings Program Act included in the last farm bill was modeled in part on the How$mart program at Habersham EMC in Georgia. This is a unique program that allows co-op homeowners to finance energy efficiency upgrades in their homes then pay back those loans on their monthly bills. The efficiency gains result in a net savings for the customer.

We encourage you to maintain the Rural Energy Savings Program and the Energy Efficiency and Conservation Loan Program. We believe these programs can help others replicate Georgia's successes around the country to save energy and save our owners money.

Broadband

Just as with other types of infrastructure, rural America cannot be competitive without access to high speed broadband service. Many comparisons are drawn between the lack of access to robust broadband service today and the need for elec-

trification in rural areas 80 years ago—with the urban areas of the country well-served, and rural areas being left behind. Some electric co-ops around the country are leading the way in connecting rural customers to high speed broadband. While we're not a silver bullet, we understand these communities and want to see them succeed. As Congress contemplates telecommunication and infrastructure policies in the farm bill and in other legislative packages, we believe that all potential providers including electric cooperatives should be eligible for programs designed to bridge the digital divide.

Conclusion

We are a healthy nation because we have vibrant, bustling urban cities **and** because we have verdant, productive rural areas. Unfortunately, whether it's infrastructure or jobs or access to health care, it seems that too often rural America gets the short end of the stick. The farm bill is important legislation that helps to address some of those disparities.

Electric Cooperatives enjoy a productive partnership with the Federal Government and with the communities we serve to promote the health of rural America. We look forward to continuing to work with you toward that important goal. I'm happy to answer any of your questions.

The CHAIRMAN. Thank you.

Mr. Fletcher.

STATEMENT OF STEVE FLETCHER, MANAGER AND OPERATOR, WASHINGTON COUNTY WATER COMPANY, IL; PRESIDENT; NATIONAL RURAL WATER ASSOCIATION, NASHVILLE, IL

Mr. FLETCHER. Chairman Scott, Ranking Member Scott, Congressman Davis from my home state, and Members of the Subcommittee, it is an honor to testify before you on the USDA Water and Waste Water Programs, and the associated technical assistance that directly benefits small and rural communities.

I am Steve Fletcher, and I have the honor to serve as President of the National Rural Water Association. NRWA is a water utility organization with over 31,000 members. Please note, 94 percent of community water systems in the U.S. serve rural communities under 10,000 in population.

I am also the manager and operator of the Washington County Water Company. This water utility started with the Farmers Home Administration loan and grant in 1979, with only 700 customers. We have received additional financing from rural development to expand and upgrade our utility 12 times. Currently, we serve 4,600 customers in parts of southern counties. We simply could not afford to debt service a commercial credit loan with the income of our customers.

We currently sell treated water to several small towns that made the decision to discontinue operating their treatment plants because they couldn't afford to staff, maintain, and upgrade the utility.

We also operate and conduct all required testing for most of these systems. We do this at our cost because they are our neighbors.

I make these points to further highlight the fact that without affordable financing and the direct assistance provided by the Rural Development, and entities like NRWA, many small and rural communities simply couldn't afford to provide basic clean, safe, and affordable water and waste water services for their residents. This story is not uncommon throughout rural America.

People take it for granted that their water is always safe and uninterrupted. This infrastructure, or what I call the invisible infra-

structure, is not just about digging holes and putting pipes in the ground, these investments have many direct and indirect benefits. They provide jobs, many times increase the tax base for new business or housing development, they are a catalyst for economic and community growth.

Mr. Chairman, as you draft the rural development title in the new farm bill, we would like to focus on four issues. First, the majority of rural communities in the nation have relied on Rural Development for affordable financing and technical assistance to provide essential water and waste water services, and to overcome the lack of population density. As previously mentioned, many rural areas lack the financial capability and technical expertise to debt service commercial credit. The grant portion makes assistance possible for lower-income residents and communities. With the current backlog of $2.5 billion, the demand for these Rural Development water and waste water loans and grants is evident.

Second, the Rural Development Circuit Rider Program. Since 1980, circuit riders have provided on-site technical assistance to small communities in all states to ensure that facilities operate at the highest level possible for public health protection. We currently have 117 full-time circuit riders in the field in all 50 states, and 85 of these circuit riders have over 25 years of experience. This assistance actually saves money, and protects the community and the government's investments by ensuring that efficient and sustainable practices are followed. I must also emphasize the direct, on-the-ground, 24/7 disaster assistance we provide. We are on the frontline of responding to disasters in all 50 states. Chairman Scott and Ranking Member Scott, a recent example of this is when Georgia Rural Water Association worked with over 50 systems in southwest Georgia immediately after a tornado struck south Georgia on Sunday, January 22, to help respond to the devastation.

Third, the Waste Water Technical Assistance Program. This initiative provides on-the-ground technical assistance directly to communities for waste water treatment facilities. Assistance includes design and upgrade recommendations, daily operation and maintenance advice, permit renewals, and helping these systems meet compliance requirements from state and Federal programs.

Fourth, as President Trump has emphasized, a robust bill is needed to address the aging infrastructure in our nation. NRWA supports the President's goal to increase infrastructure investments, and requests funding to be directed to our rural communities, including providing resources to the existing tried and true rural development programs.

We at the National Rural Water Association also share the mission and vision of our rural development partner; a mission to serve, regardless of income or location, every rural community in need.

Thank you, Chairman Scott and Ranking Member Scott, for allowing me to testify.

[The prepared statement of Mr. Fletcher follows:]

PREPARED STATEMENT OF STEVE FLETCHER, MANAGER AND OPERATOR, WASHINGTON COUNTY WATER COMPANY, IL; PRESIDENT; NATIONAL RURAL WATER ASSOCIATION, NASHVILLE, IL

Chairman Scott, Ranking Member Scott, and Members of the Subcommittee. It is an honor to testify before you on the Department of Agriculture's (USDA) Water and Waste Water programs and the associated technical assistance that directly benefit small and rural communities. I am proud of the work of this Committee and specifically the Rural Development programs that have lifted up the quality of life for so many of the residents in my home State of Illinois and throughout this nation. Thank you.

I am Steve Fletcher and I have the honor to serve as the President of the National Rural Water Association. The National Rural Water Association (NRWA) is a water utility organization with over 31,000 members. Our member communities have the very important public responsibility of complying with all applicable regulations and for supplying the public with safe drinking water and sanitation every second of every day. Most all water supplies in the U.S. are small; 94% of the country's 51,651 drinking water supplies serve communities with fewer than 10,000 persons, and 80% of the country's 16,255 wastewater supplies serve fewer than 10,000 persons.

I am also the Manager and Operator of the Washington County Water Company. This water utility started with a Farmers Home Administration loan and grant in 1979 with only 700 customers. This community worked for years to bring running water to their residents. Since inception, the Washington County Water Company has received additional financing from Rural Development to expand and upgrade our utility. Currently, we serve 4,600 customers in seven counties. This rural utility, like the overwhelming majority in the Rural Utilities Service (RUS) portfolio, have never been late on a payment. This would not have been possible without the direct assistance from the Department of Agriculture's loan and grant program. We simply could not afford to debt service a commercial credit loan with the income of our customers.

We currently sell treated water to several small towns that made the decision to discontinue operating their drinking water treatment systems because they couldn't afford to staff, maintain and upgrade their utility to meet U.S. Environmental Protection Agency (EPA) standards. We currently provide staff to sewer treatment utilities for two small towns that don't have the resources to properly operate and maintain those facilities. We also send staff to several other small towns to operate and conduct all required testing for their drinking water systems. As previously mentioned, many of these small towns do not possess the capacity to adequately operate their systems without this direct on-site assistance. We provide these services at our cost for a simple reason, they are our neighbors.

I make these points to further highlight the fact that without affordable financing and the direct assistance provided by Rural Development and entities like NRWA, many small and rural communities simply couldn't afford to provide the basic service of clean, safe and affordable water and waste water service for their residents.

As I travel around the nation in my current role as the President of NRWA, I learn that my story is not uncommon throughout our rural communities. The grant portion coupled with the direct on-site technical assistance makes these systems affordable and sustainable for their communities. These investments have paid dividends for 70 years in the small and rural communities across this nation.

The Rural Development mission area has a wide and holistic approach necessary to enhance and protect the health and vitality of Rural America. We look at these USDA investments, especially in infrastructure, and witness their impact on the quality of life for these rural communities. People take it for granted that their water is always safe and uninterrupted. This infrastructure or what I call the "invisible infrastructure" is not just about digging holes and putting pipes in the ground. These investments have many direct and indirect benefits; they provide jobs, many times increase the tax base from new business or housing development; they are a catalyst for economic and community growth while at the same time enhancing and maintaining the health and environment for the residents. In many cases, new businesses would not entertain locating in an area without water and wastewater services. We all drink the water we produce and I would offer that we are the first line of defense for the water quality that our customers use in their daily lives, especially hospitals and doctors' offices.

Mr. Chairman, as you draft the Rural Development title in the new farm bill, we would like you to focus on six issues under the Rural Development mission area.

First, the RUS Water and Waste Water Loan and Grant programs. The majority of the rural communities in the nation have relied on Rural Development (and the

predecessor agency, Farmers Home Administration) for affordable financing and technical assistance to provide these essential services. As previously mentioned, many remote rural areas lack the financial capability and technical expertise to debt-service commercial credit. The grant portion makes this assistance possible for lower-income residents and communities. The Water and Waste Water loan and grant program work in unison. In FY 2016, the RUS average loan grant ratio was 66% loan and 34% grant. Some will suggest that grant money is not needed and the community should just finance the project with 100% loan. This is simply not the case. My point is that the grants are carefully administered by RUS as an investment in order to make this vital service affordable and not over burden lower-income communities and customers.

Rural Development is unique that all their customers are rural. In FY 2016, 85% of the projects served populations of 5,000 or less and 70% of all projects served populations of 2,500 or less. The average family income was $36,178 with an average monthly water bill of $47.72 and sewer bill of $48.05. In FY 2016, 582 projects were funded with loans and grants that totaled $1.5 billion in direct RUS assistance. With a current backlog of $2.5 billion derived from 995 applications, the demand for these Rural Development programs is evident.

Many projects take years of personal investments from the local leaders and community. Everyone on the system is paying the same amount for their water or sewer bill, the retiree, the fireman, the local Mayor, everyone is treated the same. The local ownership and operation is another source of pride for the community.

Second, the Rural Development Circuit Rider Program. Since 1980, Circuit Riders have provided on-site technical assistance to small communities in all states for water infrastructure development, environmental compliance, training, certification, operations, management, rates, disaster response, training, energy audits, financial management and governance; all necessary to ensure that facilities operate at the highest level possible for public health protection. We currently have 117 full-time Circuit Riders in the field in all 50 states. Currently, over 85 or 72% have over 25 years' experience in the industry. Many of these seasoned field employees could find higher paying jobs and ones that did not require extensive travel, but they are driven and receive great personal satisfaction from their work.

This assistance actually saves money and protects the community and government's investments by ensuring that efficient and sustainable practices are followed. The low delinquency and default rate for this program is directly linked to the technical assistance provided to these utilities.

I must also emphasize the direct on-the-ground disaster assistance we provide. The Circuit Riders are on call 24 hours a day, 365 days a year. A disaster for our customers is anytime they turn on the faucet and they have no water. That is a disaster for this customer and we are sensitive to that issue and respond immediately. I am referring to natural disasters like the floods in South Carolina, Hurricanes Hermine and Matthew in Florida, the recent tornadoes in Georgia, Oklahoma, Mississippi and Arkansas. We are on the front line when these events occur. State associations provide equipment and personnel across state lines to provide immediate disaster relief. NRWA, through our experienced state affiliates, conducts annual emergency response training to prepare for these events.

Chairman Scott, and Ranking Member Scott, the Georgia Rural Water Association contacted and worked with over 50 systems in southwest Georgia immediately after the tornados struck South Georgia on Sunday, January 22nd, to respond to the devastation.

These seasoned employees have long standing relationships and trust built within the communities they serve. The on-site or hands-on assistance is required to address complex issues and build that trust.

Third, the Waste Water Technical Assistance program. This initiative provides on-the- ground technical assistance directly to communities for waste water treatment facilities. Assistance includes design and upgrade recommendations, daily operation and maintenance advice, assisting with permit renewals and helping these systems meet compliance requirements from state and Federal regulations.

Fourth, the Rural Development field structure. Rural Development offers a holistic approach for the economic vitality of a rural community whether it is water or waste water infrastructure, broadband, business loans or grants or essential community facilities; the field structure is a vital tool to deliver these programs. I have witnessed the restructuring and reduction of employees and offices in Rural Development in 2011 and 2012 that reduced the field structure by over 1,000 staff. Unfortunately, Rural Development lost numerous senior staff with expertise in water, business and housing. I would caution reducing this field presence further. Rural Development is still training and filling key positions to deliver these programs. Rural Development has used technology to help bridge this gap. RD Apply, a new

easy to use online application has been employed and used by many of our currents members. The Circuit Riders also use this application to directly assist their customers. As you are aware, Rural Development is also moving ahead on ePER, an electronic preliminary engineering report that should save communities money and time. I know it is difficult in this budget climate but any efforts to preserve or enhance this field structure will make a difference in serving remote rural areas, especially ones that experience pervasive poverty.

Fifth, future infrastructure funding. As President Trump has emphasized, a robust bill is needed to address the aging infrastructure in our nation. NRWA supports the President in this endeavor. We request your assistance to ensure any national water infrastructure proposal would include funding to address the specific needs for our rural communities, including providing resources through the existing Rural Development programs to adequately serve rural communities.

Sixth, the RUS eligible population limit. I close with an additional suggestion for the Committee. The current underlying statutory authority for the Rural Development Water and Waste Water programs is set at the 10,000 population limit. The Secretary has little flexibility or waiver authority to address communities that have grown or slightly exceed that limit. In the past, Congress was able to list these communities within a general provision contained in the annual appropriations bills. With the changing demographics in Rural America, we believe that providing the Secretary flexibility to assist these communities would be beneficial. If a community can demonstrate economic hardship, rural character and the need for RUS assistance, that community should be considered. Funding priority could still remain with the existing applicants from lower-income communities under the existing 10,000 population ceiling.

Additionally, the Water and Waste Water Guaranteed Loan program is vastly underutilized. For FY 2016, only four loans were made that totaled $7,118,000. Increasing the population ceiling for this program to 20,000 will help these larger rural communities, especially ones with more resources and capacity necessary to debt service market rate loans.

We at the National Rural Water Association also share the mission and vision of our Rural Development partner; a mission to serve, regardless of income or location, every rural community in need. Like Rural Development, we want to ensure no community in Rural America is left behind. No community can grow and improve without the sustaining resources of water and wastewater services. With your continued support and leadership, we will continue to prosper.

Thank you, Chairman Scott and Ranking Member Scott for allowing me to testify and I would be happy to answers any questions that you may have at this time.

The CHAIRMAN. Thank you, Mr. Fletcher.

Mr. Cook.

STATEMENT OF R. CRAIG COOK, CHIEF OPERATIONS OFFICER, HILL COUNTRY TELEPHONE COOPERATIVE, INC., INGRAM, TX; ON BEHALF OF NTCA—THE RURAL BROADBAND ASSOCIATION

Mr. COOK. Good morning, Chairman Scott, Ranking Member Scott, and Members of the Subcommittee. Thank you for inviting me to testify before you today on the farm bill and the importance of advanced telecommunication services to rural development.

My name is Craig Cook, I am here on behalf of Hill Country Telephone Cooperative in Ingram, Texas, and NTCA—The Rural Broadband Association, which represents about 850 of the 1,000 or so rural telecom providers in the U.S.

As many of Subcommittee Members are aware, because small rural telcos serve your districts, we provide broadband and other advanced telecom services to the most rural areas of the U.S., including substantial agriculture and energy producing regions.

The immense economic, health care, education, and public safety benefits of high-speed broadband are well known by now. A recent study revealed that rural telecom investment contributed $24.1 bil-

lion to the U.S. economy in 2015, and supported approximately 70,000 jobs.

Broadband helped solve the problem of distance by opening up new education and job opportunities in rural America, and connects rural veterans and others with healthcare professionals, helping rural businesses tap into global markets, and, of course, helps farmers and ranchers use the Internet to analyze livestock and crop data with modern precision agriculture tools.

Rural areas are unique. While they need broadband to compete, and our nation needs rural broadband so everyone can share in what rural America offers, the vast distances and low density of rural areas undermine the business case for the enormous capital and operational cost of deploying networks. A small rural broadband provider can't walk into a typical bank and expect financing for a network that measures payback over a period of decades, not years.

USDA's RUS telecom loan portfolio provides up-front capital for deploying rural telecom networks. RUS brings years of experience and familiarity with the telecom industry, and rural areas gain from financing networks through its telecom infrastructure and broadband loan programs, both of which provide loans paid back with interest to the benefit of the U.S. taxpayer. Similarly, the Community Connect Grant Program serves the most rural areas, where a loan may not make sense.

We urge the Subcommittee to continue its support for these programs, and refrain from making extensive changes that might lead to more uncertainty.

At Hill Country, we have appreciated having a dedicated and experienced partner like RUS, and just last year finished upgrading 20 percent of our network so that more of our customers have access to 25 Mbps and higher broadband speeds. And this is a project that wouldn't have been possible this soon without capital from RUS.

As a compliment to up-front financing like that available through RUS, the High-Cost Universal Service Fund Program, the USF, is essential to enable the business case for delivering broadband in rural areas. The USF helps keep consumer rates affordable on networks once they are built, and sustains operation of those networks.

Over the past 10 years, the USF High-Cost Fund has undergone extensive reforms to orient the program towards supporting broadband networks. As a result, small telcos now receive support for offering broadband-only services, thanks to help of dozens of Members of Congress, including Members of this Subcommittee.

Though we have made progress on USF reform, the High-Cost Program has been under the same effective cap since 2011, and lacks sufficient resources to make the reforms actually meaningful to consumers. This USF budget issue must be addressed or rural consumers will pay much more for broadband than urban Americans, and rural consumers will experience much slower speeds.

This unfortunate reality violates the statutory mandate for reasonably comparable rates and services in rural and urban America. I raise this budget concern because USF justifies the business case for rural broadband by keeping rates affordable.

More consumers are using more data-intensive broadband applications with each passing year. This enormous consumer demand cannot be met with short-term broadband solutions that may soon need replacing due to insufficient capacity. The resources of RUS and USDA are most efficiently and effectively invested in future-proof networks that will be readily upgraded over time to meet consumer demands. And we must take steps to ensure that facilities financed by USDA or supported by USF are not overbuilt by another carrier deploying a network financed or supported by a different program.

The provision of rural broadband service is an important job that the rural industry is committed to, and we appreciate Congress taking time to understand how rural areas remain served through the provision of necessary resources.

It is an honor to be with you today, and I welcome any questions you may have from me. Thank you.

[The prepared statement of Mr. Cook follows]

PREPARED STATEMENT OF R. CRAIG COOK, CHIEF OPERATIONS OFFICER, HILL COUNTRY TELEPHONE COOPERATIVE, INC., INGRAM, TX; ON BEHALF OF NTCA—THE RURAL BROADBAND ASSOCIATION

Introduction

Chairman Scott, Ranking Member Scott, and Members of the Subcommittee, thank you for this opportunity to testify about rural development, broadband, and the 2018 Farm Bill. I am Craig Cook, Chief Operations Officer at Hill Country Telephone Cooperative. My remarks today are on behalf of Hill Country, as well as NTCA—The Rural Broadband Association, which represents approximately 850 rural community-based carriers in 45 states that offer advanced communications services throughout the most sparsely-populated areas of the nation.

Rural Telecom Industry Innovation

Small, rural telecom providers like Hill Country connect rural Americans with the world—making every effort to deploy advanced networks that respond to consumer and business demands for cutting-edge, innovative services. Fixed and mobile broadband, video, and voice are among the many services that rural Americans can access thanks to our industry's commitment to serving sparsely populated areas. The rural telecom industry has always been innovative—leading the way in converting to digital switched systems, providing wireless options to their hardest to reach customers, enabling distance learning and tele-health applications, and where possible deploying future-proof all-fiber systems.

Hill Country Telephone

I have been part of the industry for nearly 30 years, spending the last 2 years at Hill Country. My experience has focused on telecom regulation and public policy, technical operations, engineering services, and business development. In addition to having worked for consulting firms and smaller rural service providers, I've also had the opportunity to work for larger service providers such as GTE. Hill Country is a local telecommunications provider with 111 employees serving a 2,900^2 mile area—an area larger than the state of Delaware with only 4.4 subscribers per square mile. But, 22 percent of our customers reside in just 3^2 miles, while the remaining 78 percent reside in the other 2,897^2 miles—so the population density of the more rural areas is only 3.4 customers per square mile. We provide 12,700 total connections to wireline voice, high-speed broadband, and video services over a network that employs a mix of fiber and copper facilities. In actual network terms, we have deployed 3,842 copper route miles and 1,699 fiber route miles.

Our sparsely-populated service territory does not make an attractive business case for Wall Street and will not support multiple providers making the substantial capital investments needed to serve such a large area. For Hill Country, like many other NTCA members that serve agricultural communities and other rural areas, the challenges of distance and density hit close to home.

Rural Telecom and Economic Development

Broadband-capable networks are critical to helping rural communities overcome these challenges. Our networks allow agricultural producers and other rural businesses to communicate with suppliers and sell to new markets, they enable education of our children on par with opportunities in urban areas, and they make our communities attractive destinations for people and businesses to relocate. In rural America, that translates into economic development that produces jobs, not only in agriculture, energy and other industries with a strong rural presence, but in the healthcare sector, and just about any other retail industry that requires broadband to operate.

Importance of USDA Financing

As this Committee deliberates the upcoming farm bill reauthorization, please be mindful that access to capital for rural broadband projects is limited. Smaller broadband providers like Hill Country and other NTCA members have only a few options for financing network construction. Small rural broadband providers cannot walk into large commercial banks to obtain financing for a network that will serve a small number of people over a large area, with the payback measured in decades rather than years.

Cost-effective Rural Utilities Service (RUS) loans offered through the U.S. Department of Agriculture (USDA) are therefore an essential resource for small providers that serve rural America. Apart from RUS, only a few committed, mission-driven lenders like CoBank and the Rural Telecommunications Finance Cooperative (RTFC) typically provide financing to enable small rural providers to build networks in their communities. As a complement to financing, universal service funding (USF) then helps to justify the business case for such construction. The ongoing High Cost USF support ensures that consumers can afford the services offered over the financed networks now and in the future.

The State of Rural Broadband Deployment Progress

Consumer Demand, Fiber, and Future-Proof Networks

Hill Country Telephone and other NTCA members have made remarkable progress in deploying advanced networks in their communities. A survey of NTCA members conducted last year found that 49 percent of respondents' customers are served via fiber-to-the-home (FTTH), up 20 percent from 2013. Twenty-nine percent of customers are served via copper loops, 15 percent cable modem, six percent fiber-to-the-node (FTTN), 0.5 percent fixed wireless, and 0.1 percent satellite.[1]

The growth in fiber deployment is remarkable given the regulatory instability of recent years, with USF reforms and budget shortfalls having challenged the business case for many deployments or undermined the sustainability of networks already in place. Nonetheless, policies that encourage sustainable future-proof networks—such as fiber—will be most efficient in responding to consumer demand over the lives of those networks, particularly when compared to short-term strategies that focus on getting lower-speed broadband deployed quickly only to find that consumer demands outpace the capabilities of such low-speed networks in a few short years.

Due in no small part to increased fiber deployment, rural customers have access to faster broadband speeds. Per last year's survey, 85 percent of NTCA members' customers can purchase broadband at speeds of 10 Mbps or higher. Seventy-one percent can now access speeds above 25 Mbps.

Eighty-two percent of Hill Country's customers have access to 10 Mbps service. The remaining 18 percent of customers are served by long local loops that provide 1 to 6 Mbps service. We work with those customers on an individual basis to find solutions to their broadband needs. We anticipate that twenty-five percent of our customers will have access to FTTH in the next 2 years. Seven percent are currently part of a fiber build and will have access to FTTH by the end of 2017. We have deep fiber penetration throughout our service territory that allows us to provide more than the 10 Mbps to much of our customer base.

And our customers are demanding more and more speed. In 2016, we saw nearly 1,000 customers move from the basic 10 Mbps speed to a higher-tier package. Due to this demand, we continue to employ new technology in our FTTN and copper networks to meet demand, but also continue to deploy fiber. Our vision is to reach our entire territory with FTTH. The speed and sustainability of deployment, however, will depend on both reasonable access to capital to finance construction and the

[1] *NTCA 2015 Broadband/Internet Availability Survey Report* (2016), NTCA—The Rural Broadband Association, Arlington, VA.

availability of USF support to make sure consumer rates on these rural networks, once upgraded, are not astronomical and unaffordable.

Unique Rural Challenges

Deploying networks across wide swaths of rural Texas is not easy. We face the need to cross hundreds or thousands of miles where the population is sparse, and to deal with all kinds of terrain. We must also address environmental and historical permitting concerns that can delay projects and increase their already high costs. Then, where fiber has already been built, we must maintain it over those thousands of miles and ensure customers can use it—that means technicians who travel all over our territory and customer service representatives trained to deal with questions about router and device configurations in ways that were unimaginable when we were just a "telephone company."

And even the best networks in rural markets are dependent upon "middle mile" or long-haul connections to Internet gateways dozens or hundreds of miles away in large cities. Reaching those distant locations is expensive as well, and as our customers' bandwidth demands increase, so too does the cost of ensuring sufficient capacity on those long-haul fiber routes that connect rural America to the rest of the world.

More Work to Do

And many parts of rural America, including many locations in our serving area, still need fiber or other robust facilities. Fifteen percent of NTCA member customers don't have access to even 10/1 broadband. In a country where the Federal Communications Commission (FCC) has indicated that 90 percent of Americans already have affordable access to 25/3 Mbps service and many urban consumers and businesses benefit from 100 Mbps or Gigabit speeds, broadband access in rural America remains far behind urban areas despite the best efforts, innovation, and entrepreneurial spirit of companies like Hill Country and other NTCA members.

Particularly when one considers that even where networks are available many rural Americans pay far more for broadband than urban consumers due to insufficient USF funding, it becomes apparent that the job of connecting rural America—and, just as importantly, sustaining those connections—is far from complete. The rural broadband industry has a great story of success but also much more work to do.

The Role of Rural Utilities Service Funding

The Strength of RUS Experience

Deploying a communications network in a rural area requires a large capital outlay due to the challenges of distance and terrain. The number of rural network users (as compared with more densely-populated urban areas) is too small to pay the costs of deployment and ongoing operations through customer charges. USDA's Rural Utilities Service plays a crucial role in addressing these rural broadband challenges through its telecommunications programs that finance network upgrades and deployment in rural areas.

Since the early 1990s, the RUS telecom programs have financed advanced network plant at a net profit for taxpayers and helped deploy state-of-the-art networks to rural Americans left behind by providers unable or unwilling to serve low-population-density markets. With rare exception, RUS, CoBank and RTFC are the primary lenders that small rural providers can turn to for outside financing. Not only does RUS help rural America remain connected, its Broadband Loan & Guarantees program and traditional Telecommunication Infrastructure Loan & Guarantees program make loans that must be paid back with interest—creating a win/win situation for rural broadband consumers and American taxpayers.

Hill Country's Partnership with RUS

Hill Country is well aware of the benefits of working with an experienced rural telecom lender like RUS, having received an RUS Broadband Infrastructure Program (BIP) grant/loan that helped upgrade 20% of our network connections, enabling broadband deployment to a much larger geographic area in a much more timely manner than otherwise would have been possible in the face of typical capital constraints. The RUS financing package facilitated deployment of a 148 mile fiber backbone designed to dramatically reduce subscriber loop length, enabling 25 Mbps broadband access for many unserved and under-served subscribers. Hill Country met all original project objectives and even added an additional 26 miles of fiber backbone while maintaining the overall project budget—exceeding what we originally set out to accomplish in some of our most rural and challenging service areas. RUS was a key partner in this endeavor, building upon a history of helping small

providers meet similar challenges of distance and population density across the country for decades.

Farm Bill Considerations

The Farm Bill Broadband Loans & Loan Guarantees program was first authorized in the 2002 Farm Bill, and each subsequent farm bill has made extensive reforms with the goal of greater program accountability, efficiency, and effectiveness. Two rounds of program reforms in less than 15 years—the first of which was significantly delayed by the ARRA BIP program's use of the Broadband Loan Program mechanism—means that the Broadband Loan Program has been almost continuously "under construction" since its inception, rendering the program inaccessible to borrowers for long periods of time. While the program isn't perfect, it may be helpful to simply let borrowers use the Broadband Loan Program in current form and become familiar with it for a few years before undertaking another extensive reform effort.

The Community Connect grant program is a useful complement to the other RUS telecom programs with its focus on the niche of supporting deployment in some of the most difficult areas to reach and serve. Community Connect rounds out the RUS telecom portfolio. Rural providers would welcome more resources for the RUS telecom portfolio, but would oppose cutting all funds for one program to increase the size of another, as the last Administration proposed to zero out Broadband Loans in favor of Community Connect in its FY17 budget.

NTCA urges the Committee to continue to support the RUS Broadband Loan program that is subjected to the farm bill reauthorization process at or above current funding levels as you formulate recommendations. Furthermore, we urge the Committee to continue its long history of support for the Telecommunications Infrastructure and Community Connect programs that are also vital to the ongoing deployment and maintenance of advanced communications infrastructure throughout rural America.

The Broadband Opportunity Council (BOC), which includes USDA as a member, released a report in September 2015 that recommended authorizing more USDA programs to make grants and loans for broadband infrastructure. The BOC's January 2017 progress report affirmed this recommendation. While more resources for rural broadband deployment are needed, involving more government entities and programs in broadband financing should be undertaken cautiously to avoid duplicating efforts and undermining a coherent, cohesive approach to financing and then sustaining rural broadband networks.

Along these lines, we understand that it is current RUS policy to avoid duplication of effort when financing broadband-capable infrastructure, and we encourage the Committee to consider enshrining this principle in law—that is, Congress should codify a prohibition on USDA financing new fiber or other broadband-capable infrastructure through any RUS or other USDA program where an existing network deployed by a different carrier was also financed through a RUS or other USDA program. This non-duplication provision should apply to all USDA programs, and should also extend to preclude overbuilding of other carriers' networks that receive USF High-Cost support as administered by the FCC. It would be an utter waste of public resources if any USDA resources (regardless of the program) go to finance the construction of fiber or other communications network facilities in areas where another USDA program or the FCC's USF program has already enabled the deployment and operation of a network by another operator.

Finally, various permitting regulations present significant obstacles to broadband deployment—indeed, the project financed by the RUS grant/loan to Hill Country was delayed for about a year as we waited on completion of different reviews. While permits serve an important public purpose, we'd encourage streamlining Federal approval processes to the extent possible, and to the extent that RUS can help in standardizing processes with land-managing and property-managing agencies and in improving timelines for historical preservation coordination, that would be a significant help in speeding and reducing the costs of deployment. Better, more coordinated sequencing of environmental reviews and approvals is also important, so that companies that are applying for financing do not need to expend substantial resources and staff time up-front in pursuit of loans that might not even be approved (which is a real deterrent to applications) or for environmental showings that might only need to be repeated in a few years once later phases of construction begin. Along these lines and as a related matter, we also support permitting reforms as proposed in Sen[.] Thune's MOBILE NOW Act or as adopted and applied to larger projects in the FAST Act.

The Complementary Role of the FCC'S Universal Service Fund Programs

RUS Financing and USF Support Work in Concert

RUS lending programs finance the substantial up-front costs of network deployment. By contrast, the USF High Cost Fund helps make the business case for construction and sustains ongoing operations at affordable rates. More specifically, USF by law aims to ensure "reasonably comparable" services are available at "reasonably comparable" rates. Not to be confused or conflated, RUS capital and ongoing USF support serve distinctly important, but complementary rather than redundant, purposes in furthering rural broadband deployment. The availability of USF—the ability to make sure that consumers can actually afford to buy services on the networks once built—is so essential to the RUS telecom loan calculus that uncertainty in the Federal USF program in recent years has hindered some of the success, momentum, and economic development enabled by the RUS telecommunications programs.

USF Reform and the Under-Funded High Cost Program

NTCA has made significant efforts to seek some restoration of regulatory certainty to the USF programs in the wake of reform debates that stretched nearly a decade. In March 2016, the FCC adopted reforms to the USF mechanisms that defined options for telcos to elect either a "model-based" USF support mechanism that would provide carriers with additional support in exchange for incremental broadband buildout obligations or a reformed "non-model" USF support mechanism that would provide support to enable more affordable broadband rates for rural consumers and businesses.

Unfortunately, even as the March 2016 order resolved some long-running debates and took several important steps to more directly orient the high-cost USF program toward broadband, the order did not address a fundamental concern—the lack of sufficient funding under a budget that effectively provides telcos with less revenue today than they had prior to reforms adopted in 2011. And in the wake of reforms, it has become increasingly apparent that USF programs are insufficiently funded as many rural consumers face the prospect of paying hundreds of dollars per month for standalone broadband services.

The New A–CAM Cost Model Option

To be clear, the FCC thankfully did provide additional funding in the March 2016 order—$200 million per year—to help facilitate the "model option" as part of the reforms described above. These funds will certainly help enable the expansion of broadband in areas where it is lacking today. But demand for model support far exceeded supply, confirming the insufficiency of a USF High Cost budget that was otherwise held constant at 2010 support levels. In fact, even with the additional $200 million in support, USF funding for the model remains approximately $110 million per year short of demand, meaning that tens of thousands of rural consumers will see lower speeds or no broadband at all—precisely what the reforms were intended to alleviate. NTCA and many other stakeholders are urging the FCC to provide full funding to enable the business case for greater expansion of broadband.

The Non-Model USF Support Option

A new cost model for distributing USF support that lacks sufficient funding is only part of the story. The reforms to the "non-model" USF mechanisms also did not address the underlying problem of insufficient funding. Due to the USF High Cost budget that has been flat for years, the non-model mechanisms look to be under-funded in the amount of at least $140 million this year (and perhaps much more over time). As a result, the budget control adopted to cap the High Cost Fund will cut an estimated ten percent of USF support this year on average for companies like Hill Country—cutting recovery of costs that we have already incurred in deploying networks and delivering services to consumers. Moreover, the budget control can and will vary from period to period, undercutting the kind of predictability that is called for by law and needed when evaluating future investments.

Providing rural broadband won't leave a company with a cash surplus, so the unpredictability and impact of the budget control mechanism hits close to home. Hill Country's USF support was reduced by approximately five percent in the last few months of 2016 and some estimates indicate that the budget control could increase to perhaps ten percent this year. This will translate into higher broadband prices for consumers, because the only place we can turn to recover those costs are our consumers. RUS programs are impacted in turn, because the unpredictable nature of the level of the budget control hinders our ability to plan for future investments in broadband networks.

Thus, as NTCA summarized in a recent filing with the FCC, "while much effort may have gone into rebuilding 'the engine' of non-model USF reforms, the ongoing

lack of 'gasoline in that engine' (in the form of sufficient budget resources) risks rendering its operation inefficient at best and utterly ineffective at worst." This budget crisis—captured in the form of the new budget control mechanism—will deter customer purchases of standalone broadband and ultimately undermine further deployment, as small telcos will need to factor estimated support reductions into future planning efforts and scale back investments.

Right-Sized USF Budget Key to RUS Success

Just as RUS will need sufficient resources to help rural America remain competitive, remedying this USF budget concern will be key to the sustained delivery of affordable, high-quality broadband to consumers that this Committee and many other Members of Congress hope to see in rural America. At a time when the focus is increasingly on deploying better infrastructure faster, the imposition of this budget cap at 2010 levels translates to a contrary result of lower-speed broadband to fewer locations at higher rates. The FCC has taken steps to finally adopt and implement reforms as discussed above, but there is still much more work to be done to make sure the reforms and programs work as intended and that these cornerstones of access to capital (especially RUS financing) and USF can once again operate in concert.

Rural Broadband Benefits the Entire U.S. Economy

Investing in rural broadband has far-reaching effects for both urban and rural America, creating efficiencies in health care, education, agriculture, energy, and commerce, and enhancing quality of life of citizens across the country. A report released in April 2016 by the Hudson Institute in conjunction with the Foundation for Rural Service found that investment by rural broadband companies contributed $24.1 billion to the economies of the states in which they operated in 2015.[2] Of this amount, $17.2 billion was the direct byproduct of the rural broadband companies' own operations while $6.9 billion was attributable to the follow-on impact of their operations. In Texas, the direct economic impact of rural telecommunications was over $1.3 billion with indirect impacts of nearly $720 million.

Rural Telecom a Boon to Urban Economies

The Hudson study also confirmed that while small telcos like Hill Country produce a range of telecommunications services in rural areas, much of the benefit goes to the urban areas where the vendors, suppliers, and construction firms that rural telcos use are based. Only $8.2 billion, or 34 percent of the $24.1 billion final economic demand generated by rural telecom companies accrues to rural areas—the other 66 percent or $15.9 billion accrues to the benefit of urban areas.

Additionally, the report found that the rural broadband industry supported nearly 70,000 jobs nationwide in 2015, including more than 6,300 jobs in Texas, both through direct employment and indirect employment from the purchases of goods and services generated. Jobs supported by economic activity created by rural broadband companies are shared between rural and urban areas, with 46 percent in rural areas and 54 percent in urban areas.

Immense Benefits for Rural Consumers and Communities

The direct and indirect economic impact of the investments and operations of rural telecom providers don't tell the whole story. The broader socioeconomic benefits of broadband for users cannot be ignored. A Cornell University study, for example, found that rural counties with the highest levels of broadband adoption have the highest levels of income and education, and lower levels of unemployment and poverty.[3] A recent Pew Study further finds that among those Americans who have looked for work in the last 2 years, 79 percent used online resources in their most recent job search and 34% say these online resources were the most important tool available to them.[4]

Access to healthcare is a critical issue for rural areas as well, where the lack of physicians, specialists, and diagnostic tools normally found in urban medical centers creates challenges for both patients and medical staff. Telemedicine applications help bridge the divide in rural America, enabling real-time patient consultations and remote monitoring, as well as specialized services such as tele-psychiatry. One study found that doctors in rural emergency rooms are more likely to alter their di-

[2] "The Economic Impact of Rural Broadband" (2016), The Hudson Institute, Washington, D.C.
[3] "Broadband's Contribution to Economic Health in Rural Areas" (2015), Community & Regional Development Institute, Cornell University.
[4] "Searching for Work in the Digital Era" (2015), Pew Research Center, Washington, D.C.

agnosis and their patient's course of treatment after consulting with a specialist via a live, interactive videoconference.[5]

There is also a shortage of teachers in many areas of rural America and those public school districts rely on high-speed connectivity to deliver interactive-video instruction for foreign language, science and music classes. For example, students in rural Minnesota can attend online music classes offered through the MacPhail Center for Music in Minneapolis.[6] Broadband networks also enable farmers and ranchers to use the Internet to analyze weather data, manage nutrient application, map their crop yields, and adjust planting for the next season with modern precision agriculture tools, and gain access to new markets. Farmers are relying heavily on both wireless and wireline broadband technologies, resulting in monthly data usage of 30 to 40 Gigabytes.[7]

Retail e-commerce has benefited tremendously from sales in rural America as well, where consumers may lack access to local retail outlets, but through the availability of rural broadband networks, can access a variety of shopping options. According to the Hudson Institute, rural consumers generated $9.2 billion in online sales in 2015 and if all rural Americans had access to broadband networks, the authors estimate that Internet sales would be $1 billion higher.[8]

Conclusion

Robust broadband must be available, affordable, and sustainable for rural America to realize the economic, healthcare, education, and public safety benefits that advanced connectivity offers. Small, rural telecom providers and lenders such as RUS must have regulatory certainty before they can justify greater investments in the networks of the future, and providers like Hill Country need sufficient ongoing USF support to avoid the prospect of charging rural consumers tens or hundreds of dollars more per month to recover the costs of operating in such rural and remote locations. And deploying broadband is only ½ the battle—rural areas must remain served at reasonable rates if they are to remain competitive.

Thus, the broader mission of universal service—and the economic benefits it delivers locally and to the nation as a whole—requires the resourcefulness and entrepreneurship of small businesses like Hill Country, access to capital from programs like those offered by RUS, and the availability of sufficient and predictable ongoing cost recovery mechanisms like the USF program so that rural consumers and businesses can indeed obtain services that are reasonably comparable in price and quality to those available in urban America.

The CHAIRMAN. Thank you, Mr. Cook.

Mr. Duff.

STATEMENT OF JOHN DUFF, STRATEGIC BUSINESS DIRECTOR, NATIONAL SORGHUM PRODUCERS, LUBBOCK, TX

Mr. DUFF. Chairman Scott, Ranking Member Scott, on behalf of National Sorghum Producers, I would like to thank the Committee on Agriculture and this Subcommittee for the opportunity to submit testimony on the next U.S. farm bill, and implications for sorghum in renewable energy.

My name is John Duff. I serve as Strategic Business Director for NSP, where I focus primarily on farm policy analysis, and work with sorghum-based renewable energy producers on policy and regulatory issues.

NSP represents U.S. sorghum farmers nationwide, and our mission is to increase their profitability by ensuring sound approaches to legislation and regulation. NSP greatly appreciates the work put forth by this Subcommittee in preparation for the next farm bill,

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[5] "Telemedicine Consultations and Medication Errors in Rural Emergency Departments" (2013), Center for Healthcare Policy and Research and Department of Pediatrics, University of California Davis.

[6] "Bringing Broadband to Rural Minnesota" (2016), Center for Rural Policy and Development, Mankato, MN.

[7] "Farmers Harvest Gigabytes with Broadband and Wireless Technology" (2016), CoBank Rural Infrastructure Briefings.

[8] "The Economic Impact of Rural Broadband" (2016), The Hudson Institute, Washington, D.C.

and looks forward to working with its Members to craft this vital farm policy.

My testimony, in particular, will focus on implications for sorghum in renewable energy.

The High Plains produces the largest volume of sorghum, but the crop is also grown from Georgia to California, and south Texas to South Dakota. In 2016, 480 million bushels of sorghum were produced in the U.S., with Kansas and Texas contributing approximately 80 percent of this total. Sorghum uses ⅓ less water than corn, and tolerates heat much better than comparable crops. These characteristics make it particularly well suited for the semiarid High Plains where ground water declines threaten local economies, often underpinned by renewable energy or ethanol producers. Ethanol producers typically consume about ⅓ of the U.S. sorghum crop, and are on track to use 125 million bushels in 2017.

Since the 2008 Farm Bill was enacted, the U.S. renewable energy industry has seen both incredible opportunities and tremendous challenges. As with any new industry, many companies have experienced only limited success, and setbacks have sometimes seemed more common than growth. Through this decade of change, sorghum has proven to be a constant for first-generation and next-generation renewable energy producers. The advantages are clear. Sorghum is a source of starch, sugar, and cellulose all in a single crop. Its agronomic needs are well known to U.S. farmers, and it is supported by a deeply experienced seed industry, with roots in the 1950s upper Texas Panhandle, where 85 percent of the world's sorghum seed is still produced. Simply put, unlike other renewable energy feedstocks, sorghum was built to last and is here to stay.

The 2008 Farm Bill recognized this potential and set up a structure to reward ethanol producers for taking a risk on feedstock such as sorghum. NSP firmly believes the resulting incentives enabled ethanol producers to become the foundation of the domestic sorghum market, with over $60 million being used to bolster sorghum demand through the Advanced Biofuel Payment Program. NSP strongly urges the Committee to continue and strengthen this program through a more transparent payment calculation process, and an addition of provisions that will incentivize its new processes designed to increase overall energy production.

As technology has evolved, so too have energy title needs. While many programs authorized by the 2002 and 2008 Farm Bills provided much-needed support during a time when little was known about the commercial viability of many renewable energy technologies, today's environment is significantly different. Therefore, we strongly urge the Committee to consider combining and updating programs to better suit the needs of the current renewable energy industry. In summary, the next energy title must focus more on incentivizing greater energy production by proven market participants, than on de-risking unproven technology development.

NSP believes sorghum will be a key part of our continuing move toward greater energy independence. The Department of Energy agrees, and has committed over $70 million to sorghum research since 2015. The Department refers to sorghum as a model feedstock, in large part because of the diverse nature of the crop. Sorghum is a starch, sugar, and cellulose source all in a single crop,

and growth in the area of renewable energy will benefit all U.S. sorghum farmers and ultimately all of American agriculture.

Thank you, and I welcome any questions.

[The prepared statement of Mr. Duff follows:]

PREPARED STATEMENT OF JOHN DUFF, STRATEGIC BUSINESS DIRECTOR, NATIONAL SORGHUM PRODUCERS, LUBBOCK, TX

Introduction

On behalf of National Sorghum Producers, I would like to thank the House Committee on Agriculture for the opportunity to submit testimony on the next U.S. farm bill and implications for sorghum in renewable energy.

My name is John Duff. I serve as Strategic Business Director for NSP, where I focus primarily on farm policy analysis and work with sorghum-based renewable energy producers on policy and regulatory issues. NSP represents U.S. sorghum farmers nationwide, and our mission is to increase their profitability by ensuring sound approaches to legislation and regulation. NSP greatly appreciates the work put forth by the Committee in preparation for the next farm bill and looks forward to working with its Members to craft this vital farm policy. My testimony, in particular, will focus on implications for sorghum in renewable energy.

Industry Overview

The High Plains produces the largest volume of sorghum, but the crop is also grown from Georgia to California and south Texas to South Dakota. In 2016, 480 million bushels of sorghum were produced in the U.S., with Kansas and Texas contributing approximately 80 percent of this total. Sorghum uses ⅓ less water than corn and tolerates heat much better than comparable crops. These characteristics make it well-suited for the semi-arid High Plains, where groundwater declines threaten local economies often underpinned by renewable energy or ethanol producers. Ethanol producers typically consume about ⅓ of U.S. sorghum production and are on track to use 125 million bushels in 2017.

Expand Opportunities for Renewable Energy Producers Using Sorghum

Since the 2008 Farm Bill was enacted, the U.S. renewable energy industry has seen both incredible opportunities and tremendous challenges. As with any new industry many companies have experienced only limited success, and setbacks have sometimes seemed more common than growth. Through this decade of change, sorghum has proven to be a constant for first generation and next generation renewable energy producers. The advantages are clear: Sorghum is a source of starch, sugar and cellulose all in a single crop; its agronomic needs are well-known to U.S. farmers; and it is supported by a seed industry with roots in the 1950s upper Texas Panhandle, where 85 percent of the world's sorghum seed is still produced. Simply put, unlike other renewable energy feedstocks, sorghum was built to last and is here to stay.

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As technology has evolved so too have energy title needs. While many programs authorized by the 2002 and 2008 Farm Bills provided much needed support during a time when little was known about the commercial viability of many renewable energy technologies, today's environment is significantly different. Therefore, we strongly encourage the Committee to consider combining and updating programs to better suit the needs of the current renewable energy industry. In summary, the next energy title must focus more on incentivizing greater energy production by proven market participants than on de-risking unproven technology development.

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The CHAIRMAN. Mr. Greenwood.

STATEMENT OF HON. JAMES C. GREENWOOD, PRESIDENT AND CHIEF EXECUTIVE OFFICER, BIOTECHNOLOGY INNOVATION ORGANIZATION, WASHINGTON, D.C.

Mr. GREENWOOD. Chairman Scott, Ranking Member Scott, and other distinguished Members of the Subcommittee, good morning. Thank you for the invitation to testify today as we look ahead to the next farm bill, and the strategies to support our farmers and our local businesses.

Twelve years ago, after serving for 12 years in Congress, I left a safe seat here in the House to lead the world's largest trade association representing biotechnology companies. I would like to note that I left undefeated and unindicted, by the way. I did this because I believed deeply in the biotechnology industry, and in our ability to affordably fuel, feed, and heal this country and, indeed, the world.

Mr. Chairman, congratulations on your selection to lead this Committee, and Mr. Ranking Member, welcome back.

I had the opportunity to be a Subcommittee Chairman during my service on the Energy and Commerce Committee, under Speaker Gingrich. These leadership posts don't always bring the cameras, which isn't necessarily a bad thing these days, but they do bring the opportunity to enact your ideas and to make a real difference for the people who put you here.

I know Georgia's farmers are in good hands. I don't think it is a coincidence that this Subcommittee and the USDA are now led by public servants from a state that is on the cutting edge of modern agriculture.

Georgia generates more than $8 billion a year in biobased industrial activity. Only one state in the Union produces more, and nationally, Georgia is ranked fourth in the number of direct biobased industry jobs, with more than 80,000.

One of Georgia's most iconic companies, Coca-Cola, has utilized the farm bill's energy title to become one of the largest bioplastics end-users in the country. Their new bottle, introduced in 2009, is made 30 percent from plants. To date, Coca-Cola has produced more than 40 billion plant bottles. And the PlantBottle™ technology is now being used in polyester car interiors and souvenir cups, and Coca-Cola is building new manufacturing facilities and creating made-in-the-USA jobs through its plant PET technology collaborative.

That is just one example from one farm bill energy initiative, USDA's BioPreferred Program, but actually, there are 71 companies in Georgia benefitting from this program, from biobased flooring companies in Dalton, to the world's leading producer of pine chemicals in Savannah.

In my written statement, and in BIO's report that I have submitted for the record, I highlight companies from every state that are developing new technologies and products with support from each of the farm bill energy title programs. We should build on these programs and go forward, not backward.

If you would have asked me during my time in Congress what is the only thing a Member can do for his constituents more valu-

able than create jobs, I might have said create new American industries full of high-paying jobs; jobs that will help preserve our natural environment for our children and our grandchildren. That is exactly the future we are building, and the energy title of this farm bill is a big reason why.

According to USDA, the biobased industry contributes $393 billion to the U.S. economy annually, and supports 4.2 million jobs, and the bioeconomy is adding hundreds of thousands more jobs a year. The renewable fuel sector adds another 850,000 jobs, and $185 billion in annual economic output, and $46 billion in wages for our farmers, our workers, and our workers according to an analysis from Fuels America. These numbers would be a fraction of their current size without the energy title. The programs, *in toto,* provide what all investors say they need; a long-term, stable policy environment to help them make investment decisions. That stability is especially important in these tough times for our rural producers. We know America's farmers today are facing severe economic pressures, commodity prices are down, and so are net farm incomes. They dropped 15 percent last year, and the USDA forecasts another nine percent drop this year. The farm bill's energy programs are an instrumental tool to help farmers weather this storm and bounce back stronger. The demand for biomass gives farmers a value-added product they can grow to offset low commodity prices.

McKinsey and Company estimates $¼ trillion in annual global sales of biobased products. Here in the United States, we have the people, the universities, the technology, and the vision to lead the world in bio-processes and products. Biofuels, renewable chemicals, and biobased products diversity demand for crops and crop residues. Just as modern oil refineries take a crude oil feedstock and produce many value-added products, biorefineries take renewable feedstocks and do the same. And the growing demand for employees to build and operate these new biorefineries is another way we are revitalizing rural communities.

This is the future. The choice we make in the farm bill is whether or not we are going to lead it. In addition to boosting farmer incomes, creating jobs, and revitalizing U.S. manufacturing, the biobased economy is helping to offset the impact OPEC has on our oil prices. In 2014, biobased products replaced nearly 7 million barrels of oil. In 2015, renewable fuels displaced an amount of gasoline equivalent to 527 million barrels of crude. In other words, our industry saved us roughly the volume of oil imported annually from Saudi Arabia and Kuwait combined. BIO is proud to be a founding member of the Ag Energy Coalition of trade groups, companies, and organizations representing thousands of farmers and businesses across the country. We are committed to developing all of the above approach to supporting renewables, energy efficiency, and farm and forest resources. To me, the economic case alone for these new technologies is so strong and compelling that it warrants the continuation and growth of this title, even if one did not share my conviction that they are also critical to the health of our planet.

Mr. Chairman, I look forward to working with this Committee as we plot a course to capture and capitalize on this growing market to harvest and manufacture sustainability. And thank you for al-

lowing me to use the time that the other witnesses left on the table.

[The prepared statement of Mr. Greenwood follows:]

PREPARED STATEMENT OF HON. JAMES C. GREENWOOD, PRESIDENT AND CHIEF EXECUTIVE OFFICER, BIOTECHNOLOGY INNOVATION ORGANIZATION, WASHINGTON, D.C.

Introduction

The Biotechnology Innovation Organization (BIO) is the world's largest trade association representing biotechnology companies, academic institutions, state biotechnology centers and related organizations across the United States and in more than 30 other nations. BIO members are involved in the research and development of innovative healthcare, agricultural, industrial and environmental biotechnology products. Our members are working every day to solve the greatest challenges facing society—whether it is finding a cure for cancer, protecting the public against bio-terror threats, feeding hungry people nutritious food, or generating renewable fuels, renewable chemicals and biobased products. We support public policies, including government funding for key agencies and programs that unleash our members' scientific innovation potential and grow the bioeconomy. BIO also is one of the founding members of the Agriculture Energy (Ag Energy) Coalition, a coalition of trade groups, companies, and organizations representing thousands of farmers and businesses across the United States who are developing an "all-of-the-above" approach to renewable energy, energy efficiency, and farm and forest resources.

Within its broad membership, BIO's member companies are developing new agricultural and low-carbon feedstocks, industrial enzymes, and biological catalysts for the conversion of biomass into advanced biofuels, alternative jet fuels, renewable chemicals, and biobased products. Utilizing the power of industrial biotechnology, companies across the country are creating a robust biobased economy. Biobased production encompasses a complex value chain, from agriculture through the manufacture of consumer goods, that provides an alternative to the petroleum-based value chain and that brings environmental, economic and other benefits. The biobased economy can generate new markets for agricultural producers, boost innovation in domestic manufacturing, and stimulate sustainable economic growth. These companies are developing plant biotechnologies that improve crop insect resistance, enhance crop herbicide tolerance, and facilitate the use of more environmentally sustainable farming practices. In animal agriculture, biotechnology is used to genetically engineer animals to improve their suitability for pharmaceutical, agricultural, and industrial applications.

The biobased economy and industrial biotechnology already contribute to millions of jobs and hundreds of millions of dollars in annual economic activity. And we are poised for accelerated growth in the 21st century. The farm bill energy title can unleash this potential growth, creating tens of thousands of more jobs in rural America and promoting billions of dollars of additional economic activity.

Revitalizing Rural Economies

Much has changed since Congress passed the current farm bill, the *Agricultural Act of 2014*.[1] As [*T*]*he Wall Street Journal* noted last month, American farmers and rural communities are hurting economically. A multiyear slump in prices for corn, wheat and other farm commodities brought on by a world-wide glut of grain is pushing many farmers into debt. Net farm income dropped 15 percent to about $68 billion last year, the lowest since 2009,[2] according to the Agriculture Department. It is expected drop another nine percent in 2017,[3] extending the steepest slide since the Great Depression into a fourth year. As incomes drop, the number of farms continues to decline; there are now fewer than two million farms in America.

Federal lawmakers have worked over many years to craft policies in the farm bill that minimize farm household income fluctuations caused by volatility associated

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[1] H.R. 2642, 113th Cong., Pub. L. 113–79 *https://www.congress.gov/113/plaws/publ79/PLAW-113publ79.pdf* (2014) (enacted).

[2] Dow Jones & Company, Inc. All Rights Reserved. (Feb. 10, 2017). *Trade Punishment for Trump Voters.* THE WALL STREET JOURNAL. *https://www.wsj.com/articles/trade-punishment-for-trump-voters-1486686758*.

[3] Newman, J., & McGroarty, P. (Feb. 8, 2017). *The Next American Farm Bust Is Upon Us.* THE WALL STREET JOURNAL. *https://www.wsj.com/articles/the-next-american-farm-bust-is-upon-us-1486572488*.

with agricultural production.[4] As Members of the Committee begin their work on the development of the next farm bill, they should keep in mind that policies supporting and growing the 21st century biobased economy can help reverse the economic trends farmers and rural communities are currently facing. Chief among these policies is the farm bill energy title, which creates high-value careers and new income streams for American farmers, accelerates the commercialization of new technologies and products derived from agricultural products, and supports construction of biorefinery manufacturing facilities in rural communities. Conventional and advanced biofuels, renewable chemicals, and biobased products made with industrial biotechnology are helping diversify demand for crops and crop residues. Just as modern oil refineries take a crude oil feedstock and produce many value-added products, biorefineries will take renewable feedstocks and make multiple products in the not-too-distant future.

The Value of the Biobased Economy

During the 3 years of deliberations that led to the 2014 Farm Bill, BIO and the Ag Energy Coalition advocated for a robust energy title with mandatory funding to incentivize development and growth of the biobased economy. Within Title IX of the last farm bill, the energy title received $881 million in mandatory funds in 2014, representing less than one percent of the overall farm bill budget. This small amount of funding yields big results for the overall economy. According to the U.S. Department of Agriculture (USDA), the number of jobs contributed to the U.S. economy by the biobased products industry in 2014 was 4.2 million, up from 4.0 million in 2013. In addition to the direct jobs created by the industry, the biobased economy generates a jobs multiplier of 2.76, meaning for every 1,000 biobased products jobs, 1,760 more jobs are supported in the United States.[5] This industry contributed $393 billion to the U.S. economy in 2014, up from $369 billion in 2013.

This broad economic impact comes from biorefineries that are commercializing a range of technology solutions to produce commodity and specialty renewable chemicals as well as advanced biofuels. Industrial biotechnology companies are pursuing renewable chemicals and biobased materials because they can be commercialized at smaller scale and they promise environmental benefits, stable costs, and novel properties in comparison to fossil fuel-derived chemicals. Competition to produce platform renewable chemicals provides manufacturers assurance of a steadily available, high-quality supply of renewable chemicals for consumer product applications.

These facilities are being built in rural communities near biomass resources. The demand for biomass helps agriculture producers by giving them a value-added product they can grow to offset low commodity prices. The demand for employees to build and operate these biorefineries helps to revitalize rural communities.

Development of these biorefineries can bring long-term economic development to rural communities through the predicted rapid expansion of renewable chemical production in the near future. McKinsey & Co. estimates that there were $252 billion in global sales of biobased products in 2012, with biofuels and plant extracts comprising more than ½. Sales of renewable chemicals represented nine percent of the $2.820 billion in worldwide chemical sales in 2012. By 2020, McKinsey expects biobased products to make up 11 percent of the $3.401 billion global chemical market. Sales of biobased products would reach $375 to $441 billion by 2020, with a compound annual growth rate of eight percent over the preceding decade.[6]

Gains in productivity associated with biotech crops also help grow the American agricultural trade surplus because so many biotech crop harvests are dedicated to foreign markets. In Fiscal Year 2015, U.S. agricultural exports totaled more than $143 billion, contributing to a $27.5 billion agricultural trade surplus. This is in part due to biotechnology, which has contributed to a strong and steady growth in the U.S. agricultural export market, particularly for corn and soybeans. It is noteworthy that, according to the White House National Bioeconomy Blueprint, published in 2012, U.S. revenues from biotech crops totaled more than $75 billion. The investments by companies in research, development and commercialization of these crops have generated good jobs all across our country.

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[4] Good, K. (Feb. 28, 2017). *USDA Report Examines Farm Household Income Volatility.* FARM POLICY NEWS. *https://farmpolicynews.illinois.edu/2017/02/usda-report-examines-farm-household-income-volatility/*.

[5] Golden, J., Handfield, R., Daystar, J., & McConnell, E. (Oct. 2016). USDA: *An Economic Impact Analysis of the U.S. Biobased Product Industry. https://www.biopreferred.gov/BPResources/files/BiobasedProductsEconomicAnalysis2016.pdf* .

[6] Biotechnology Innovation Organization (BIO). *Advancing the Biobased Economy: Renewable Chemical Biorefinery Commercialization, Progress, and Market Opportunities, 2016 and Beyond. https://www.bio.org/sites/default/files/BIO_Advancing_the_Biobased_Economy_2016.pdf.*

In addition to boosting farmer incomes, creating jobs, and revitalizing U.S. manufacturing, the biobased economy is lessening our dependence on foreign sources of petroleum. While the U.S. has benefited in recent years from increased production of domestic oil and gas, we are still unnecessarily impacted by the global price of oil and those who control it. One need look no further than OPEC's conscious decision 2 years ago to try to squeeze U.S. producers out of the market, followed by OPEC's cut in production last fall. OPEC's actions caused a ten percent increase in oil prices in 1 day, and prices continued to climb to an 18 month high within a month. Biobased products and renewable fuels are helping to offset the impact OPEC has on our energy prices. In 2014 biobased products replaced about 6.8 million barrels of oil, while in 2015, renewable fuels displaced an amount of gasoline equivalent to 527 million barrels of crude oil. That's roughly the volume of oil imported annually from Saudi Arabia and Kuwait combined.[7]

Whether the growth and benefits from this industry occur in the United States will depend on supportive policies to help grow the 21st century biobased economy. The 2014 Farm Bill energy title programs spurred the development of this industry. To ensure the biobased industry continues to expand in the United States, Congress must improve upon the existing Title IX programs and provide mandatory funding. This will help innovative U.S. companies continue to commercialize advanced biotech processes. Putting homegrown technologies to work converting domestic crops and residues to value-added products can create high-quality rural jobs, spur economic growth, and improve environmental health.

What follows are the existing programs contained within Title IX of the 2014 Farm Bill, how the programs work, the jobs, facilities, and products these programs have helped develop, and how BIO believes these programs can be improved in the next farm bill.

Farm Bill Energy Title Programs

- Section 9002 Biobased Markets Program, known as the BioPreferred® Program.
- Section 9003 Biorefinery, Renewable Chemical, and Biobased Product Assistance Program (BAP).
- Section 9005 Bioenergy Program for Advanced Biofuels.
- Section 9007 Rural Energy for America Program (REAP).
- Section 9008 Biomass Research and Development (BRDI).
- Section 9010 Biomass Crop Assistance Program (BCAP).

Section 9002, the Biobased Market Program, or the BioPreferred® Program

Managed by USDA, the goal of the BioPreferred program is to increase the purchase and use of biobased products from agricultural feedstocks. The BioPreferred® Program was created by the 2002 Farm Bill and reauthorized and expanded as part of the Agricultural Act of 2014 (the 2014 Farm Bill). The program's purpose is to spur economic development, create new jobs and provide new markets for farm commodities. The increased development, purchase, and use of biobased products reduces our nation's reliance on petroleum, increases the use of renewable agricultural resources, and mitigates adverse environmental and health impacts.[8]

BioPreferred® Program is transforming the marketplace for biobased products through two initiatives: purchasing requirements for Federal agencies and their contractors; and voluntary product certification and labeling. Federal law, the Federal Acquisition Regulation, and Presidential Executive Orders direct all Federal agencies and their contractors to purchase biobased products in categories identified by USDA through the BioPreferred® Program. To date, over 14,000 biobased products in 97 product categories (*e.g.,* cleaners, carpet, lubricants, paints) listed in the BioPreferred® Catalog qualify for mandatory Federal purchasing. In Fiscal Year 2017, Federal agencies have committed to include biobased product purchasing requirements in 84,433 contracts totaling $453,150,168.

The BioPreferred® Program also drives growth of the bioeconomy by helping drive consumer recognition of biobased products. USDA is making it easier for consumers to identify biobased products with the USDA Certified Biobased Product label. There are currently more than 2,700 voluntarily labeled products: 1,700 of them are consumer goods, 400 are renewable chemicals, and 600 are industrial products.

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[7] Urbanchuk, J. (Feb. 2016). ABF Economics: *Contribution of the Ethanol Industry to the Economy of the United States in 2015. http://ethanolrfa.org/wp-content/uploads/2016/02/Ethanol-Economic-Impact-for-2015.pdf.*

[8] USDA. *What Is Biopreferred? https://www.biopreferred.gov/BioPreferred/faces/pages/AboutBioPreferred.xhtml.*

Brand owners such as Procter and Gamble (P&G) on their Tide bottle; General Mills on their cereal boxes; Unilever on their detergents; and The Coca-Cola Company on their PlantBottle™ packaging, all use USDA's label to show consumers the biobased content in their products. Eventually, P&G intends to use only recycled or renewable materials to make and package its consumer products. Wal-Mart has set goals to sell only products that use renewable energy and produce zero wastes. The BioPreferred® Program helps create this market pull for renewable chemicals and biobased products and creates a uniform process for companies interested in these technologies.

Recommendations for the Next Farm Bill

USDA should establish within the BioPreferred® Program's voluntary labeling and procurement system a campaign to increase public awareness and acceptance of renewable chemicals and biobased products. The BioPreferred program also should develop an annual report both auditing and tracking USDA's voluntary Certified Renewable Chemicals and Biobased Product labeling program and showing procurement and sales of biobased products by Federal agencies and their contractor's.

Additionally, USDA could work with United States Department of Commerce in developing North American Industry Classification System (NAICS) codes that identify renewable chemical and biobased product manufacturers. USDA should explore combining its certified renewable chemicals and biobased products labeling program with the Environmental Protection Agency's Safer Choice label, providing consumers the ability to identify products that are both certified biobased and safer for human health and the environment.

Finally, we ask Congress to consider increasing mandatory funding for this program to $10 million annually.

Section 9003 Biorefinery, Renewable Chemical, and Biobased Product Assistance Program

The Biorefinery, Renewable Chemical, and Biobased Product Manufacturing Assistance Program (BAP), also known as the Section 9003 Program, provides loan guarantees to assist in the construction of advanced biofuels biorefineries. Consistent with BIO's past advocacy, it was expanded to include renewable chemicals and biobased products manufacturing facilities in the 2014 Farm Bill.[9]

This loan guarantee program enables manufacturers to access capital for large-scale projects in rural communities. Without the loan guarantee program, new innovative companies might never be able to pool sufficient capital to commence development of a project in a rural community with a small population. Section 9003 has enabled companies to put steel in the ground for first-of-a-kind biorefineries. These biorefineries are proven job and economic growth drivers for rural communities.

Sapphire—Columbus, New Mexico

In 2011, under this program, USDA provided Sapphire Energy a $54.5 million loan guarantee to build a refined algal oil commercial facility. Sapphire's "Green Crude Farm" in Columbus, NM, is an example of how USDA funding and partnerships with the private sector are helping to support the development of biorefineries. About a 4 hour drive south of Albuquerque, roughly 1,700 Columbus residents live at the southern edge of New Mexico and the United States. In the desert scrub outside of Columbus the plant opened in May 2012 to produce renewable algal oil. According to the company, more than 600 jobs were created during the first phase of construction at the facility and during operations the plant employs approximately 30 people.[10] After Sapphire received additional equity from private investors, it repaid the remaining balance on its USDA-backed loan in 2013. The plant is current being brought fully online to produce algae for human and animal nutritional products. It is a measured and effective approach to becoming a permanent form of nutritional oils and protein for the world.[11]

Fulcrum Sierra Biofuels—Storey County, Nevada

Section 9003 is supporting development of the exciting field of alternative jet fuels. In 2014, USDA closed on a loan guarantee to Fulcrum Sierra Biofuels, LLC,

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[9] USDA. *Biorefinery, Renewable Chemical, and Biobased Product Manufacturing Assistance Program. https://www.rd.usda.gov/files/fact-sheet/RD-FactSheet-RBS_Biorefinery.pdf.*

[10] BIO-BASED WORLD NEWS. (Aug. 10, 2016). *$250m USDA funding pool to help bio-based chemicals and products seeks applications. https://www.biobasedworldnews.com/250m-usda-funding-pool-to-help-bio-based-chemicals-and-products-seeks-applications.*

[11] Sapphire Energy, Inc. Algae Farm. (2015). *http://www.sapphireenergy.com/locations/green-crude-farm.html.*

to build a biorefinery to produce jet fuel from municipal solid waste in Storey County, Nevada, approximately 20 miles east of Reno. Fulcrum will produce synthesis gas from 147,000 tons of municipal solid waste and catalytically convert it to synthetic paraffinic kerosene/jet fuel through a proprietary technology. The plant will be the first of what the company expects to be several bio-jet fuel plants throughout the country. At the same time as USDA made its loan guarantee, Cathay Pacific Airways announced investment in Fulcrum Bioenergy and negotiated a long-term supply agreement for 375 million gallons of sustainable aviation fuel over 10 years. This would represent about two percent of the airline's annual fuel consumption.[12]

Biosynthetic Technologies—Texas

With Section 9003 expanded in 2014 to make renewable chemicals and biobased products manufacturing facilities eligible to participate in the program, Irvine, California-based, Biosynthetic Technologies, LLC, received conditional approval from USDA for its loan guarantee application. Biosynthetic Technologies is working with a rural lender to finance the construction of a full-scale commercial manufacturing plant in Houston that will produce 20 million gallons a year of its oil-based ingredient for high-performance motor oils, industrial lubricant products, and cosmetic ingredients. These biobased oils have higher viscosity, thermal stability, and flash point than traditional petroleum motor oils as well as existing synthetics. This new project will create manufacturing jobs in the United States, strengthen the agricultural sector, and help create environmentally friendlier products that perform better.[13]

Recommendations for the Next Farm Bill

The 2014 Farm Bill extended loan guarantee eligibility to renewable chemicals and biobased products makers. However, due to a drafting error when reconciling the differences between the House and Senate versions of the 2014 Farm Bill, language was inadvertently deleted that would have allowed stand-alone renewable chemical facilities to fully participate in the program. Under USDA's current regulations, all biorefinery projects must produce an advanced biofuel, even if the main purpose of the project is to create renewable chemicals. As a result, a number of renewable chemical producers are ineligible because it is too costly or impractical for them to retrofit their processes to produce a biofuel, in addition to a renewable chemical.

BIO urges the Committee to amend the language in Section 9003 to ensure stand-alone renewable chemical facilities are eligible in the next farm bill. BIO also requests the Committee work with USDA to ensure timely implementation of the new rules that will come as a result of the next farm bill to ensure USDA makes funding available in a timely manner. Maintaining mandatory funding for this program is crucial for its success in enabling companies to secure the financing they need to commercialize biorefinery projects.

Section 9005 Bioenergy Program for Advanced Biofuels

This program encourages production of advanced biofuels, other than corn starch ethanol. The policy goal is to create long-term, sustained increases in advanced biofuels production. Under the last farm bill, awards totaling $8.8 million were made through Rural Development to biofuels producers, based on the amount of advanced biofuels produced from renewable biomass. Feedstocks incentivized by this program include crop residue, food and yard waste, vegetable oil and animal fat. The program has promoted the development of wood pellets, biodiesel, advanced and cellulosic ethanol, and biogas.[14]

The return on investment (ROI) for new technologies, including advanced biofuels, are important to driving investor interest. Many advanced biofuels are still utilizing brand new technologies and plants, so there is much to learn and improve. Initial investment costs for these technologies and plants will improve with time, practice, learning, and ultimately additional plants. Efficiencies across the value chain—including biomass harvest and storage, engineering improvements, construction learnings and regulatory approvals—must be made in order to improve the economic outlook and certainty for the ROI. Section 9005 funding helps investors in these new

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[12] USDA. Fletcher, J. (Press Release No. 0195.14). *USDA Announces Loan Guarantee to Help Innovative Company Turn Waste Into Renewable Jet Fuel. https://www.usda.gov/wps/portal/usda/usdamediafb?contentid=2014/09/0195.xml.*

[13] BUSINESS WIRE. (Feb. 01, 2016). *USDA Reserves Over $100 Million in Loan Guarantee Funding for Biosynthetic Technologies. http://www.businesswire.com/news/home/20160201005258/en/USDA-Reserves-100-Million-Loan-Guarantee-Funding.*

[14] USDA. *Advanced Biofuel Payment Program. https://www.rd.usda.gov/files/RD_AdvBiofuelsChart_2016.pdf.*

technologies with the requisite ROI needed to proceed with constructing a new plant or expanding capacity at an existing facility. Without Section 9005 mandatory funding, companies working on advanced biofuel technologies have one less tool to support innovation and commercialization of the cleanest fuels in the world. Current USDA and DOE funding programs help advanced biofuels succeed; the industry cannot afford to be without one of these programs.

Recommendations for the Next Farm Bill

It is critical the Committee maintain robust mandatory funding for Section 9005 to help grow and expand the advanced biofuels industry nationwide.

Section 9007 Rural Energy for America Program (REAP)

REAP has been a remarkably popular, successful, and constructive program that supports every state and region and renewable energy and energy efficiency technology. REAP provides benefits to the full agricultural value chain, from producers to coops, to biotechnology and clean technology companies operating across rural America. Nearly 13,000 projects in all 50 states have received awards since the 2008 Farm Bill, leveraging more than $3 billion in private investment. REAP is one of agriculture's best ways of improving the nation's energy infrastructure and resiliency.

The program has been instrumental in helping deploy biogas systems throughout the rural economy allowing agricultural producers, through the use of digesters, to make products from waste streams—manure and crop residues—that would otherwise be viewed as an environmental challenge. Farmers can now take these wastes streams and make on-farm energy, nutrient-rich soil amendments, fertilizers, a renewable replacement for natural gas, and even feedstocks for renewable chemicals and bioplastics. The sale of all these products helps protect the agricultural producer from uneven commodity prices.

REAP improves profit margins for farmers, ranchers, and rural small businesses by cutting energy costs with modern energy efficiency and renewable energy technologies. With REAP, businesses become more efficient, resilient to energy market changes, and more energy independent. Growing economic opportunities with proven energy technologies excites rural citizens and communities and helps keep younger generations in rural areas and in farming.

Recommendations for the Next Farm Bill

The program has been oversubscribed year after year; it should be expanded both in terms of funding and scope in the next farm bill. For example, REAP should be modified to make clear that varying biomaterials projects are fully eligible for funding. In addition, BIO and the Ag Energy Coalition would like to see improvements so that under-served technologies like small-scale wind generation and biogas are better served.

Section 9008 Biomass Research and Development (BRDI)

The Biomass Research and Development Initiative (BRDI)[15] seeks to foster significant commercial production of biofuels, biobased energy innovations, development of biobased feedstocks, and biobased products and processes, including cost-competitive cellulosic ethanol. To this end the program provides competitive funding in the form of grants, contracts, and financial assistance for research, development, and demonstration of technologies and processes. Eligibility is limited to institutions of higher learning, national laboratories, Federal or state research agencies, private-sector entities, and nonprofit organizations.[16]

This program has afforded researchers across the country opportunities to explore new techniques and feedstocks that will enable the biotech industry to build facilities nationwide and create a true biobased economy. Whether it is examining on-farm biomass processing in Kentucky or co-treatment for low-cost fermentation of cellulosic biomass in New Hampshire, this program is key to unlocking the technical challenges of deploying these technologies nationwide.[17]

Recommendations for the Next Farm Bill

It is critical the Committee maintain robust funding for BRDI. Cuts in the appropriations process have led to smaller grants, limiting the diversity of projects.

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[15] USDA. (Feb. 26, 2015). *Biomass Research and Development Initiative (BRDI) https://nifa.usda.gov/funding-opportunity/biomass-research-and-development-initiative-brdi.*

[16] USDA CRS Report. *https://www.everycrsreport.com/reports/R43416.html#fn31.*

[17] USDA NIFA Current Research Information System. *http://cris.nifa.usda.gov/cgi-bin/starfinder/0?path=fastlink1.txt&id=anon&pass=&search=(gc=BRDI%20OR%20GC=RDFD)&format=WEBTITLESG.*

Section 9010 Biomass Crop Assistance Program (BCAP)

The Biomass Crop Assistance Program (BCAP) provides financial assistance to owners and operators of agricultural and non-industrial private forest land who wish to establish, produce, and deliver biomass feedstocks.[18] BCAP provides two categories of assistance: matching payments and establishment and annual payments.

In fashioning the 2014 Farm Bill, Congress made a number of changes to BCAP. Standing out among the changes was a cap on the program's mandatory authorization level. The 2014 Farm Bill imposed for the first time a $25 million cap per year in mandatory funding for FY 2014 through FY 2018.

This cap was due at least in part to concerns that arose in the early years after BCAP was authorized—for example, that it could heighten competition over eligible woody biomass, thus raising the price of that material to the detriment of traditional users, such as nurseries and others, and that the byproduct of paper production, "black liquor," could qualify for Collection, Harvest, Storage, and Transportation (CHST) matching payments. Such concerns have been addressed or have become less acute.[19]

Despite the initial challenges of developing and implementing BCAP, this remains a crucial program for developing the feedstocks necessary for the biobased economy. The program's regionally appropriate biomass feedstocks are key to the development of sustainable systems for biofuels, renewable chemicals, and biobased products.

BCAP has incentivized nearly 1,000 growers and landowners farming nearly 49,000 acres to establish and produce dedicated, non-food energy crops for delivery to energy conversion facilities.[20] In 2014 and 2015, USDA approved 209 contracts for matching payments of $15.8 million toward the collection or harvest of approximately 300,000 dry tons of forest residues from National Forest Service and Bureau of Land Management public lands. Forest residues are removed for the reduction or containment of disease or insect infestation and reduction of fire threat.[21]

In 2016, $1 million was allocated toward the sign-up of 1,000 acres of Miscanthus in project area 5 in Ohio and Pennsylvania[22] and of shrub willow for project area 10 in New York.[23–24]

In the Miscanthus project, BCAP was critical in helping Aloterra establish 5,000 acres of a perennial grass on cropland that was sitting idle and underutilized in Northeast Ohio and Northwest Pennsylvania. BCAP enabled local farmers to wait 3 years before earning income from a harvest of this new perennial grass. Aloterra then leveraged the program to bring an additional $20 million in private funds to build two manufacturing facilities in Ashtabula County, Ohio. This region has been heavily impacted by the opioid epidemic and manufacturing job losses and badly needs good paying manufacturing jobs. Because of BCAP, Aloterra has now created over 60 full-time jobs in the region and brought a new cash crop to poor farmland that was idle. BCAP drives a very powerful economic combination of farming and rural manufacturing. Aloterra is now operating the only facility in North America turning grass into food service packaging, and it is looking to expand this model to several more states.[25]

In northern New York State, the BCAP project has led to the commercialization of shrub willow grown for as a source of renewable energy. Eight landowners are now taking part. All of the willow biomass grown will be used to produce renewable energy at facilities owned by ReEnergy Holdings LLC in northern New York. The purchase of willow to generate renewable energy will inject about $3 million into the local economy over the course of the project.[26]

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[18] USDA *BCAP. https://www.fsa.usda.gov/programs-and-services/energy-programs/BCAP/*.

[19] CRS R41296 *Biomass Crop Assistance Program (BCAP): Status and Issues.* Jan. 12, 2015. *https://www.everycrsreport.com/reports/R41296.html*.

[20] Biomass Crop Assistance Program (BCAP) Qualified Biomass Conversion Facilities (BCF's) FY 2017. *https://www.fsa.usda.gov/Assets/USDA-FSA-Public/usdafiles/Energy/BCAP%20Facility%20Listing%20FY2017.pdf*.

[21] *USDA Resumes Incentives to Grow the Bioeconomy and Improve Forest Health. https://www.fsa.usda.gov/news-room/news-releases/2016/nr_20161110_rel_185*.

[22] Biomass Crop Assistance Program—*Project Areas Numbers 2 through 5 Implemented in Arkansas, Missouri, Ohio and Pennsylvania County Locations for New Giant Miscanthus Biomass Producers. https://www.fsa.usda.gov/Internet/FSA_File/bcap_areas2_5_2011.pdf*.

[23] Biomass Crop Assistance Program—*Project Area Number 10. https://www.fsa.usda.gov/Assets/USDA-FSA-Public/usdafiles/Energy/BCAP/bcap_proj10.pdf*.

[24] USDA: *Feedstocks and the AJF Supply Chain the Broad Pict[ur]e,* Harry Baumes, Sep. 14, 2016. *https://energy.gov/sites/prod/files/2016/09/f33/baumes_alternative_aviation_fuel_workshop.pdf*.

[25] *Miscanthus: Cultivating a Brighter Future. http://www.aloterrallc.com/*.

[26] *Extension BCAP Helps Commercialize Shrub Willow for Bioenergy in Northern New York.* Apr. 20, 2016. *http://articles.extension.org/pages/71099/bcap-helps-commercialize-shrub-willow-for-bioenergy-in-northern-new-york*.

Recommendations for the Next Farm Bill

BCAP has the potential to be a huge benefit to the development of the biobased economy and to agricultural producers looking for additional income streams. We would encourage the Committee to provide the program robust funding in the next farm bill. The key impediment to BCAP's success has been the continual reduction of mandatory funds by appropriators and delays by USDA in implementing the program.

We also would encourage the Committee to explore how BCAP can be better utilized to improve forest health through reductions of hazardous fuels. BIO supports expanding the eligibility of BCAP to include energy sorghums (sweet sorghum, biogas and biomass sorghums) and eligibility of energy sorghum for all of the payments once they are restructured. Introduction of a parallel payment structure for annual crops that remunerates for annual planting and annual retrieval is also necessary for annual crops like sorghum. Rather than dividing payments into establishment, maintenance and retrieval, a structure appropriate for forestry and perennial crops.

Conclusion

Farm Bill energy title programs have been incredibly successful in incentivizing the biobased economy. Because of the research, loans, and grants provided by these programs, industrial biotechnology companies are developing new feedstocks, industrial enzymes, and biological catalysts for the conversion of biomass for the production of advanced biofuels, alternative jet fuels, renewable chemicals, and biobased products.

The industry is on the cusp of creating a robust biobased economy through U.S. biobased production. This encompasses a value chain from agriculture through the manufacture of consumer goods that provides a cost-competitive alternative to petroleum's value chain and brings environmental, economic and other benefits. This generates new markets for agricultural producers, boosts innovation in domestic manufacturing and exports, and stimulates sustainable economic growth. In turn, because the inputs and technologies are domestically developed, this sector will boost the incomes of America's farmers, revitalize rural communities, create high-skilled jobs in the manufacturing sector, and provide sustainable employment.

BIO and the Ag Energy Coalition are ready to serve as a resource to the Committee in developing the energy title and look forward to working with you during reauthorization of the farm bill.

APPENDICES

Editor's note: Due to the size of the appendices referenced, they have been relocated to the end of the published hearing for Thursday, March 9, 2017 for the Subcommittee on Commodity Exchanges, Energy, and Credit, and are located on p. 170.

The CHAIRMAN. Congressman Greenwood, like most Members, you never understood what the red light was for. That holds true today. Thank you for your testimony.

I would like to remind Members that they will be recognized for questioning in order of seniority for Members who were here at the start of the hearing. After that, Members will be recognized in order of arrival. I appreciate the Members' understanding.

I now recognize myself for 5 minutes.

Commissioner Fox, an increase in rural opportunities and narrowing the rural-urban divide is an essential purpose of rural development programs. What should this Committee consider as metrics to judge if we have been successful or not on that effort?

Mr. FOX. Well, the Committee has to look at the SECD Program (Strategic Economic and Community Development), which was part of the 2014 Farm Bill. I mean that program was the first time that we could go through multi-jurisdictional areas, where counties could work together on economic development, you could leverage, I think that is very important as we move forward.

I just think that in rural America we can't afford to build silos, we need to partner. And as an intergovernmental partner, we need

to partner with the Federal and the state to make things happen in rural America.

The CHAIRMAN. Thank you.

Mr. Cook, in your testimony, you proposed a non-duplication rule. I understand the value of this rule, preventing the government from supporting the same service twice, and ensuring borrowers have revenue to pay back their loans, but your rule raises questions for me about what we do for rural residents who are being served by Internet services that are inadequate by today's standard, but built with RUS loan dollars that are still being paid back.

Mr. COOK. Well, thank you.

The CHAIRMAN. Can we allow a potential competitor to take out a loan to build out technically better services, or are those residents resigned to the slow lane for the duration of the loans that underwrote the system?

Mr. COOK. Thank you, Mr. Chairman. I certainly understand that issue, and believe that one of the things that NTCA believes, first and foremost, and certainly its member companies like Hill Country, is that our utmost concern is serving our end-user customers in rural America. Certainly, in cases where there is an existing provider who has an RUS loan, from the standpoint of assuring that the money is used efficiently and effectively, and that there is not duplication of support, we certainly believe it is wise that we are spending taxpayer dollars to the most efficient way possible. At the same time, as I said, we believe that the consumer should be our utmost concern.

I think that in cases where there is another provider wishing to provide support or service in an area that is currently served by an existing RUS borrower, there should be a process in place whereby that existing borrower can at least prove-up their ability to provide service. And if it becomes apparent that they are not doing what they are supposed to be, and not abiding by their loan covenants, then we would agree with you that another provider should at least be considered in those cases.

The CHAIRMAN. Yes. Thank you.

Mr. Chastain, I know that the National Rural Electric Cooperative Association members have been grappling with these concerns too. I would invite you to weigh on that issue as well.

Mr. CHASTAIN. Well, I think what Mr. Cook said makes a lot of sense. There are cases out there where, unfortunately, there are some incumbent providers who do have RUS loans, who are not providing adequate service. We have examples of that in several places in Georgia. As a matter of fact, as you and Ranking Member Scott are aware, the state legislature put in a rural broadband study committee, chaired by Senator Steve Gooch and Representative Don Parsons, specifically to address that issue in rural Georgia.

What he said is correct. Either the incumbent providers who have taken the money either need to be given the chance to step up to the plate and prove that they can provide the adequate service, but if they are not, there should be opportunities for others who can come in to be able to provide that service.

Our view in Georgia is that rural broadband is absolutely quickly becoming a critical piece of infrastructure for rural communities. Rural communities, as you well know, have a lot of challenges already, and not having access to rural broadband is just one further kind of brick on their wagon, so to speak.

The CHAIRMAN. Thank you.

Mr. Duff, as we evaluate energy programs, how have they made meaningful impacts on our rural economies, and do you believe that these investments build self-sufficient infrastructure to drive long-term economic activity? And if you could be brief, I am down to about 20 seconds.

Mr. DUFF. Yes, I will. Thanks for the opportunity to comment.

The best example of the rural development impacts with the energy title from the 2008 and 2014 Farm Bills would be Section 9005, the Advanced Biofuel Payment Program. As I said, it has been a $60 million impact to ethanol plants in Kansas and Texas, in order to incentivize greater use of feedstocks, like sorghum, and that really had a direct impact on the buying power of those facilities in local economies, particular where groundwater declines are really threatening the way of life and the way of farming in the High Plains.

I think that the opportunity that that has created for feedstocks like sorghum in areas where the need is there has had a very significant impact.

The CHAIRMAN. Thank you for that.

I now recognize my colleague from Georgia, the Ranking Member, Mr. David Scott, for 5 minutes.

Mr. DAVID SCOTT of Georgia. Thank you very much.

Mr. Chastain, you in your testimony brought up an interesting comparison between electricity and broadband. And let me first ask you, to your knowledge, there is no American home today that is not connected with electricity. Am I safe in saying that?

Mr. CHASTAIN. Yes, sir, that is correct.

Mr. DAVID SCOTT of Georgia. And am I safe in saying it nearly took us 80 years to accomplish that task?

Mr. CHASTAIN. Yes, sir.

Mr. DAVID SCOTT of Georgia. I can vouch for that. I was born in a rural area, and you can't get much more rural than Aynor, South Carolina, in Horry County. We didn't have electricity or running water, any of that, so I can relate.

Now, how do we compare that to broadband in terms of, we know how important electricity was, but as we move now into this high technology area, how do you compare that with the need for broadband? Are not both at the same level?

Mr. CHASTAIN. Yes, it is hard to compare, it is almost in many ways an apples and oranges comparison, but there are some similarities. We are obviously a very technology-driven society, especially the younger members of our society. We all probably have a cell phone or smartphone in our pockets.

Mr. DAVID SCOTT of Georgia. Yes.

Mr. CHASTAIN. And not just for quality of life, but for business applications in rural America, broadband is going to be increasingly important.

I worked most of my career in economic development trying to recruit industry into rural Georgia, and it is a challenge when there is inadequate broadband to get companies who work on a global platform to be able to locate in some of these communities. Even mom-and-pop entrepreneurial operations, sometimes it makes it hard for them to compete. That is where the comparison is similar, and that I do believe it is something that we are going to have to look at as a nation as a priority for infrastructure improvement to rural broadband. The challenges Mr. Cook outlined very well, it is a Herculean effort when it comes to financing these programs. My opinion is, it is going to take some massive Federal programs to help provide people the opportunity to do that.

Mr. DAVID SCOTT of Georgia. Good. Thank you very much.

Now, Mr. Cook, I want to go to you. You mentioned in your testimony this comparison in speed between rural America and urban America. Could you refine that a bit? Exactly what are you talking about there, how serious it is, and how can we address this?

Mr. COOK. Thank you for the question. Yes, the Communications Act, going back to 1934 and then updated in the Telecommunications Act of 1996, in Section 254 it talks about universal service. It is very clear that we as telecommunications companies have been given a mandate that we are to provide reasonably comparable services at reasonably comparable rates. In other words, trying to equalize what is available in rural America, as compared to what is available in urban America. And that is something that the small telecos that are represented by NTCA work very hard at every day, is trying to make sure that rural America has the same level of service that is available in urban——

Mr. DAVID SCOTT of Georgia. And how far are we from that? Are we there now or what do we need to do more of to make sure that rural America and urban America are on the same level of broadband capacity?

Mr. COOK. That is a great question. I believe about 80 percent, maybe a little bit more than 80 percent of the NTCA member companies have deployed broadband services, and most of those are between 80 and 85 percent deployed 10/1. We are in good shape. We are certainly not through. We are working very hard.

One of the things that we are really dealing with is an insufficient USF fund.

Mr. DAVID SCOTT of Georgia. Yes.

Mr. COOK. While we have seen increases to the E-Rate Program and Lifeline over the last 7 years, we have been capped on the USF fund. So that has definitely been an obstacle.

Mr. DAVID SCOTT of Georgia. Okay. Thank you very much. My time is running out, but, Mr. Greenwood, I have to get to you because you have served in and out. You have served here with us, and now you are out dealing with the reality. Could you share with us what exactly we in Congress can do better and more of to help the rural communities in acquiring this equal balance between urban America, and do you believe that we are doing enough in adequate funding or do we need to do more?

Mr. GREENWOOD. Well, thank you for the question, Congressman.

First off, I would say that the energy title in the last farm bill was about $881 million, and I would certainly encourage you to im-

prove upon that if possible. I know that is a tough prospective, given the many competing interests for the budget this year, but these programs are working, and they are working well.

The second suggestion I would make, when it comes to the RFS, is to do exactly nothing, to leave it as it is.

Mr. DAVID SCOTT of Georgia. Yes.

Mr. GREENWOOD. This program was created in 2007, and has been serving the country very well. We have been able to use renewable fuels that, as I have said in my testimony, replace enough energy to substitute for all the oil we get from Saudi Arabia and Kuwait, it is better for the environment, it creates jobs in the rural economy. And what is necessary is stability. The investors invested in this program and in these plants on the basis of a promise that Congress made when it passed the law originally. Now, there is a lot of controversy around the RFS, but my admonition in answer to your question would be to let that program complete its course as originally intended.

Mr. DAVID SCOTT of Georgia. Thank you very much.

Thank you, Mr. Chairman.

The CHAIRMAN. The chair now recognizes Mr. Comer, from Kentucky, for 5 minutes.

Mr. COMER. Thank you, Mr. Chairman.

My first question is for Mr. Cook. Do you know exactly, or roughly, what percentage of rural America does not have broadband access?

Mr. COOK. Mr. Comer, I can certainly get back to you with that specific information. As I mentioned a little bit earlier, I can speak for the NTCA member companies and tell you that in terms of 10/1 broadband availability we are about 85 percent deployed. Now, certainly, some areas have much greater than that. We have a lot of member companies that are providing gig service. We have a number that are providing the new FCC goal of 25 meg downspeeds and 3 meg up-speed. We are doing quite well in terms of some of the price cap areas. Larger companies that historically have not done as great a job as the small companies. That figure I don't have for you today, but definitely there is probably more of an issue in those areas where they have historically been served by the larger carriers.

Mr. COMER. Right. Is there something that could be done in this Congress, aside from more funding, for example, deregulation, is there something that can be done to provide more broadband capabilities in the rural areas?

Mr. COOK. Yes. That is a great question. Certainly, our top issue really is the insufficiency of the current USF fund, where the small companies right now are capped at about $2 billion annually. And again, we have seen increases in other funds that are part of USF; namely, the E-Rate Program and Lifeline Program, and we are in support of that, but at the same time we are the underpinning of supporting those services. And so we really believe that is the main issue is addressing the insufficiency of the fund.

Mr. COMER. When I was in the Kentucky Legislature, this was an issue, and some of the big companies would come in and say if we would deregulate, that would get things going and help the development of broadband. It really, to my knowledge, hasn't hap-

pened yet, and I was just wondering because if there were ever a time to deregulate, the 115th Congress would be the window of opportunity to do that, if that is an option. When I was traveling the First Congressional District, which is a very, very rural district, campaigning and talking to people, obviously, about what can be done to improve the economy, every rural community in my districts, like the rural communities that you all represent, many of the best and brightest young people, when they graduate from high school, go off to college and for whatever reason don't come back, primarily because they don't oftentimes have the same opportunities. And when asking the local leaders and the job creators what can be done in Congress, more broadband, and investing in that type of infrastructure would help rural communities attract better jobs, next-generation-type jobs that would attract people and create badly needed jobs in these rural communities.

I am going to switch to Mr. Fox. What do you think are the best things that can be done in these rural communities to attract good-paying jobs that would retain our best and brightest young people in these rural communities, like where I am from, that often don't come back home when they go off to college?

Mr. FOX. Chairman Scott, Representative, thank you for the question. I think broadband is top on that list.

Mr. COMER. Yes.

Mr. FOX. You send a young son or daughter off to college, and they are used to great speeds, and do 4 years of college, they are not coming back to speeds of 5/5, or 5/2, and that is what I have on my farm.

Economic development and jobs always comes down to infrastructure. Every time that I have a business that looks to expand, or a new business is looking to come into our area, there are three questions. One is roads. Do you have roads able to bring trucks in? The second one would be freight. What have you got for railroads? And the third one, and those three questions will interchange, but what is the speed of your broadband.

Mr. COMER. Right.

Mr. FOX. And if you can't take care of those three issues, they are not coming and there are going to be no jobs. A few years ago where we had local people working on a broadband project, one of the facts that just startled me was a nursing home administrator, and their people could put someone in an ambulance, take them to a hospital 25 miles away, and the ambulance could beat the records over the Internet service because their Internet service was that slow.

Mr. COMER. Yes.

Mr. FOX. Broadband, with the guaranteed loans, because if you look at most of the projects, they have a problem in that 3, 4, 5 year time frame. Once they get past 4 or 5 years, they are pretty good, but if they can have some way to get a guaranteed loan to help them through that, that is amazing.

Mr. COMER. Okay.

Thank you, Mr. Chairman.

The CHAIRMAN. The chair now recognizes Ms. Kuster, for 5 minutes.

Ms. KUSTER. Thank you, Chairman Scott. I appreciate this hearing on rural development.

I am from New Hampshire, and we spend a lot of our time working in this space, rural development, and I was particularly pleased in the 2014 Farm Bill, I had the opportunity to offer an amendment that would support our rural community colleges. Previously, community colleges had not been included under the USDA farm bill rural development programs. And we were able to open a whole new college campus in Lebanon, New Hampshire, that will provide up to 500 students with access to education in a rural community. And we did that through a $1.6 million loan awarded by USDA Rural Development. It is critically important, and infrastructure, and I agree with all the witnesses about trying to bring young people back, or keep people. We have an expression in New Hampshire, stay, work, play, and we are trying to convince our young people to be there.

I want to direct my question to Mr. Cook, because I am particularly focused in on telecommunications, which is a big problem for us throughout the state. I actually recently had a forum with realtors, and in the southern part of the state near Massachusetts, it is not far from a pretty populated area, but they are unable to sell homes, $200,000, $300,000, $400,000 homes, because there is no broadband connection to the home.

I wanted to ask you, Mr. Cook, talked about the Broadband Loan Program as being largely inaccessible because of program reforms. Can you expand on this, what do you mean by inaccessible, is USDA turning down applications, and how can the program be improved, and do we need to make any changes to the Universal Service Fund, or how should we go about this? Because in the next farm bill I want to make sure that we make it very easy to expand and get over that maybe 3 to 4 year hump that Mr. Fox has referred to.

Mr. COOK. Thank you for the question. Yes, USF and the RUS Programs are really closely tied, and so the meaning behind that statement was really meant to address the issue that, since the national broadband plan was announced back in late 2009, we have had much uncertainty introduced into the rural telecom industry. There has been a lot of uncertainty about what recovery companies would be able to get from the USF fund, concerns about interior designer-carrier compensation, frankly, just a lot of unknowns about what the revenue streams would look like for rural companies.

As a result of that, we have seen a number of companies over, again, probably the last 7 years not take advantage of RUS programs as they used to, just because of this uncertainty. That is certainly something that we would appreciate your assistance with, going forward, and making sure that the USF fund is sufficient. Also in terms of helping us try to streamline some of the regulatory hurdles that we face today, especially with respect to permitting. We have an appreciation for the rules that RUS employs when it is looking to give us grants and loans. At the same time, there are some process improvements that can probably take place. I know with our particular loan grant program at Hill Country, that we were fortunate enough to work with RUS on, we lost about a year

period of time in deploying our network because of environment permits that we were able to conduct the environments, but at the same time it took a very long time to get those approvals from RUS. And at the same time, we had certain departments within RUS saying that they were going to rescind our money because we hadn't yet spent it, and other areas within RUS saying that we couldn't spend the money because the environmentals, we had done too many, or that that hadn't been completely approved at that point. From a process standpoint that is something that we would appreciate your assistance with.

Ms. KUSTER. Well, I hope I can ask all of the witnesses to offer your practical suggestions to the Committee, and I know the bipartisan nature of the Members of this Subcommittee, and we will be working on this section of the farm bill, and we want to make sure we get it right so that we can improve access to broadband communication throughout rural America. So thanks very much.

I yield back.

The CHAIRMAN. Thank you, ma'am.

The chair now recognizes one of our new Members, Mr. Faso, from New York.

Mr. FASO. Thank you, Mr. Chairman. It is a pleasure to have the witnesses here today, and I appreciate all of their coming. And, Congressman Greenwood, welcome to the Committee here today.

I wanted to focus on rural water. And, Mr. Fletcher, the New York Rural Water Association, Patricia Scalera and folks that have worked in rural water are people that I have worked with for many years in my prior tenure in the New York State Legislature. And I noticed in your testimony you suggest raising the cap. I think that you said raising the cap on water projects and waste water programs to $20,000. If we did that, would that affect the backlog, and would it impermissibly increase the difficulty that some very small communities have in getting access to these programs, because rural water on the Circuit Rider Program, from my experience, have been terrific?

Mr. FLETCHER. Thank you for the question.

Funding priority should still be given to smaller rural and lower-income communities. Every state is provided a specific allotment for the loan and grant program. If any state would have obligated their funds to small rural utilities and had a balance left, at that point then we could look at helping slightly higher-populated communities that demonstrate a need for the financing, but also is still rural in character.

Taylorville, where Congressman Davis hails from, and that is where our state rural water office is, their population is about 11,000, and with the current cap they are not eligible for that funding.

Mr. FASO. Yes.

Mr. FLETCHER. I think that would help these slightly larger communities have access to the loan and grant program if funds are available.

Mr. FASO. Well, thank you very much. I appreciate that.

And I am also going to be giving some testimony to the Appropriations Committee later today. There is one of their subcommittees on the Circuit Rider Program and, for instance, on how impor-

tant that is to the rural areas in my district. I know sometimes when you are from New York State, people think Manhattan. Well, upstate New York is a very rural area, in need of much economic assistance.

And I wanted to turn also to Commissioner Fox. I noted in your testimony you mentioned the Community Facilities Program that was used to help, through loan and grant, construct a hospital in your county. And I was wondering if you could just elaborate for the Committee a bit on the ease with which you were able to secure that assistance through that program, and any suggestions or recommendations you might have about it, because I have a very similar situation in a portion of my district as well.

Mr. FOX. Chairman Scott, Representative, thank you for the question.

Our Administration would say that it went quite well. Yes, there is a process, but there has to be a process when being fiscally responsible. We used $18.9 million, I believe, and it was all loans, we had no grants. We had local money that we put in, and our hospital foundation raised over $1 million to go into the project. But it is a process that goes through. It is the staff, and Rural Development staff in Minnesota, they are great people. They are great people to work with, they help through different programs, whether it is that one or the reprogram. But it is a process, and you have to meet, go to the table and be a partner at the table, and they will help you through it, and it is a great process.

Mr. FASO. Thank you.

And last for Mr. Cook, broadband has been discussed here. It is a big issue. We have the Middleburgh Phone Company in Schoharie County, which I don't know if they are a member of your association, but they have been very active in providing expanded broadband coverage. I am just wondering, from your vantage point and from your experience, is there a technological leapfrogging that will allow us, through wireless technology, to be able to accommodate much of the need that we have for broadband in rural communities? I just wondered about your perspective on this, because I do see this now being heavily advertised by some of the companies in suburban New York City, just south of my district, and I was wondering about your perspective on that.

Mr. COOK. Yes, that is a great question. It is something that we are constantly looking at is new technologies, ways that we can more efficiently deploy broadband services, provide faster speeds. One of the things that was included in my testimony was this term *future-proof,* and really what we are talking about there is not only providing the best available service for the consumer today, but also providing long-term solutions. When you look at the growth of broadband, and now nationally you are looking at a median broadband speed of about 41 meg that is generally available across the nation. When you look at the potential growth of that year over year of about 28 percent, it is not long before you realize that we are going to be at gig-level services that customers are going to be demanding.

So in terms of technology, right now, it really appears that fiber is the best solution in most cases. And in terms of wireless technology, certainly, there are some fixed wireless technologies that

we are using, and that other companies are deploying, satellite is another example, in very remote areas where that could be a solution. But in terms of trying to make sure that we are doing the best thing for the consumer today and in the near-term, but also what is most economical, so that we are not having to go back and re-engineer the network and pay for the same deployment again in just a few short matter of years in order to keep up with capacity, we are really kind of leaning towards fiber at this point.

Mr. FASO. Thank you.

The CHAIRMAN. Thank you. The chair now recognizes Mr. Soto, from Florida, for 5 minutes.

Mr. SOTO. [Audio malfunction in hearing room.] funds—thank you, haven't gotten their share of Federal funds and felt left behind. And so I appreciate the Chairman and Ranking Member focusing on this.

In Florida I have seen everything from cowboys use cell phones to communicate with each other, to WiFi and sensors being used to determine when to harvest a crop. Technology is very integrated in our agriculture in Florida.

And so I was wondering, with the lack of adequate broadband and other communication infrastructure, if Mr. Cook or Mr. Chastain can discuss what the current potential production loss we have would be from the lack of these sorts of resources.

Mr. COOK. Well, I will address it from the standpoint of reasonable comparable rates and service that we talked about before. That is something that comes up a lot in discussions about deploying broadband in rural America and the cost of doing that. One of the things too that we hear a lot at the state level is this general thought about urban areas subsidizing rural areas. And, in fact, I would argue that you can make that same argument in reverse, that rural areas in many ways are subsidizing urban areas. And we don't see a farm in downtown Minneapolis, you don't have a dairy farm in downtown Dallas. Rural areas are extremely important, and providing them the same level of service that is available in urban areas is critically important, not only for the success of those rural areas, and enabling those rural areas to compete in a global economy, but also ensuring that urban areas are well served by the rural areas. So it is a symbiotic relationship.

To address more specifically your question in terms of cost and availability, economically that is a great question. I don't know if we have any specific facts about what that means to the economy, but, obviously, it is very critical, especially when you look at food supplies and the growing population globally. It is expected by 2050 to be a 9.6 billion population, and it is estimated that food production, in order to keep up with that growing population, would need to improve by 50 percent. And so a lot of that additional food production will be supported by broadband applications, enabling farmers to work more efficiently using IoT (Internet of Things)-type technologies.

Mr. SOTO. And on to my second question, it is to Mr. Greenwood. You had mentioned about renewable energy, in Florida we use bagasse, which is a byproduct of sugar to provide energy for several towns in Florida. What areas do you think are succeeding in using biofuel or other renewables across our country, and what areas

have a lot of potential but really could use additional help to get them over the top?

Mr. GREENWOOD. Well, thank you for the question. The beautiful thing about renewable fuels is that the feedstocks are multiple. You mentioned biogas, right now there are projects that USDA is considering that use for feedstocks the following: vegetable waste, manure, algal biomass, nonedible distillers, corn oil, soy oil, canola oil, almond, walnut shells, and woody biomass, waste oils, high oleic soybean oil, switchgrass sorghum, macadamia nutshells, and woody biomass. It is basically a question of the science of it, and I am not a scientist, basically, plants have evolved: if you look at corn, for instance, corn evolved so that the seeds are highly soluble, so that is how they germinate. But the cornstalks and the leaves, and all of the kinds of the materials I just cited, are cellulosic, and they evolved for rigidity and structure. And so the challenge has always been how chemically, and using other products, can we extract the energy from that cellulosic material that is otherwise frequently gone to waste and has no economic value. And so the biotechnology industry develops enzymes and other products that allow us to break that down, and including solid waste materials, and turn it into usable energy.

Does that respond to your question, sir?

Mr. SOTO. Yes. And just to correct the record, I was referring to bagasse, which is a byproduct of the sugar industry and used, rather than biogas. But thank you for answering my question. I appreciate it.

Mr. GREENWOOD. Right.

Thank you, Mr. Chairman.

The CHAIRMAN. The chair now recognizes Mr. Davis, for 5 minutes.

Mr. DAVIS. Thank you, Mr. Chairman.

The hard part about serving on two different committees sometimes is you have hearings at the exact same time. Forgive me if I am redundant on any of the issues that I bring up.

But I would like to continue what my colleague, Mr. Soto, was briefly mentioning, and especially with your response, I would like to welcome one of our former colleagues, Mr. Greenwood, here, and my friend. Obviously, where I come from in Illinois, ethanol RFS is a major issue. As we move forward, you mentioned cellulosic opportunities, what is the status right now of moving ahead on more cellulosic opportunities to make our homegrown fuels more secure?

Mr. GREENWOOD. Sure. Well, cellulosic ethanol is in production at a commercial scale in multiple locations around the country. The problem is that the uncertainty caused by the RFS renewable volume obligations in 2014, 2015, and 2016 during the Obama Administration, cost advanced cellulosic biofuels industry over $22 billion in lost investment, much of which has gone overseas.

I did say earlier that the most important thing Congress needs to do is nothing, to leave the RFS alone and fulfill the promise that Congress made to investors originally in 2005, and expanded in 2007, that if they brought private capital to the table, Congress would leave a stable policy in place for more than 15 years. Second would be to maintain the farm bill energy title. In particular, Section 9003, the Bio-Refinery Assistance Program, and the Biomass

Crop Assistance Program, or BCAP, to help advance biofuel producers to secure the capital necessary to build a biorefinery and assist farmers to produce the feedstocks necessary for these facilities.

The Administration needs to deny the petition to change the point of obligation under the law, keeping the 2015 RVO in place, and set the 2018 RVO according to the law. We need to bring these dollars back to the U.S., and policy stability is the only way to make that happen.

Mr. DAVIS. Well, I couldn't agree more, Jim. I appreciate your comments there.

One other quick question. The USDA has operated the BIP Program over the last few years, and they have worked with states to deploy distribution infrastructure, and as a result we now have over 600 locations in 28 states throughout the U.S., offering more opportunities for homegrown fuels for sale. Can you offer your opinion on that program and how successful it has been so far?

Mr. GREENWOOD. Well, the Biofuel Infrastructure Program as referred to, BIP, has been a critical aid to retailers moving higher blends of biofuels to the market. This is creating critical space in the transportation fuel market for advanced and cellulosic biofuels. The program is succeeding in helping gas stations put infrastructure in place to deliver higher volumes of biofuels.

As you mentioned, there are now 650 stations selling E15 in 28 states, 409 of these are BIP participants. It is expected to be over 1,200 locations by year-end, and a vast majority of these pumps also are selling E85. Major retailers selling or committed to selling E15 include Sheetz, Come and Go, Thorntons, Racetrack, Mineco, Murphy, USA, Mapco, Family Express, Senex, and Protect Fuels. And this is going beyond the Corn Belt, Florida, Georgia, North Carolina, and Texas are in the top six states of pumps being deployed.

These retailers are making these investments because E15 sells 3¢ to 10¢ below regular gasoline, helping to bring in more consumers.

I would like to add that E10 is approved and recommended for all small and off-road engines. The distribution and use of E15 is not mandatory, and it is not approved for use in small engines like boats or lawnmowers. With E15 for sale at over 600 locations in 28 states, there has not been a single verified report of E15 misfueling and engine damage.

Infrastructure investments are critical as we continue to deploy higher demands of ethanol across the country, which is also why we have the funding for the farm bill energy title as important as it is for building out this industry.

Mr. DAVIS. Thank you. Thank you.

And, Mr. Fletcher, welcome from the great State of Illinois. I know I don't represent the Nashville area, but I appreciate what you have done. Actually, in my previous position, I had a chance to work with your water company. And I hear right before I got here you mentioned my hometown of Taylorville, so I can't not ask you, give us anything that you might not have been asked yet that you want to make sure that the Committee understands that is important to rural water systems in Illinois, please go ahead.

Mr. FLETCHER. Thank you, Congressman.

I think pressing rural needs in Illinois, and also the other rural communities in all the states, is the funding through the Rural Development Waste Water Loan and Grant Program. Rural Development has been working for 7 years with this program. And I am sure you are aware that the last two farm bills were able to fund hundreds of projects in less than 90 days. At that point, after the RD projects were done, it erased the backlog for water and waste water projects in the United States. And at this time, we have a $2.5 billion backlog just after a few years after the RD program. I would give priority to aging and deteriorating systems that are determined to be beyond their useful life, or ones with the greatest public health needs.

Second, our Circuit Rider Program that the Congressman from New York mentioned a few minutes ago, that assistance to small rural communities is essential to make sure that the water is safe for everybody to drink, and they comply with all the Federal regulations. I appreciate everything that you all do for rural water.

Mr. DAVIS. Thank you.

Mr. FLETCHER. Thank you.

Mr. DAVIS. Thanks for being here.

The CHAIRMAN. Before we adjourn, I would invite my Ranking Member, Mr. David Scott, from my home state, to make any closing remarks that he may have.

Mr. DAVID SCOTT of Georgia. Sure. Well, thank you, Mr. Chairman. I appreciate that.

And first of all, let me commend you for pulling together this very, very important and very informative cast of these six persons to testify before us this morning. Their testimony was very accurate, it was thorough, and very helpful to us. And I just want you all to go away from this meeting knowing that this Subcommittee stands with you shoulder to shoulder to make sure we provide you with the adequate funding that you need, and let the people of America know that they get a return benefit. Mr. Chastain, you mentioned $300 million that has been brought back, and the roles that you play.

Thank you, Mr. Chairman. And we look forward to taking care of your interests in the upcoming farm bill.

The CHAIRMAN. Gentlemen, I want to thank you for taking time to come up here on behalf of the people that you represent; the same people that we represent. And I want to commit to you that this Subcommittee, and on behalf of the big Chairman of the full Committee, will be working hand-in-hand with you to make sure that you have the resources that you need in the next farm bill to help those that both of us represent in America. Again, thank you for coming to Washington and testifying on behalf of our constituents.

Under the Rules of the Committee, the record of today's hearing will remain open for 10 calendar days to receive additional materials and supplementary written responses from the witnesses to any questions posed by a Member.

This hearing of the Subcommittee on Commodity Exchanges, Energy, and Credit is adjourned.

[Whereupon, at 11:26 a.m., the Subcommittee was adjourned.]

[Material submitted for inclusion in the record follows:]

SUBMITTED LETTER BY HON. AUSTIN SCOTT, A REPRESENTATIVE IN CONGRESS FROM GEORGIA AND HON. DAVID SCOTT, A REPRESENTATIVE IN CONGRESS FROM GEORGIA

February 22, 2017

Hon. DONALD J. TRUMP,
President,
United States of America.

Dear Mr. President:

On behalf of our respective organizations, which collectively represent U.S. agricultural producers, rural businesses, rural communities, and rural families, we are writing to ask your support for rebuilding infrastructure in rural America.

We were very pleased to hear your comments about the importance of rebuilding U.S. infrastructure. Those of us in rural communities have seen our infrastructure deteriorate, jeopardizing jobs, our agricultural competitiveness, and the health of rural families. Past infrastructure initiatives often focused on urban and suburban infrastructure while not adequately addressing the unique needs of rural communities. We ask that you address this as part of your Administration's comprehensive infrastructure renewal efforts.

American agriculture truly feeds the world and creates millions of jobs for U.S. workers. Our nation's ability to produce food and fiber and transport it efficiently across the globe is a critical factor in U.S. competitiveness internationally. Infrastructure that supports rural communities and links them to global markets has helped make the U.S. the unquestioned leader in agricultural production. Our deteriorating infrastructure threatens that leadership position.

Transportation infrastructure improvement is the most obvious need in rural communities, but not the only one. Highways, bridges, railways, locks and dams, harbors and port facilities all need major investment if we are to continue efficiently getting our agricultural products to market. For example, ¼ of our road system's bridges require significant repair, or cannot efficiently handle today's traffic and many of the 240 locks and dams along the inland waterways are in need of modernization. In addition, though, critical needs exist in providing clean water for rural families, expanding broadband to connect rural communities to the outside world, and enhancing the ability to supply affordable, reliable and secure power for the rural economy.

The scope of the investment needed is staggering. Clearly the Federal Government must continue to play an important role in providing funding and those Federal investments should increase. However, Federal resources, likely cannot fill the need entirely. Creative solutions that pair Federal investment with state/local government investment and private sources of capital hold promise for raising a portion of the funds necessary to do the job.

As you take office and begin addressing the nation's infrastructure needs, we hope you will provide leadership to ensure that rural America's needs are addressed. We stand ready to work with you and your Administration to begin this important initiative.

Respectfully,

Agribusiness Association of Iowa
Agribusiness Council of Indiana
Agricultural and Food Transporters Conference
Agricultural Retailers Association
Agriculture & Commodities Transportation Coalition
Alabama Rural Electric Association of Cooperatives
Alaska Power Association
Alliance for I–69 Texas
Almond Alliance of California
American Association of Crop Insurers
American Cotton Shippers Association
American Dairy Coalition
American Farm Bureau Federation
American Feed Industry Association
American Horse Council
American Sheep Industry Association
American Society of Farm Managers and Rural Appraisers
American Soybean Association
Arkansas Electric Cooperatives
Arkansas Soybean Association
Association of Equipment Manufacturers
Association of Illinois Electric Cooperatives
Association of Louisiana Electric Cooperatives
Association of Missouri Electric Cooperatives
Bongards Premium Cheese
California Association of Winegrape Growers
Colorado Rural Electric Association
Cooperative Network
Corn Refiners Association
Crop Insurance Professionals Association
Empire State Potato Growers, Inc.
Empire State Water Well Drillers' Association
Michigan Bean Shippers
Michigan Electric Cooperative Association
Michigan Soybean Association
Midwest Shippers Association
Minnesota AgriGrowth Council
Minnesota Corn Growers Association
Minnesota Farmers Union
Minnesota Grain and Feed Association
Minnesota Milk Producers Association
Minnesota Pork Producers Association
Mississippi Association of Cooperatives
Mississippi Soybean Association
Missouri Corn Growers Association
Missouri Soybean Association
Montana Electric Cooperatives' Association
Montana Grain Growers Association
National Association of Resource Conservation and Development Councils
National Association of State Departments of Agriculture
National Association of Towns and Townships
National Association of Wheat Growers
National Barley Growers Association
National Black Growers Council
National Cooperative Business Association
National Corn Growers Association
National Cotton Council
National Council of Farmer Cooperatives
National Family Farm Coalition
National Farmers Union
National Grain and Feed Association
National Grange
National Ground Water Association
Oklahoma Agribusiness Retailers Association
Oklahoma Agricultural Cooperative Council
Oklahoma Association of Electric Cooperatives
Oklahoma Soybean Association
Oklahoma Wheat Growers Association
Oregon Potato Commission
Oregon Wheat Growers League
Panhandle Peanut Growers Association
Pennsylvania Farm Bureau
Pennsylvania Rural Electric Association
Pennsylvania State Association of Township Supervisors
Rocky Mountain Agribusiness Association
Rural and Agriculture Council of America
Rural Coalition/Coalición Rural
Rural Development Leadership Network
SE Minnesota Grain and Feed Dealers
Select Milk Producers, Inc.
South Carolina Fertilizer and AgriChemical Association
South Carolina Peach Council
South Dakota Association of Cooperatives
South Dakota Corn Growers Association
South Dakota Rural Electric Association
South Dakota Soybean Association
Southern Peanut Farmers Federation
Southwest Council of Agribusiness
Soy Transportation Coalition
State Agriculture and Rural Leaders
Tennessee Electric Cooperative Association
Tennessee Soybean Association
Texas Ag Industries Association
Texas Elective Cooperatives

Equipment Dealers Association
Farm Credit Council
Farmer Mac
Farmworker Association of Florida, Inc.
Federation of Southern Cooperatives Rural Training and Research Center
First District Association
Florida Electric Cooperatives Association
Georgia Electric Membership Corporation
Golden State Power Cooperative
Grain and Feed Association of Illinois
Great Plains Canola Association
I–14/Gulf Coast Strategic Highway Coalition
Idaho Consumer-Owned Utilities Association
Idaho Grain Producers Association
Illinois Corn Growers Association
Illinois Fertilizer and Chemical Association
Illinois Soybean Association
Indiana Corn Growers Association
Indiana Electric Cooperatives
Indiana Soybean Alliance
Institute for Agriculture and Trade Policy
Iowa Association of Electric Cooperatives
Iowa Corn Growers Association
Iowa Institute for Cooperatives
Iowa Soybean Association
Kansas Association of Wheat Growers
Kansas Cooperative Council
Kansas Electric Cooperatives
Kansas Grain and Feed Association
Kansas Soybean Association
Kentucky Association of Electric Cooperatives
Kentucky Corn Growers Association
Kentucky Soybean Association
Louisiana Association of Cooperatives
Louisiana Ground Water Association
Maryland Grain Producers Association
Michigan Agri-Business Association
Ohio Rural Electric Cooperatives
National Latino Farmers & Ranchers Trade Association
National Milk Producers Federation
National Oilseed Processors Association
National Pork Producers Council
National Potato Council
National Rural Economic Developers Association
National Rural Electric Cooperative Association
National Rural Water Association
National Sorghum Producers
National Sunflower Association
Nebraska Corn Growers Association
Nebraska Grain and Feed Association
Nebraska Rural Electric Association
Nebraska Soybean Association
Nevada Rural Electric Association
New Mexico Rural Electric Cooperative Association
New York Corn and Soybean Association
New York State Agribusiness Associations
New York State Vegetable Growers Association
North American Millers' Association
North Carolina Electric Cooperatives
North Carolina Ground Water Association
North Carolina Small Grain Growers Association
North Dakota Association of Rural Electric Cooperatives
North Dakota Corn Growers Association
North Dakota Grain Dealers Association
North Dakota Soybean Growers Association
Northeast Agribusiness and Feed Alliance
Northeast Association of Electric Cooperatives
Northeast Cooperative Council
NTCA—The Rural Broadband Association
Ohio Agribusiness Association
Ohio Corn and Wheat Growers
Ohio Dairy Producers Association
Ohio Farm Bureau Federation
Ohio Pork Council
Ohio Soybean Association
Texas Grain and Feed Association
Texas Vegetation Management Association
The Electric Cooperatives of South Carolina
U.S. Canola Association
U.S. Dry Bean Council
U.S. Forage Export Council
U.S. Poultry and Egg Association
United Egg Producers
United Fresh Produce Association
USA Dry Pea and Lentil Council
USA Rice
Utah Rural Electric Association
Virginia Agribusiness Council
Virginia Beef Industry Council
Virginia Cattlemen's Association
Virginia Cooperative Council
Virginia Farm Bureau
Virginia FFA Association
Virginia Horse Council
Virginia Poultry Federation
Virginia State Dairymen's Association
Virginia Telecommunications Industry Association
Virginia Water Well Association
Virginia, Maryland & Delaware Association of Electric Cooperatives
Washington Association of Wheat Growers
Washington State Potato Commission
Water Systems Council
Water Well Trust
West Virginia Farm Bureau
West Virginia FFA and Agricultural Education
West Virginia Poultry Association
Western Peanut Growers Association
Wisconsin Agri-business Association
Wisconsin Corn Growers Association
Wisconsin Soybean Association
Women Involved in Farm Economics
WTA—Advocates for Rural Broadband
Wyoming Rural Electric Association

CC:

Hon. MITCH MCCONNELL,
Hon. CHARLES SCHUMER,
Hon. PAUL RYAN,
Hon. NANCY PELOSI.

SUPPLEMENTARY MATERIAL SUBMITTED BY HON. JAMES C. GREENWOOD, PRESIDENT AND CHIEF EXECUTIVE OFFICER, BIOTECHNOLOGY INNOVATION ORGANIZATION

APPENDICES

Editor's note: Due to the size of the appendices submitted for the Thursday, March 9, 2017 Subcommittee on Commodity Exchanges, Energy, and Credit published hearing they have been relocated here.

APPENDIX A

Advancing the Biobased Economy: Renewable Chemical Biorefinery Commercialization Progress, and Market Opportunities, 2016 and Beyond

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Washington, D.C. 20024

Introduction

A review of operating biorefineries displays a range of technology solutions undergoing commercial development—beyond just advanced biofuels—to produce commodity and specialty renewable chemicals. Industrial biotechnology companies are pursuing renewable chemicals and biobased materials because they can be commercialized at smaller scale, as well as promise environmental benefits, stable costs and novel properties in comparison to fossil fuel-derived chemicals. Competition to produce platform renewable chemicals provides manufacturers assurance of a steadily available, high-quality supply of renewable chemicals for consumer product applications.

Analysts predict a rapid expansion of renewable chemical production in the near future based on planned capacity expansion or new construction. McKinsey & Co. estimates that there were $252 billion (€204 billion) in sales of biobased products in 2012, with biofuels and plant extracts comprising more than ½. Sales of renewable chemicals represented nine percent of the $2,820 billion (€2,281 billion) in worldwide chemical sales in 2012. By 2020, McKinsey expects biobased products to make up 11 percent of the $3,401 billion (€3,130 billion) global chemical market. Sales of biobased products would reach $375–$441 billion (€345–€406 billion) by 2020, with a compound annual growth rate of eight percent over the preceding dec-

ade. Worldwide sales of chemicals are expected to grow at four percent annually, overall. While biofuels and plant extracts continue to comprise ½ of the projected sales of biobased products in 2020, McKinsey expects the highest growth rates in sales of new biopolymers and renewable chemicals, biocatalysts for industrial processes and biologic medicines, as well as biofuels.

Supportive polices will help grow the 21st century biobased economy. The Renewable Fuel Standard (RFS), for instance, not only helped stimulate innovation in biofuels, but also opened discussions and policy development in renewable chemicals and biobased products. The 2014 Farm Bill (*The Agriculture Act of 2014*) extended loan guarantee eligibility to renewable chemicals and biobased products producers, through Section 9003, *the Biorefinery, Renewable Chemical, and Biobased Manufacturing Assistance Program.*

Other policy drivers include draft legislation, introduced in both Federal chambers, creating tax incentives for production of or investment in qualifying renewable chemicals. Spurred by the Federal legislation, Iowa and Minnesota announced enactment of state-level production tax credits for renewable chemicals that will speed capital investment availability and commercialization. Additionally, draft legislation introduced in the 114th Congress—the Master Limited Partnerships Parity Act (MLP)—proposes to extend tax benefits currently available only to the oil and gas industry to renewable chemicals and biofuels producers. If enacted, the legislation will provide renewable chemical producers access to low-cost capital and attract investors and lower corporate stock tax liabilities.

Enactment of the Frank R. Lautenberg Chemical Safety for the 21st Century Act, updating and revising the Toxic Substances Control Act (TSCA), has favorable provisions for Class 2 renewable chemical manufacturers who use renewable feedstocks. The new law could minimize costly pre-commercial reviews, if the renewable chemical has already been produced from fossil fuel feedstocks.

Background

The *Economist* magazine's *Technology Quarterly* edition for December 2015 heralded a "golden age" of material science, highlighting recent developments in inorganic chemistry. The magazine utilized the "materials genome" as a metaphor for the pace of pre-commercial innovation in the field. The industrial biotechnology sector should welcome the analogy, especially as its list of commercial successes grows. The industrial biotech sector has reached a stage where first-of-a-kind biorefineries are paving the way for rapid commercialization of new applications.

The National Science and Technology Council's Subcommittee on Advanced Manufacturing, in an April 2016 report, titled *Advanced Manufacturing: A Snapshot of Priority Technology Areas Across the Federal Government,* identifies engineering biology and advanced bioproducts manufacturing as technology areas of emerging priority. The report estimates the size of the U.S. biobased economy at roughly $350 billion annually, citing a National Research Council roadmap to accelerate advanced chemical manufacturing through industrial biotechnology.

To document the progress and illustrate the growing potential for biobased production of renewable chemicals, the Biotechnology Innovation Organization's (BIO) Industrial and Environmental Section has compiled a new body of data on established biorefineries. The data includes descriptions of the technologies along with common applications and measures of the market potential. And since the renewable chemical sector seeks a level playing field in government support and regulatory policies, the data includes the demographic and economic impact of each biorefinery.

Biobased production holds many potential benefits for consumers, including cleaner, more efficient manufacturing processes that incorporate renewable ingredients in everyday products found in the home. Delivering these benefits requires continued growth of the sector to ensure that product manufacturers have a reliable, sustainable, and scalable supply of renewable chemicals.

Renewable Chemical Processes at Demonstration and Pilot Scale

Coca-Cola, H.J. Heinz, Nike Inc., Ford Motors and Procter & Gamble are cooperatively working to accelerate the development of 100 percent renewable polyethylene terephthalate (PET), a common plastic used in packaging materials such as bottles, footwear, apparels and automobile fabrics. Coca-Cola currently markets PlantBottle™ with renewable ethylene glycol, which makes up as much as 30 percent of the plastic bottle. Coca-Cola Company has partnered with Virent, Gevo and Avantium and, similarly, Suntory Holdings has partnered with Anellotech to develop renewable para-xylene to replace petroleum terephthalic acid. These strategic partnerships have demonstrated the feasibility of a 100 percent renewable PET bottle.

A potential alternative to PET is polyethylene furanoate (PEF). Avantium has commercialized 100 percent biobased PEF resin, which is made from the company's patented biobased 2,5 furandicarboxylic acid (FDCA) combined with plant-based monoethylene glycol (MEG). Avantium is currently producing FDCA at a 40 metric ton per year pilot plant in Geleen, Netherlands. Avantium plans to start commercial production of FDCA and PEF at 50,000 ton per year plant in 2017 and announced its intention to establish a joint venture with BASF in the production and marketing of FDCA.

A few companies have focused efforts on producing C5 and C6 sugars as a feedstock for other companies to produce biofuels and renewable chemicals. Renmatix is operating a demonstration-scale Feedstock Processing Facility in Rome, New York, to supply its Integrated Plantrose Complex, based in Atlanta, where it converts the processed woody biomass to cellulosic sugars. Sweetwater Energy is securing financing to build a biorefinery at Mountain Iron, Minnesota, which will convert 51,000 tons of timber to sugars and lignin. Sweetwater has also leased space at Eastman Business Park in Rochester, New York, to produce alcohols from cellulosic sugars. Similarly, American Process has developed GreenPower+® process technology, which produces low-cost, mixed cellulosic sugars from biomass.

Several companies are currently piloting production of adipic acid, which is a precursor to nylon and can be used in coatings and detergents. Rennovia is currently operating a pilot project at the Johnson Matthey Process Technologies R&D Center in Stockton, England, converting biobased glucaric acid to adipic acid. Verdezyne is operating a pilot production facility in Carlsbad, California. And, BioAmber has formed a partnership with Celexion to produce adipic acid from succinic acid. Genomatica of Carlsbad, California, began efforts in 2014 to commercialize biobased production of adipic acid and other nylon intermediates.

At least one company has commercialized production of polyhydroxyalkanoate (PHA), a polymer that can be blended into various plastic applications. Metabolix's current range of Mirel® PHA copolymers are produced by fermentation, using specially engineered microorganisms that bioaccumulate the inert polymer. The PHA is co-polymerized with PVC to make a stronger and more flexible plastic. Metabolix uses contract manufacturing to produce Mirel®; the company's partners are currently ramping up pilot production to run at nameplate capacity for 2016.

Two companies, Cargill and Novozymes, have partnered since 2008 to demonstrate biobased production of 3-hydroxypropionic acid (3-HPA), which is a precursor to acrylic acid. Acrylic acid is polymerized and used as an absorbent in diapers and hygiene products as well as in coatings, adhesives, carpets, and fabrics. The traditional petrochemical process for 3-HPA synthesis is achieved through the oxidation of propylene, a product of crude oil refining. Under the partnership, Cargill is operating a pilot scale production plant fermenting 3-HPA and converting it to acrylic acid. Cargill acquired Colorado based OPX Biotechnologies and its proprietary fermentation-based process for 3-HPA.

Renewable Chemical Commercialization Successes

One of the earliest renewable chemicals to be successfully commercialized is 1,3-propanediol (1,3-PDO™), a chemical building block for nylon and emollients used in cosmetics, coolant and fibers for the production of high-end carpets. DuPont Tate & Lyle has operated a 63,500 metric ton per year biorefinery in Loudon, Tennessee, since late 2006. The company markets the diol for industrial uses as Susterra® propanediol.

One biobased process has been commercialized and another process is being scaled up to produce propylene glycol (1,2-propanediol), which can be used as a building block for saturated and unsaturated polyesters, a humectant or a food preservative. ADM began production of propylene glycol in March 2011 at a 100,000 metric ton per year facility in Decatur, Illinois, that uses glycerin as a feedstock in a catalytic process. More recently, Metabolic Explorer and UPM have formed a joint venture to demonstrate monopropylene glycol via fermentation of sugar at a facility in Clermont-Ferrand, France.

Another of the earliest renewable chemicals to be commercialized is polylactic acid (PLA), which was truly a tipping point for renewable chemicals. PLA is commonly used in food wrap and utensils and can be made into textile fibers. Since 2003 Nature-Works has produced PLA at a facility in Blair, Nebraska, with name plate capacity of 300 million pounds (140,000 metric tons). NatureWorks markets the product as Ingeor biopolymer. Corbion more recently announced that it will build a biobased PLA plant with an annual capacity of 75 kilotons and expand by 25 kilotons per year its existing lactide plant in Rayong Province, Thailand.

Several companies have commercialized biobased routes to succinic acid, a building block chemical that replaces petroleum-based maleic anhydride in polyesters,

alkyd resins, polyurethanes, plasticizers and solvents. Companies that are currently producing succinic acid include Myriant, which is operating a 13,600 metric ton per year facility in Lake Providence, Louisiana. BioAmber piloted its biobased process for succinic acid at a 3,000 metric ton facility in Pomacle, France, and is now producing 17,000 metric tons per year in Sarnia, Ontario, Canada. Reverdia, a joint venture between DSM and Roquette, has built a 10,000 metric ton per year facility in Cassano Spinola, Italy. And Succinity, a joint venture between BASF and Corbion, is due to start up a 25,000 metric ton per year facility in Barcelona, Spain.

One company has commercialized a biobased route to 1,4-butanediol (BDO), which is a building block in the production of tetrahydrofuran (THF), which is an intermediate for spandex and other performance polymers, and polybutylene terephthalate (PBT) resins, which are used for engineering plastics. BASF has licensed direct fermentation technology developed by Genomatica and secured rights to commercially produce up to 75,000 metric tons per year of renewable 1,4-BDO. To date, BASF reports producing volumes for its downstream customers to test and at a purity comparable to petrochemical-based 1,4-BDO for use in commercial applications. BASF is also producing and offering polytetrahydrofuran (PolyTHF®) made from renewable 1,4-BDO.

Multiple competitors are also commercializing biobased routes to iso-butanol and n-butanol. Iso-butanol can be used as an oxygenate and octane-enhancing fuel additive while n-butanol is used as a solvent and intermediate in paints, coatings, printing inks, adhesives, sealants, textiles and plastics. In addition, iso-butanol can be cyclized to para-xylene, the precursor to terephthalic acid; Gevo is commercializing a process based on this chemistry. Green Biologics, which focuses on n-butanol for chemical markets, is currently refitting a 21 million gallon ethanol plant in Little Falls, Minnesota, with plans to begin commercial production of n-butanol and acetone during 2016. Butamax has completed phase 1 of its retrofit of a 50 million gallon ethanol plant in Lamberton, Minnesota, and projects completion of phase 2 for production of iso-butanol in 2016. The company in early 2016 petitioned the U.S. Environmental Protection Agency (EPA) to approve its production and feedstock technology for iso-butanol as an advanced renewable fuel. Gevo retrofitted an ethanol biorefinery in Luverne, Minnesota, and is targeting production of up to 1 million gallons of iso-butanol and 17 million gallons of ethanol in 2016. The facility is registered with EPA as Agri-Energy LLC to produce renewable fuels. Intrexon, located in the San Francisco Bay Area, began operation of a pilot plant to produce iso-butanol in early 2016.

Multiple companies have researched and developed biobased production routes for isoprene, which when polymerized is used in synthetic rubber applications for footwear, mechanical instruments, medical appliances, sporting goods, and most extensively as polyisoprene in rubber tires. But only one company is currently producing commercial quantities. Using its bacterial fermentation platform, GlycosBio has built its first commercial facility in southern Malaysia to supply the Southeast Asian region with up to 40,000 tons of bioisoprene annually. DuPont Industrial Biosciences and Goodyear developed a fermentation process for gas-phase capture of isoprene, and have demonstrated a prototype tire using the bioisoprene monomer. Ajinomoto has already successfully manufactured bioisoprene at a laboratory scale using a fermentation process, and Bridgestone has successfully produced polyisoprene rubber using the material. Michelin is also working with Amyris Biotechnologies to develop liquid-phase bio-isoprene using farnesene—a 15 carbon isoprenoid—as a building block. Amyris has begun commercialization of this new, renewable isoprene. Zeon, Yokohama Rubber, and RIKEN, Japan's national R&D agency, expect to commercialize a process for synthesizing isoprene from biomass in 2020. Aemetis now owns Zymetis' proprietary aerobic marine organisms, (*Saccharophagus degradans* 2-40) that will enable the company to produce bio-isoprene and other renewable chemicals.

One company, Itaconix Corporation, has commercialized fermentation technology, using *Aspergillus,* to produce itaconic acid, a building block for adhesives and sealants, finishing agents, paint and coating additives, detergents and cleaners, absorbents and dispersants. Itaconic acid can replace banned chemical phosphates in detergents. Itaconix operates a large-scale production facility in Stratham, New Hampshire, marketing a growing line of itaconic acid applications and polyitaconic acid. Itaconix recently announced its acquisition through merger by UK based Revolymer plc, a specialty chemical company.

Another company has commercialized a biobased process for aliphatic diacids, a building block for polyurethanes and polyamides. Elevance Renewable Sciences is producing Inherent™ C18 diacid, also known as octadecanedioic diacid (ODDA) at a biorefinery in Gresik, Indonesia, using the company's proprietary olefin metathesis technology.

And at least one company is producing commercial quantities of levulinic acid, a renewable specialty chemical building block for coatings, flavors/fragrances, polymers, detergents. Traditional petrochemical process of producing levulinic acid is from maleic anhydride; this process is expensive, limiting its use to low-volume applications such as fragrances and food additives. At larger, lower-cost production volumes, levulinic acid can replace bisphenol A (BPA) as a plasticizer. GFBiochemicals is currently expanding levulinic acid production capacity, from 2,000 to 8,000 metric tons by 2017, at a facility in Caserta, Italy.

Market Potential for Renewable Chemicals

A number of recent studies provide estimates of the current value of renewable chemical production, which overall represent a small percentage of the worldwide chemical market. Production is expected to grow most rapidly in Asia in response to the region's demand for products, supply of biomass raw material and favorable policies. Future value is dependent on the price of competing fossil-based chemicals, the price of oil, and a somewhat unpredictable policy environment.

Robert Carlson, writing in *Nature Biotechnology* in 2016, estimates that the U.S. industrial biotechnology industry revenues reached $105 billion at a growth annual rate of 12 percent, and renewable chemicals contributed $66 billion.

A report by the U.S.-based Biomass Research and Development Board estimates that the U.S. share of the biobased economy is approximately $50 billion (€46.9 billion). More than ¼ million U.S. workers are employed in the industry.

The nova-Institute of Germany more recently examined the biobased polymer segment of the industry, which represented about $12.8 billion (€10 billion) or five percent of biobased product sales in 2013. Production capacity for biobased polymers is growing at a 20 percent compound annual growth rate, with 3.5 million metric tons produced in 2011 and 5.1 million metric tons in 2013. The nova-Institute projects production capacity to reach 17 million metric tons by 2020. Biobased polymers currently represent a two percent share of the overall 256 million metric ton market for polymers (up from 1.5 percent of the 235 million metric ton market in 2011). By 2020, the 17 million metric tons of biobased polymers are expected to represent four percent of a 400 million metric ton market. The strongest growth in market demand for biobased polymers will be in food packaging and utensils, according to the nova-Institute. Production capacity for biobased polyethylene terephthalate (PET) is projected to grow from 600,000 metric tons in 2013 to 7 million metric tons in 2020, leading the group of polymers. Based on planned capacity, nova-Institute projects similar expansion in production of biobased polyhydroxyalkanoates (PHA), and strong growth in production of polylactic acid (PLA) and biobased polyurethanes (PUR).

Lux Research based in Boston has also projected growth in the renewable chemical market through 2018. Their estimate includes the biobased polymer sector as well as intermediates—such as biobased succinic acid or adipic acid—and renewable specialty chemicals—such as farnesene or terpenes. Based on announced capacity construction, Lux expects biobased production capacity for intermediate chemicals to reach 2.9 million metric tons in 2018, reflecting an 11 percent compound annual growth rate; specialty chemical capacity is perhaps a quarter the size of the intermediate market. Lux Research projects leveling off of production capacity for polymers, due to the low prices of oil and natural gas. But renewable specialty chemicals continue to represent a profitable market opportunity.

Potential Advantages for Consumer Product Applications

Renewable chemicals have been recognized for more than a decade as having environmental, economic, and performance advantages when compared to fossil fuel-based chemicals. Biotech routes to chemical production are inherently consistent with the principles of green chemistry.

In 2004, the U.S. Department of Energy (DOE) published a report, *Top Value-Added Chemicals from Biomass,* acknowledging that biobased processes are often faster and more energy efficient production routes than petrochemical processes. Reduction of time and energy inputs potentially can be translated into cost reductions, providing manufacturers an economic benefit. Further, renewable chemical production processes use raw material resources more efficiently and have less environmental impact overall than petrochemical production. The improvement potentially can save manufacturers material handling and regulatory compliance costs. Additionally, biomass is less volatile in price than fossil resources, which have characteristic boom and bust production cycles. Long-term stability in prices for renewable chemicals provide product manufacturers the ability to plan production well in advance and provides hedging.

A few years later, in 2007, the U.S. Environmental Protection Agency (EPA) published a report, *Bioengineering for Pollution Prevention,* recognizing that industrial biotechnology used in biobased processes and in renewable chemical production can reduce carbon emissions via many of the same attributes recognized by DOE—namely, improved process efficiency, the displacement of fossil fuels and petroleum-based materials, and the creation of closed loop industrial systems that eliminate waste. EPA recognized that these innate characteristics of biotech and biobased processes prevent waste and reduce derivatives, which closely match the principles of green chemistry. Since the introduction of EPA's Presidential Green Chemistry Challenge in 1996, ⅓ of all awards have gone to industrial biotechnology or biobased processes. Consumer demand for environmentally conscious products continues to rise.

More recently, in April 2016, the White House Office of Science and Technology Policy released a report on *Advanced Manufacturing: A Snapshot of Priority Technology Areas Across the Federal Government.* This roadmap emphasizes that growth of the biobased economy is dependent on advanced biobased manufacturing and engineering biology. According to the roadmap, synthetic biology foundries hosted by Federal Government efforts will promote the commercial development of new renewable chemicals via faster and cheaper methodologies that use appropriate design of microorganisms.

Most producers of renewable chemicals can demonstrate comparable performance as drop-in replacements for petroleum-based chemicals. A few applications demonstrate improved performance. To cite one example, Avantium's PEF has superior properties to PET in drink bottle applications, including a higher barrier to oxygen, carbon dioxide and water. These properties can extend product shelf life and reduce production costs for beverage producers. PEF's carbon footprint is 50–70 percent lower compared to PET.

Conclusion

Consumer product manufacturers have indicated that they are eager to use renewable chemicals in formulations in order to meet consumer demand for environmentally preferable products. The main challenge producers have cited for adoption of renewable chemicals is their ability to secure reliable, competitive supplies for large-scale product applications. Providing sufficiently large-scale supplies of drop-in renewable chemicals for some applications may require multiple manufacturers who adhere to common standards for chemical purity and quality.

Some renewable chemicals—such as succinic acid and PLA—are already being produced commercially by multiple, competing companies and could potentially have commodity applications. A few additional renewable chemicals—such as butanol and isoprene—are approaching the same status. Several other renewable chemicals are being produced at commercial levels by a single company—such as 1,3-propanediol, propylene glycol and some diacids—with production tailored to niche product markets.

Many additional companies are scaling up and demonstrating new renewable chemical technologies. And in some cases, there are multiple companies competing to reach commercial scale. Forming partnerships with consumer product manufacturers or larger mid-market chemical producers—who can provide off-take agreements or capital investment in some form—is a common strategy for emerging companies commercializing new renewable chemicals. Ensuring that consumers receive the environmental, economic and performance benefits of renewable chemicals requires an integrated effort across this entire production value chain.

Agrivida

Medford, MA
Number of employees: 40
Agrivida, Inc. Is Delivering The Next Generation Of Enzyme Solutions.



Above: Agrivida founder Michael Raab and U.S. Secretary of Energy Steven Chu, Medford, MA.

Biorefinery Classification: Commercial Plant

Key Facts

- Feedstock: Grain, lignocellulosic biomass and sugar
- Agrivida's GraINzyme® technology is an expression platform for making recombinant or synthetic proteins in grain and other plant tissues. Using GraINzyme® technology, Agrivida is commercializing a series of enzyme and protein products that are produced and delivered in grain. These initial products target the animal nutrition industry and improve feed conversion, yields, and the efficiency of food production.

Partnerships and Financing

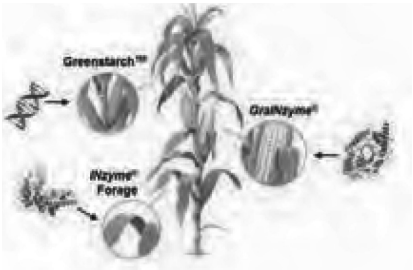
In 2014, Agrivida entered a trait development collaboration with Precision BioSciences to use Directed Nuclease Editor™ (DNE) technology. In 2015, Agrivida completed a $23 million Series D financing led by Cultivian Sandbox Ventures, joined by an affiliate of Maschhoff Family Foods, ARCH Venture Partners, Middleland Capital and existing investors Kleiner Perkins Caufield & Byers, DAG Ventures, Bright Capital Partners, Gentry Venture Partners, Northgate Capital, Prairie Gold and private investors.

About: Agrivida is developing and commercializing solutions that are the next evolutionary step in animal nutrition, using the plant as a factory to produce and deliver highly differentiated agricultural and nutritional products.

Product applications: Animal health and nutrition; grain, food and feed processing; first and second generation biofuels and biobased chemicals; industrial enzymes for a variety of industries.

Potential market size: Animal nutrition enzymes represent an $850 million market. With increased food demand, sales of animal feed enzymes are expected to exceed $1.8 billion by 2020.

Technology: Agrivida's INzyme® technology is a biological "off-on" switch engineered into enzymes to control their activity. Enzymes can be engineered with self-splicing peptides, called inteins, and produced in grain, green plants, fermentation microbes, or other hosts in a "dormant" form, where they accumulate in high concentrations. The enzymes are reactivated "on command" using a selected, controlled change in temperature or pH at a precise time, maximizing their value in the process or application.



American Process
Atlanta, GA
Number of employees: 100

American Process Is Commercializing GreenPower+ For Ethanol.



Above: AVAP Demonstration Plant, Thomaston, GA.

Biorefinery Classification: Demonstration Plant

Key Facts

- Thomaston, GA Integrated demonstration plant forGreenPower+, AVAP and Bioplus
- Alpena, MI Demonstration pre-commercial GreenPower+ plant—succesfully completed demonstration—currently furloughed
- Feedstock: Any woody or agricultural residue biomass

Partnerships and Financing

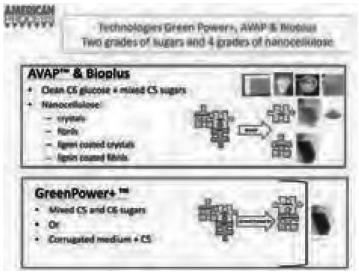
American Process is privately owned by a joint venture of GranBio and TRLLC. API has formed partnerships with Green Tech America and Valmet. American Process sponsors biorefinery research consortiums at the Empire State Paper Research Institute, North Carolina State University, and TEKES, Finnish Funding Agency for Technology and Innovation. It directly commissions biorefinery research projects at Georgia Institute of Technology, University of Maine, and Michigan Technological University.

About: American Process Inc. (API) specializes in the development, demonstration and commercialization of GreenPower+, AVAP and Bioplus technologies for the commercial production of cellulosic ethanol, cellulosic sugars and nanocellulose from biomass.

Product applications: Cellulosic ethanol, cellulosic sugars, nanocellulose.

Potential market size: Transparency Market Research reports that the global biofuels market was valued at $168.18 billion in 2016 and is projected to reach $246.52 billion by 2024.

Technology: GreenPower+® is a patented technology suite for producing low-cost mixed cellulosic sugars from biomass hemicelluloses and cellulose in co-production mode. These sugars are fermented to ethanol. AVAP® technology produces low-cost clean cellulosic sugars from biomass cellulose—and ethanol from the hemicelluloses—in a stand-alone facility. Bioplus® technology produces highly functional, hydrophilic and hydrophobic nanocellulose fibrils or crystals, in gel or dried form.



Amyris

Emeryville, CA
Number of employees: 400
Amyris, Inc. Is Producing Farnesene.



Above: Brotas, São Paulo, Brazil Plant.

Biorefinery Classification: Commercial Plant

Key Facts

- Brotas, São Paulo, Brazil
- 1.2 million liters
- Feedstock: Sugarcane juice

Partnerships and Financing

With Total—Amyris launched in 2010 an ongoing research and development collaboration to accelerate the deployment of farnesene for the production of renewable jet fuel. In 2014, following regulatory approvals, Amryis began to commercialize its renewable jet fuel.

With Firmenich—Amryis developed a technology to produce sustainable, cost-effective ingredients for the flavors and fragrances (F&F) industry and have successfully produced its first fragrance oil.

About: Amyris delivers high-performance renewable products across a wide range of consumer and industry segments. Our products offer customers a way to reduce environmental impact with No Compromise® in performance or availability.

Product applications: Flavors, fragrances, cosmetics, detergents, fuels, lubricants, performance materials and biopharmaceuticals.

Potential market size: The personal care business represented $25 million of 2015 revenue and is expected to contribute $40 million of 2016 revenue. Amyris expects existing collaboration and supply agreements to generate over $200 million in revenue through 2020 from the company's flavors and fragrances partners.

Technology: Through synthetic biology, Amyris is able to engineer the metabolic pathways of sugar, so that it can design microbes, primarily yeast, and use them as living factories in fermentation processes to convert plant-sourced sugars into target molecules. Amryis uses proprietary high-throughput processes to create and test thousands of yeast strains a day in order to choose those yeast strains that are most efficient and scalable for industrial production.



Anellotech
Pearl River, NY

Number of employees: 23
Anellotech, Inc. Is Producing Benzene, Toluene And Xylenes.



Above: Anellotech's TCat-8™ development and testing unit for converting biomass to BTX.

Biorefinery Classification: Pilot Plant

Key Facts

- Pearl River, NY
- Feedstock: Biomass (wood, corn stover, sugarcane bagasse) and other non-food agricultural products
- Anellotech's new, fully-integrated development and testing facility (TCat-8™) is currently under construction and will be operational in 2016. This continuous unit will confirm the viability and suitability of the process for scale-up and generate data needed to design commercial Bio-TCat plants. The TCat-8 unit was jointly designed by Anellotech and its R&D partner IFP Energies nouvelles (IFPEN) and will use a novel catalyst under joint development by Anellotech and Johnson Matthey.

Partnerships and Financing

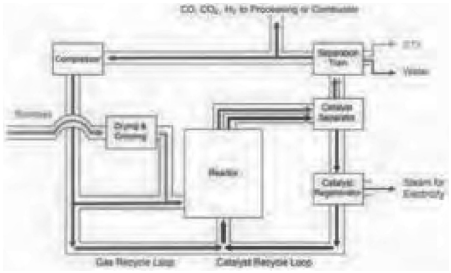
IFP Energies nouvelles (IFPEN) is our process development and scale-up partner. Johnson Matthey is our catalyst development and commercial catalyst supply partner. Axens is our partner for industrialization, commercialization, global licensing and technical support. In November 2015, Anellotech Inc. announced an equity investment of $7 million from a new, strategic investor.

About: Anellotech is a green innovation and technology company developing an efficient process for producing biobased aromatic chemicals (BTX) from non-food biomass. We use proprietary thermal catalytic biomass conversion (Bio-TCat™) technology to provide sustainable chemical building blocks as an alternative to identical fossil-derived counterparts.

Product applications: Polyester, (polyethylene terephthalate or PET), polystyrene, polyurethane, nylon, styrene butyl rubber (SBR), acrylonitrile butadiene styrene (ABS) and other polymers, which are used to produce beverage bottles, clothing, carpeting, automotive components, and a broad range of other household and industrial products.

Potential market size: The global market for benzene, toluene and xylenes was approximately $130 billion in 2014.

Technology: Through Bio-TCat™ technology, non-food biomass is rapidly heated in a fluid-bed reactor and the resulting gases are immediately converted into hydrocarbons by a proprietary, recirculating zeolite catalyst. Biobased BTX, which is identical to petroleum-derived counterparts, can be further purified, separated and converted into a broad range of plastics using existing commercial technologies and industry infrastructure.



BASF Corporation
Florham Park, NJ
Number of employees: 17,471 in North America



Above: Grain processing facility.

Biorefinery Classification: Commercial Plant

Key Facts

- In addition to its own manufacturing facilities, BASF secures contract manufacturing relationships with qualified third parties possessing sufficient fermentation capacity to meet commercial production requirements.

  For example, BASF has an important partnership with Fermic, which operates a U.S. FDA cGMP approved fermentation and synthesis facility and has a large fermentation plant in a suburb of Mexico City.



About: BASF Enzymes LLC is a wholly owned subsidiary of BASF Corporation located in San Diego, CA. It is a recognized pioneer in the development and commercialization of high-performance enzymes for use in industrial processes.

Our interdisciplinary, international research and development teams work at several BASF sites: Ludwigshafen (Germany), Tarrytown (New York, United States) and San Diego (California, United States).

Product applications: BASF sells enzymes developed using its unique patented R&D capabilities, harnessing the power of nature to satisfy the needs of the global market. Key markets are: human and animal health and nutrition, home care, grain processing, oilfield solutions, and pulp and paper.

Technology: Genetic expression libraries are constructed and quickly screened using automated and high-throu[gh]put robotic technologies. BASF uses patented,

state-of-the-art gene evolution capabilities—suite of DirectEvolution® technologies—that make possible rapid optimization of proteins at the DNA level.

White Biotechnology develops and refines methods to use microorganisms, enzymes and cells to produce chemical and biochemical products. For thousands of years, people have been harnessing natural chemical processes to produce food, medicines and other products. Today, rapid technological progress in the life sciences is leading to innovative ways to use nature's variety for completely new applications.

BASF White Biotechnology uses natural synthesis techniques to develop products such as vitamins, food and feed supplements, chiral compounds, and pharmaceutical and agricultural intermediates. These techniques can increase efficiency and reduce raw materials, energy requirements and carbon emissions as compared to conventional chemical processes.

BioBased Technologies® LLC

Rogers, AR
Number of employees: 15
BBT Strives To Reduce The Use Of Nonrenewable Ingredients By Integrating Renewable Ingredients.

Biorefinery Classification: Commercial Plant

Key Facts

- Fountain Inn, SC
- Dalton, GA Laboratory
- Feedstock: Soybean oil
- 100 percent Woman-owned small business.
- Collaborates with customers to create sustainable products that reduce costs while adding value.
- Multiple U.S. and international patents.
- Ample manufacturing capacity with room for growth.
- Agrol® is cost competitive compared to other traditional polyols.
- We enable sustainability . . . through partnerships.

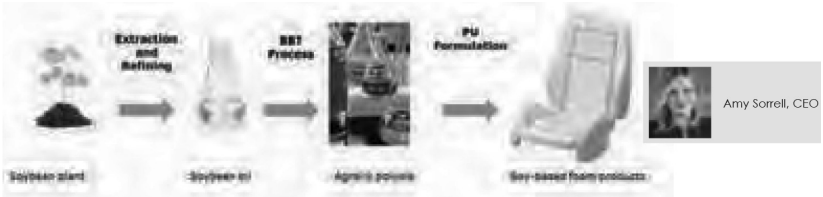
Partnerships and Financing

Agrol® and Agrol Diamond® have been approved to use the U.S. Department of Agriculture certified biobased product label. The label indicates that the products have been independently certified to meet USDA BioPreferred™ program standards for biobased content.

About: BioBased Technologies® is an innovative leader in renewable chemistry and the maker of Agrol®, a line of USDA Certified Biobased polyols. Agrol® polyols are made from farm-grown plants and are suitable for all polyurethane applications as a substitute for petrochemicals in the making of products.

Product applications: Agrol®, commercialized in 2005, is used in lubricants, building products, furniture, bedding, automotive foams and parts, adhesives, agricultural products, carpet backings, industrial coatings and printing inks.

Technology: Agrol® polyols have a high bio-content and are made from plant-based ingredients, including soy and cashew nuts. Using a patented oxidation process, Agrol® can be used in various polyurethane applications with properties ranging from semi-flexible to semi-rigid. Qualities such as low acid number, mild odor and light color make Agrol® polyols ideal replacements for petroleum-based polyols. Custom blends are also available.



BIO–CAT/BIO–CAT Microbials

Troy, VA; Shakopee, MN
Number of employees: 15
BIO–CAT/BIO–CAT Microbials Is Producing Enzymes.



Above: Shakopee, MN Plant.

Biorefinery Classification: Commercial Plant

Key Facts

- Shakopee, MN

Partnerships and Financing

BIO–CAT launched in 1988. BIO–CAT purchased AMS in 2004 and renamed it BIO–CAT Microbials. Facilities were updated, new fermentation equipment was purchased and larger blenders were added.

About: BIO–CAT offers a wide range of products, from single enzymes to multi-enzyme blends. BIO–CAT Microbials is an innovator in the field of biological solutions for a broad range of emerging and existing markets and industries.

Product applications: Detergent and other cleaning products, animal nutrition and aquaculture, food and beverage ingredients, dietary supplements, septic and drain care, waste treatment.

Potential market size: The potential market for industrial enzymes is 6.2 billion by 2020 according to Markets and Markets.

Technology: Enzymes can be produced from animal, bacterial, fungal, yeast and plant sources. They can be Kosher, Halal, and GRAS or industrial grade. They come in dry and liquid form.

Bacillus is a specific type (genus) of bacteria which grow aerobically (with oxygen) and to some extent anaerobically (without oxygen) and forms spores.

Bioresource International

Research Triangle Park, NC
Number of employees: 17
Bioresource International, Inc Is Producing Enzymes.

Biorefinery Classification: Pilot Plant

Key Facts

- Research Triangle Park, NC
- Feedstock: Poultry waste

Partnerships and Financing

BRI has signed a marketing agreement with Jubilant Life Sciences, an integrated pharmaceutical and life sciences company, for marketing and distribution of selected feed enzyme products in South Asia. BRI has signed an agreement with ilender Corp. for the distribution and marketing of selected feed enzyme products in Latin American countries.

About: A global biotechnology company specializing in the research, development and manufacture of enzyme feed additives that help poultry and swine producers optimize animal nutrition.

Product applications: Versazyme® has become the leading protease in the global animal nutrition market. Valkerase® is an enzyme that improves the processing of feathers and the quality of feather meal. BRI's newest product, Xylamax™, is an intrinsically thermo-stable xylanase that delivers consistent all-around performance in nutrient release and absorption, total energy availability, and feed conversion rate. To quickly test animal feed on site to confirm the presence of Xylamax, the company has developed XylaQuick™, a qualitative in-feed calorimetric kit.

Potential market size: Animal nutrition enzymes represent an $850 million market. With increased food demand, sales of animal feed enzymes are expected to exceed $1.8 billion by 2020.

Technology: Dr. Shih's 1980s research and development of a thermophillic digester to generate power from poultry waste led to his discovery of keratinase, an enzyme that digests the keratin protein found in feathers. Further research proved that keratinase could also improve digestibility of animal feed.

Biosynthetic Technologies

Irvine, CA
Number of employees: 10
Biosynthetic Technologies Is Producing Biosynthetic Base Oil.



Above: Baton Rouge, LA Plant.

Biorefinery Classification: Demonstration Plant

Key Facts

- Baton Rouge, LA
- Feedstock: Organic fatty acids found in plant oils

Partnerships and Financing

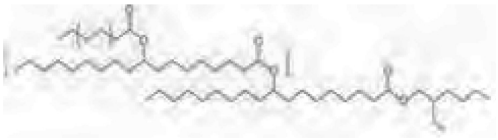
Biosynthetic Technologies holds exclusive rights to patented USDA technology that converts fatty acids found in plant and animal oils into high-performance synthetic oils. Biosynthetic Technologies is funded in part by multiple *Financial Times* Global 500 companies. For more information, visit *Biosynthetic.com*.

About: Biosynthetic Technologies (BT) manufacturers a renewable high-performance lubricant base oil that exceeds the toughest performance standards, even in challenging applications like motor oil. BT has received ILSAC GF–5 certification on both SAE 5W–20 and 5W–30 grade passenger car motor oil formulations using its Biosynthetic Base Oil. These formulations have also been certified by the American Petroleum Institute (API) to exceed the requirements of the most recent service category issued by API's Lubricants Group, the API SN "Resourcing Conserving" designation.

Product applications: Passenger car motor oil (PCMO); Marine lubricants; Small engine oil (2T/4T); Hydraulic fluid; Wind turbine; Refrigeration/compressor oil; Food-grade lubricant grease; Dielectric (transformer) fluid; Metalworking fluid; Gear oil; Bar and chain oil; General purpose lubricant; Plastics.

Potential market size: 1 billion gallons per year.

Technology: Biosynthetic Technologies (BT) manufactures a revolutionary new class of biobased synthetic molecules that are made from organic fatty acids found in plant oils.



Blue Marble Biomaterials

Missoula, MT
Number of employees: 80
Blue Marble Biomaterials Is Producing Specialty Chemicals—Sulfur Compounds, Thioesters, Esters, Specialty Offerings, Extract & Oils.



Above: Bitterroot Valley of Montana Plant.

Biorefinery Classification: Pilot Plant

Key Fact

- Bitterroot Valley of Montana
- Feedstock: Organic material (biomass): food co-products, spent brewery grain, spent coffee and tea, algae, milfoil, agricultural silage, wood chip

Partnerships and Financing

In the fall of 2010, Blue Marble was awarded the Regional Woody Biomass Utilization Grant by Montana's Department of Natural Resources and Conservation. Innovate Montana is a public-private partnership, led by the Governor's Office of Economic Development working in collaboration with Montana's business community. Their goal is to highlight innovative businesses like Blue Marble Biomaterials that are advancing the state's economy by creating quality jobs.

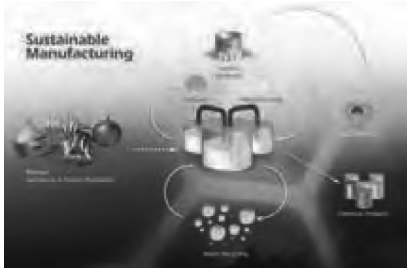
About: Our mission is to replace petroleum-based chemicals with fully sustainable, zero carbon specialty chemicals.

Product applications: Natural flavours and fragrances.

Potential market size: In 2014, the world's ten largest specialty chemicals segments accounted for 61 percent of the market, reported IHS. Markets and Markets projects that specialty chemicals will reach $470 billion by 2020.

Technology: Patented processes utilize plant material and managed ecosystems of bacteria to produce complex chemical compounds. We refine our compounds using green chemistry processes. Its proprietary AGATE system uses cellulosic, lignin, and protein based biomass to produce target products. Uses non-GMO polyculture fermentation and extraction.

Blue Marble is working with researchers at the University of Montana to develop natural algal products using patent-pending algae strains, growth systems, and extraction technologies.



Calysta

Menlo Park, CA
Number of employees: 50
Calysta Is Developing FeedKind® Protein, Alcohols, Esters, Oxides And Olefins.



Above: FeedKind®.

Biorefinery Classification: Commercial Plant

Key Facts

- Menlo Park, CA
- Feedstock: Methane
- In January 2016, Calysta received a conditional award of up to £2.8 million Exceptional Regional Growth Fund (eGRF) grant subject to due diligence from the UK Government to develop a Market Introduction Facility in northern England to develop a production process for FeedKind® protein. FeedKind® is approved for sale in the European Union. In June 2014, Calysta announced it has successfully fermented methane into lactic acid, under a research collaboration with NatureWorks. Lactic acid is the building block for NatureWorks Ingeo lactide intermediates and polymers.

Partnerships and Financing

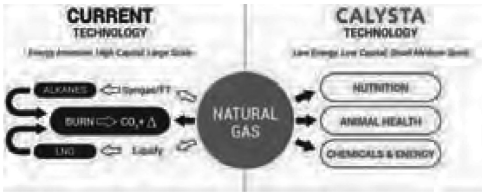
In February 2016, Calysta announced $30 million in Series C funding with Cargill, the Municipal Employee Retirement System (MERS) of Michigan and Old Westbury Global Real Assets Fund LLC. In January 2015, Calysta completed of a Series B financing round totaling $10 million, led by Walden Riverwood Ventures, a venture firm focused on investing in core technology companies globally, and Aqua-Spark, a Netherlands-based firm focused on sustainable aquaculture investments.

About: Calysta creates high-value nutrition products and industrial materials by converting energy-rich methane into sustainable building blocks for life.

Product applications: Fish and livestock nutrition products, industrial materials and consumer products. FeedKind® protein is a natural, safe, non-GMO, sustainable fish feed ingredient to reduce the global aquaculture industry's use of fishmeal.

Potential market size: Specialty.

Technology: Calysta is converting novel feedstocks to high value sustainable products using synthetic biology. Calysta is developing Biological Gas-to-Chemicals® and Biological Gas-to-Liquids® platforms and Biological Gas to Feed™ and Biological Gas to Fuel™ fermentation platforms. These platforms create valuable cost and performance advantages over current gas conversion processes without competing for food, land or water. FeedKind® is produced using methanotrophs, natural organisms that consume methane from multiple sources, including anaerobic digestion and municipal solid waste, as their energy source.



Biobased products are made from renewable biomass, oils or other carbon waste streams, including waste stack gases. Renewable chemicals are the building blocks for biobased products.

Cellana, LLC

Kailia-Kona, HI

Number of employees: 20+

Cellana, LLC Is Producing Algae Oils, Proteins/Carbohydrates And Biomass.



Above: Kailua-Kona, HI Plant.

Biorefinery Classification: Demonstration Plant

Key Facts

- Kailua-Kona, HI
- 12+ tons per year, current capacity
- Feedstock: Algae

Partnerships and Financing

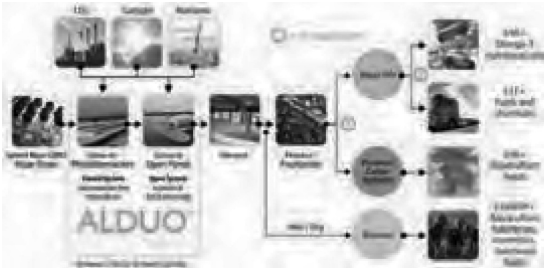
Cellana has rec[ei]ved multiple large grants from the U.S. Departments of Energy (DOE) and Agriculture (USDA). Cellana has entered into a commercial-scale off-take agreement with Neste, the world's leading supplier of renewable diesel and jet fuel, for Cellana's ReNew™ Fuel biocrude oil for fuel applications.

About: Cellana is a leading developer of algae-based bioproducts for sustainable nutrition and energy applications.

Product applications: Algae-based bioproducts such as Omega-3 nutritional oils, Aquaculture/animal feeds, human foods and fuels.

Potential market size: $4 billion Omega-3 oils, $9 billion aquaculture feeds, $1 trillion fuels/chemicals, $100 million whole algae products for aquaculture hatcheries, cosmetics, & functional foods.

Technology: Cellana's patented production system, called ALDUO™, is unique in that it couples large-scale photobioreactors (PBRs) with open ponds in a two-stage process. Open ponds, which are very cost-effective, have historically been limited by contamination from undesirable algae strains (weeds) or grazer organisms (pests). PBRs are generally unable to produce algae at an acceptable cost for commodity applications. ALDUO™ minimizes the footprint of PBRs & maximizes the footprint of the open ponds, in order to minimize overall cost & minimize risk of contamination. By operating the PBRs in semi-continuous mode to provide inoculum for the open ponds, which are operated in batch mode, Cellana has successfully grown more than ten strains of algae at commercial yields w[i]thout pesticides or herbicides.



The Coca-Cola Company

Atlanta, GA

Number of system employees: >700,000

The Coca-Cola Company Produces PlantBottle™ Packaging, The First-Ever Fully Recyclable Pet Plastic Beverage Bottle Made Partially From Plants.

Biorefinery Classification: Commercial Plant

Key Facts

- Feedstock: Sugarcane

Partnerships and Financing

In June 2012, Coca-Cola, Ford, Heinz, Nike and Procter & Gamble formed the Plant PET Technology Collaborative to accelerate development of products made entirely from plants. The PlantBottle™ technology has also been applied beyond beverage bottles. Coca-Cola now has developed partnerships with the Ford Motor Company to use the PlantBottle™ technology for polyester car interiors, and SeaWorld® Parks & Entertainment (as well as other theme parks and zoos), to introduce a refillable souvenir cup made with PlantBottle technology.

About: The Coca-Cola Company is the world's largest beverage company, refreshing consumers with more than 500 sparkling and still brands and more than 3,800 beverage choices.

Product applications: PET packaging and materials.

Potential market size: PlantBottle™ packaging accounts for 30 percent of the company's packaging volume in North America and eight percent globally, some seven billion bottles annually, making The Coca-Cola Company a large bioplastics end-user.

Technology: Coca-Cola introduced PlantBottle™ Technology in 2009 as the first recyclable PET plastic bottle made partially from plants. Since then, more than 40 billion PlantBottle™ packages have reached the market in over 40 countries, saving more than 845,000 barrels of oil. The company's goal is to adopt the PlantBottle™ packaging (which consists of 30 percent plant-based material) for all of its new PET plastic bottles in the future. To achieve this objective, Coca-Cola is partnering with other companies to expand technology and build manufacturing facilities around the world.



Corbion

Amsterdam, Netherlands
Number of employees: 1,673
Corbion Is Producing Lactide Monomers And Polymers, 2,5-Furandicarboxylic Acid, And Succinic Acid.



Above: Blair Manufacturing Facility, Blair, NE.

Biorefinery Classification: Commercial Plant

U.S. Production Facilities

- Blair Manufacturing Facility, Blair, NE
- Dolton Manufacturing Facility, Dolton, IL
- East Rutherford Manufacturing Facility, East Rutherford, NJ
- Grandview Manufacturing Facility, Grandview, MO
- Totowa Manufacturing Facility, Totowa, NJ
- Tucker Manufacturing Facility, Tucker, GA

Partnerships and Financing

In 2011, Corbion signed a partnership agreement with Perstorp; and in 2015 jointly announced development of a new lactide (PURALACT® B3) caprolactone co-polymer (Capa™) for use in hot melt adhesive applications.

In 2013, Corbion and BASF established the 50/50 joint venture, Succinity GmbH, to produce high-quality succinic acid based on renewable resources.

In 2015, Corbion and MedinCell established a 50/50 joint venture, CM Biomaterials, to supply biobased copolymers for controlled-release drug delivery. The joint venture will sell the co-polymers to MedinCell partners who license the MedinCell technology (BEPO™).

About: Corbion is the global market leader in lactic acid, lactic acid derivatives, and lactides, and a leading company in emulsifiers, functional enzyme blends, minerals, and vitamins.

Product applications: The company delivers high performance biobased products made from renewable resources and applied in global markets such as bakery, meat, home and personal care, packaging, pharmaceuticals and medical devices, automotive, coatings and adhesives. Its products have a differentiating functionality in all kinds of consumer products worldwide.

Potential market size for bioplastics: Global bioplastics production capacity is set to increase from around 1.7 million tonnes in 2014 to approximately 7.8 million tonnes in 2019, according to Institute for Bioplastics and Biocomposites.

Technology: Corbion has an established technology platform based on over 80 years of fermentation experience. Corbion leads the way in lactic acid as well as in cutting-edge emulsification technology and functional blending capability. Drawing on the deep rooted application and market knowledge that has been built up over decades, Corbion works hand in hand with our customers to make our technology work for them.

With the construction of a 75 kiloton per year PLA plant in Rayong Province, Thailand, Corbion is moving one step in the value chain.



The Dow Chemical Co.

Midland, MI

Number of employees: 49,495

The Dow Chemical Company Is Producing Ethanol, Plasticizers, Polyols.

Biorefinery Classification: Commercial Plant

Key Facts

- U.S. Gulf Coast
- Feedstock: Soy
- DOW's Santa Vitória, Minas Gerais, Brazil integrated alcohol-chemical complex uses sugarcane as a renewable feedstock for the production of ethanol. The mill has the capacity to convert 2.7 million tons of sugarcane into 240,000 cubic meters of hydrous fuel ethanol per harvest year.

Partnerships and Financing

BioVinyl™ flexible vinyl compounds incorporate phthalate-free DOW ECOLIBRIUM™ Bio-Based Plasticizers, which are manufactured using plant by-products by Dow Electrical and Telecommunications, a business unit of The Dow Chemical Company. Under a Joint Collaboration Agreement, Teknor Apex has the exclusive right to market in North America flexible vinyl compounds containing DOW ECOLIBRIUM™ Bio-Based Plasticizers in consumer and industrial products, automotive components, certain medical devices, and certain wire and cable uses.

About: The Dow Chemical Company is a diversified, worldwide, manufacturer and supplier of products, used primarily as raw materials in the manufacture of customer products and services.

Product applications: Flexible packaging, hygiene and medical markets, adhesives and sealants.

Potential market size: The global market for adhesives and sealants is expected to reach $43,195.5 million by 2020, according to a 2014 study by Grand View Research, Inc.

Technology: RENUVA™ Renewable Resource Technology breaks down natural oil and functionalizes it, then uses a distinct process to polymerize the molecules into designed polyols with control of functionality and molecular weight for greater quality and consistency.

DuPont

Wilmington, DE

DuPont Is Developing Platforms For Biofuels, Food Ingredients, Materials And Chemicals.

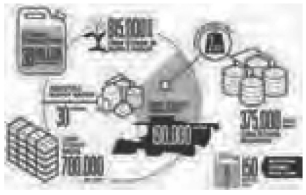


Above: DuPont Cellulosic Ethanol, Nevada, IA.

Biorefinery Classification: Commercial Plant

Key Facts

- DuPont Cellulosic Ethanol Nevada, IA
- 30 million gallons per year
- Feedstock: Corn stover



Partnerships

In 2016, DuPont and Archer Daniels Midland announced a method for producing furan dicarboxylic methyl ester (FDME) from fructose. One of the first polymers under development utilizing FDME is polytrimethylene furandicarboxylate (PTF).

About: DuPont has been bringing world-class science and engineering to the global marketplace in the form of innovative products, materials, and services since 1802.

Product applications: Animal nutrition, food, detergents, textiles, carpets, personal care, biobased materials and biofuels.

Technology: DuPont integrates proven strengths in chemistry, materials science and engineering with cutting-edge biology, augmenting or replacing chemical transformations with biological ones. DuPont's biobased materials reduce the use of petroleum while improving performance. DuPont is leading the world in meeting growing biofuel needs.

By adding modern science and knowledge to nature's own material, DuPont™ Danisco® food enzymes bring added value and previously unattainable functionalities to many food products. They help extend shelf life, optimize production, add texture, ensure quality consistency and reduce costs—gains that in turn enable customers to reduce water use, energy consumption and waste. POWERFlex®, an enzyme solution developed for tortilla baking, reduces the sticki-

ness of dough and gives tortillas long-lasting freshness and improved flexibility. Enzymes also support health and wellness by promoting the digestion of milk lactose, starch, proteins, fats and oils.

DuPont offers a wide range of liquefaction, saccharification and isomerization products to customers in the wet milling industry, backed by our applications laboratories in the U.S., China and Europe. Experienced DuPont professionals provide technical support to optimize the production of HFCS, high dextrose and high maltose syrups. This enzyme technology also contributes to energy, water and chemical reduction by increasing dry solids, reducing process temperatures and pH adjustments and improving filtration efficiencies.

DuPOnt Tate & Lyle Bio PRODUCTS

Loudon, TN

DuPont Tate & Lyle Bio Products Is Producing 1,3 Propanediol.



Above: Loudon, TN plant.

Biorefinery Classification: Commercial Plant

Key Facts

- The global headquarters and production facility for DuPont Tate & Lyle Bio Products is located in Loudon, TN.
- The plant started production in 2006 and has a current capacity of 140 million pounds per year.
- Feedstock: Glucose from corn wet milling operation.

Partnerships and Financing

DuPont Tate & Lyle Bio Products is a joint venture between DuPont, a global science company, and Tate & Lyle, a world-leading renewable food and industrial ingredients company. DuPont and Tate & Lyle jointly funded the plant with total investment of $100 million.

Awards

2003 EPA Presidential Green Chemistry
2007 ACS Heroes of Chemistry
2009 ACS–BIOT Industrial Biotechnology
2010 State of Tennessee Governor's Award for Trade Excellence

About: DuPont Tate & Lyle Bio Products provides natural and renewably sourced ingredients that enhance product performance.

Product applications: 100 percent biobased 1,3 propanediol is used to produce fiber grade polyester polymer for residential and commercial carpets, apparel and automotive mats and carpets. In addition the Zemea® brand of 1,3 propanediol is found in cosmetics, personal care, food, flavors, laundry, cleaning and pharmaceutical products. The Susterra® brand is targeted for industrial applications such as heat transfer fluids, deicing, polyurethanes, paints, coatings and inks.

Technology: Under exact temperatures and conditions, a patented microorganism functions as a bio-catalyst, converting sugar into 1,3 propanediol. The deactivated microorganism is separated from the broth, along with unfermented sugars, salts and water. The material is then refined to remove any trace quantities of water and other byproducts. The resu[lt]ing product is highly purified 1,3 propanediol ready for commer[ci]al use.



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EcoSynthetix
Burlington, ON, Canada
Number of employees: 50
EcoSynthetix Is Producing Ecosphere® Biopolymers And Ecomer® Biomonomers.

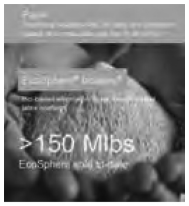


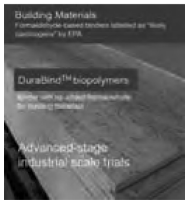
Above: Eco[S]ynthetix, Burlington, Ontario.

Biorefinery Classification: Commercial Plant

Key Facts

- Centre of Innovation, Burlington, Ontario, Canada. Production sites in Tennessee and The Netherlands.





Partnerships and Financing

The company has established a number of academic and government funding partnerships to support its research and development activities. EcoSynthetix is a public company trading on the Toronto Stock Exchange (TSX: ECO). For further details, visit us at *ecosynthetix.com*.

About: EcoSynthetix is a renewable chemicals company specializing in biobased materials used as inputs in a wide range of end products. Our commercial biobased products exhibit similar performance characteristics compared to non-renewable products that they replace, often at reduced total systems cost.

Product applications: Binders and modifiers for key global markets, including: paper & paperboard, building and construction, personal care, and others.

Potential market size: $60 billion of synthetic polymers.

Technology: EcoMer® is the flagship product family of functional engineered biopolymers that are patented and exclusively available from EcoSynthetix. These products represent a class of highly efficient binders derived from renewable materials which can cost-effectively displace traditional synthetic binders in a number of significant market applications, including coated paper and paperboard, building products such as wood composites and insulation, and others.



Edeniq

Visalia, CA

Number of employees: 30

Edeniq Is Producing Cellulosic Sugars.



Above: Visalia, CA Plant.

Biorefinery Classification: Pilot Plant

Key Facts

- Visalia, CA
- Feedstock: Corn stover, sugarcane bagasse
- The PATHWAY Platform has been licensed for commercial production of cellulosic biofuel from corn kernel fiber. Edeniq has announced commercial licenses for its PATHWAY Platform with Pacific Ethanol, Flint Hills Resources, Siouxland Energy, and Aemetis.
- Edeniq is partnering with Usina Vale to build a demonstration plant at Usina Vale's sugar mill in Brazil to convert sugarcane bagasse to cellulosic ethanol

Partnerships and Financing

Department of Energy program funded $20 million of Edeniq's $25 million cellulosic ethanol pilot plant; with nearly $4 million from the California Energy Commission (CEC).

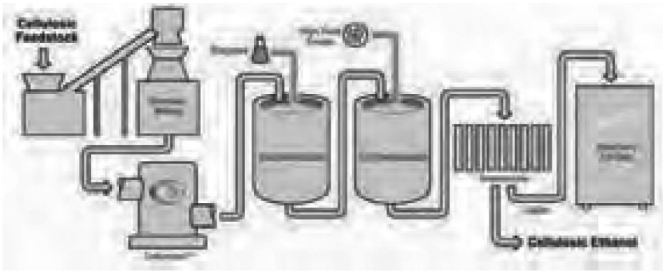
Edeniq is a privately held company. Edeniq and Aemetis have announced a planned merger to close in the third quarter 2016.

About: Edeniq is a biorefining and cellulosic technology company. Edeniq delivers integrated process innovations that unlock sugars.

Product applications: Technology to produce cellulosic ethanol from corn kernel fiber at existing ethanol plants using Edeniq's Cellunator™ pretreatment and cellulases.

Technology: Edeniq combines a mechanical pretreatment (Cellunator) process with enzymatic hydrolysis to efficiently and cost-effectively break down structural

plant materials into cellulosic sugars. Edeniq's PATHWAY Platform integrates enzymes with the Cellunator and SmartFlow™ Technology for water and lignin recovery to allow for conversion of corn kernel fiber into cellulosic sugars and ethanol. PATHWAY produces up to 2.5 percent cellulosic ethanol; a 15,000 gallon per year plant could produce 375 gallons per year of cellulosic ethanol.



Elevance Renewable Sciences

Woodridge, IL
Number of employees: 100
Elevance Renewable Sciences, Inc Is Producing Ethylene.



Above: Woodridge, IL Plant.

Biorefinery Classification: Commercial Plant

Key Facts

- Woodridge, IL
- Feedstock: Plant-based oils like soybean, canola, palm, mustard and jatropha or algae

Partnerships and Financing

Elevance has a collaboration with Genting Plantations Berhad through Genting Integrated Biorefinery Sdn Bhd (GIB). The collaboration will build a 240,000 megaton (MT) biorefinery in the Palm Oil Industrial Cluster (POIC) in Lahad Datu, Sabah, Malaysia. Versalis, the chemical subsidiary of Eni, has licensed Elevance technology to build a biorefinery at Porto Maghera, Italy.

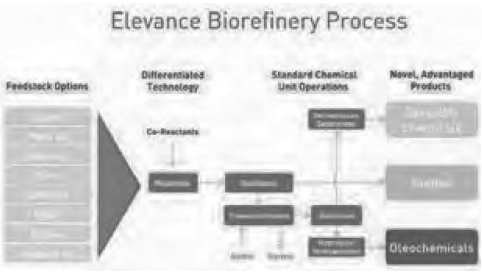
Elevance and Wilmar International Limited formed a joint venture that operates a world-scale biorefinery in Gresik, Indonesia, based on Elevance's technology. The commercial-scale manufacturing facility capacity is 180,000 MT per year.

About: Elevance is a high-growth company that creates novel specialty chemicals from renewable feedstocks by using a proprietary, Nobel Prize-winning technology called olefin metathesis. With olefin metathesis, Elevance helps enable its customers to deliver everyday products that exceed the performance of existing products while leaving a smaller environmental footprint.

Product applications: Personal care, detergents, cleaners, polymers, lubricants and oilfield chemicals.

Potential market size: The outputs from Elevance's production process are relevant to markets valued well in excess of $200 billion. The specialty chemicals market is estimated at $176 billion. The oleochemical market was $38 billion in 2010. The intermediate olefin market was $7 billion in 2008.

Technology: Olefin metathesis chemistry, a groundbreaking catalyst technology, allows carbon atoms in natural oils to "swap" places, enabling new chemical compounds and manufacturing processes.



Evolva
Reinach, Switzerland
Number of employees: 116
Evolva Is Producing High-Value Specialty Ingredients.



Above: Evolva fermenter.

Biorefinery Classification: Commercial Plant

Key Fact

- Feedstock: Baker's yeast

Partnerships and Financing

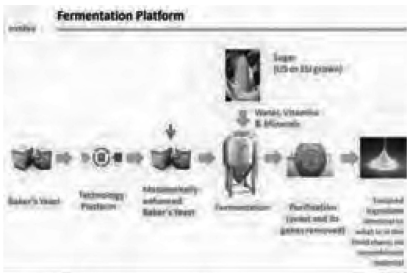
The partners in the BioPreDyn project are developing software tools to facilitate metabolic engineering by the use of computer-based cell models. The PROMYS project has a duration of 4 years and a total EU funding of €7.2 million (CHF 8.9 million), of which Evolva's share is 9.8 percent. The PROMYS project is part of the European Commission's 7th Framework Programme for Research ("FP7"). Evolva's role in the project will be to construct a yeast that is able to produce high yields of a taste modulating ingredient.

About: Evolva is a pioneer and global leader in sustainable, fermentation-based approaches to ingredients for health, wellness and nutrition.

Product applications: Evolva's products include stevia, resveratrol, vanillin, nootkatone and saffron

Potential market size: $91.2 billion by 2020, according to Markets and Markets.

Technology: We have an array of technologies that allow us to rapidly insert and express tens to hundreds of genes in billions of individual yeast cells in a highly combinatorial fashion. This allows us to explore large numbers of gene combinations and hence find those gene combinations that are necessary to biosynthesise a given ingredient. Funded by the Innovative Medicines Initiative, The CHEM 21 project (Chemical Manufacturing Methods for the 21st Century Pharmaceutical Industries) brings together six pharmaceutical companies, five SMEs and research groups eight other universities from the UK and Europe.



ForeLight
Chicago, IL
Number of employees: 6
ForeLight Is Producing Algae Biomass.



Above: Algae bioreactor with Illumesis™ lighting.

Biorefinery Classification: Pilot Plant

Key Facts

- Chicago, IL
- Feedstock: Algae
- ForeLight's production facility is located in the University Technology Park on the Chicago campus of the Illinois Institute of Technology (IIT).

Partnerships and Financing

Privately held.

About: ForeLight's advanced artificial light bioreactor enables unparalleled control over the growth of algae, cyanobacteria and other photosynthetic organisms, offering a stable, cost-effective solution to the biomass production needs of the life sciences, material sciences and biological research & diagnostics fields.

Product applications: Fore[L]ight, Inc. provides fluorescent biomarkers. ForeLight's patented Illumesis™ lighting and growth platform is accelerating the potential application of indoor agriculture/aquaculture for the food, beverage, nutraceutical, cosmetic and other industries.

Technology: Allophycocyanin (APC) is a highly soluble fluorescent phycobiliprotein isolated from the cyanobacteria *Arthrospira platensis.* R-Phycoerythrin (R-PE).

Genomatica
San Diego, CA
Number of employees: ~100
Genomatica, Inc. Is Producing 1,4-Butanediol, Butadiene, Hexamethylenediamine, Caprolactam And Adipic Acid.



Above: Adria, Italy Plant.

Biorefinery Classification: Commercial Plant

Key Facts

- Adria, Italy
- 30 kilotons per year
- Feedstock: Strategic relationships with Tate & Lyle for dextrose sugar, M&G for sugars from cellulosic biomass, and Waste Management for C1s.
- Genomatica and DuPont Tate & Lyle Bio Products Company, LLC (DT&L) produced more than 5 million pounds (over 2,000 metric tons) of BDO by direct fermentation using conventional sugars as feedstock in 2012.

Partnerships and Financing

Under a joint venture agreement, Novamont is converting an existing facility in Adria, Italy to use Genomatica's BDO process to produce approximately 40 million pounds of BDO per year. In April 2013, Versalis and Genomatica announced an agreement to create a joint venture for butadiene. In December 2013, Braskem and Genomatica announced a joint development agreement for butadiene. Braskem anticipates funding Genomatica's development work; will allocate Braskem R&D resources; and fund the construction of pilot and demonstration-scale plants.

About: Genomatica delivers new manufacturing processes that enable its partners to produce the world's most widely-used chemicals from alternative feedstocks, with better economics and greater sustainability than petroleum-based processes.

Product applications: BDO is used in plastics, solvents, electronic chemicals and elastic fibers for the packaging, automotive, textile, and sports and leisure industries. Butadiene is a key raw material for tires, engineering polymers and latex products.

Potential market size: The 1,4-Butanediol market will be worth $8.96 billion by 2019. Hexamethylenediamine, caprolactam and adipic acid have a total market of over $18 billion per year.

Technology: Guided by a genome-scale metabolic model, we engineered the *E. coli* host to enhance anaerobic operation of the oxidative tricarboxylic acid cycle. The organism produced BDO from glucose, xylose, sucrose and biomass sugar streams.



Gevo

Englewood, CO
Number of employees: 91
Gevo Is Producing Isobutanol, Ethanol And High-Value Animal Feed.



Above: Luverne, MN Plant.

Biorefinery Classification: Commercial Plant

Key Facts

- Luverne, MN
- 20 billion gallons per year
- Feedstock: Corn
- Gevo currently operates a biorefinery in Silsbee, Texas, in collaboration with South Hampton Resources Inc., to produce renewable jet fuel, octane, and ingredients for plastics like polyester.

Partnerships and Financing

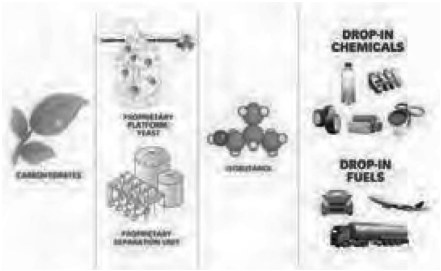
Gevo has a marquee list of partners including The Coca-Cola Company, Toray Industries Inc. and Total SA, among others.

About: Gevo® is a leading renewable chemicals and advanced biofuels company. We are developing biobased alternatives to petroleum-based products using a combination of synthetic biology and chemistry.

Product applications: Isobutanol has broad market applications as a solvent and a gasoline blendstock that can help refiners meet their renewable fuel and clean air obligations.

Potential market size: The global isobutanol market is expected to reach $1.18 billion by 2022. The feed additives is projected to reach $21.8 billion by 2020.

Technology: Gevo's proprietary integrated fermentation technology platform (GIFT®), which has been designed to produce low-cost renewable isobutanol, consists of two elements: A proprietary yeast biocatalyst, which converts sugars derived from multiple renewable feedstocks into isobutanol, and a proprietary separation unit which is designed to bolt onto existing ethanol facilities.



GFBiochemicals

Milan, Italy

Number of employees: 50

GFBiochemicals Americas Is Producing Levulinic Acid Derivatives, Like Esters And Ketals.



Above: Golden Valley, MN Plant.

Biorefinery Classification: Demonstration Plant

Key Facts

- Golden Valley, MN
- Caserta, Italy
- 3 million lbs per year
- Commercial under development, potentially at Laskin Energy Park in Hoyt Lakes, MN.

Partnerships and Financing

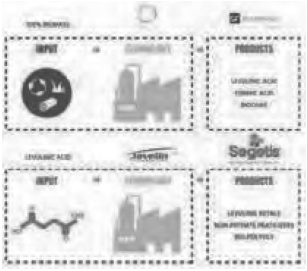
GFBiochemicals is owned by private investors.

About: GFBiochemicals is the main producer of levulinic acid at commercial scale directly from biomass.

Product applications: Pharma, personal care, flavors and fragrances, resins and coatings, cleaners, plasticizers, nylon, fuel additives.

Potential market size: $40 billion annually.

Technology: Thanks to its proprietary technology, levulinic acid is produced through a one-step process directly from a wide range of cellulosic feedstock and GFBiochemicals offers a combination of high product yields, high productivity, concentrated process streams and efficient recovery. Produced at an industrial scale levulinic acid is cost competitive and can also successfully address many performance-related issues attributed to petroleum-based chemicals and materials. Levulinic acid was recognized by the U.S. Department of Energy as one of the top biobased platform chemicals of the future.



Green Biologics

Ashland, VA.

Number of employees: 78 (in U.S. operations)

Green Biologics Is Producing 100 Percent Biobased, Renewable N-Butanol And Acetone.



Above: Little Falls, MN P[la]nt.

Biorefinery Classification: Commercial Plant

Key Facts

- Little Falls, MN 30,000 tonnes per yearFeedstock: Corn
- Emmetsburg, IA. 40,000 liter demonstration

Partnerships and Financing

GBL was founded in Oxford, England in 2003 and moved to its current location in Milton Park near Abingdon in 2005. On January 1, 2012, GBL merged with Butylfuel™ Inc., a Gahanna, Ohio company founded in 1991.

GBL has raised well over $100 million in equity financing from investors and venture capital firms including Sofinnova Partners, Swire Pacific Limited, Capricorn Venture Partners, Oxford Capital Partners, ConVergInce Holdings, the Carbon Trust and Morningside Group.

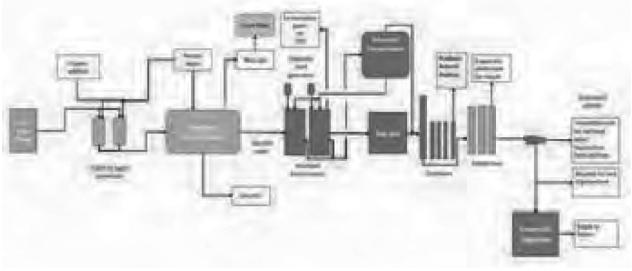
Additional venture debt financing was provided by Tennenbaum Capital Partners (TCP). In 2014, GBL received a $500,000 grant from the Minnesota Agricultural Department to support the engineering for repurpose of their advanced fermentation facility in Little Falls, MN. *www.greenbiologics.com*.

About: Green Biologics Ltd (GBL) is developing and commercializing technologies to produce renewable chemicals that reduce GHG emissions, create rural jobs and deliver a sustainable value chain for a global green economy.

Product applications: n-Butanol is used in paints and coatings, and as an intermediate in the production of household, institutional, and industrial products as well as plasticizers, esters and amines. Acetone is used extensively as a solvent in paints, coatings, adhesives, inks, plastics and polymers, personal care and food applications.

Potential market size: The global market for n-butanol was estimated at 3,802.5 kilotons in 2012. According to Markets to Markets consultancy, the global n-butanol market is expected to reach $9.4 billion by 2018, with year-over-year growth exceeding 4.4 percent.

Technology: We use microbial engineering and synthetic biology tools to continually expand our robust library of *Clostridium* microbial strains, which are used as biocatalysts as part of our Advanced Fermentation Process (AFP)™.



Heliae

Gilbert, AZ

Number of employees: ~130

Heliae Is Currently Producing High-Value Products Derived From Microalgae. Heliae Produces Supplement Grade Astaxanthin And A Number Of Agricultural Products At Commercial Scale.



Above: Gilbert, AZ Plant.

Biorefinery Classification: Commercial Plant

Key Facts

- Gilbert, AZ
- 1 billion gallon per year
- Feedstock: Microalgae and other underdeveloped biological platforms
- Heliae offers technology and facility development services, contract research and manufacture, and maintains a robust pipeline of materials and human/animal health products.

In an effort to support the growth of algae as a sustainable resource, Heliae provides a full range of facility development services around the world. Such projects may range in scope, scale and production potential.

Partnerships and Financing

Heliae led a joint venture—named Alvita Corp.—with Japan-based Sincere Corporation, a waste management and recycling company, in the development of a commercial algae production facility in Saga City, Japan. Construction of the facility began in 2015 and Alvita's astaxanthin product is targeted for market in Japan by the end of 2016. Heliae continues research partnerships with Schott glass, Evodos Separation Technology, and a number of universities and companies.

Heliae is privately held.

About: Heliae® is a platform technology company using sunlight and low-cost carbon feedstocks to produce a wide range of high-value products from microalgae and similar emerging biological systems, with a long term vision of producing a sustainable source of high-quality, low-cost protein, materials, and related products.

Product applications: Human and animal health, agriculture, aquaculture, materials and technology services.

Potential market size: The current market value of commercially used carotenoids (such as astaxanthin) is estimated at nearly $1.5 billion (2014) and is projected to reach $1.8 billion in 2019 at a CAGR of 3.9 percent. The soil treatment market is valued at $24.1 billion and is estimated to grow at a CAGR of 8.5 percent through 2020. The biological products in agriculture market was estimated at $3 billion in 2013 with a 3 year CAGR of 15 percent. Nutritional chemicals for the animal health market are estimated to reach nearly $4 billion in 2016, with a CAGR between 3.2 and 4 percent. By 2020, the aquaculture feed market is expected to reach $381.9 million. The global biomaterials market is forecast to grow to an estimated $130.57 billion by 2020 at a CAGR of 16 percent.

Technology: While experts in phototrophic microalgae production, Heliae's mixotrophic algae production platform sets it apart from the industry. Mixotrophy is a hybrid of known phototrophic and heterotrophic models, which decreases capital costs, improves contamination control and increases productivity and product optionality.

Itaconix

Stratham, NH

Number of employees: 15

Itaconix Corporation Produces A Growing Line Of Novel Polymers That Ut[i]lize The Unique Functionality Of Itaconic Acid To Meet Customer Needs For Safer Chemicals.

Biorefinery Classification: Commercial Plant

Key Facts

- Stratham, NH
- In 2009, we established a large-scale production facility.
- Feedstock: Corn

Partnerships and Financing

In 2009, Itaconix, in partnership with the University of Maine and UMass Lowell, received a $1.8 million research grant from the U.S. Department of Energy and U.S. Department of Agriculture through the Joint Biomass Research and Development Initiative.

In 2014, Itaconix received a Phase II SBIR grant from the National Science Foundation for the development of biobased latex resins.

In 2015, Itaconix signed a collaboration agreement with a leading chemical company for the development and worldwide marketing of certain Itaconix polymers.

About: Itaconix Corporation is a biobased specialty chemicals company developing highly functional polymers from itaconic acid that achieve three essential objectives—safety, performance and sustainability.

Product applications: Itaconix® DSPT for hard water conditioning in consumer, agricultural, and industrial uses; Itaconix® VELASOFT™ for skin/hair conditioning in shampoos and skin products; Itaconix® XDPT for dispersing minerals; Itaconix® ZINADOR™ for odor neutralization; Itaconix® TSIT for anti-scaling; Itaconix® CHTT for spotting/filming prevention in automatic dishwashing; Itaconix® BIOBIND™ for binding in coatings and adhesives; Itaconix® SAP for adsorption in diapers and feminine care.

Potential market size: The estimated U.S. market for current Itaconix products is $16 billion.

Technology: Itaconix's PURITAC™ technology platform covers processes, compositions, and applications for polymers of itaconic acid. Itaconic acid is produced by fermentation with *Aspergillus terreus* using carbohydrates such as corn. The initial technology was developed by Dr. Yvon Durant, the company's CTO and cofounder, while at the University of New Hampshire.

Joule Unlimited

Bedford, MA

Joule Unlimited Is Producing Ethanol, Diesel.



Above: Hobbs, NM plant.

Biorefinery Classification: Demonstration Plant

Key Facts

- Hobbs, NM
- Feedstock: CO_2, sunlight

Partnerships and Financing

Joule is privately held and has raised approximately $200 million in funding to date. The company was founded within Flagship VentureLabs™.

About: Joule has pioneered a CO_2-to-fuel production platform, effectively reversing combustion through the use of solar energy. The company's platform applies engineered catalysts to continuously convert waste CO_2 directly into renewable fuels such as ethanol or hydrocarbons, for diesel, jet fuel and gasoline.

Product applications: Fuel.

Potential market size: Over $1 trillion.

Technology: Each module of the SolarConverter system contains Joule's tailored catalysts (a modified cyanobacterium), non-potable water and micronutrients. Waste CO_2 is pumped in from an industrial emitter or pipeline. The CO_2 keeps the catalysts in motion, maximizing their exposure to sunlight to drive photosynthesis. Charged from the sunlight, the catalysts consume the CO_2 and continuously produce and secrete the fuel or chemical molecules into the liquid medium. The medium circulates through a separator that filters the end product, which is sent to a central plant for final separation and storage. The process occurs continuously for numerous weeks before the module is flushed and reinoculated on a staggered basis.

LanzaTech

Chicago, IL
Number of employees: 140
LanzaTech Is Producing Ethanol, 2,3-Butanediol, 1,3-Butadiene, Acetic Acid, Isopropanol, And Isobutylene.

Biorefinery Classification: Commercial Plant

Key Facts

- LanzaTech Freedom Pines Biorefinery, Soperton, GA
- Feedstock: Biomass (including MSW) synthesis gas, industrial waste gases, biogas



Partnerships and Financing

Led by Mitsui & Co., in 2014, the $112 million Series D round included new investors New Zealand Superannuation Fund, Siemens Venture Capital, CICC Growth Capital Fund I, L.P. and Khosla Ventures, Qiming Venture Partners, K1W1 and the Malaysian Life Sciences Capital Fund. LanzaTech has global partnerships across multiple sectors and along the supply chain, from steel, chemicals, aviation and banking.

About: LanzaTech's biological carbon recycling technology opens up new resources for making low-carbon chemicals and fuels. LanzaTech presents a 'carbon smart' future where you can choose where the carbon in your products comes from.

Product applications: Styrene-butadiene rubber, plastics, textiles, resins, polyeurethane, adhesives, solvents, coatings, paints, fuels, de-icers, cosmetics, pharmaceuticals, personal care, and food.

Potential market size: The global butadiene market is over 12 million megatons per year (MTA). The global acetic acid market is ~16 million MTA. The global IPA market is ~2 million MTA, with a value of $2.5–$3.5 billion.

Technology: Using microbes (*Clostridium autoethanogenum*) that ferment gases (rather than sugars), carbon-rich waste gases and residues are transformed into useful liquid commodities.



Manus Bio
Cambridge, MA
Number of employees: 10
Manus Bio's First Chassis Produces Terpenoids.



Above: Cambridge, MA lab.

Biorefinery Classification: Pilot Plant

Key Facts

- Feedstock: Glucose and glycerol

Partnerships and Financing

$25 million in non-dilutive funding from early adopting customers, NSF SBIR Phase I grant ($150,000) in January 2013, NSF STTR Phase I grant ($225,000) in June 2014, NSF SBIR Phase I grant ($225,000) in June 2016.

About: Manus Bio recreates plant processes in microorganisms to produce natural ingredients through fermentation. Manus Bio's microbial platform has been optimized to convert inexpensive sugar sources into rare and expensive products, providing a low-cost, sustainable, and environmentally friendly source for many ingredients used in our daily lives.

Product applications: Flavors, fragrances, food ingredients, sweeteners [nutraceuticals], cosmetic actives, biopesticides, agrochemicals, and pharmaceuticals.

Potential market size: Flavors and fragrances ($2 billion), sweeteners ($2 billion), biopesticides ($4 billion), nutraceuticals ($1.5 billion), cosmetic actives ($2.2 billion), agrochemicals ($100 billion), and pharmaceuticals ($60 billion).

Technology: Manus Bio merges three core disciplines—metabolic engineering, protein engineering, and systems biology—in order to quickly and efficiently generate microbes that produce a variety of plant-based ingredients. The patented microbial platform has been optimized for high yield of a common precursor pathway, thus making it simple to pursue new products. The use of modular, reconfigurable, and plug-and-play tools and components further shortens the path to commercialization for new ingredients. In essence, Manus Bio has created an efficient BioAssemblyLine™ for the low-cost and sustainable production of an array of high value natural products.



Matrix Genetics
Seattle, WA
Number of employees: 29
Matrix Genetics Is Producing Enhanced Products From Spirulina.

Biorefinery Classification: Pilot Plant

Key Facts

- South Lake area near Seattle, WA
- Feedstock: Cyanobacteria

Partnerships and Financing

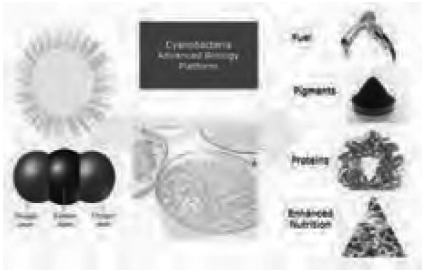
Matrix has announced two partnerships, one with a multinational energy company for biofuels research and one with Proterro in the area of enhanced nutrition. Avista Development is the venture arm of Avista Corp., an energy company involved in the production, transmission and distribution of energy as well as other energy-related businesses.

About: Matrix Genetics, LLC is a biotechnology company focused on producing high value products from algae. Our state-of-the-art, synthetic biology platform is the most cost-efficient method to create customized organisms with a range of traits to meet the needs of the fuel, food and feed industries.

Product applications: Pigments, feed enzymes, vaccines, fuels.

Potential market size: Matrix is pursuing multiple markets, from the $100 million blue pigment market to the billion dollar feed enzyme market.

Technology: Matrix has developed world-class capabilities in directing carbon flux in algae to products of interest, including pigments, proteins, oils, anti-oxidants and specialty chemicals. Matrix is also the first to develop tools to precisely modify the genome of Spirulina, one of the few algae grown commercially at large scale. Spirulina has Generally Recognized as Safe (GRAS) status, allowing quick access to product opportunities in the food, beverage and enhanced nutrition categories. This ability to engineer strains to produce products of interest is the basis of the Company's technology and differentiates us from our competitors.



MBI

Lansing, MI
Number of employees: 11
MBI International Is Commercializing Afex (Ammonia Fiber Expansion), A Transformational Biotechnology That Sustainably Expands Our Capacity To Supply Both Food And Energy While Improving Economic Resilience For Rural Communities Around The World.



Above: AFEX Pilot Plant, Lansing, MI.

Biorefinery Classification: Pilot Plant

Key Facts

- AFEX Pilot Plant
- Lansing, MI

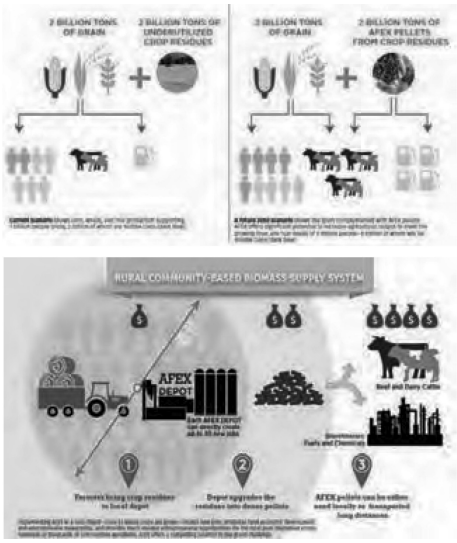
- Feedstock: Corn stover, wheat straw, rice straw, switchgrass

Partnerships and Financing

MBI and MSU have been collaborating under a strategic framework through which MBI serves as a technology development and commercialization partner for promising biobased technologies.

About: Established in 1981, MBI is closely affiliated with Michigan State University (MSU) and a wholly owned subsidiary of the MSU Foundation. MBI serves as a biotech hub, a technology development and commercialization partner for promising biobased technologies.

Technology: MBI is also licensing patented technologies for the production of biobased fumaric and succinic acid.



Meredian Bioplastics

Bainbridge, GA
Number of employees: 70
Meredian Is Producing Nodax™ Medium-Chainlength Polyhydroxyalkanoates (MCL-PHA).

Biorefinery Classification: Demonstration Plant

Key Facts

- Bainbridge, GA
- 20,000 liters
- Feedstock: Fatty acid feedstocks
- In late March, 2014, Tate & Lyle validated the replication of the proprietary process.

Partnerships and Financing

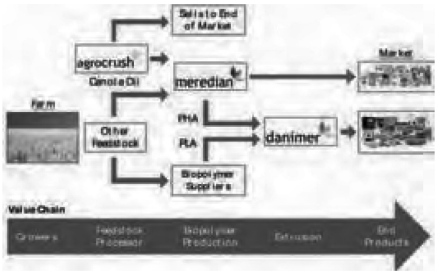
Working in partnership with sister companies Danimer Scientific and AgroCrush, Meredian creates bioplastic feedstock from cold pressed canola oil. U.S. Government loan programs for businesses, such as those offered by the USDA—Rural Development and the U.S. Department of Treasury—New Market Tax Credit programs.

About: Meredian Bioplastics, a subsidiary of Meredian Holdings Group, makes commercial grade PHA using world-class production systems, offering a scalable, durable, and cost effective material that reduces manufacturing dependence on nonrenewable, diminishing resources.

Product applications: In March, 2014, NODAX™ received FDA approval for food contact applications. The PHA produced at MHG is also Vinçotte Certified to biodegrade within 12 to 18 weeks in six different mediums including anaerobic, soil, freshwater, marine, industrial and home composting.

Potential market size: PHA market consumption will grow from an estimated 10,000 megatons (MT) in 2013 to 34,000 MT by 2018, with a CAGR of 27.7 percent from 2013 to 2018.

Technology: Meredian purchased the intellectual property that forms the basis of its bioplastic technology from Procter & Gamble in 2007, and has continued to improve the patent portfolio with key international and North American patents.



Metabolix

Woburn, MA

Number of employees: 70

Metabolix, Inc Is Producing Polyhydroxyalkanoate Polymers (PHAs).



Above: PHA coploymer material.

Biorefinery Classification: Commercial Plant

Key Facts

- Contract production
- 50,000 pounds per month
- Feedstock: Industrial sugars

Partnerships and Financing

Metabolix is working with customers across a range of applications for specialty PHA applications. We are targeting PHA to improve performance and/or reduce costs in material systems such as PVC and PLA, and in applications requ[i]ring improved performance, biocontent, biodegradability and other attributes where PHAs can provide unique [functional] benefits.

About: Metabolix, Inc. is an innovation-driven specialty materials company focused on delivering high-performance biopolymer solutions to customers in the plastics industry.

Product applications: Developmental film grades based on amorphous-PHA (a-PHA) modified PLA. PHA additives in PVC systems improve permanence in durable applications. Biobased paper coatings based on PHA possess excellent barrier properties to water and grease and are compatible with the re-pulping operations typically used to recycle paper and corrugated cardboard. Plastic microbeads with PHA biopolymer materials that are biobased and marine degradable.

Potential market size: According to the Freedonia Group, the total additives market for PVC is approximately 7 million metric tons per annum. The property modifier and process aid segment of the current global PVC market is approximately 3.5 billion pounds and an aggregate market value of approximately $6 billion annually.

Technology: Metabolix has developed proprietary microbial strains to produce target PHA co-polymers. We have also developed fermentation technology and a novel recovery process to recover high purity specialty PHA biopolymers.





Micromidas

Sacramento, CA
Number of employees: 31
Micromidas Is Producing Furans.



Above: Sacramento, CA Plant.

Biorefinery Classification: Pilot Plant

Key Facts

- Sacramento, CA
- 500 kilograms per day
- Feedstock: Waste paper, cardboard, wood chips

Partnerships and Financing

Micromidas has raised $40 million to date.

About: Micromidas is building a chemical platform to produce both existing and new furanic and aromatic chemicals, polymers and resins using a wide variety of cellulosic biomass and carbohydrates, including wood and wood refuse, pulp and paper sludge, corn, corn byproducts, corn stover, sugarcane bagasse, empty palm fruit bunches and other glucan sources.

Product applications: Furans are readily derivatized to produce monomers, plasticizers, or renewable (but chemically identical) variants of commodity chemicals such as paraxylene.

Potential market size: Globally, 35 million metric tons of paraxylene are consumed each year, mostly used to make polyester for fabric. It is a $50 billion global market.

Technology: The Micromidas process is a non-fermentation, non-gasification, chemical-only process that selectively produces a furan intermediate from any feedstock containing cellulose or hemicellulose.



Modular Genetics

Woburn, MA
Number of employees: 6
Modular Genetics, Inc Is Producing An Acyl Glutamate Surfactant.



Above: Biorefinery, *Bacillus* strain, electronic circuit, flasks (clockwise from top left).

Biorefinery Classification: Pilot Plant

Key Fact

- Feedstock: Sugar from corn or woody material

Partnerships and Financing

Modular Genetics has shown that its surfactant can be produced from sugar derived from rice hulls—a byproduct of rice production. This technology was funded through the NSF Small Business Innovation Research Program. Unilever is testing the new surfactants.

About: Modular Genetics, Inc. is a sustainable chemistry company utilizing advanced technology in synthetic biology to produce specialty chemicals that are cost competitive, provide superior performance and are environmentally friendly.

Product applications: Detergents, wetting agents, emulsifiers and foaming agents.

Potential market size: The global surfactants market is estimated to register a CAGR of 5.4 percent by volume and 5.8 percent by value from 2014 to 2019. The global surfactants market is projected to reach 22,802 kilotons by volume and $40,286 million by 2019.

Technology: Modular Genetics, Inc.'s automated gene engineering system, CombiGenix™, can synthesize, modify and recombine genes to create novel recombinant DNA molecules by the thousands. By linking CombiGenix™ to sophisticated, proprietary protein design tools and high-throughput screening, Modular has created an automated platform for the evolution of proteins with enhanced functions. Modular has engineered *Bacillus subtilis* strains to convert cellulosic sugar into a surfactant consisting of a fatty acid linked to an amino acid.



Myriant Corporation

Quincy, MA

Number of employees: 150

Myriant Corporation Is Producing Succinic Acid (1,4-Butanedioic Acid), Acrylic Acid, Lactic Acid, Muconic Acid, And Fumaric Acid.



Above: Lake Providence, LA Plant.

Biorefinery Classification: Commercial Plant

Key Facts

- Lake Providence, LA
- 30 million pounds of bio-succinic acid
- Feedstock: Sorghum grain and sorghum grits
- With our partner ThyssenKrupp Uhde, we successfully scaled and achieved commercial production of bio-succinic acid at Uhde's biotech commercial validation facility in Leuna, Germany.

Partnerships and Financing

Myriant is a subsidiary of PTT Global Chemical Public Company Limited, Thailand's largest and Asia's eighth largest chemical company. Our Lake Providence Commercial Facility is partially funded through a $50 million cost sharing award from the United States Department of Energy (DOE), and a $25 million Business and Industry (B&I) Loan Guarantee from the United States Department of Agriculture (USDA). Myriant has partnered with Johnson Matthey—Davy Technologies (JM Davy) to demonstrate that our bio-succinic acid can be utilized in JM Davy's process as a direct replacement for maleic anhydride.

About: Myriant is a global leader innovating and commercializing biobased chemical intermediates.

Product applications: Plastics, textile fibers, coatings. Myrifilm® Zero-VOC Coalescing Solvent.

Potential market size: Succinic acid represents a $7.1 billion market.

Technology: Myriant uses a single-step, anaerobic fermentation process that enables higher productivity and yield than other bio-production processes. Our team of scientists and researchers accomplishes this by developing proprietary biocatalysts—microorganisms, including *E. coli,* bacillus, streptomyces, corynbacterium, and yeast, with altered metabolic pathways—designed to produce our target biochemicals from a variety of feedstocks.

NatureWorks, LLC

Minnetonka, MN
Number of employees: 130
NatureWorks, LLC Is Producing Polylactic Acid (PLA).



Above: Blair, NE Plant.

Biorefinery Classification: Commercial Plant

Key Facts

- Blair, NE
- 300 million pounds (150,000 metric tons) of Ingeo biopolymer
- Feedstock: Corn

Partnerships and Financing

NatureWorks is an independent company invested in by Cargill and PTT Global Chemical, who recently announced a $150 million investment in NatureWorks.

About: NatureWorks is the first to offer a family of commercially available biopolymers derived from 100 percent annually renewable resources with cost and performance that compete with petroleum-based packaging materials and fibers.

Product applications: Polymer—food service, packaging, textiles, apparel, durable goods. Ingeo bioplastic

Potential market size: According to a report by Markets and Markets, by 2020 the Lactic Acid Market will be worth $3.82 billion and the Polylactic Acid Market will be worth $5.16 billion.

Technology: Microorganisms convert the sugar into lactic acid through fermentation. A two-step process transforms the lactic acid molecules into rings of lactide. The lactide ring opens and links together to form a long chain of polylactide polymer. This is the process of polymerization.

Neol Bio

Granada, Spain
Number of employees: 35
Neol Bio Is Producing Tailor-Made MicroBIOil, Oleochemicals.



Above: Neol Bio's Pilot Plant.

Biorefinery Classification: Demonstration Plant

Key Facts

- Aoiz, Navarra, Spain, Center for Second Generation Biofuels (CB2G) of CENER, the Spanish National Renewable Energy Centre.
- Neol Bio has developed the process and the microorganisms to produce high-value, tailor-made oils in its R&D centers in Granada, Spain, and validated on a large scale at demonstration plants.

Partnerships and Financing

Neol Bio is a company listed at the Spanish Alternative Market.

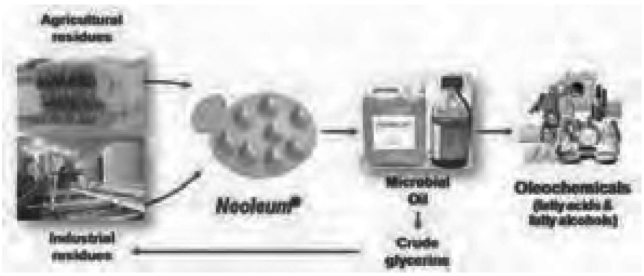
About: Neol Bio develops economically viable bioprocesses, reducing the use of chemical contaminates and assessing agricultural and industrial waste, thus using advanced techniques in molecular biology, bioprocess engineering and industrial microbiology.

Product applications: Very long chain fatty acids (arachidonic, erucic, gondoic and nervonic) have a wide industrial use in cosmetics, lubricants and as additives for plastics.

Potential market size: The global market for oleochemicals is valued at around $30,000 million per year with an estimated annual growth of six percent.

Technology: MicroBiOil™ is a platform to produce high added value oils and microbial derived oleochemicals from renewable sources. MicrobiOil™ facilitates the production of oils through sustainable processes, using industrial byproducts (such as crude glycerin) or organic residues (such as wheat straw or sugarcane bagasse).

All processes and micro-organisms used have been fully developed by Neol Bio and are protected by world-wide patents.



Newlight Technologies

Costa Mesa, CA

Newlight Technologies Is Using Greenhouse Gas To Produce Aircarbon™ Polyhydroxyalkanoate (PHA) Thermoplastic.



Above: Newlight California Facility.

Biorefinery Classification: Commercial Plant

Key Facts

- Feedstock: Air and captured methane-based farm carbon emissions.

Partnerships and Financing

In June 2016, Newlight signed a 20 year master off-take agreement with Vinmar International, Ltd.

Under the terms of the off-take agreement, Vinmar will initially purchase and Newlight will sell 1 billion pounds of AirCarbon PHA, including 100 percent of AirCarbon PHA from Newlight's planned 50 million pound per year production facility for 20 years. The contract will also cover 100 percent of the output from a 300 million pound per year AirCarbon production facility and a 600 million pound per year AirCarbon production facility for a total of up to 19 billion pounds over 20 years.

In October 2016, Newlight signed a supply, collaboration, and production license with IKEA, wherein IKEA will use Newlight's AirCarbon technology to produce up to 10 billion pounds of AirCarbon for use in IKEA home furnishings.

About: Newlight is a sustainable materials company dedicated to using carbon sequestration technology to produce clean, high-performance materials that reduce cost, maintain or improve performance, and capture carbon on a market-driven basis.

Product applications: AirCarbon™ can be used in extrusion, blown film, cast film, thermoforming, fiber spinning, and injection molding applications, replacing fossil-fuel based polypropylene, polyethylene, ABS, polystyrene, and TPU.

Technology: First, concentrated greenhouse gas emissions such as biogas are directed into Newlight's patented conversion reactor. Next, those carbon emissions are combined with air and Newlight's biocatalyst, which pulls oxygen out of air and carbon and hydrogen out of methane. Finally, carbon, oxygen, and hydrogen are re-assembled to form a long chain thermopolymer.



Novomer
Waltham, MA
Number of employees: 50
Novomer Has Two Technology Platforms And Is Producing Acrylic Acid, Other C3 And C4 Drop-In Chemicals And Converge® Polypropylene Carbonate (PPC) Polyols.



Above: Houston, TX Plant.

Biorefinery Classification: Commercial Plant

Key Facts

- Houston, TX
- 2,000 megatons per year
- Feedstock: Waste CO_2. propylene oxide, waste CO and ethylene oxide
- Novomer has scaled up the production of Converge polyols using a contract manufacturer in Houston, Texas.

Partnerships and Financing

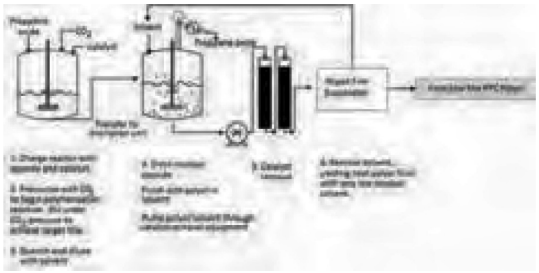
Novomer has numerous industry partnerships and a broad array of financial and strategic investors. The company received a 3 year $25 million U.S. Department of Energy Award in 2010. The DOE Advanced Manufacturing Office awarded the company an additional $5 million grant. Novomer rec[ei]ved $400,000 from the NSF to make CO_2 based polymers and $475,000 from NYSERDA to support development of a continuous production process for CO_2 polyols.

About: Novomer is a leading materials company commercializing a family of low-cost, high-performance, sustainable polymers and chemicals.

Product applications: Rigid and flexible foams, coatings, adhesives, sealants, elastomers, diapers, paints and high-performance plastics.

Potential market size: Novomer estimates these product markets represent more than $40 billion per year.

Technology: Novomer is commercializing two platforms, one that uses waste CO_2 as a raw material to produce a family of polyols for use in polyurethane applications and another that uses waste CO to produce C3 and C4 drop-in chemicals (acrylic acid). The foundation for these platforms results from catalyst research completed at Cornell University. The CO_2 technology platform combines waste CO_2 with commodity Epoxides (currently Propylene Oxide (PO)) to form a family of novel polymers that contain up to 50 percent by weight CO_2.



Novozymes, NA
Franklinton, NC
Number of employees: 1,326
At Novozymes It Begins With Enzymes And Microorganisms.



Above: Franklinton, NC Plant.

Biorefinery Classification: Commercial Plant

Key Facts

- Milwaukee, WI (Production, Marketing, Sales since 2011)
- Franklinton, NC (Production, Administration since 1979)
- Houston, TX (Production, Marketing, Sales since 2012)
- Davis, CA (R&D since 1992)
- Ottawa, Canada (Production, Marketing, Sales since 2013)
- Salem, VA (R&D, Production since 2001)
- Watertown, SD (Production, Marketing, Sales since 2013)
- Saskatoon, Canada (R&D, Marketing, Manufacturing since 2007)
- San Francisco, CA (R&D since 2013)
- Blair, NE (Production since 2009)

Product Launches 2015

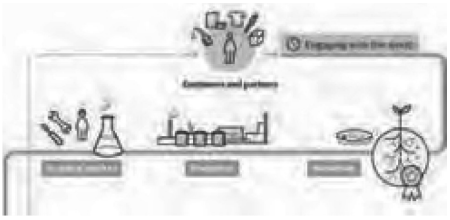
Pulp and paper xylanase
Novozymes Secura®
Protease for automatic dishwashing
Novozymes Liquozyme® LpH
Novozymes Extenda®
Novozymes Avantec® Amp

About: Rethink Tomorrow: Novozymes is the world leader in biological solutions. Together with customers, partners and the global community, we improve industrial performance while preserving the planet's resources and helping build better lives. As the world's largest provider of enzyme and microbial technologies, our bioinnovation enables higher agricultural yields, low-temperature washing, energy-efficient production, renewable fuel and many other benefits that we rely on today and in the future.

Technology: Enzymes are proteins that act as catalysts. When one substance needs to be transformed into another, nature uses enzymes to speed up the process. Our customers use enzymes as catalysts in the manufacture of a wide variety of products, including ethanol, sugar, beer and bread, where the enzymes are not part

of the end product. Enzymes are also used directly in products such as laundry detergents, where they help remove stains and enable low-temperature washing.

Like enzymes, many microorganisms have natural properties that can be put to use in a variety of processes. In our strategic BioAg Alliance, Novozymes is working on microorganisms that will give the world's farmers a new biological toolkit for increasing yields and protecting crops.



Nucelis, LLC
San Diego, CA
Number of employees: 20
Nucelis LLC Is Producing Squalane, Ergosterol, Vitamin D_2.



Above: San Diego, CA Plant.

Biorefinery Classification: Pilot Plant

Key Facts

- San Diego, CA
- 400 liters of fermentation capacity
- Feedstock: Sugar

Partnerships and Financing

Cibus Global, Ltd., a cutting-edge technology firm and leader in the area of gene editing, acquired Nucelis LLC in January 2014. Nucelis, which had been established as an independent entity in December 2010, is now an independent operating unit of Cibus.

About: Nucelis, LLC is a leading metabolic engineering company leveraging its proprietary precision gene editing technology and integrated fermentation development platform (RTDS™), to develop and deliver premium, biobased and sustainable specialty products for the personal care, food ingredients, and flavor and fragrance markets.

Product applications: Squalane is a high value, clear oil compound used in cosmetics, pharmaceuticals, and specialty lubricants. Ergosterol is a provitamin to vitamin D_2. Vitamin D_2 has a variety of applications as a food supplement.

Potential market size: The squalene and squalane market is expected to grow to $177.06 million at a CAGR of 10.3 percent in terms of value from 2014 to 2019.

Technology: Nucelis has leveraged the versatility of its Rapid Trait Development System (RTDS™) platform for the production of its lead product, Vitamin D_2. Nucelis' Vitamin D_2 represents a non-animal source with unmatched purity and performance, at price points that make it the obvious source for all Vitamin D_2-based formulations. Nucelis Vitamin D_2 is currently for sale, with commercial samples available upon request. In addition, Nucelis is commercializing a high purity squalane product, and a unique formulation of squalene and natural oils for use in personal care products.

One key feature of the RTDS platform is its flexibility in optimizing any existing fermentation-based production process. Nucelis can customize a solution for all partners seeking to improve production efficiencies. For those partners who participate in GM-sensitive markets, Nucelis can engineer valuable improvements while maintaining the non-GM status of the production strain. The impact is a clear path to improved process productivity and increased economic value.

Phycal

Highland Heights, OH
Number of employees: 50
Phycal Is Producing Algal Oil.



Above: Wahiawa and Kalaeloa, HI Plant.

Biorefinery Classification: Pilot Plant

Key Facts

- St. Louis, MO research facility
- Feedstock: Algae

Partnerships and Financing

The Department of Energy has awarded Phycal more than $27.2 million in Federal funding for the further exportation of algae based biofuel. As part of its program to promote beneficial reuse of carbon dioxide, the Department of Energy awards companies funding to create green solutions to carbon dioxide problems.

About: Phycal, Inc. is developing an integrated system for producing renewable biofuels and their co-products from algae. The biofuels include renewable "green" drop-in jet fuel and diesel, straight vegetable oil, fuel oil blends (*e.g.,* for industrial boilers), and others. Co-products could include proteins, methane, hydrogen, animal or human nutritional products, and others.

Product applications: Fuels.

Potential market size: $99 billion in 2014.

Technology: Heteroboost™ is an algae "feedlot" that uses mature algae from the open ponds and increases lipid content by introducing fixed carbon in a closed system, such as inedible sugar and glycerol, which dramatically increases algal productivity.



Phytonix

Asheville, NC
Number of employees: <10
Phytonix Corporation Is Producing N-Butanol.



Above: Black Mountain, NC lab.

Biorefinery Classification: Pilot Plant

Key Facts

- Black Mountain, NC
- Feedstock: Carbon dioxide

Partnerships and Financing

Phytonix has several strategic partnerships, including: Uppsala University (Sweden) and South Dakota State University.

About: Phytonix Corporation ("Phytonix" or "Px") is an industrial biotechnology company producing sustainable chemicals directly from carbon dioxide. Phytonix's objective is to be the global leader in bio-safe, direct solar chemicals and fuel production utilizing carbon dioxide as the sole feedstock and energy from the Sun.

Product applications: Industrial chemical market and fuels.

Potential market size: Biobutanol is a valuable industrial chemical intermediate with a existing $10 billion global market growing at 13 percent CAGR.

Technology: Phytonix has developed engineered cyanobacterial species that secrete n-butanol in a significantly carbon-negative, photosynthetic process. Phytonix commercial facilities will be a modular and scalable system consisting of soft-sided vessels called phytoconverters™, where the cyanobacteria will grow.

POET

Sioux Falls, SD
Number of employees: 1,500
POET Is Producing Inviz™ Zein And Voila™ Corn Oil.

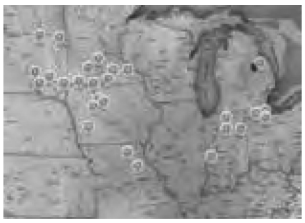


Above: Project Liberty, Emmetsburg, IA.

Biorefinery Classification: Commercial Plant

Key Facts

- POET Footprint: 27 corn ethanol biorefineries, one cellulosic ethanol biorefinery
- Total capacity: 1.7 billion gallons per year
- Feedstock: Corn, corn stover



Partnerships and Financing

In partnership with Royal DSM of the Netherlands, POET–DSM Advanced Biofuels opened a commercial-scale ethanol plant in Emmetsburg, Iowa—dubbed "Project LIBERTY"—in September of 2014. Project LIBERTY's feedstock is corn crop residue—cobs, leaves, husk and some stalk.

About: POET, one of the world's largest ethanol producers, is a leader in biorefining through its efficient, vertically integrated approach to production.

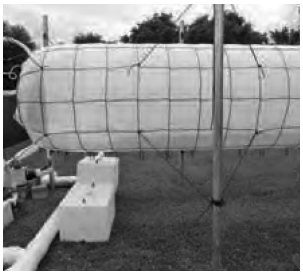
Product applications: Films, packaging, adhesives, edible coatings and glazes, plastics, rubber, asphalt paving additives, and high-energy additive to feed rations.

Technology: Our patented raw starch hydrolysis process, named BPX, converts starch to sugar with a proprietary blend of enzymes, while other ethanol producers use a jet cooker to break down starch with heat. BPX reduces energy use in the plant by eight to 15 percent and increases yield by 0.10 to 0.15 gallons per bushel. After years of development, we brought the process to commercial scale production in 2004 and it is now deployed in all of our biorefineries.

Proterro

Bronxville, NY

Proterro, Inc Is Producing Industrial And Food Grade Sugars, Organic Acids And Amino Acids.



Above: Orlando, FL Plant.

Biorefinery Classification: Pilot Plant

Key Facts

- Orlando, FL
- Feedstock: CO_2, sunlight, water and nutrients

Partnerships and Financing

Proterro was founded in 2008 and is backed by Battelle Ventures, Braemar Energy Ventures, Cultivian Sandbox Ventures and Middleland Capital.

About: Proterro is a biotechnology company that converts waste CO_2 into valuable products under license agreements with our partners. Our technology utilizes cyanobacteria in a patented, fully integrated production system to produce cost-competitive products for partners in the global food, feed, and energy industries.

Product applications: Fermentation to fuels and other chemicals; food and nutritional ingredients.

Potential market size: $44 billion.

Technology: Proterro's patented two-step technology platform provides maximum flexibility in creating products that are tailored to our partners' needs. We modify cyanobacteria to produce molecules designed to our partner's specifications. Then we efficiently produce high-yield organisms in a unique solid state bioreactor.

Provivi
Santa Monica, CA
Number of employees: 8
Provivi, Inc Is Producing Olefins.

Biorefinery Classification: Pilot Plant

Key Fact

- Santa Monica, CA

Partnerships and Financing

Provivi was founded in 2013 based on biocatalysis technology developed at the California Institute of Technology (Caltech) which has since become a licensor, shareholder, and research collaborator.

In September 2014, Provivi signed an enzyme distribution agreement with Strem Chemicals, Inc., a manufacturer of specialty chemicals for research and development, granting Strem distribution rights for research quantities of Provivi's carbene/nitrene transferase enzymes that will feature in the new C/N Transferase Screening Kit.

About: We are developing biopesticides for agriculture, commercial, household, and public health pest management.

Product applications: Chiral pesticides.

Potential market size: The global agrochemical market is predicted to reach $223 billion in 2015.

Technology: Included in our arsenal of biocatalyts are ones that catalyze the transfer of carbenes, nitrenes, and oxenes to olefins and carbon-hydrogen bonds, thus installing important functional groups (*e.g.,* cyclopropanes, amines, alcohols, epoxides, sulfoxides, sulfoximines, and ethers) that feature in various chiral pesticides. For example, we have developed the most active catalyst ever reported for olefin cyclopropanation, a key reaction in the synthesis of a variety of pesticides. Provivi has an exclusive license from Caltech for this technology platform.

PureVision Technology
Fort Lupton, CO
PureVision Technology Is Producing Cellulosic Sugar.



Above: Hemp feedstock at Ft. Lupton, CO Plant.

Biorefinery Classification: Pilot Plant

Key Facts

- Ft. Lupton, CO
- Half-ton per day
- Feedstock: Hemp

Partnerships and Financing

PureVision Technology LLC is targeting to raise $10 million in an A-round equity financing during 2015. Use of proceeds include working capital to advance and complete three pre-commercialization programs (corn stover, wheat straw and industrial hemp), intellectual property development, patent filings, and pre-development costs to support PureVision's first commercial demonstration biorefinery. A-Round investors are entitled to a preferred return on their investment.

About: PureVision Technology is a biorefining R&D company developing and licensing technology packages for the lowest cost production of sugars, lignin and pulp from diverse non-food biomass to industries manufacturing biobased products.

Product applications: Fermentation to fuels and other chemicals

Potential market size: TechNavio's analysts forecast the global cellulosic ethanol market to grow at a CAGR of 53.3 percent over the period 2013–2018.

Technology: PureVision's latest technology breakthrough rapidly converts diverse cellulosic biomass into fermentable sugars in less than 1 hour without the use of enzymes or concentrated acids. The company's rapid hydrolysis technique has the flexibility of producing separated or mixed concentrated sugars. Experimental proof-of-concept of the company's rapid hydrolysis chemistry has been completed successfully at the Ft. Lupton laboratories.

Renewable Energy Group, Inc. REG Life Sciences, LLC

Ames, IA; South San Francisco, CA
Number of REGI employees: >700
REG Life Sciences LLC Is Developing High-Value Fatty Acid Derivatives.



Above: REG Life Sciences Biorefinery. Okeechobee, FL.

Biorefinery Classification: Demonstration Plant

Key Facts

- REG Life Sciences Biorefinery. Okeechobee, FL
- Feedstock: Corn sugars, crude glycerin, cane sugars and biomass hydrolysate

Partnerships And Financing

REG Life Sciences has partnered with ExxonMobil for the development of cellulosic sugars as a fermentation feedstock for biofuel production.

About: REG Life Sciences is a wholly-owned subsidiary of Renewable Energy Group established in 2014 to harness the power of industrial biotechnology to produce renewable chemicals, fuels and other products.

Product applications: Fragrances, polymers, and surfactants.

Potential market size: The global market for natural fatty acids reached $18.3 billion in 2014 and is expected to grow at a compound annual growth rate of 7.1 percent to $25.7 billion for 2014–2019. The global market for fragrances was worth roughly $11 billion in 2015. Sales of polymers reached $112 billion in 2015 in the U.S., up three percent from 2014. The global market for surfactants was $25–$30 billion in 2015, with a volume of around 15 million megatons, expected to grow at a CAGR of approximately five percent through 2020 to $32–$40 billion.

Technology: Combining the natural efficiency of microbial fatty acid metabolism with novel engineered biosynthetic pathways, REG Life Sciences engineers industrial microorganisms to selectively convert renewable feedstocks to target end-product compounds. These products range from difficult-to-produce "drop in" and value-add replacement compounds to completely new structures with diverse chemical functionalities and applications. The flexibility of the platform technology and ability to design, construct, and evaluate processes efficiently from lab to commercial scale has enabled a growing pipeline of renewable chemical products.

Renmatix

King of Prussia, PA
Number of employees: ~85
Renmatix Is Producing Cellulosic Sugars, Omno Polymers And Crystalline Cellulose



Above: Integrated Plantrose Complex (IPC), Kennesaw GA.

Biorefinery Classification: Demonstration Plant

Key Facts

- Integrated Plantrose Complex (IPC), Kennesaw, GA
- 3 dry tons of biomass to sugar per day
- Feedstock: Woody biomass, agricultural residues, energy crops, municipal solid waste, and additional plant material
- Renmatix acquired a 56,000′2 manufacturing facility in Rome, NY. The new Feedstock Processing Facility (FPF) opened on April 20, 2015, as the third U.S. location for Renmatix. This move creates a secure supply for Renmatix and its development partners at the IPC in Kennesaw, GA, where the second step in production of Plantro® sugars is performed.

Partnerships and Financing

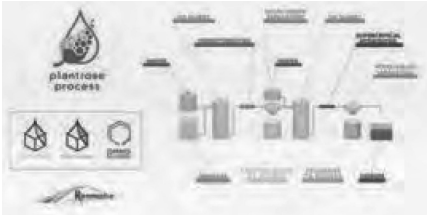
Renmatix has publicly disclosed joint development agreements with BASF, UPM, and Total. As announced in 2015, Total will utilize Renmatix's proprietary Plantrose process with specific feedstocks to extract sugar for use in production of biobased products of strategic interest to Total. Existing Renmatix investors, including BASF and Kleiner Perkins Caufield & Byers, joined Total in the initial *tranche* of a Series D fundraise.

About: Renmatix's proprietary Plantrose® Process pioneers the use of supercritical hydrolysis to break down non-food biomass quickly, using no significant consumables.

Product applications: Fermentation or catalytic conversion to biochemicals and biofuels or direct utilization of coproducts as produced.

Potential market size: TechNavio's analysts forecast the global cellulosic ethanol market to grow at a CAGR of 53.3 percent over the period 2013–2018.

Technology: The water-based Plantrose® Process consists of two core steps. The first is fractionation of biomass and separation of the remaining solids, which contain cellulose and lignin. The second is cellulose hydrolysis of the pretreated solids under elevated conditions utilizing supercritical water, or water at higher temperatures and pressures, as the primary solvent. The company won the 20th Annual Presidential Green Chemistry award in 2015 for its work in harnessing water as a new solution to the difficult problem of economically extracting cellulosic sugar from biomass.



Rennovia

Santa Clara, CA

Number of employees: ~50

Rennovia, Inc.'s First Targets Are Glucaric Acid, Adipic Acid, 1,6-Hexanediol, Hexamethylenediamine (HMD).



Above: Stockton, England Plant.

Biorefinery Classification: Demonstration Plant

Key Facts

- Stockton, England
- Feedstock: Sugars
- In July 2015, Johnson Matthey Process Technologies and Rennovia announced the on time start-up of the first phase of an integrated mini-plant for production of glucaric acid from glucose, using jointly developed technology. Construction of the second phase or production of adipic acid from glucaric acid is ongoing.

  Operation of the mini-plant will provide the engin[ee]ring data for the design of commercial scale manufacturing plants. The miniplant is located at the Johnson Matthey Process Technologies R&D Center in Stockton, England.

Partnerships and Financing

Rennovia strategic partners and investors include Archer Daniels Midland (ADM)—the No. 1 global corn processor, leading sugar feedstock supplier and established manufacturer of bio based ADM Evolution Chemicals™—and Johnson Matthey—a $10 billion global catalyst and process technology and catalyst development partner and commercial cata[ly]st supplier for the Rennovia glucaric and adipic acid process.

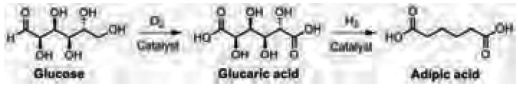
About: Rennovia Inc. is a specialty chemical company focused on breakthrough catalysts and processes for the cost-advantaged production of chemicals from renewable feedstocks.

Product applications: Nylon-6,6, polyurethanes, and specialty chemicals.

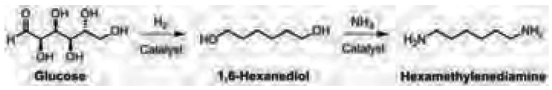
Potential market size: Nylon-6,6 engineering polymers and fibers markets are approximately 2.5 million metric tons (5.5 billion pounds) per year, predicted to grow at three to four percent CAGR to 2022. Global polyurethane markets for adipic acid, HMD, and 1,6-HDO total approximately 900,000 metric tons (2 billion pounds) per year, predicted to grow at about four to five percent CAGR to 2020. Additional addressable markets for glucaric acid are predicted to be greater than 350,000 metric tons (770 million pounds) per year.

Technology: Rennovia employs its high-throughput catalyst synthesis and screening technology infrastructure to identify new heterogeneous catalysts for cost advantaged production of biobased specialty chemicals:

Rennovia's Glucaric and Adipic Acid Production from Glucose



Rennovia's 1,6-HDO and HMD production from Glucose



Reverdia

Geleen, Netherlands
Number of employees: 40
Reverdia Is Producing Sustainable Succinic Acid.



Above: Cassano Spinola, Italy Plant.

Biorefinery Classification: Commercial Plant

Key Facts

- Cassano Spinola, Italy
- 10,000 tonnes per year
- Feedstock: Glucose

Partnerships and Financing

Business Model: Reverdia captures value though product sales and technology licensing.

Reverdia is a joint venture between Royal DSM, the global Life Sciences and Materials Sciences company, and Roquette Frères, the global starch and starch-derivatives company. Reverdia has many [partnerships] in place, including: (i) distributor partnerships with Helm and Omnia, (ii) codevelopment partnerships with Proviron and Covestro, (iii) consortia like BioSuccInnovate. Many other partnerships exist but have not been published in the public domain.

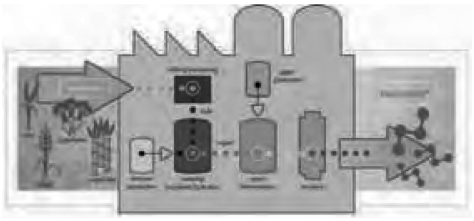
About: Reverdia is dedicated to be the global leader in the market for sustainable succinic acid, focusing on market development by establishing partnerships with direct and indirect customers, building on customer needs and Reverdia's strengths.

Product applications: Bio-polymers (*e.g.,* Polybutylene succinate, PBS), polyurethanes, coatings.

Potential market size: The global market for succinic acid is expected to grow from ~0 kilotons in 2015 to ~700 kilotons in 2025 and will be mainly driven by bio-succinic acid for new biobased polymer and material applications.

Technology: Reverdia uses low pH yeast technology rather than bacteria to produce biobased succinic acid.

Reverdia's low pH yeast fermentation process has best-in-class carbon performance as demonstrated by the published cradle-to-gate LCA by the University of Utrecht.



Rivertop Renewables

Missoula, MT
Number of employees: 33
Rivertop Renewables, Inc Is Producing Sodium Glucarate.



Above: Rivertop's production facility at DTI, Danville, VA.

Biorefinery Classification: Commercial Plant

Key Facts

- Rivertop's production facility at DTI, Danville, VA
- 9 million dry pounds [18 million pounds wet] of sodium glucarate.
- Feedstock: Sugars, sugar and alcohols
- Commercial production at DTI: Riose® detergent builder, a sugar-derived chelant that meets high performance standards and enables lower total formulation cost for dishwasher and laundry detergents. Waterline™ corrosion inhibitors and descaling agents designed to be high-performing, low-cost alternatives to phosphates for water treatment. Headwaters® biodegradable inhibitors that enable highway departments to reduce the costly corrosive impacts of de-icing brines to roads, bridges and vehicles.

Partnerships and Financing

About: Merging proven science with renewable resources, Rivertop is improving the performance, sustainability and cost of end-products with innovative, new-to-market solutions.

Product applications: Chelants and corrosion inhibitors for consumer products (like detergents) and industrial uses (water treatment & road deicing).

Potential market size: $50 billion. $9 billion for detergent ingredients. $2.8 billion for cooling towers.

Technology: Rivertop's oxidation platform utilizes all of the carbon atoms from the glucose feedstock and adds oxygen weight, resulting in more pounds of product than feedstock input. This improved process enables the mass production of versatile, high-value renewable chemicals, including sodium salts of glucaric acid. The technology was first developed at the University of Montana.



Royal DSM

Heerlen, Netherlands
Number of employees: 25,000
Royal DSM Is Mastering Microbes And Enzymes To Create Sustainable Solutions.

Biorefinery Classification: Demonstration Plant

Key Facts

- DSM Biotechnology Center, Delft, Netherlands, and Shanghai, China
- Feedstock: Biomass

Partnerships and Financing

In January 2012, DSM announced the POET–DSM Advanced Biofuels, LLC, joint venture with U.S.-based POET to commercially demonstrate and license cellulosic ethanol derived from corn crop residue.

In May 2011, DSM and the French company Roquette Frĕres formed the Reverdia joint venture to build a commercial scale plant for the production of biobased succinic acid, the first non-fossil feedstock derived chemical building block for a broad range of applications, from packaging to footwear.

About: Royal DSM is a global science-based company active in health, nutrition and materials. By connecting its unique competenc[i]es in life sciences and materials sciences, DSM is driving economic prosperity, environmental progress and social advances to create sustainable value for all stakeholders simultaneously.

Product applications: Biofuels, food and nutrition, advanced materials.

Technology: DSM uses its biological sciences competenc[i]es to find, make, and apply microbes and enzymes to create more sustainable processes, ingredients and building blocks for new products. These competenc[i]es specifically help to engineer and characterize enzymes and microbial strains in detail up to the molecular level; to assess their performance under application conditions; and to develop data and computation-driven model systems for building efficient "design-build-test-learn" engineering cycles.

Sapphire Energy

San Diego, CA
Number of employees: 150
Sapphire Energy Is Producing Algae Nutritional Oils.



Above: Las Cruces, NM Plant.

Biorefinery Classification: Demonstration Plant

Key Facts

- 100 acre algae farm; modules at strategic global sites
- Feedstock: Algae

Partnerships and Financing

Sapphire Energy is supported by a world-class syndicate of investors, including a recent funding round from a Chinese investor and previous investments from ARCH Venture Partners; The Wellcome Trust; Cascade Investment, LLC; Venrock; and Monsanto. Sapphire has relationships with a variety of academic and industrial partners for commericalization such as MATRIC (Mid-Atlantic Technology, Research and Innovation Center) in West Virginia.

About: Sapphire's world-leading technology uses sunlight, CO_2, seawater, non-arable land, nutrients, and novel strains of algae in outdoor ponds to produce biomass for processing into a range of consumer products. Sapphire's clean technology is presently undergoing expansion to a variety of global sites ideally suited for highproductivity and maximal environmental sustainability.

Product applications: Fuel, feed, food, dietary supplements and pharmaceuticals.

Potential market size: Varies by market.

Technology: Developed at the University of California, San Diego.



Senomyx
San Diego, CA
Number of employees: 90
Senomyx, Inc Is Producing Complimyx® Brand Of Flavor Ingredients, Which Include Sweetmyx, Savorymyx®, And Bittermyx® Offerings.



Above: San Diego, CA Plant.

Biorefinery Classification: Commercial Plant

Key Facts

- San Diego, CA
- Senomyx flavors and flavor boosters are produced in accredited food manufacturing facilities using the highest quality ingredients.

Partnerships and Financing

PepsiCo funds research to identify and develop novel sweet taste ingredients, including both boosters and natural sweeteners. PepsiCo has exclusive licensed rights in non-alcoholic beverages on a worldwide basis during the research funding period. Firmenich has collaborated with Senomyx and continues to provide research funding in the area of sweet taste for use in food products on a global basis. Ajinomoto, Co., Inc. currently markets products in several Asian markets that contain a Senomyx savory ingredient. Nestlé has commercialized a Senomyx flavor ingredient in Southeast Asia.

About: Senomyx is using proprietary taste science technologies to discover, develop, and commercialize new flavor ingredients that havebenefits for consumers and consumer products manufacturers.

Product applications: Flavoring.

Potential market size: The global flavor and fragrance market is rising with an annual growth rate from five to six percent valued at an estimated $23.9 billion in 2013.

Technology: With an advanced understanding of human taste bud science, precise screening platforms and taste testing, Senomyx has developed a process that mimics the natural function of the taste bud and enables discovery of new flavors that boost the taste of sweeteners and other flavors in foods and allow for the reduction of sugar and high fructose corn syrup.

Sirrus, Inc.
Loveland, OH
Number of employees: 15
Sirrus Is Commercializing 1,1-Disubstituted Alkene Monomers.

Biorefinery Classification: Demonstration Plant

Key Facts

- Loveland, OH
- 5 kilogram per hour
- Feedstock: Malonic acid, formaldehyde

Partnerships and Financing

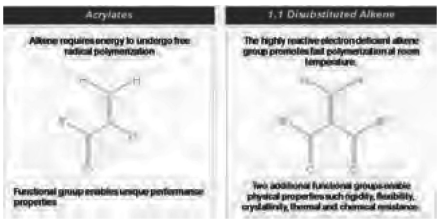
Sirrus has announced agreements with Elmer's Products, Inc. and Sun Chemical. Additionally, Sirrus has four additional unannounced partnerships drawing on Sirrus' unique technology to provide benefits in coating and adhesive application. Sirrus has raised more than $35 million from blue chip investors including Braemar Energy Ventures and Arsenal Ventures and strategic investors including General Motors Venture and Mitsui Ventures.

About: Sirrus advances manufacturing technology through chemistry relating to the synthesis, stabilization, activation and formulation of a unique and reactive class of monomers commonly known as methylene malonates.

Product applications: Adhesives, sealants, coatings and resins.

Potential market size: The global demand for reactive intermediates is valued at greater than $1 billion, with formulated reactive intermediates valued at >$200 billion.

Technology: Sirrus has developed a novel intermediate chemical platform based on 1,1-disubstituted alkene monomers that will allow many current manufacturing processes to be completed faster with less energy and reduced solvent. Chemilian products have one alkene group with the potential to have a wide variety of substituent terminal or functional groups that can be used to make tunable molecular weight polymers. Forza products contain multiple alkene groups allowing cross-linking for the development of polymers exhibiting high strength as well as thermal and chemical resistance.



Solegear

Vancouver, BC, Canada
Number of employees: 12
Solegear Is Producing Proprietary Bioplastic Materials: Polysole® & Traverse®.



Above: Vancouver, BC Plant.

Biorefinery Classification: Commercial Plant

Key Facts

- Vancouver, BC
- Feedstock: Sugarcane, non-food grade corn, and/or sugarbeets
- Commercialization-focused business model:
  - Proprietary Formulation—value we can build on.
  - Collaborative R&D—benefit from the highest expertise.
  - Outsourced supply chain and tolled manufacturing—lowers costs, increases flexibility.
  - Pull-based sales and inventory—customer demand drives development.

Partnerships and Financing

Solegear works in partnership with major brands, retail customers and innovative plastic manufacturers. Partnerships include r-pac international, Columbia Plastics, Ex-Tech Plastics and TEQ.

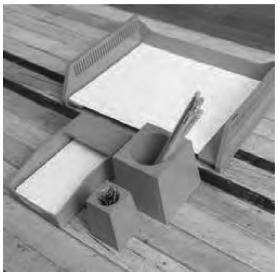
Since going public in 2015, the Company has raised over $3.5 million in equity and receives ongoing research funding from the Government of Canada.

About: Solegear is an advanced materials firm that develops, produces and distributes high-performance bioplastics—plastics made from plants, not petroleum.

Product applications: Consumer goods and packaging.

Potential market size: $35 billion.

Technology: Green Chemistry—Proprietary biopolymer with maximum biobased content and no hazardous chemicals.



Succinity GmbH
Düsseldorf, Germany
Succinity GmbH Is Producing Succinic Acid.



Above: Montmélo, Spain Plant.

Biorefinery Classification: Commercial Plant

Key Facts

- Montmélo, Spain
- 10,000 metric tons
- Feedstock: Glycerol, glucose, sucrose
- The plant is located at the Corbion Purac Montmélo site.

Partnerships and Financing

BASF and Corbion Purac have been conducting research on biobased succinic acid under a joint development agreement since 2009, before registering Succinity GmbH in August 2013.

Projected market growth will be driven partially by legislative initiatives and partially by brand owners reacting to changed consumer needs with differentiated products that focus on improved ecological footprints.

About: Succinity is a joint venture between BASF and Corbion Purac for the production and commercialization of biobased succinic acid with the name Succinity®.

Product applications: Bio-polymers (*e.g.,* Polybutylene succinate [PBS]), polyurethanes, coatings.

Potential market size: The global market for succinic acid was around 40 kilotons in 2015 and is expected to grow with >10 percent CAGR in the coming years.

Technology: Feedstock is fermented based on the bacterium [*B*]*asfia succiniciproducens*. *Basfia* has a naturally high yield for the production of succinic acid and allows the flexible usage of various feedstocks, such as glycerol and C5/C6 sugars. Using an innovative closed-loop downstream process, Succinity Gmbh is able to produce high-quality biobased succinic acid efficiently, without major waste streams. The result is a highly pure product that is an attractive alternative to petrochemically derived succinic acid and an attractive raw material for several applications, such as bioplastics.



Sweetwater Energy
Rochester, NY
Number of employees: 29
Sweetwater Energy Is Producing Cellulosic Sugar.



Above: Rochester, NY Plant.

Biorefinery Classification: Demonstration Plant

Key Facts

- Rochester, NY
- 2 megaton feedstock input per day
- Feedstock: Mixed hardwoods
- The company's first commercial facility will be constructed in Northern Minnesota and will produce hardwood-derived cellulosic sugar and clean lignin that will then be fully processed into final market-ready products: 4.1 million gallons of industrial alcohol, 550,000 gallons of subfuel grade alcohol, and over 6,000 metric tons of industrial activated carbon. Sweetwater's wood-based industrial alcohol and activated carbon compete directly on price with the incumbent feedstocks.

Partnerships and Financing

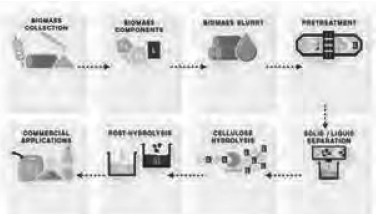
Sweetwater has received a $30 million loan guarantee and incentives package from the State of Minnesota for our first commercial project (total project CAPEX of $54 million) and is currently actively in their Series B to raise an additional $100 million to cover the remaining capital for the first two commercial facilities.

About: Sweetwater Energy owns ground-breaking, patented technology that will be economically disruptive for the chemicals, fuels and advanced materials industries.

Product applications: Biochemicals, biofuels, bioplastics and advanced packaging and construction materials.

Potential market size: $105 billion.

Technology: Sweetwater's technology efficiently processes low-cost, sustainable biomass, such as wood and agricultural residues, into two platform products: highly fermentable cellulosic sugar and clean lignin fiber. Sweetwater's technology converts 95 percent of available sugar in biomass feedstocks, including all C5 and C6 sugars. The technology that we now own significantly outperforms each of the previous systems that we thoroughly tested in terms of sugar yield, inhibitor profile, ethanol yield, clean lignin that can actually be processed into something beyond fuel. Further, our highly scalable hardware has been reliably proven in heavy industrial duty in multiple industries worldwide.



Syngulon
Liege, Belgium
Number of employees: 3
Syngulon Is Developing Bacteriocin Technology.

Biorefinery Classification: Pilot Plant

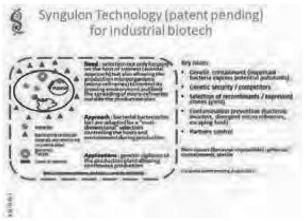
Partnerships and Financing

Syngulon is a start-up, founded in 2013, incubated by Walloon incubator for engineering sciences (WSL). Syngulon is part of a Horizon 2020 consortium financed by the EU on the industrial applications of the microalgae.

About: Syngulon is developing original genetic technologies to improve the efficiency of microorganisms (also called microrefineries) involved in industrial bioproduction.

Product applications: Green chemical production organisms.

Technology: A pressing concern with microbial systems is that re-engineered microbes may escape and produce undesirable effects on the environment. To address this biosafety issue, multiple mechanisms for constraining microbial replication and horizontal gene transfer have been proposed, including the use of host-construct dependencies such as selection using toxin-antitoxin pairs, conditional plasmid replication or the requirement for a specific metabolite for bacterial function. A need for efficient genetic firewall design is presented including new selection genetic circuit using bacteriocins gene platform. Syngulon proposes an innovative genetic firewall to boost fermentation.



Synthetic Genomics
La Jolla, CA
Number of employees: >200
Synthetic Genomics, Inc Serves Three Distinct End Markets: Research, Bioproduction, And Applied Products.

Biorefinery Classification: Pilot Plant

Key Facts

- SGI's Research offerings, commercialized through its subsidiary SGI–DNA, are revolutionizing biotechnology with next-generation genomic solutions, including the world's first DNA printer.
- Bioproduction expertise extends across various production hosts: phototrophic, heterotrophic, viral, mammalian and fully synthetic.
- Applied Products include vaccines, biologics and therapeutics, human nutrition, biofuels and biobased chemicals, crops.

Partnerships and Financing

SGI develops its applied products, typically in strategic partnerships with leading global organizations, across a variety of industries. Examples include algae based biofuels (with ExxonMobil), sustainable crops (with Monsanto), nutritional supplements (with ADM to commercialize Omega-3 DHA oil from algae), vaccines (with

GlaxoSmithKline and Sequiris), non-GMO food proteins, and transplantable organs (with United Therapeutics).

About: Synthetic Genomics (SGI) is a leader in the field of synthetic biology, an emerging science that is at the intersection of biology and engineering, requiring the integration of evolutionary, molecular, and systems biology, biophysics, machine learning, and genetic engineering. SGI utilizes its foundational intellectual property in this rapidly evolving field in combination with expertise in core disciplines such as bio-discovery, -informatics, and -processing, software engineering, analytical chemistry, fermentation, and advanced cell engineering, to design and build biological systems to solve global sustainability challenges.

Technology: Synthetic Genomics combines advanced genomics capabilities, such as Gibson Assembly Method, and proprietary microbial cell lines obtained through worldwide discovery to develop biobased, consumer friendly products that are sustainable and economically advantaged.



TerraVia

South San Francisco, CA
Number of employees: ~200
TerraVia Holdings, Inc Is Producing Algae-Based Oils And Ingredients.



Above: Solazyme Bunge Renewable Oils, São Pa[u]lo State, Brazil.

Biorefinery Classification: Commercial Plant

Key Facts

- Peoria, Illinois and São Pa[u]lo State, Brazil
- Feedstock: Dextrose and sucrose
- Solazyme Bunge Renewable Oils began commercial production in Brazil in May 2014. The facility has some of the world's largest aerobic fermenters and a nameplate capacity of 100,000 metric tons of oil per year.

Partnerships and Financing

TerraVia formed a joint venture with Bunge Limited in 2012 that established the production facility as well as multiple jointly funded developed programs. In 2015, they expanded the JV to commercialize algae-based oils and ingredients globally. TerraVia also has a history of collaboration with Unilever in order to produce sustainable oils for personal care products. In 2016, the two companies announced a multiyear supply agreement for algae-based oils.

About: TerraVia™ is a next-generation food, nutrition and specialty ingredients company that harnesses the power of algae, the mother of all plants and [E]arth's original superfood, to deliver much needed innovation and sustainable solutions to the food industry.

Product applications: Food, aquaculture, animal nutrition and personal care.

Potential market size: Signed $200 million multi-year deal with Unilever for algae-based oils in 2016.

Technology: TerraVia's algae-based platform is transforming our food system by bringing together better nutrition and great taste, along with economic and environmental sustainability. The company has spent over a decade unlocking the power of algae to find and develop vital food, nutrition, and specialty ingredients: healthy oils and fats, proteins, fibers and micronutrients. The company also manufactures a range of specialty personal care ingredients for key strategic partners.

Verdezyne

Carlsbad, CA
Number of employees: 65
Verdezyne, Inc Is Developing Technology To Produce Dodecanedioic Acid (DDDA), Adipic Acid, Sebacic Acid.



Above: Carlsbad, CA Plant.

Biorefinery Classification: Commercial Plant

Key Facts

- Malaysia
- 30 million pounds per year of diacids
- Feedstock: Fatty acids isolated from soy, palm kernel, coconut and other plant-based oils
- Drop in renewable replacements for petrochemicals

Partnerships and Financing

Verdezyne has raised ~$66 million in equity capital, plus MYR $250 million in project finance to fund construction of a plant in Bio-XCell's premier biotechnology and ecosystem park in southern Malaysia. With construction scheduled to commence in 2016, the plant will be capable of producing approximately 30 million pounds of diacids per year.

About: Verdezyne is a privately owned industrial biotechnology company that is leveraging the power of biology to produce chemicals from renewable, non-food sources.

Product applications: Nylon or other polymers for use in a variety of applications including: engineering resins, automotive parts, athletic apparel, carpeting and toothbrush bristles.

Potential market size: DDDA for nylon 6,12, is a $200 million per year market growing 5.4 percent annually. Sebacic acid for nylon 6,10 is a $400 million per year market growing 5.5 percent annually. Adipic acid for nylon 6,6 and thermoplastic polyurethanes is a $6 billion annual market growing 4.6 percent annually.

Technology: Verdezyne has developed a proprietary platform that uses engineered yeast to metabolize multiple non-food-based renewable feedstocks and isolate a number of widely-used, high-value chemicals. The industrially robust production yeast used has two chromosome copies (diploid), which provides the stability of genetic redundancy compared with bacterial systems which have one chromosome (haploid).



Virent
Madison, WI
Number of employees: 37
Virent Is Producing Direct Replacement Fuels And Chemicals.



Above: Madison, WI Plant.

Biorefinery Classification: Demonstration Plant

Key Facts

- Madison, WI
- 10,000 gallons per year
- Feedstock: Beet sugars
- Several products have been produced at demonstration scale and validated with industrial leaders including renewable gasoline, jet fuel and diesel fuel; bio-paraxylene for polyester beverage packaging and fibers.

Partnerships and Financing

Partnerships with Cargill, Royal Dutch Shell, Honda, Tesoro, and Coca-Cola Company. In 2011, Virent received up to $13.4 million from the Department of Energy to convert corn stover to jet fuel.

About: Using patented catalytic chemistry, Virent converts soluble biomass-derived sugars into products identical to those made with petroleum, including gasoline, diesel, jet fuel, and chemicals used for plastics and fibers.

Product applications: Fuels, aromatic chemicals.

Technology: Virent's BioForming® process provides a true biorefinery capable of producing multiple products from various feedstocks using heterogeneous catalysts common to the petroleum and catalyst industry. Virent's products are drop-in equivalents to their petroleum counterparts, but with a significantly reduced carbon footprint. The Virent catalytic process is similar to processes in the refining and petrochemical industry and is more readily scalable than other types of biobased technologies. The flexible product slate allows for optimization in response to shifting market opportunities between fuels and chemicals production. Virent's process can work with a variety of feedstocks including ethanol, sugars, and lignocellulosic materials from wood, corn and bagasse.

xF Technologies
Albuquerque, NM
Number of employees: 16
xF Technologies Is Producing Furoates.



Biorefinery Classification: Pilot Plant

Key Facts

- Albuquerque, NM
- 10,000 gallons/year
- Feedstock: Biomass feedstock agnostic (compatible with cellulosic biomass, sugars and starches). Alcohol feedstock flexible (process utilizes ethanol, methanol, butanol, diols, polyols, *etc.*).

Partnerships and Financing

xF is seeking customers interested in testing and commercially utilizing its products.

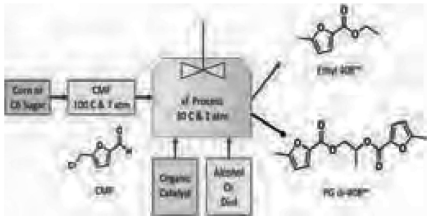
xF is a venture backed company interested in strategic investment or additional venture capital.

About: xF Technologies Inc. is a renewable products company thathas developed a proprietary process to convert biomass into novelpetrochemical replacements.

Product applications: Solvents, anti-microbial inhibition agents, plasticizers for polymers and bioplastics, fragrance carriers for personal care, coalescing aids for coatings; gasoline and diesel oxygenates.

Potential market size: The global solvents market has been estimated to be worth $35 billion according to a 2014 report by Markets and Markets.

Technology: xF Technologies has created a chemical platform that combines a biomass derived intermediary with an alcohol or a diol to create a broad range of high value renewable chemicals. It is a two-step, low cost thermochemical process that first generates a sugar derivative called CMF (5-chloromethyl furfural) followed by a catalytic step to convert the CMF into a finished product. In the first step, hydrochloric acid (HCl) is used to break down the feedstock into C6 sugars that are subsequently converted into CMF. This reaction occurs via a non-catalytic proprietary process that operates at about 100 °C and 7 atm of pressure.



ZeaChem

Lakewood, CO
Number of employees: 26
ZeaChem Is Producing Acetic Acid, Ethyl Acetate, Ethanol.



Above: Boardman, OR Plant.

Biorefinery Classification: Demonstration Plant

Key Facts

- Boardman, OR
- 1,500 megatons per year (MTPY) of acids from 5,000 dry MTPY of ligno cellulosic woody biomass or 20,000 MTPY acids from 132,000 MTPY of sugarbeets
- Feedstock: Feedstock flexible. Lignocellulosic feedstocks demonstrated to date include hardwoods, softwoods, wheat straw, corn stover, sugarcane bagasse, rye grass, banagrass, and sugarbeet pulp. Advanced feedstocks demonstrated to date include sugarbeet and corn syrup.
- ZeaChem's commercialization plan includes an expansion of the existing assets to enable commercial volume production at the same location.

Partnerships and Financing

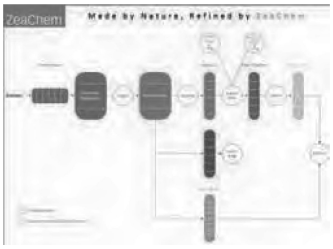
Privately funded. Investors include Firelake Capital Management, PrairieGold Ventures, Sustainable Conversion Ventures, and Leaf Resources Limited. ZeaChem currently operates its demonstration biorefinery as a technology institute. Third parties who come and work at the demo plant are able to accelerate scale up of their technology at a fraction of the cost to building a new plant.

About: ZeaChem Inc. develops biorefineries capable of producing advanced chemicals and fuels, using its own proprietary technology as well as that of its partners.

Product applications: ZeaChem's two and three carbon based products are the chemical building blocks in many applications including paints, solvents, PET, pharmaceuticals, food preservatives, and absorbents.

Potential market size: $1 trillion.

Technology: ZeaChem's C2 Platform uses a combination of fermentation and conventional chemical synthesis pathways to produce acetic acid, acetate esters, and ethanol. Its C3 Platform changes the microorganism used for fermentation, resulting in a slate of analogous three-carbon products such as propionic acid, propionate esters, propanol, propylene, and propylene derivatives.



Appendix A. Renewable Chemical Companies

Company	Product
AB Enzymes GmbH	Enzymes
ADM	Citric Acid; Ethanol; 2,5-Furandicarboxylic Acid (FDCA); Glycerin; Lecithin; Polyols; Propylene Glycol (1,2-propanediol); Sorbitol; Soy Methyl Ester; Starches; Sugars; Vegetable Oils (Canola, Cottonseed, Linseed, Soybean); Xanthan; Waxes

Appendix A. Renewable Chemical Companies—Continued

Company	Product
Advanced Biocatalytics Corporation	Surfactants
Agrivida, Inc.	Enzymes
Ajinomoto	Amino Acids; Isoprene
Akzo Nobel	Acetic Acid; Acetone; n-Butanol; Epichlorohydrin; Fatty Acids
American Process	Cellulosic Sugar; Nanocellulose
Amyris, Inc.	Farnesene; Isoprene
Anellotech, Inc.	Benzene; Toluene; Xylene
Arbiom	Glucose; Lignin; Xylose
Arkema	Fatty Acids and Esters; Polyamides; Polyphthtalamide (PPA)
Arzeda	1,3-Butadiene; Enzymes; Levulinic Acid
Ava Biochem	2,5-Furandicarboxylic Acid (FDCA); 5-Hyroxymethylfurfural (5-HMF)
Avantium	Alkoxymethyl-Furfural; Furandicarboxylic Acid (FDCA); Methyl Levulinate; Mono-Ethylene-Glycol (MEG)
Barentzymes	Enzymes
BASF Enzymes LLC	1,4-Butanediol (1,4-BDO); Enzymes; Polytetrahydrofuran (PolyTHF®)
Bioamber	Adipic Acid; 1,4-Butanediol (1,4-BDO); Succinic Acid
Biobased Technologies	Polyols
Biobtx	Terephthalic Acid
BIO–CAT/BIO–CAT Microbial	Enzymes
Biocatalysts	Enzymes
BIO–ON	Polyhydroxyalkonate (PHA)
Bioresource International, Inc.	Enzymes
Biosynthetic Technologies	Biosynthetic Oils
Blue Marble Biomaterials	Acetic Acid; Acrylic Acid; Butyric Acid; Caproic Acid; Butyl Butyrate; Dimethyl Sulfide; Ethyl Butyrate; Ethyl Thioacetate; Ethyl Thiobutyrate; Ethyl Thiopropionate; Lactic Acid; 3-Mercapto-Butanone; 3-Mercapto-Pentanone; 5-Methyl Furfuryl Mercaptan; Methyl Thioacetate; Methyl Thiobutyrate; Propionic Acid; S-Propyl Acetate; Propyl Butyrate; Propyl Hexanoate; Propyl Propionate; Propyl Thioacetate; Thiobutyric Acid; Thiopropionic Acid; Thioacetic Acid
Borregaard	Ethanol; Cellulosic Sugars; Lignin
Braskem	Butadiene; Ethanol; Ethylene; Isoprene; Propylene; Polyethylene; Polypropylene
Calysta	Lactic Acid; Methane
Cargill	Citric Acid; Ethanol; Glucaric Acid; Glycerin; 3-Hydroxypropionic Acid; Isoprene; Lactic Acid; Itaconic Acid; Lecithins; Maltodextrins; Palm Oils; Polyols; Sorbitol; Sugars; Starches; Triglycerides; Xanthan Gum
Cathay Industrial Biotechnology	DC11 (Undecanedioic Acid); DC12 (Dodecanedioic Acid); DC13 (Brassylic Acid); DC14 (Tetradecanedioic Acid); DC15 (Pentadecanedioic Acid); DC16 (Hexadecanedioic Acid); 1,5-Pentamethylene Diamine
Celanese	Cellulose Diacetate
C-Lecta	Enzymes
Cellana LLC	Biodiesel; Omega-3-Oils
Cellucomp	Cellulose Nano-Fibers
Codexis	Enzymes
Cool Planet Energy Systems	Biocarbon; Hydrocarbon
Corbion	2,5-Furandicarboxylic Acid (FDCA); Lactic Acid; Polylactic Acid (PLA); Succinic Acid
Covestro	Pentmethylene Diisocyanate; Waterborne Polyurethanes
Croda	Ethylene Oxide; Non-ionic Surfactants
Deinove	Carotenoids; Muconic Acid
DuPont	Enzymes; 2,5-Furandicarboxlic Acid (FDCA); Isoprene; Polyesters
DuPont Tate & Lyle Bioproducts	1,3 Propanediol
Earth Energy Renewables	Fatty Acids (C2–C8)
Eastman Chemical Company	Cellulose Acetate; Cellulose Acetate Butyrate; Cellulose Acetate Propionate; n-Butanol
Ecosynthetix	Starch Vinyl Emulsions; Starch-Vinyl Polymers
Edeniq	Cellulosic Sugars
Elevance Renewable Sciences, Inc.	Ethylene; C10+ Hydrocarbons from Olefin Metathesis; Esters from Olefin Metathesis
Emery Oleochemicals	Aliphatic Esters; Polyols
Enerkem	Ethanol; Methanol
Epygen	Enzymes
Evolva	Nootkatone; Resveratrol; Saffron; Stevia; Vanillin
Evonik	Amino Acids; Enzymes
Forelight	Astaxanthin; Omega-3s; Phycocyanin
Genomatica, Inc.	Adipic Acid; Butadiene; 1,4-Butanediol (BDO); Caprolactam; Hexamethylenediamine
Gevo	iso-Butanol; Butene; Ethanol; Isooctane; p-Xylene
GFBiochemicals	Levulinic Acid

Appendix A. Renewable Chemical Companies—Continued

Company	Product
Global Bioenergies	Butadiene; Isobutene; Propylene
Glycosbio	Isoprene; Lactic Acid; Omega 3 Fatty Acid; Triglycerides
Grain Processing Corporation	Corn Syrup; Maltodextrins; Starches
Green Biologics	Acetone; n-Butanol
Green Life CAN, LLC	Polyalphaolefins; Polyolesters
Greenlight Biosciences	Fatty Acids; Pyrimidines; Ribose
Heliae	Astaxanthin; Proteins
Ingredion	Corn Oil and Proteins; Dextrose; Maltodextrins; Polyols; Starches
Intrexon	1,4-Butanediol; iso-Butanol; Farnesene; Isoprene
Invista	Adipic Acid; Adiponitrile (ADN); 1,3-Butadiene; 2,3-Butanediol (BDO); Polyamide (Nylon 6,6)
Itaconix Corporation	Itaconic Acid; Polymers of Itaconic Acid
Joule Unlimited	Diesel; Ethanol
Kiverdi	Citrus Oil; Omega-7 Oils; Sugars
Kraton Performance Polymers (Arizona Chemical)	Fatty Acids; Pine Oils; Pine Pitch; Rosin Acids; Sulphate Turpentine; Tall Oil
LanzaTech	Acetic Acid; 1,3-Butadiene; iso-Butylene; 2,3-Butanediol, Ethanol; iso-Propanol
Leaf Resources LTD	Cellulosic Sugars
Logos Technologies	Rhamnolipids
Lygos	Malonic Acid
Mango Materials	Polyhydroxyalkonate (PHA)
Manus Biosynthesis	Terpenoids
Matrix Genetics	Spirulina Derived Products
MBI International	Fumaric Acid; Succinic Acid
Mercurius Biorefining	Ethyl Formate; Ethyl Levulinate; Formic Acid; Furfural
Meredian Bioplastics	Medium Chain Length Polyhydroxyalkanoates (MCL-PHA)
Metabolic Explorer	Glycolic Acid; L-Methionine; 1,2 Propanediol; 1,3 Propanediol
Metabolix, Inc.	Acrylic Acid; Gamma-Butyrolactone; Butanediol; Polyhydroxyalkanoates (PHAS)
Micromidas	Aromatics; Furanics
Modern Meadows, Inc.	Collagen
Modular Genetics, Inc.	Acyl Glutamate Surfactant
Myriant Corporation	Acrylic Acid; Fumaric Acid; Lactic Acid; Muconic Acid; Succinc Acid
NatureWorks, LLC	Polylactic Acid (PLA)
Neol Biosolutions SA	Arachidonic Acid; Erucic Acid; Gondoic Acid, Nervonic Acid
Neste	Isoalkanes; Propane; Vegetable Oils
Newlight Technologies	Polyhydroxyalkanoates (PHA)
Novomer	Acrylic Acid; Butanediol; Polypropylene Carbonate Polyols; Succinic Acid
Novozymes	Enzymes
Nucelis LLC	Squalane; Ergosterol; Vitamin D
Oakbio Inc.	n-Butanol; Polyhydroxyalkanoate (PHA)
Photanol	Erythritol
Phycal	Algae Oils; Biodiesel
Phytonix Corporation	n-Butanol
Plaxica	Lactic acid
Poet	Cellulosic Ethanol; Corn Oil Byproducts; Sugar
Praj Matrix	Lignin; Pentose and Hexose Sugars
Proterro, Inc.	Amino Acids; Sugars
Provivi, Inc.	Olefin Chiral Pesticides
PTT Global Chemical (PTTGC)	Butanediol; Lactic Acid; Polylactic Acid; Succinic Acid,
PureVision Technology	Cellulosic Sugar
Renewable Energy Group, REG Life Sciences LLC	Fatty Acids
Renmatix	Cellulosic Sugars
Rennovia	Adipic Acid; Glucaric Acid; 1,6-Hexanediol; Hexamethylenediamine
Reverdia	Succinic Acid
Rivertop Renewables, Inc.	Sodium Glucarate
RHO Renewables, Inc.	Trans-Cinnamic Acid; Methylcyclohexane; 3-Methylanisole; Styrene; Toluene; p-Xylene
Roquette	Gluconic Acid; Isosorbide; Isosorbide Polymers; Sodium Gluconate; Starch; Succinic Acid; Proteins
Royal DSM	Alkyd Resins; Cellulosic Ethanol; Carotenoids; Enzymes; Polyamides; Polyester Elastomer (Castor Oil Based); Succinic Acid
Sabic	Polyethylene (PE); Polypropylene (PP)
Sapphire Energy	Algae Nutritional Oils
Senomyx, Inc.	Artificial Flavors
Sirrus	1,1-Disubstituted Alkene Monomers
Solegear	Polylactic Acid (PLA)
Solix Algredients	Astaxanthin
Solvay	Acetone; n-Butanol; Cellulose Acetate; Epichlorohydrin; Glycerin; Guar Gum; Surfactants; Vanillin
Stora Enso	Lignin; Sugars
Succinity GmbH	Succinic Acid

Appendix A. Renewable Chemical Companies—Continued

Company	Product
Sweetwater Energy	Cellulosic Sugars
Sylvatex	Micro-emulsion Additive for Inverse Micelles
Synthezyme	Enzymes; (omega) Hydroxy Fatty Acids; Polyesters; Surfactants
Swissaustral Biotech SA	Enzymes; Microbial Biobank
Tate & Lyle	Corn Syrup, Starch, and Oil; Citric Acid and Other Acids; Distiller Grain; Ethanol, Gluten; Waxy Corn
The Coca-Cola	Polyethylene Terephthalate (PET)
The Dow Chemical Company	Ethanol; Plasticizers; Polyols
Terravia	Algae Oils for Specialty Applications
United Catalyst, LLC	Sugars from Cellulose Hydrolyzing Imprinted Polymers (CHIPs)
Verdezyne, Inc.	Adipic Acid; Dodecanedioic Acid (DDDA); Sebacic Acid
Virent	Aromatic Mixtures; Benzene; p-Xylene
White Dog Labs	Acetone; iso-Butanol; n-Butanol; Butyrate; iso-Propanol
xF Technologies	5-Chloromethyl Furfural; Furoate Esters
Zeachem	Acetic Acid; Ethanol; Ethyl Acetate; Ethylene Glycol
Zuchem	Mannitol; Monosaccharides; Oligosaccharides for Pharmaceutical and Nutritional; Xylitol

Appendix B. Strain Development Technology Companies

Company	Product
Aequor Inc.	Engineered Marine Microbe for Antifouling and Antibiofilm
Caribou Bioscience	Precision Cell Engineering
Chain Biotechnology LTD	Develops Microbial Hosts (chassis) for Engineering Anaerobic Bacteria
DNA2.0	Gene Synthesis—Tools Provider
Enevolv, Inc.	Engineers Microbes: Bacteria, Yeast, Algae
GEN9	Gene Synthesis
Ginkgo Bioworks	Engineers Microorganisms
Greenlight Biosciences	Cell-Free Bioprocessing Technology
Molecular Assemblies	DNA Synthesis
Muse Biotechnologies Inc.	Strain Engineering
Oligos Biotech	Engineering Fungus
Pareto Biotechnologies	Polyketide Pathways
Syngulon	Bacteriocin Engineering
Synpromics	Synthetic Promoters for Gene Expression
Synthetic Genomics	Advanced Genomics—Microbial Cell Lines; DHA Omega-3; Astaxanthin
Teselagen	Combinatorial Gene Design and Editing
Twist Bioscience	Gene Synthesis on Silicon
Zymergen	Strain Improvement

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Epygen Labs FZ LLC, Dubai, United Arab Emirates
Genencor® A Danisco Division, Palo Alto, CA
Evolva, Allschwil, Switzerland
Genomatica, Inc., San Diego, CA
GranBio, São Paulo, Brazil
Green Biologics, Gahanna, OH
Green Life Can LLC, Las Vegas, NV
Heliae, Gilbert, AZ
Intrexon Corp., Germantown, MD
Itaconix Corp., Stratham, NH
LanzaTech, Skokie, IL
Matrix Genetics, Seattle, WA
MBI International, Lansing, MI
Metabolix, Inc., Cambridge, MA
Modular Genetics, Inc., Woburn, MA
Monsanto Co., Saint Louis, MO
Muse Biotechnologies, Inc., Boulder, CO
NatureWorks, LLC, Minnetonka, MN
NexSteppe, South San Francisco, CA
Novozymes, Bagsvaerd, Denmark
Nucelis LLC, San Diego, CA
Poet, LLC, Sioux Falls, SD
POET–DSM Advanced Biofuels LLC, Elgin, IL
Praj Matrix—The Innovation Center, Pune, Maharashtra, India
Primordial Genetics Inc., San Diego, CA
ProteoNic BV, Leiden, Netherlands
Proterro, Inc., Ewing, NJ
Renmatix, King Of Prussia, PA
Rennovia, Inc., Santa Clara, CA
Reverdia, Geleen, Netherlands
RHO Renewables, Inc., Oakland, CA
Sapphire Energy, Inc., San Diego, CA
Succinity Gmbh, Düsseldorf, Germany
Syngulon, Gosselies, Belgium
Synthetic Genomics, Inc., La Jolla, CA
TerraVia, South San Francisco, CA
The Coca-Cola Co., Atlanta, GA
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APPENDIX B

The Biobased Economy: Measuring Growth and Impacts

March 2017

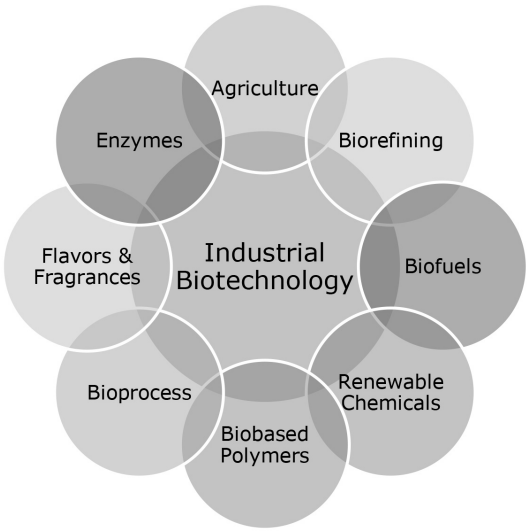
- **Industrial biotechnology empowers the biobased economy, enhances a broad variety of industries and creates potential for new products.**
- **The biobased economy is poised for accelerated growth, with an abundance of cost-competitive feedstocks, commercial success of pioneer products, and ongoing investment in innovative research.**
- **The United States could capture a fair share of projected worldwide growth of the biobased economy with effective state and Federal policy support.**

By utilizing the power of industrial biotechnology companies around the globe are creating a robust biobased economy. In the biobased economy, companies use microbial systems, fermentation and other clean tech methods to manufacture sustainable products from agricultural biomass, municipal waste and other low-carbon feedstocks. Biobased production encompasses a value chain from agriculture through the manufacture of consumer goods that provides an alternative to petroleum's value chain and brings environmental, economic and other benefits. The biobased economy can generate new markets for agricultural producers, boost innovation in domestic manufacturing, and stimulate sustainable economic growth. The biobased economy and industrial biotechnology are poised for accelerated growth in the 21st century; Federal and state policies can unleash this growth by identifying and supporting all segments of the value chain.

Industrial biotechnology—which is at the center of the biobased economy, as shown in *Figure 1* below—generates economic opportunity, investment and employment in:

- agriculture, especially through the development of new crops and new uses for crop residues and waste;
- biorefining of food and feed ingredients for the grocery manufacturing industry;
- biofuel production;
- renewable chemical and biobased polymer production, which impacts cosmetics, textiles, personal care and other consumer product sectors;
- bioprocesses used in pharmaceutical and other manufacturing;
- nutritional ingredients as well as flavors and fragrances; and
- enzymes, which are used in household cleaners, laundry detergents, and food processing.

Figure 1: The Biobased Economy



Industrial biotechnology is sometimes viewed as a subset of the petrochemical industry, since industrial biotech processes are more sustainable and can be paired with or replace traditional chemical processes in the production of a final product. But industrial biotechnology impacts many different industries and creates potential for new products and materials that are not possible or cost-efficient with traditional chemistry.

An increasing number of studies and market analyses measure the economic impact of the industrial biotechnology sector and the biobased economy. Rob Carlson of Biodesic, Inc., estimates that the industrial biotechnology sector generated more than $105 billion in direct revenue in 2012.[1] Carlson draws his estimate from a review of the total revenue for the biofuels, renewable chemicals, enzymes and biobased polymers industries, controlling for the costs of the non-biotech sectors. He also notes that the overall economic impact from this direct revenue is likely to be ten to 15 percent larger.

USDA's BioPreferred® Program commissioned a report to Congress and a follow up study of the economic impact associated with the roughly 20,000 biobased products recognized by the program. The analyses include agriculture and forest products that are not directly impacted by industrial biotechnology, but exclude biofuels, food ingredients and bioprocess applications that are not part of the program. The resulting studies found that between 2013 and 2014, the industry's direct revenue grew from $125.75 billion to $127 billion. The total economic impact of U.S. biobased production grew from $369 billion to $393 billion.[2] Because biofuels and food ingredients are excluded, the economic impact of the entire industrial biotechnology sector is significantly larger.

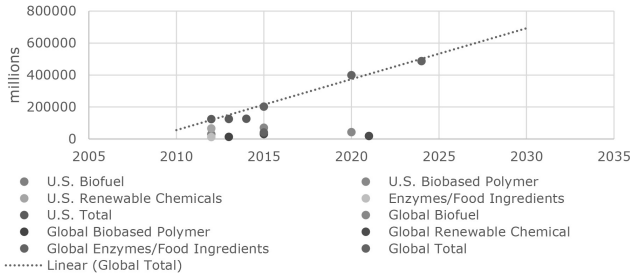
Figure 2 below maps a selection of projections and estimates of the economic impact of industrial biotechnology from industry analysts and market watchers. While each study may include or exclude different parts of the biobased economy, all analysts agree that the overall global industry and the various subsectors—biofuels, renewable chemicals, enzymes and biobased polymers—are poised for accelerated growth during the first ½ of the 21st century.

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[1] Carlson, R. *Estimating the biotech sector's contribution to the U.S. economy.* NATURE BIOTECHNOLOGY, 34, 247–255, (2016). doi:10.1038/nbt.3491.

[2] Golden, J.S., Handfield, R.B., Daystar, J., and McConnell, T.E. *An Economic Impact Analysis of the U.S. Biobased Products Industry.* Washington, D.C.: USDA BioPreferred Program, 2016.

Figure 2: Biobased Economy and Sector Projections



Worldwide production of biobased products—including biofuels, renewable chemicals, and biobased polymers—is projected to grow from approximately $203.3 billion in 2015 to $400 billion by 2020 and $487 billion by 2024.[3] The United States is well-positioned to capture a large share of that projected growth, due to investments made today in first-of-a-kind production capacity, innovative research and development, as well as employment and training of U.S. workers.

Similar to assessments of the chemical industry, projections of future growth in industrial biotechnology and biobased manufacturing are built on the abundance and favorable costs of renewable feedstocks, the successful commercialization of pioneer products, and new investments in production capacity. In contrast to traditional industries, though, expectations for industrial biotechnology's future potential are heightened by the exponential growth in discovery of biological processes. The intensifying pace of research and development in biotechnology, new developments in synthetic biology and gene editing, and recent experience in engineering commercial scale industrial biotech processes augment projections for accelerated economic growth in the field.

Between 2010 and 2015, investors pumped nearly $9.2 billion into the industrial biotechnology sector.

Between 2010 and 2015, investors pumped nearly $9.2 billion into the industrial biotechnology sector, primarily in renewable chemicals and biobased polymers. The funding came from a variety of sources, including private equity and some public investment. But the majority of the investment and financing—$5.3 billion (57 percent)—came from venture capital.[4] Venture capital investments primarily target research and development of new technologies, and synthetic biology startups have garnered the largest share in recent years.

Another significant source of investment came from partnerships and private equity investments to launch new commercial-scale industrial biotech processes. BioAmber is operating a commercial scale facility in Sarnia, Ontario, Canada to produce biobased succinic acid, which is a building block for polyesters used in fabrics. Myriant is operating a similar facility in Louisiana. Green Biologics has started production in Minnesota of n-butanol, which is a solvent used in many consumer product. Novamont is producing biodegradable plastics at scale in Italy. New partnerships include Genomatica's with BASF to produce butanediol, which can be used in polyesters and cosmetics; Avantium's with Coca-Cola to produce polyethylene furoanate for plastic drink bottles; and Novvi's with Chevron to produce biobased lubricants for automotive applications.[5] The commercial success of pioneer renewable chemical producers encouraged these additional equity investments.

Continued growth of the biobased economy will benefit rural America by creating new markets for biomass. The U.S. farm sector continues to increase crop productivity—achieving higher yields with relatively fewer inputs—even as crop prices decline. The U.S. Department of Energy has conducted regular analyses of agricultural, forestry, waste, and algal biomass, determining that there is a cost-competi-

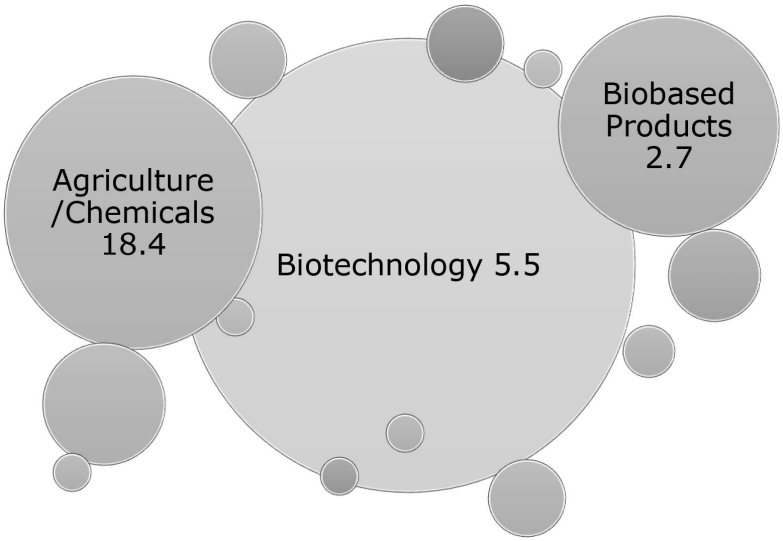
[3] Grand View Research. "White Biotechnology Market Analysis By Product (Biofuels, Biomaterials, Biochemicals, Industrial Enzymes), By Application (Bioenergy, Food & Feed Additives, Pharmaceutical ingredients, Personal Care & Household Products) And Segment Forecasts To 2024." San Francisco: October, 2016. McKinsey & Co. "Bio-based chemicals are gradually gaining their share of the global chemicals market." Boston: Feb. 2016.

[4] Oh, V. "Show Me the Money: Where is Venture Capital Placing Bets in Bio-based?" Boston: Lux Research, Dec. 5, 2016.

[5] Molchanov, P. "Clean Tech Primer 2017." St. Petersburg, FL: Raymond James & Assc. January 2017.

tive supply sufficient to displace 30 percent of U.S. petroleum consumption.[6] The abundance of price advantaged feedstocks makes the biobased product sector an attractive investment opportunity. It can also help to support farm sector earnings, which have been falling with lower commodity prices.[7]

Figure 3: Job Multipliers for Various Sectors of Industrial Biotechnology



In addition to added value for farm production, the biobased economy can generate spillover employment opportunities in engineering, construction and transportation. According to the USDA BioPreferred® Program report mentioned above, there are 1.53 million U.S. workers directly employed in the biobased product industry as of 2014. The industry also creates employment in other industries, such as transportation and feedstock supply, as illustrated in *Figure 3.* Every direct job in the biobased product industry creates 1.76 jobs in other industries. In a separate study specifically of the biotech industry, TEConomy calculates that every direct bioscience industry job creates 5.5 additional jobs elsewhere in the economy. For workers in the agricultural feedstock and chemicals sector of the biotech industry, which includes biofuel producers, the multiplier is as high as 18.4 additional jobs for every direct job.[8]

The biobased economy is poised for ongoing growth, building on the success of pioneering commercial-scale industrial biotech projects. The potential for growth has attracted billions in venture capital, strategic investments and partnerships. The United States is well-positioned—with abundant biomass resources and innovative research and development in industrial biotechnology—to capture a favorable share of future biobased economy growth and employment. Effective state and Federal policy is needed to unleash continued investment and growth.

Among the most important Federal policies supporting the biobased economy are those in the farm bill's energy title. Since 2002, the quinquennial farm bill has included energy programs that have effectively supported development of new markets for agriculture and capital formation for rural communities. As Congress Members begin work on the next farm bill, they should strengthen these effective programs and provide mandatory funding. The BioPreferred® program, as mentioned, has helped the U.S. agriculture sector generate $393 billion in economic activity and

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[6] U.S. Department of Energy. 2016. *2016 Billion-Ton Report: Advancing Domestic Resources for a Thriving Bioeconomy, Volume 1: Economic Availability of Feedstocks.* M.H. Langholtz, B.J. Stokes, and L.M. Eaton (Leads), ORNL/TM–2016/160. Oak Ridge National Laboratory, Oak Ridge, TN. 448p. doi: 10.2172/1271651.

[7] USDA Economic Research Service. *2017 Farm Sector Income Forecast.* Feb. 9, 2017. *https://www.ers.usda.gov/topics/farm-economy/farm-sector-income-finances/farm-sector-income-forecast/.*

[8] TEConomy/BIO. *The Value of Bioscience Innovation in Growing Jobs and Improving Quality of Life.* Washington, D.C.: Biotechnology Innovation Organization, 2016.

4.22 million jobs. The Biorefinery, Renewable Chemical, and Biobased Product Manufacturing Assistance Program ensures that institutional lenders serving rural communities have sufficient capital to back large-scale biorefineries. This program will enable banks to join the venture capital and equity investments in industrial biotechnology and renewable chemical production, which will revitalize U.S. manufacturing, create jobs and improve U.S. economic competitiveness. Congress should create a clear path forward for farm bill energy programs to enable U.S. technology producers to unleash innovation and ensure rural communities share in economic growth.

APPENDIX C

An Economic Impact Analysis of the U.S. Biobased Products Industry



2016

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- Enviva
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- Green Biologics Ltd.
- General Motors Company
- IO Sustainability
- Johnson and Johnson
- Lanzatech
- Lenovo
- Lux Research, Inc.
- Michigan Biotechnology Institute
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- North Carolina Biotechnology Center
- Patagonia, Inc.
- Penford Products Co.
- POET, LLC
- Procter & Gamble
- Seventh Generation, Inc.
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- Tecnon OrbiChem
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- Dow Chemical Company
- NatureWorks LLC
- Nike
- Novozymes
- DuPont
- Verdezyne, Inc.
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- Yulex Corporation

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Dr. Handfield is the Consulting Editor of the Journal of Operations Management, one of the leading journals in the field of supply chain management, and he has written several books on supply chain management. In 2013, he led a global study on Global Logistics Trends and Strategies for BVL International and wrote a report entitled 'Future Buy: The Future of Procurement,' which was published by KPMG.

He has published extensively on sustainable supply chain management in the Journal of Supply Management, Business Strategy and the Environment, and the European Journal of Operations Research. In 2013, he also conducted studies on global supply chain sustainability with the German nonprofit logistics organization, BVL International, and he received funding in 1998 from the National Science Foundation to study Environmentally-Friendly Manufacturing.

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Drawing on skills in Life Cycle Assessment, sustainability strategy, chemical engineering, paper and pulp engineering, and supply chain logistics & strategy, Daystar develops sustainability solutions through pragmatic research and applied industrial solutions. His experience includes sustainable chemical process development and efficiency management program development with the National Council for Air and Stream Improvement, Mead WestVaco, Pesco-Beam Environmental Solutions, and Kemira Chemical.

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Dr. McConnell's research has focused on input-output modeling of the forest products industry, timber, and lumber price trends, and the typologies of production forestry clientele. His Extension program provides information to clientele and stakeholders regarding wood technology, wood products sustainability criteria, economic

impacts, and industrial trends. Dr. McConnell's professional service includes contributing to the Forest Products Society, the Society of American Foresters, and the Society of Wood Science and Technology.

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Executive Summary

This report was prepared for the U. S. Department of Agriculture (USDA) BioPreferred® Program as a follow-up to the 2015 report to the Congress of the United States mandated in Section 9002 of the 2014 Farm Bill (the Agricultural Act of 2014; P.L. 113–79).[1] The conclusions and recommendations in this report are those of the authors, and have not been endorsed by USDA. The report seeks to provide information on the following contributions of the biobased products industry in the United States:

(i) Changes in value-added and jobs between 2013 and 2014 for the national biobased products industry;

(ii) The value-added and jobs contributed by the biobased products industry for all 50 states and the District of Columbia in 2013;

(iii) Changes and updates to the domestic biobased products industry, including case studies of advances and innovations;

(iv) The quantity of petroleum displaced by biobased products; [and]

(v) Policy recommendations.

Established by the Farm Security and Rural Investment Act of 2002 (2002 Farm Bill) and strengthened by the Food, Conservation, and Energy Act of 2008 (2008 Farm Bill) and the Agriculture Act of 2014 (H.R. 2642 2014 Farm Bill), the USDA BioPreferred Program is charged with transforming the marketplace for biobased products and creating jobs in rural America. The Program's mandatory Federal purchasing initiative and voluntary labeling initiative have quickly made it one of the most respected and trusted drivers in today's biobased product marketplace. Private and government purchasers now look to the USDA BioPreferred Program to ensure that their purchases are biobased. Beginning in 2005 with its first designations of six product categories, the Program has now designated 97 product categories representing approximately 14,200 products on the market today. With the Federal Government spending about $450 billion annually on goods and services, there is an incredible opportunity to increase the sale and use of biobased products as required by Federal law. Executive Order 13693, Planning for Federal Sustainability in the Next Decade, increases Federal agency accountability for achieving biobased purchasing requirements.[2]

Although there have been several studies on the contributions of the biobased products industry to the European and global economies, this report is the first to examine and quantify the effects of the U.S. biobased products industry on each state and the District of Columbia. The report provides a snapshot of available information and a platform upon which to build future efforts as more structured reporting and tracking mechanisms are developed.

As detailed in this report and similar to the 2015 report, we undertook an updated approach to gathering information on the biobased products industry. A broad

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[1] Golden, J.S., Handfield, R.B., Daystar, J., and McConnell, T.E., *An Economic Impact Analysis of the U.S. Biobased Products Industry: A Report to the Congress of the United States of America,* A Joint Publication of the Duke Center for Sustainability & Commerce and the Supply Chain Resource Cooperative at North Carolina State University, 2015.

[2] The President, "Executive Order 13693—Planning for Federal Sustainability in the Next Decade", *Federal Register*, accessed April 2015, *https://www.federalregister.gov/articles/2015/03/25/2015-07016/planning-for-federal-sustainability-in-the-next-decade*.

spectrum of government, industry, and trade association representatives involved in the biobased products industry were interviewed in order to gain a better understanding of the challenges and the future growth potential for biobased products. Data were collected from government agencies and published literature on the biobased products industry. We also conducted extensive economic modeling using IMPLAN modeling software, which was initially developed by the U.S. Forest Service to analyze and trace spending through the U.S. economy and to measure the cumulative effects of that spending on the U.S. economy. The IMPLAN model tracks how dollars spent in one sector of the economy result in increased spending in other sectors of the economy because of those dollars, creating waves of economic activity (the "economic multiplier" effect). IMPLAN uses national industry data and county-level economic data to generate a series of multipliers, which, in turn, estimate the total implications of economic activity as direct, indirect, and induced effects. The spillover effect can be calculated from these results by adding the indirect and induced effects. A contribution analysis was conducted to assess the effects of specific biobased sectors of the U.S. economy.

The seven major sectors chosen here to represent the biobased products industry's contribution to the U.S. economy are:

- Agriculture and Forestry.
- Biorefining.
- Biobased Chemicals.
- Enzymes.
- Bioplastic Bottles and Packaging.
- Forest Products.
- Textiles.

The USDA's definition of biobased products excludes the energy, livestock, food, feed, and pharmaceutical industries, so they have been excluded from this report as well.

Figure 1 shows that the total contribution of the biobased products industry to the U.S. economy in 2014 was $393 billion in value-added and 4.223 million jobs. Every 1,000 jobs in the biobased industry supported 1,760 additional jobs in other parts of the economy. *Figure 2* shows these numbers broken down into direct effects and spillover effects. The 1.528 million jobs directly supported by the biobased industry supported 2.695 million indirect and induced jobs. Similarly, the $127 billion in value-added from sales by the biobased products industry generated another $266 billion in indirect and induced sales.

Figure 1: Key Findings of the U.S. Biobased Products Industry in 2014

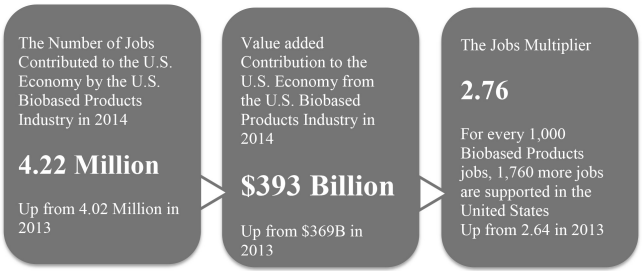
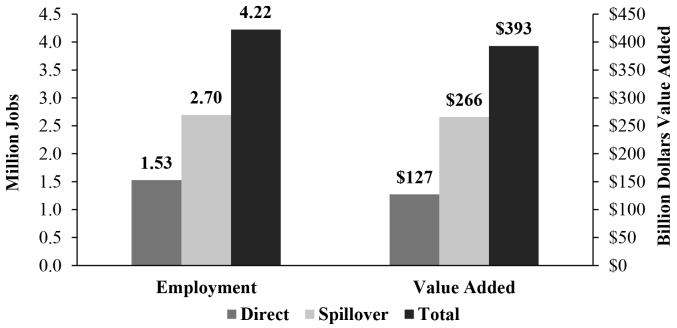


Figure 2: Total Employment and Value-Added to the U.S. Economy from the Biobased Products Industry in 2014



In the 2015 report, we highlighted states with particularly high concentrations of activity in the biobased products industry using location quotients (relative comparisons of direct jobs in each state to the national average for the biobased products industry). In this 2016 report, Section III provides fact sheets that detail jobs and value-added contribution by the biobased products industry for all 50 states and the District of Columbia. *Figure 3* shows the direct number of jobs supported by the biobased products industry for each state and the District of Columbia in 2013. The direct number of jobs by state is also listed in *Appendix C. Table 1* lists the ten states with the most direct jobs in the biobased products industry. Similarly, *Figure 4* shows the direct value-added by the biobased products industry in each state and the District of Columbia, while *Table 2* lists the ten states with the highest direct value-added by the biobased products industry.

Figure 3: Direct Jobs Contributed by the Biobased Products Industry in Each State and the District of Columbia in 2013 [3]

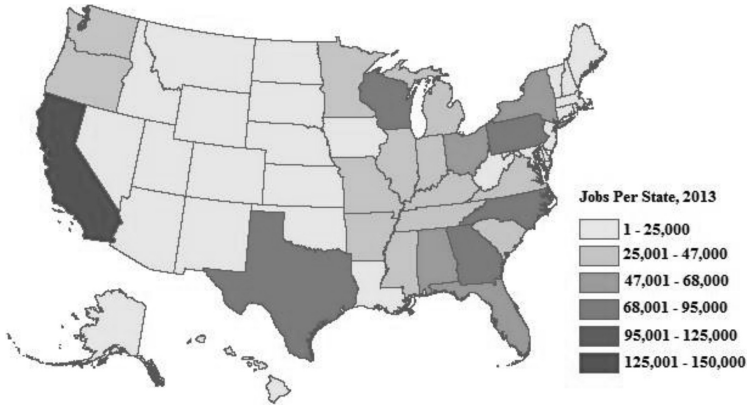


Table 1. Top 10 States for Direct Jobs in the Biobased Products Industry in 2013

Rank	State Direct	Jobs
1	California	145,080
2	North Carolina	90,040
3	Texas	88,680
4	Georgia	80,520
5	Pennsylvania	71,360

[3] Esri, TomTom, Department of Commerce, Census Bureau, U.S. Department of Agriculture (USDA), National Agricultural Statistics Service (NASS). "USA States" Basemap. ArcGIS Online, accessed 3/3/16, *http://www.arcgis.com/home/item.html?id=1a6cae723af14f9cae228b133aebc620.*

Table 1. Top 10 States for Direct Jobs in the Biobased Products Industry in 2013—Continued

Rank	State Direct	Jobs
5	Pennsylvania	71,360
6	Wisconsin	68,250
7	Ohio	52,930
8	New York	52,300
9	Alabama	49,650
10	Florida	47,690

Figure 4: Direct Value-Added Contribution in Each State by the Biobased Products Industry in 2013 [4]

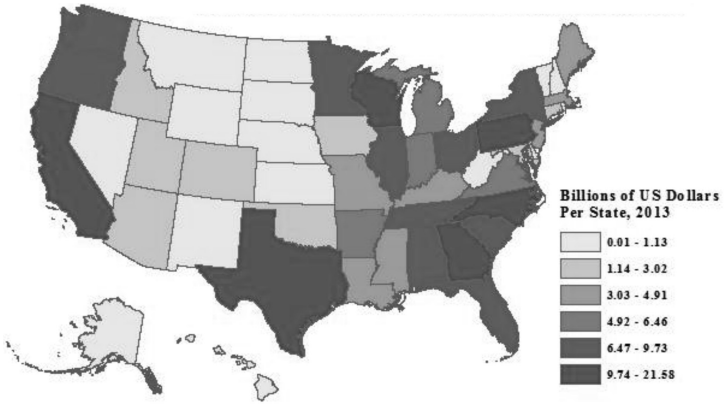


Table 2. Top 10 States for Direct Value-Added to the Biobased Products Industry in 2013

Rank	State	Direct Value-Added
1	California	$9,862,930,000
2	Georgia	$8,237,608,000
3	Texas	$6,828,425,000
4	Pennsylvania	$6,522,151,000
5	North Carolina	$6,437,140,000
6	Wisconsin	$6,252,403,000
7	Alabama	$4,977,941,000
8	Tennessee	$4,429,804,000
9	Ohio	$4,276,668,000
10	South Carolina	$4,227,162,000

The original report sought to answer six questions:

(i) The quantity of biobased products sold

While there is no database that tracks the quantity of biobased products sold, the USDA BioPreferred Program's database currently includes over 20,000 biobased products. This database contains a limited number of forest products or traditional textile fiber products, as these products were only included in the Program recently. Therefore, we estimate that the actual number of biobased products on the market is dramatically higher than the number in the BioPreferred Program's database. In terms of jobs and value-added contributed, the forest products sector alone more than doubles the estimates for the remainder of the biobased products industry. Thus, 40,000 would be a conservative estimate of the total number of existing

[4] Esri, TomTom, Department of Commerce, Census Bureau, U.S. Department of Agriculture (USDA), National Agricultural Statistics Service (NASS). "USA States" Basemap. *ArcGIS Online,* accessed 3/3/16, *http://www.arcgis.com/home/item.html?id=1a6cae723af14f9cae228b133aebc620.*

Thus, 40,000 would be a conservative estimate of the total number of existing biobased products. The data required to estimate the total number of individual "units" of biobased products that have been sold are not available. However, the total value-added from direct sales of biobased products in 2014 was estimated to be $127 billion (*Figure 2*).

(ii) The value of biobased products

The total value-added contribution to the U.S. economy from biobased products was $393 billion in 2014, the most recent year for which data are available (*Figure 2*).

(iii) The quantity of jobs contributed

The biobased products industry directly supported 1.53 million jobs in 2014 and through spillover effects, supported 4.22 million total jobs throughout the economy in the United States (*Figure 2*).

(iv) The quantity of petroleum displaced

The use of biobased products reduces the consumption of petroleum equivalents by two primary mechanisms. First, chemical feedstocks from biorefineries have replaced a significant portion of the chemical feedstocks that traditionally originate from crude oil refineries. Biorefineries currently produce an estimated 150 million gallons of raw materials per year that are used to manufacture biobased products. Second, biobased materials are increasingly being used as substitutes for petroleum-based materials, which have been used extensively for many years. An example of this petroleum displacement by a biobased material is the use of natural fibers in packing and insulating materials as an alternative to synthetic foams, such as Styrofoam. In this report, the research team utilized newly available data and scientific literature which, when modeled, estimate petroleum displacement of up to 6.8 million barrels in 2014.

(v) Other environmental benefits

While only limited lifecycle analyses of the production of biobased products have been conducted, the key environmental benefits of manufacturing and using biobased products are (1) reducing the use of fossil fuels and (2) reducing the associated greenhouse gas (GHG) emissions. The previous paragraph presents an estimate of the petroleum displacement associated with the biobased products industry. We also estimated the GHG emission reductions associated with the production of biobased products as alternatives to petroleum-based products. This number was not calculated for the 2015 report and is presented here for the first time. A literature review showed that there are a wide range of GHG reductions resulting from the use of biobased products as an alternative to petroleum-based products. Using the upper range of GHG emissions reductions potential, the analysis indicates that up to 10 million metric tons of CO_2 equivalents may have been reduced in 2014. Given the increasing interest in and use of biobased products, it is essential to conduct additional analyses of their potential impacts on water quality, water use, land use and other environmental impact categories.

(vi) Areas in which the use or manufacturing of biobased products could be more effectively used, including identifying any technical and economic obstacles and recommending how those obstacles can be overcome

A wide range of both near-term and long-term opportunities exists that the government and biobased products industry members can pursue to advance the biobased products industry. Congress should continue to advance the biobased products industry for National Security and Domestic Industrial Strength by enacting a short-term production tax credit, investment tax credits, and master limited partnerships for biobased product manufacturers to help level the playing field with petroleum-based products. Congress should also direct the U.S. Department of Commerce to work with USDA to develop NAICS codes that describe companies in the biobased products industry. Suggested avenues for promoting the biobased products industry also include funding the USDA BioPreferred Program at the levels similar to its counterparts to increase the visibility of the USDA Certified Biobased Product label, and expansion of other related USDA programs. Additionally, members of the biobased products industry should work together to solve the challenges facing their industry.

As noted above, in addition to collecting data from published sources and collecting government statistics, we interviewed organizations in the biobased products industry to understand the dynamics, drivers, and challenges that will affect the

continued growth of the industry. We conducted the interviews with personnel in the following organizations, institutes, and companies:

- Agricultural Utilization Research Institute
- American Cleaning Institute
- American Chemical Society
- BASF Corporation
- Bayer AG
- BioAmber, Inc.
- BioFiber Solutions International
- Biotechnology Innovation Organization
- The Bureau of Labor Statistics of the U.S. Department of Labor
- The Coca-Cola Company
- ConVergInce Advisers
- Cotton Incorporated
- Deere & Company
- Dow Chemical Company
- Eastman Chemical Company
- Enviva
- Ford Motor Company
- Green Biologics Ltd.
- General Motors Company
- Johnson and Johnson
- Lanzatech
- Lenovo
- Lux Research, Inc.
- Michigan Biotechnology Institute
- Myriant Corporation
- NatureWorks LLC
- Nike
- North Carolina Biotechnology Center
- Novozymes
- DuPont
- Patagonia, Inc.
- Penford Products
- POET, LLC
- Procter & Gamble
- Seventh Generation, Inc.
- Society of the Plastics Industry
- Tecnon OrbiChem
- Tetsis
- Tyton BioEnergy Systems
- United Soybean Board
- U.S. Forest Service
- Verdezyne, Inc.
- Walmart Stores, Inc.
- Yulex Corporation

The report includes case studies of the development, manufacture, and use of biobased products by the following organizations:

- NatureWorks LLC
- BASF Corporation
- Eastman Chemical Company
- Michigan Biotechnology Institute
- DuPont
- The Coca-Cola Company
- POET LLC
- Verdezyne, Inc.
- Green Biologics Ltd.
- Agricultural Utilization Research Institute

Glossary of Terms

Biobased: Related to or based on natural, renewable, or living sources.

Biobased chemical: A chemical derived or synthesized in whole or in part from biological materials.

Biobased content: The amount of new or renewable organic carbon in a material or product as a percent of the material or product's total organic carbon. The standard method ASTM D6866 is used to determine this amount.

Biobased product: A product determined by USDA to be a commercial or industrial product (other than food, feed, or fuel) that is:

(1) Composed, in whole or in significant part, of biological products, including renewable domestic agricultural materials and forestry materials; or

(2) An intermediate ingredient or feedstock.

Biobased products industry: Any industry engaged in the processing and manufacturing goods from biological products, renewable resources, domestic or agricultural or forestry material. The USDA excludes food, feed, and fuel when referring to the biobased products industry.

Bioeconomy: The global industrial transition of sustainably utilizing renewable aquatic and terrestrial resources into energy, intermediates, and final products for economic, environmental, social, and national security benefits.

Biomass: Material derived from recently living organisms, which includes plants, animals, and their byproducts. For example, manure, garden waste, and crop residues are all sources of biomass. It is a renewable energy source based on the carbon cycle, unlike other natural resources, such as petroleum, coal, and nuclear fuels.[5]

Biobased plastics: Plastics derived from renewable biomass sources, such as vegetable oil and cornstarch. In contrast to conventional plastics that utilize petroleum-based products as raw material, biobased plastics utilize biomass, which can be regenerated, as their raw material.

Biobased polymers: Polymers produced by living organisms that form long chains by the interlinking of repeating chemical blocks. Common biobased polymers in nature are cellulose in the cell walls of plants and polysaccharides such as starch and glycogen.

Biorefining: Process of production of heat, electricity, fuel, or chemicals from biomass. For example, production of transportation fuel such as ethanol or diesel from natural sources, such as vegetable oil and sugarcane.

Byproduct: Substance, other than the principal product, generated because of creating a biofuel. For example, a byproduct of biodiesel production is glycerin and a byproduct of ethanol production is distiller's dried grains with solubles.

Cellulose: Fiber contained in the leaves, stems, and stalks of plants and trees. Cellulose is the most abundant organic compound on [E]arth.[6]

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[5] Khan, F.A., *Biotechnology Fundamentals:* Second Edition, (Boca Raton: CRC Press, 2015), 336.

[6] *The Biofuels Handbook,* ed. J.G. Speight (London: RSC Publishing, 2011), 524.

Contribution analysis: The economic effect of an existing sector, or group of sectors, within an economy. The results define to what extent the economy is influenced by the sector(s) of interest.

Co-product: Product that is jointly produced with another product, which has a value or use by itself. For example, paraffin wax is a co-product during the refining of crude oil to derive petroleum products.

Direct effects: Effects generated by the industry of interest through employment, value-added, and industrial output to meet final demands.

EIO–LCA: Economic input-output life cycle assessments quantify the environmental impact of a sector of the economy.

Emissions: Gases and particles that are released into the air or emitted by various sources.[7]

Employment: Considered in this report as full and part-time jobs in a sector.

Enzyme: A protein that catalyzes or increases the rate at which chemical reactions occur in living organisms.[8]

Ethanol: Produced from fermenting any biomass that contains a high amount of carbohydrates. It is typically made from starches and sugars but advanced generation technologies allow it to be made from cellulose and hemicellulose.[9]

Forestry materials: Materials derived from the practice of forestry or the management of growing timber.[10]

Genetically Modified Organism (GMO): An organism (*i.e.,* plants, animals, or microorganisms) whose genetic material (DNA) has been altered in a way that does not occur by mating or natural recombination.[11]

IMPLAN: Originally developed by the U.S. Forest Service and currently owned and operated by IMPLAN Group LLC (Huntersville, NC). The IMPLAN database and software system can be used to measure the economic effects of a given change or event in a region.

Indirect effects: The result of all sales by the industry of interest's supply chain.

Induced effects: The changes produced from the purchasing of goods and services by households because of changes in employment and/or production levels.

Intermediate ingredient or feedstock: A material or compound that has undergone processing (including thermal, chemical, biological, or a significant amount of mechanical processing), excluding harvesting operations. It is subsequently used to make a more complex compound or product.[10]

Location Quotient: The measure of the concentration of an industry in a state, relative to the national average concentration of that industry.

NAICS: Acronym for the North American Industry Classification System. A classification system for grouping businesses by similarity of production process.

Output: An industry's gross sales, which includes sales to other sectors (where the output is used by that sector as input) and those to final demand.

PET: Polyethylene terephthalate.

PLA: Polylactic acid.

Production Tax Credit (PTC): A tax credit that provides a company with financial support based on their production. PTCs can be offered by the Federal Government or a state government, and can be refundable, partially refundable, or nonrefundable.

Qualified biobased product: A product that is eligible for the BioPreferred® Program's mandatory Federal purchasing initiative because it meets the definition and minimum biobased content criteria for one or more of the 97 product categories designated for this initiative.

Renewable chemical: A monomer, polymer, plastic, formulated product, or chemical substance produced from renewable biomass.

Sector: Unique field of firms that is a portion of the U.S. economy defined by NAICS.

Spillover: Used in the economic modeling in this report to define Employment and Value-Added resulting collectively from indirect and induced activities.

Subsector: Field of firms that produce a specialized product.

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[7] U.S. Environmental Protection Agency (EPA), "Air Pollution Emissions Overview", U.S. EPA, accessed June 2016, *https://www3.epa.gov/airquality/emissns.html*.

[8] Alberts B, Johnson A, Lewis J, *et al., Molecular Biology of the Cell* (New York: Garland Science, 2002), *http://www.ncbi.nlm.nih.gov/books/NBK26911/#A466*.

[9] International Energy Agency (IEA), "Glossary", IEA, accessed May 2016, *http://www.iea.org/aboutus/glossary/e/*.

[10] U.S. Government Publishing Office (GPO) *Electronic Code of Federal Regulations* (e-CFR), Title 7 CFR part 3201.2, e-CFR, accessed June 2016, *http://www.ecfr.gov/cgi-bin/text-idx?SID=c2eba5045067ce569f1d820d6d77b694&mc=true&node=se7.15.3201_12&rgn=div8*.

[11] World Health Organization, "Food Safety", World Health Organization, accessed June 2016, *http://www.who.int/foodsafety/areas—work/food-technology/faq-genetically-modified-food/en/*.

Total effect: The sum of the effects of all sales generated by all sectors, supply chains, and influence of employees spending within the study region. The sum of the direct, indirect, and induced effects.

Type I multiplier: The sum of direct effect plus indirect effect divided by the direct effect.

Type Social Accounting Matrix (SAM) multiplier: The Type SAM multiplier considers portions of value-added to be both endogenous and exogenous to a study region. It is the sum of the direct, indirect, and induced effects divided by the direct effect. Type SAM multipliers are generally the preferred multipliers used in input-output analysis.

USDA Certified Biobased Product: A biobased product that meets the BioPreferred® Program's criteria to display the USDA Certified Biobased Product certification mark.

Value-Added: Composed of labor income, which includes employee compensation and sole proprietor (self-employed) income, other property type income (OPI), and taxes on production and imports, less subsidies (TOPI).

- OPI in IMPLAN includes corporate profits, capital consumption allowance, payments for rent, dividends, royalties, and interest income.
- TOPI primarily consist of sales and excise taxes paid by individuals to businesses through normal operations.
- A sector's value-added is its contribution to the study area's Gross Regional Product.

I. Introduction

A. The USDA BioPreferred® Program

The USDA BioPreferred Program is charged with transforming the marketplace for biobased products and creating jobs in rural America. It was established by the Farm Security and Rural Investment Act of 2002 (2002 Farm Bill) and strengthened by the Food, Conservation, and Energy Act of 2008 (2008 Farm Bill), and the Agriculture Act of 2014 (H.R. 2642 2014 Farm Bill). The Program's mandatory Federal purchasing initiative and voluntary USDA Certified Biobased Product label have quickly made it one of the most respected and trusted drivers in today's biobased marketplace. Visit *www.BioPreferred.gov* for more information.

Strategic Goals

The mission of the BioPreferred Program is to facilitate the development and expansion of markets for biobased products. To accomplish this mission, the Program has two broad strategic goals: (1) to advance the markets for biobased products and (2) to increase the purchase of biobased products government-wide. As of June 2016, there were approximately 20,000 products in the BioPreferred Program's database.

Mandatory Federal Purchasing

Private and public purchasers now look to the USDA BioPreferred Program to ensure that their purchases are biobased. Beginning in 2005 with its first designations of six product categories, the Program has now designated 97 product categories that include approximately 14,200 products that are in the mandatory Federal purchasing initiative. The Program offers purchasers of biobased products an independent assessment of the product's biobased content using a universal standard.[12] By providing a central product registry through its online catalog, accessible at *www.BioPreferred.gov,* the BioPreferred Program enables purchasers to find and compare products, such as cleaners, lubricants, and building materials, from all participating manufacturers. This encourages manufacturers to compete to provide products with higher biobased content.

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[12] American Society for Testing and Materials (ASTM) International, "ASTM D6866–16. Standard Test Methods for Determining the Biobased Content of Solid, Liquid, and Gaseous Samples Using Radiocarbon Analysis," ASTM International, accessed April 2015, *http://www.astm.org/Standards/D6866.htm*.



Voluntary Consumer Label

In February 2011, USDA introduced the BioPreferred Program's voluntary label to the consumer market. To date, more than 2,700 products have been authorized to display the USDA Certified Biobased Product label, and the number of applications continues to increase. With a web-based application process, the BioPreferred Program makes it simple for manufacturers to apply for the label and track their applications. The Program's partnership with ASTM International ensures quality control and consistent results.

Executive Order 13693, Planning for Federal Sustainability in the Next Decade

With the Federal Government spending about $450 billion annually on goods and services, there is an extraordinary opportunity to increase the sale and use of biobased products as required by Federal law. Executive Order 13693, "Planning for Federal Sustainability in the Next Decade"[13] increases Federal agencies' accountability for purchasing biobased products in each of the 97 designated product categories. Federal agencies are directed to establish annual targets for the number of contracts awarded that include biobased products in these categories. The dollar value of biobased products is required to be reported under those contracts. Federal agencies are also directed to ensure that contractors submit timely annual reports of their biobased purchases.

B. About this Report

To date, the availability of data quantifying the biobased products industry in the United States has been very limited. Consistent with the 2015 report, a three-pronged approach to gather information was taken for this report. A broad spectrum of representatives of government, industry, and trade associations involved in the biobased products industry were interviewed to understand the challenges and future growth potential for biobased products. Information was also collected from government agencies and published literature on biobased products. IMPLAN's economic databases were used to analyze and trace spending through the U.S. economy and measure the cumulative effects of that spending.[14]

IMPLAN is an economic impact modeling system that uses input-output analysis to quantify the economic activities of an industry in a given region. Impacts or contributions to the region are expressed in terms of dollars added to the economy and the number of jobs produced. IMPLAN models are ready-made using benchmark data from various government sources and non-survey techniques to create regional input-output tables. The time and money savings advantages provided by non-survey techniques must be balanced with the limitation of introducing potential error into local accounts. The inaccuracies of individual cells, though, do not necessarily compromise the overall holistic portrait a regional table can provide of an economy's interactions. Users do have the ability to override any presented data when locally collected information is deemed superior.

When examining the economic contributions of an industry, IMPLAN generates four types of indicators:

- Direct effects: effects of all sales (dollars or jobs) generated by a sector.
- Indirect effects: effects of all sales by the supply chain for the industry of interest.
- Induced effects: A change in dollars or jobs within the study region that represents the influence of the value chain employees' spending wages in other sectors to buy goods and services.
- Total effect: the sum of the direct plus spillover (indirect effect and induced effect).

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[13] The President, "Executive Order 13693—Planning for Federal Sustainability in the Next Decade", *Federal Register* web site, accessed April 2015, *https://www.federalregister.gov/articles/2015/03/25/2015-07016/planning-for-federal-sustainability-in-the-next-decade*.

[14] IMPLAN, "IMPLAN" Computer Software, IMPLAN Group LLC, *http://www.implan.com*.

A Type Social Accounting Matrix (SAM) multiplier was used in determining the overall monetary contribution or jobs supported by an industry sector. The Type SAM multiplier accounts for the direct, indirect, and induced effects on employment and value-added. *Appendix A* describes the IMPLAN modeling framework in detail.

The greatest limitation of the findings in this report relates to the percentages of biobased sectors within the larger economic sectors, such as biobased chemicals within the chemical industry. To provide conservative estimates of the biobased products sectors, we consistently utilized percentages at the lower end of the ranges we modeled. As discussed in the recommendations section, the authors of this report strongly emphasize the need to develop specific industrial sector (North American Industry Classification System/NAICS) codes so that the biobased products industry's activities can be tracked more effectively and accurately.

This report is intended to serve as a platform for greater understanding and tracking of the progress of the bioeconomy in the United States.

Section II provides an updated overview of the industry based on a search of the literature and interviews of industrial members, governmental agency personnel, members of non-governmental organizations (NGOs), and academics during 2015 and 2016. Also in Section II, there are case studies of eight companies that are engaged in different parts of the biobased products industry.

Section III begins with an overview of the state initiatives and policies that support the development of the biobased products industry at the state level. The most substantial new element of our report is the inclusion of in-depth analyses and economic modeling of all 50 states and the District of Columbia regarding their activities related to the biobased products industry. Section III provides this state-by-state value-added contributions and jobs associated with the biobased products industry. There are also two case studies of organizations active in the biobased products industry at the state level.

Environmental considerations related to the biobased products industry are discussed in Section IV, where an overview of the GHG reduction benefits derived from the utilization of biological feedstocks in lieu of non-renewable feedstocks is provided.

Section V of this report explores various recommendations put forward to expand the domestic biobased products industry.

Appendix A describes the economic modeling framework using IMPLAN. *Appendix B* lists the product categories used by the BioPreferred Program to classify biobased products as well as the number of products grouped in each category. *Appendix C* ranks states by the number of direct jobs contributed by the biobased products industry. *Appendix D* ranks states by the direct value-added contribution from the biobased products industry. *Appendix E* contains an alphabetical listing of the states with their direct jobs, direct value-added contribution, and number of companies participating in the BioPreferred Program.

II. Industry Overview

This section provides an overview of the biobased products industry from 2013 to 2014. There is first a focus on some of the key metrics used for measuring the biobased products industry—jobs and value-added contribution. This is followed by a discussion of some of the biggest factors influencing the biobased products industry. The focus then shifts to the future with a forecast of where the biobased products industry is headed. This section closes with case studies of eight companies at the forefront of the biobased products industry.

A. Overview of the Changes from 2013 to 2014

Figure 5 shows the contributions of the biobased products industry to employment and GDP in the United States in 2014. When compared to the 2013 results (presented in the previous study),[15] the direct value-added contribution of the biobased products industry grew by 0.2 percent. Year to year percent changes in direct value-added were measured using Producer Price Index for all commodities to account for inflation. The direct jobs contribution to the U.S. economy from the biobased products industry grew 0.5 percent from 2013 to 2014. *Figure 6* shows the growth in total jobs and total value-added to the biobased products industry from 2013 to 2014.

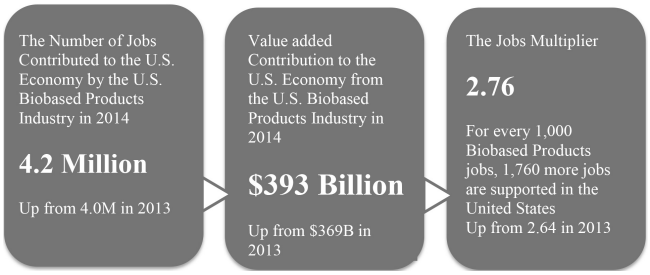
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[15] Golden, J.S., Handfield, R.B., Daystar, J., and McConnell, T.E., *An Economic Impact Analysis of the U.S. Biobased Products Industry: A Report to the Congress of the United States of America,* A Joint Publication of the Duke Center for Sustainability & Commerce and the Supply Chain Resource Cooperative at North Carolina State University, 2015.

Figure 5: Total Employment and Value-Added to the U.S. Economy by the Biobased Products Industry in 2014



Figure 6: Key Findings of the U.S. Biobased Products Industry in 2014



The biobased products industry experienced steady growth from 2013 to 2014. The growth in the direct value-added was smaller than the growth in the total value-added. This contributions-based total value-added growth is predicated on the strengthening of inter-industry linkages between the biobased products industry and other parts of the U.S. economy.

The steady growth of the biobased products industry is particularly impressive given that the price of oil dropped to roughly ½ its January 2014 price by December 2014. Many biobased products are in direct competition with petroleum-based products. One would expect that as the price of oil decreased and petroleum-based products became relatively cheaper, the biobased products industry would see a decrease in demand for the products that compete with petroleum-based products. The growth in the biobased products industry proves that the industry is robust and diverse enough to grow even in the face of a sharp decrease in oil prices. It is likely that the biobased products industry will experience even greater growth when the cycle of low oil prices turns around.

Interviews conducted for this report indicate that pricing pressure from petroleum-based products resulted in challenges to profitability, but, in spite of that, revenue and jobs increased and the biobased products industry expanded.

It is apparent that growth is occurring increasingly in specialty sectors (see the Eastman Chemical Company case study for an example). The methodology used to create this report involved scaling the outputs from IMPLAN using estimates of the biobased portion of each sector from the 2015 study. This limited the ability to measure the growth of specialty sectors. For example, the 2015 study estimated that 0.28 percent of all plastic bottles and packaging produced in the U.S. was made with biobased materials. The focus of this study was to provide a state-by-state analysis of the biobased products industry, so the authors kept the original 0.28 percent estimate for this report. It is very reasonable to assume however, that the biobased products share of the plastic bottles and packaging market increased from 2013 to 2014, so using the 0.28 percent estimate provides conservative growth estimates. It is inappropriate to draw conclusions from the biobased products industry growth rate without recognizing that the market share of biobased products may be increasing, which is not reflected in the growth rate presented in the report. Including the change in the percentage of biobased products' market share would provide additional granularity that would enable a more meaningful analysis and understanding of the shifts in specific sectors of the biobased products industry.

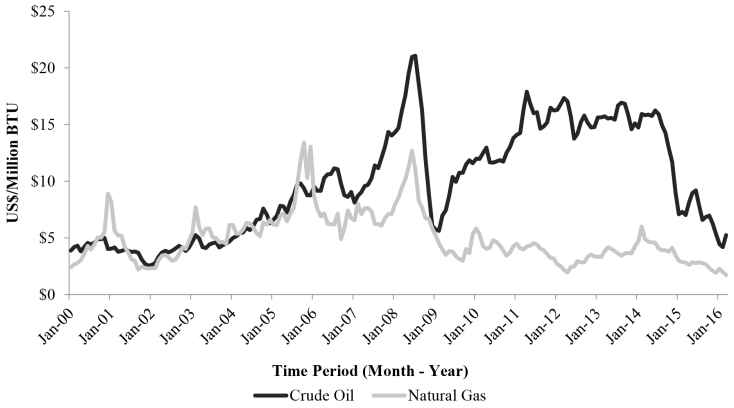
B. Factors Shaping the Biobased Products Industry

The key factors that influence the biobased products industry are identified below. These factors reflect a challenging environment for the biobased products industry, but they also include several encouraging signs that suggest the industry is poised to grow in the next decade.

1. Oil Prices

Figure 7 shows the volatility in oil and natural gas prices over the past 16 years. When the price of oil is high, we expect the demand to increase for biobased chemicals that can be used as replacements for petroleum because they become relatively cheaper. The highly cyclical nature of oil prices suggests that prices have reached a low and are beginning to increase again The price was in the $40 to $50 per barrel range in the summer of 2016. As oil prices increase, the barriers to biobased ethanol producers using first- and second-generation feedstocks will decrease. Currently, producers are struggling to survive with the existing profit margins and they are receiving very low payments for their products, regardless of whether the products are used as additives or as fuels. This has made the business environment very challenging.

Figure 7: Crude Oil and Natural Gas Price Volatility



U.S. Energy Information Administration (EIA) a, "Natural Gas: Henry Hub Natural Gas Spot Price", U.S. EIA, accessed 6/6/16, *https://www.eia.gov/dnav/ng/hist/rngwhhdm.htm*.

U.S. EIA b. "U.S. Crude Oil First Purchase Price", U.S. EIA, accessed 6/6/16, *https://www.eia.gov/dnav/pet/hist/LeafHandler.ashx?n=pet&s=f000000__3&f=m*.

Low margins tend to diminish investment in future business, so it is more important than ever to take a long-term view of this technology. Government incentives seeking to encourage investments in these technologies are critically important at this time because it is virtually certain that the outlook for these technologies will be more favorable from the long-term perspective.

As oil prices increase, large companies are increasingly focused on making more investments in the biobased chemicals sector and enhancing their production capacity in this sector. This is evident in the on-going mergers of Dow Chemical and DuPont to produce a division focused on biobased technologies, as well as other investment strategies in the works at BASF, Bayer AG, Eastman Chemical Company, and other leaders in the chemical industry.

We project that oil prices will not remain low for an extended period. The expected increases in oil prices will have a positive impact on the biobased products industry because often, the overall investments made in petrochemical plants and in biobased product development come from the same companies and investors. Even though many view the two industries as competitors, there are strong ties between them.

Investors, as well as the public, sometimes think that biobased products cost more than their petroleum-based counterparts do. Several third-party studies have been conducted, and the results support the contention that biobased products sequester carbon and have more favorable LCAs than non-biobased products. In fact, a 2015 Argonne National Laboratory report indicated that all biobased products they re-

search that have a fossil-based counterpart exhibited reduced cradle-to-grave GHG emissions reductions ranging from 27% to 86%.[16] Additionally, life cycle assessment models that incorporate biogenic carbon storage show even higher environmental performance.[17] Our interviews suggest that industry executives are beginning to understand how efficient the chemical transition from sugar to plastic is, and these processes should become cost competitive when they are scaled up. However, to achieve this, biobased product producers must collaborate with investors who have a long-term view and who will invest in efficient facilities and eventually find their functional fit in the marketplace.

2. Second-Generation Biobased Feedstocks

First-generation feedstocks are the easiest to utilize and the most common. They are derived from food components such as vegetable oil, sugars, grains, and animal fats. Second generation feedstocks are from non-food biomass: waste, woody or highly cellulosic sources, and agricultural byproducts, which are referred to as lignocellulosic biomass.

One of the key insights gained from our interviews indicated that the level of investment for second-generation biofuels and feedstocks has diminished significantly. Many of the company representatives with whom we spoke have been working to reduce the cost of a commercially viable plant, but the slow start of the second-generation technologies has resulted in less capital available for investments in equipment.

A second reason for the slow start of production using second-generation feedstocks is the global uncertainty regarding the projected demand for second-generation fuels. Few of the industries that use these fuels expect demand to increase enough to influence the adoption of biobased products. There is a need to develop a better understanding of the potential and real impacts of government policies on the biobased industry, especially on biobased chemicals. As the numbers of collaborations and co-development activities continue to increase, it is apparent that the stimuli for these activities are investments and the perceived success of second-generation technologies that produce biofuels. However, rather than investing in a new facility, it may be more practical to use existing systems for the production and collection of feedstocks rather than developing new systems. After years of effort, there are also indications that other feedstocks, such as algae, are becoming more practical for higher value chemicals.[18]

Our discussions with the manufacturers of several major brands suggest that they prefer using first-generation feedstocks because there is no efficient pathway and supply chain for cellulosics. Taking the woody stems of plants and trying to convert them into carbon sugar costs a lot more and takes more effort than using first-generation feedstocks. Sugar is the most efficient feedstock in terms of the acreage required to grow product biobased feedstocks, and, until this changes, there is uncertain growth in second-generation feedstocks.

3. New Applications for Enzymes

Enzymes are used in detergents in the textile sector to break down proteins, starches, and fatty stains in the finishing of fabrics. Enzymes also are used in several other industrial sectors, such as pulp and paper. An innovation in the enzymes sector is the use of symbiotic microorganisms to improve the yields of agricultural products.

Generally, the enzymes sector is undergoing stable, moderate growth driven by various businesses, including manufacturers of household care products and laundry detergents. Enzyme companies traditionally acquired very large accounts in end-use packaged goods, which allowed them to make investments in innovations with a specific application in mind. However, now enzymes are being used to improve biobased products and companies are seeking to collaborate with smaller, more nimble companies to drive new product innovation.

One of the differentiators of the enzyme sector is that, even with low revenue growth, returns are improved by optimizing production based on biological effi-

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[16] Dunn, J., Adom, F., Han, J., and Snyder, S. "A Life Cycle analysis of Bioproducts and Their Conventional Counterparts in GREET™", Argonne National Laboratory, last updated 9/30/15, *https://greet.es.anl.gov/publication-bioproducts-lca*.

[17] Pawelzik, P., Carus, M., Hotchkiss, J., Narayan, R., Selke, S., Wellisch, M., Weiss, M., and Patel, M.K. "Critical aspects in the life cycle assessment (LCA) of bio-based materials—Reviewing methodologies and deriving recommendations", *Resources, Conservation and Recycling* 73 (2013): 211–228.

[18] Savage, S., "Replacing Petro-chemicals With Bio-Based Alternatives. Can We Do It?", Forbes, last modified 4/23/16, *http://www.forbes.com/sites/stevensavage/2016/04/23/replacing-petro-chemicals-with-bio-based-alternatives-can-we-do-it/#6218f036378a*.

ciencies as well as capital investments, such as purchasing new fermenters. Enzyme companies can select organisms that have better biological efficiencies and can improve them over time through genetic engineering. The ability to improve without capital upgrades is an important characteristic of the enzyme sector, but may not provide advantages over chemical plant and petroleum refinery processes, which can also be improved with new catalysts or alterations to operational conditions, without major capital expenditures.

4. Federal Government Purchasing

One key to stimulating growth and participation in the biobased products industry is a reliable and robust purchasing commitment from the Federal Government. The USDA BioPreferred® Program, which includes procurement preferences within the Federal Government and voluntary labeling, provides a key way to inform the public. The Program has been remarkably successful, despite a funding setback when the 2008 Farm Bill expired. Interest in the Program from companies producing biobased products is growing and the number of products participating in the Program is increasing. The entire Federal Government should follow the example set by USDA and ensure that biobased products are given preference whenever possible in the procurement process.

There is a general lack of awareness from the public regarding biobased products, as is the case in some parts of the Federal Government outside USDA. Non-fuel biobased products are virtually unknown to the people along the supply chain, including wholesale and retail distributors, Federal Strategic Sourcing Initiative contract holders (sellers), Federal buyers, and most importantly, American consumers. Awareness in the private sector is of particular importance because purchasing biobased products is a matter of choice. If the Federal Government becomes a reliable customer, these products will be produced and distributed efficiently, demand will be met, and the industry will thrive. If manufacturers assume the risk of producing biobased products in response to the requirements of the Federal Government, the government, in turn, should support these products and help "jump start" this industry. One executive noted that the non-fuel biobased products industry is in the early stages of evolution, and as such, products in this industry are "custom made" for the Federal Government. That executive believes that, in light of this, these types of products should be supported by the government.

Our interviews also led us to believe that the Federal Government's ability to gain traction in the acquisition community relative to the purchase of biobased products and services is in a nascent stage. This is not due to any lack of effort on the part of the USDA; rather, it is due to a lack of widespread awareness within the General Services Administration and Federal agencies, including the Department of Defense (DOD) regarding the availability and use of biobased products.

One company executive remarked that, while the USDA Certified Biobased Product label is important, he/she believes it is not providing the level of market benefit and impact at the consumer level that it was believed would emerge. Furthermore, from this executive's perspective, the extent to which DOD mandated purchasing of biobased products is driving demand for these products within the traditional chemical industry is not clear.

Another executive emphasized that there is a lack of top-down Federal policy on using biobased products, which makes it difficult for industry leaders to commit to long-term investment, given that there is no indication that investment will be supported. According to this executive, there is a lot of support for biofuels, but there has not been an equal level of support for biobased materials until recently. For example, legislation has been written around biofuels, creating investment tax credits for biofuels, but not for biobased products. Thus, without investment from a big firm, there is no assurance that biobased products will be supported. This executive believes that a solid value proposition is essential to access the capital needed in order for the biobased industry to grow.

5. Biobased Product Innovation and the Need to Consider Supply Chain Impacts

To innovate in the biobased products industry, companies must consider the factors that affect supply chain integration and consider incentives to build in the United States. Petrochemical supply chains are highly integrated and the pathways for plastics are already reasonably well established and understood. However, the biobased chemicals supply chain is a combination of the chemical and biotechnology fields. The creation of an efficient supply chain requires investment and education, both within the industry and the consumer base. Many of these supply chain challenges are related to reaching a revenue break-even point that will support investments in the infrastructure that must be built for this emerging industry.

Education within the industry is essential to help biotechnology scientists understand the dynamics of the chemical industry. The people who run some of the new start-up biobased companies have no experience in the traditional petrochemical industry. Many rely on consultants and market studies to make their decisions and they do so without understanding the nature of the overall chemical sector supply chain. Some individuals point to the fact that there is a huge end market but they neglect to emphasize that 70 percent of that market is already captive to downstream conversion processes. When chemical companies decide which chemical to produce, they already have downstream applications in mind, ensure that the products they produce are cost effective, and can beat out competitors.

However, when a new product is introduced into the biobased chemicals sector, there is sometimes less of a clear downstream application in mind and sustainable options are not always immediately accepted into the supply chain. The decision to introduce a biobased chemical product is often made without understanding the macro-level issues in the chemical market, such as understanding the end users' technical specifications, volume requirements, environmental and regulatory requirements, and controlled-substance issues. This lack of understanding can cause otherwise highly innovative companies to fail.

To prevent the recurrence of this situation, companies producing biobased chemicals should hire people from the both the chemical and biotechnology fields. Comprehensive knowledge and consideration of the factors involved in operating a business in the chemical sector helps insure profitability.

6. Emerging Education

Education is emerging to address food *versus* fuel and GMO misconceptions. Many of the organizations interviewed for this report noted that the food *versus* fuel debate remains an inhibitor to market growth, based on consumers' misperceptions concerning this issue. In addition, many consumers will not buy products that are derived from GMOs. Many biobased products fall into this category, as it is difficult to trace whether the feedstocks used to make the biobased products come from GMO or non-GMO sources, and even in cases where the feedstocks can be traced, the distribution and processing and of the feedstocks frequently mixes GMO and non-GMO feedstocks.

The origin of this debate goes back to the 1990s, when some NGOs were fighting against the push of companies selling genetically modified crops into European markets. Some NGOs campaigned against GMOs, and as a result, many consumers became sensitized to genetically modified ingredients. Even when biobased companies purchase non-GMO corn to send to the mills that provide them with sugar, many of the mills are part of a larger biorefinery campus, which makes it impossible to segregate non-GMO feedstocks. Although many European brands accept the idea that offsets, such as wind power, used by these facilities are enough to cancel out the use of GMOs, many North American retailers and manufacturers do not feel that these offsets are enough to cancel-out the use of GMOs.

In fact, many large European brands point to the fact that sugarcane and corn are the most efficient plants to use for biobased products and second-generation feedstocks, such as wood stems, take a lot more effort and are much more costly to utilize. Second generation feedstocks have encountered limited growth in the market, but there are concerns that the release of GHGs globally may cancel the benefits of our domestic renewables policy. The link between the use of domestic crops for biobased products rather than as a food source has almost no correlation with the changes in the patterns of land use worldwide; nevertheless, it is a concern that some people express in the "food *versus* fuel" debate. In actuality, the United States is using fewer acres for corn than it did 10 years ago, but the public perception is that a higher percentage of corn being used to make ethanol means there is less land available for food production, which simply is not true.

7. Production Credits and Financing Incentives

Investments by large chemical companies are focused on biobased chemicals facilities, but production credits and financing incentives are needed to create U.S.-based facilities. After a somewhat rocky start following the expiration of funding from the 2008 Farm Bill, the BioPreferred Program had a good level of support in the 2014 Farm Bill. The administrative regulatory rules are well developed, particularly for the Biorefinery Assistance Program. Previously, this rule was strictly for advanced biofuels, whereas the current iteration expanded the program to include biobased products and renewable chemicals. This has led to the development of a framework for assessing the biobased products economy. However, this framework also requires that the public and private sectors be made aware of the fact that biobased products are not in stand-alone facilities; rather, they are part of a large supply chain that

begins with biorefineries. In the past, if a biorefinery produced anything other than biofuels, it did not qualify for farm bill benefits, but this has changed.

The Biomass Crop Assistance Program (BCAP) is an extremely important part of the farm bill. For members of the farming community to grow cellulosic, non-food crops, they need assurance that they can make money by doing so. Some biomass crops require a planting lead-time of 1 to 5 years, and this program now provides an assured market with mandatory funding.

Cellulosic ethanol was the initial focus of the BCAP, but the first wave of cellulosic technologies were disappointing. The second-generation cellulosic biofuels have a PTC that expires on December 31, 2016, but currently, they are receiving a tax credit. There is a possibility that a PTC linked to a flexible format based on the specific business plan would be very beneficial. This is currently in the works for the biofuels and renewable chemicals sectors. This tax credit is available to the oil and gas industry through Master Limited Partnerships (MLPs) and the credit is related to how business partners and business liabilities are defined. MLPs may be made available to renewable energy companies.

The Environmental Protection Agency (EPA) is developing general frameworks for carbon accounting. Currently, carbon accounting with low carbon fuel standards does not treat biobased carbon feedstocks as neutral; however, many in the biobased industry believe they should be. This long-term iterative framework could take years to resolve. Those in the industry hope that the framework will incorporate a credit for biobased feedstocks that are converted into biobased chemicals.

Many of the investments in the biobased products industry are being made by large chemical companies, and these companies are going through many mergers and acquisitions. These companies include Bayer/Monsanto, National Chemicals (China)/Syngenta, and Dow/DuPont. These mega-mergers will result in companies that will have many more resources to invest in biobased products and that have a longer capitalization timeline.

However, there are major challenges for emerging companies that are often small start-ups without significant capital. Without a partner to provide the required financial resources, it may be difficult to interest investors in a 5 year planning horizon. The length of time required to develop a product is a function of the available infrastructure and the fact that the biobased products industry and the biofuels industry are closely connected. Currently, there is a lack of infrastructure for the value chain that extends from biofuels to biobased products, and biobased products do not have a public policy driving the front end of the value chain. This is an enormous roadblock to growth in the biobased economy.

Another legislative challenge has to do with EPA's regulations that are in place to standardize fuel. The regulations were intended to assure people that their vehicles would run properly when they buy fuel. The central focus of EPA's regulations in this area has been to standardize fuels with the intent of reducing emissions. However, EPA's standardization effort is focused primarily on gas derived from petrochemical sources rather than renewable sources. The assumption is that any biobased fuels that are added to fossil fuels must comply with the standards for fossil fuels. This has created a challenge for biobased fuels, making it more difficult to use them in flex-fuel vehicles, which are designed to operate primarily with 15 percent ethanol in the fuel mixture, imposing a cap on the growth of the market. The current challenge is how to go about getting approval for a higher level of renewable fuels for all vehicles. Various companies, including POET, are working on these problems with the automotive industry. The next-generation fuel for vehicles must meet these regulatory constraints because, currently, they are impeding the growth of the renewables market.

The biopolymer sector has experienced tremendous technology development over the last decade, with the United States leading these advancements. However, for production capacity, the sector is still in its nascent stage. The opportunity and the danger for the United States is whether the construction of biopolymer plants over the next 5 to 10 years and the full range of their associated facilities and jobs will predominantly be located in the United States or elsewhere, where feedstocks and the cost of production can be cheaper. For example, companies identified as the "hot leaders" in the biobased products industry, such as Verdezyne, are building facilities in Malaysia, because of the vision and financial support of the country's government. It is clear that certain governments and emerging economies are offering incentives to convince companies to invest there in an effort to ensure their country's long-term, sustainable growth. Southeast Asia, Europe, and Brazil are establishing regional hubs of industrial biobased products. Good examples of companies facing this issue are Verdezyne and Green Biologics, both of which have pursued a dual approach of sourcing outside and inside the United States based on local government support.

The businesses that will survive most easily in the biobased products industry are those that emerge from creatively designed collaborations. This means carefully selecting a pathway, carefully assessing and minimizing the risks associated with that pathway, and appointing leaders who are creative, smart, and spend money wisely, as they go forward. This is the basic path forward for this industry, all the way from feedstock suppliers and treatment technologies, to downstream building block technologies and sustainable materials that are converted into higher value chemicals. Partners along the end-to-end supply chain will need to work together to design these supply chains, with a given end product in mind, and the total end-to-end cost to serve the customer must be used to drive cost targets for those enterprises along the way. This may involve larger companies collaborating with smaller companies that have new and innovative ideas.

One example of successful use of PTCs is in Iowa. Iowa also has identified biobased products as a targeted growth industry for the state and has advocated for a biobased production credit to be established.[19]

Interviews suggest that a renewable chemical PTC would be fundamental to the ultimate location decision in or outside Iowa for new projects. Iowa has invested more in biobased manufacturing capital assets than any other state. The state invested $61 million in the ethanol industry. This money will be returned to the state though taxes and increased economic activity. The payback from income taxes alone would take just 2 years. The payback period is only 1 year if we assume that eight percent of the economic activity is returned in taxes.[20]

The success of the biobased products industry depends on its ability to function at a large enough scale to be competitive with the petrochemical industry. Being competitive does not require that biobased products industry be the size of the petrochemical industry, but it cannot simply be a series of small plants scattered around a landscape. Moreover, many of the chemicals produced through fermentation that go into biobased products happen to be competing in commodity markets. Producers should think clearly about focusing on specialty markets, with products that have unique performance characteristics, based on conversion of biobased commodity chemicals into specialized chemicals through chemical synthesis. Specialty biobased chemicals can be produced in this manner at a total cost of production that is lower than the variable cost of production of petrochemically derived chemicals, which allows them to grow and compete.

An executive interviewed argued that producers of biobased products must adapt to the market they are in, and to do this, they must understand their product on every level. This executive continued, adding that it is important to understand the performance of the molecules that make up a product and how they blend with other ingredients; it is important to be able to target the right applications through innovation and understand the commercial impacts of a product. According to this executive, having a deep understanding of their products allows biobased producers to be more adaptable than big commodity players.

Our interviews regarding PTCs also lead us to believe that short-term incentives are sorely needed. Several companies with U.S.-developed biobased technologies are looking for locations to build new facilities. Some countries provide incentives to build these types of facilities, but incentives for them are absent in the United States. Given the intense international competition at this historic point, the companies we interviewed are exploring all global options for expansion projects, which includes taking into account political leadership and market push and pull policies.

Investment in the biobased products industry remains strong. However, continued growth can be bolstered by the development of a strong end user market as well as growth in production credits to help launch the industry.

C. Biobased Products Industry Growth Forecast

A recent forecast stated the following: "One of the bright spots in American manufacturing is the petrochemical industry, which produces chemicals used to make everything from car tires to fertilizer to fabrics. According to the American Chemistry Council (ACC), chemical companies have committed $153 billion in new investment in production in the United States over the next decade."[21] Given the growth in the petrochemical investment sector as a whole, it is also likely that some growth will

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[19] Willett, B. and Hrdlicka, J., "The Case for a Renewable Biochemical Production Tax Credit", Iowa Biotechnology Association, 2016.

[20] Cultivation Corridor, "Biobased Chemicals: The Iowa Opportunity," Cultivation Corridor, last updated 1/14/16, *http://www.cultivationcorridor.org/assets/pdf/Iowa-Biobased-Chemicals-Full-Report.pdf*.

[21] Hoium, T., "4 Reasons Why Falling Oil Prices Are Worse Than You Think", *The Motley Fool,* last modified 12/5/15, *http://www.fool.com/investing/general/2015/12/05/4-reasons-why-falling-oil-prices-are-worse-than-yo.aspx*.

be seen in the biobased chemical sector investment as part of overall increased investment in the chemicals sector. Indeed, interviews we conducted with university centers that focus on piloting new biobased chemical technologies indicated that the university centers are seeing strong demand for their services, an indicator of the increasing number of emergent technologies, especially in the pilot stage. (See the MBI case study in section III.) The ACC estimates that growth in the chemicals sector will create more than 800,000 permanent jobs, paying an average salary of over $69,400 and generating more than $322 billion in annual economic output.

However, if the price of oil stays low for an extended period, projects may be delayed or cancelled, which would result in fewer manufacturing jobs being supported in the U.S. In addition, the number of gas field jobs would decrease, because less natural gas is needed for domestic manufacturing.

Despite the current low price of oil, we project that the biobased products industry in the United States will exhibit steady growth over the next 5 years. The rationale for this projection is the following trends evident in our interviews:

- The major focus of the leaders in the biobased products industry is on innovation and differentiation of products.
- Oil prices are increasing, which will make biobased products more competitive.
- There will continue to be growth in enzyme-related industries.
- Federal purchasing policies are becoming more focused on biobased products.
- A wave of emerging innovations is targeting the biobased products industry.
- Investments by large chemical companies are focused on biobased chemical facilities.

We also identified several steps that must be taken to overcome factors that challenge the growth of the biobased products industry:

- Production tax credits (PTCs) must be extended beyond biofuels to include biobased products.
- Further legislation is required to support the biobased products industry.
- Financial incentives are needed to promote the construction and operation of more U.S.-based facilities.
- States need to provide resources to support the growth of the biobased products industry, which is very important because currently there are insufficient pilot plants to foster innovation.
- Further efforts to integrate the biobased products industry's supply chain are needed.
- Increased education is needed to help address the "food *versus* fuel" myth and the "no-genetically modified organisms (GMOs)" faction, leading to increased understanding of and growth in the biobased products industry.

C1. Case Study: NatureWorks



Ingeo-based products by Natur-tec.

NatureWorks began as a joint venture between Cargill (a large private agricultural products company) and Dow (a chemical, plastic, and agricultural products company). Cargill had done a lot of development work on high-end products using biological feedstocks and expressed interest in forming a company focused on creating a carbohydrate products economy. The Cargill-Dow joint venture included a 154,000 ton facility in Nebraska to transform carbon sugars (cornstarch) into lactic acid, which is a key building block for biobased products. The lactic acid produced on an industrial scale was used as a monomer to produce several different polymers, including 20 different grades of plastic.

One product, polylactide (Ingeo™), is used primarily by the packaging markets. The product has properties similar to PET and is a clear plastic that is used in drinking bottles, plates and cups, flexible film packaging, computer housings, baby wipes, apparel, covers for cellphones, and many other products. Ingeo produces 75

percent less GHGs and uses 50 percent less non-renewable energy than traditional plastics, such as PET and polystyrene (PS).

Identifying the right applications for Ingeo was a challenge. NatureWorks' Director of Public Affairs, Steve Davies, explained that NatureWorks understands that there is not a green premium for biobased products, so a product's performance must be superior to what is already on the market. Mr. Davies went on to say that after about 10 years of studying the properties of Ingeo, NatureWorks now knows where the material works well and where it does not.

For example, NatureWorks determined not to use Ingeo to make plastic bottles because the material is technically "breathable", and the water it contains can evaporate. However, it is excellent for packaging leafy greens, as Ingeo allows a longer shelf life for the product.

Mr. Davies also emphasized that understanding the fundamentals and cost of what one is selling is important. There is a wide spectrum of biobased plastics, from hard (PET) to soft (polyethylene for trash bags), and everything in between. It is also important to look at the ratio of the pounds of sugar required to produce a pound of plastic. For PLA, 1.25 pounds of sugar produces 1 pound of plastic. Biobased PET requires a ratio of 3 pounds of sugar to 1 pound of plastic. Mr. Davies explained that there is constantly a need to make tradeoffs and consider the cost-effectiveness and characteristics of one plastic *versus* another, as PLA is better for some applications, while PET is better for others. Mr. Davies argued that materials must be cost-effective, and this point is often lost in discussion.

NatureWorks works with hundreds of partners that produce biobased products. They are also expanding, and a petrochemical company based in Thailand has invested as an equity partner, due to their large export of cane sugar. There are plans to build a new biorefining facility in Thailand near the source of feedstocks, as well as plans to expand the Nebraska facility due to the increasing demand.

There is significant interest in certain product sectors, including replacing PET clamshell packaging, using Ingeo for packaging yogurt at Danone, and in other food-packaging areas. Ingeo is cost neutral, but it performs better and has a smaller carbon footprint, and this has become a winning combination for many manufacturers.

Another important element of food packaging is where the packaging ends up. Many people discard packaging and do not consider what happens to it after that. What if all of the food packaging could be composted? The "killer value proposition" is to render the entire value stream compostable by using PLA-based food packaging. Packaging for food products is one of the biggest opportunities on the horizon for NatureWorks, but there are enormous barriers. The conventional plastics industry may never be replaced, and other than milk jugs and water bottles, most plastics are not recycled.

Mr. Davies noted the importance of the Three Ps: **P**erforming the right function at the right **p**rice and meeting the customer's **p**reference, in that order. If a product is performing better than the alternative and it is priced competitively, then it follows that consumers will prefer it.

C2. Case Study: BASF



Source: BASF. Three BASF scientists in laboratory in Tarrytown, New York.

Biotechnology is a key component of the German chemical company BASF. It has the potential to manufacture products more efficiently than conventional chemical processes and it can produce new products inaccessible using conventional synthesis approaches. BASF uses biobased-based methods of fermentation and biocatalysis to manufacture various products, such as chiral compounds, enzymes, and specialty ingredients for the personal care industry.

In February 2012, BASF opened a new biotechnology and microbiology research center in Tarrytown, New York. In the new laboratory, scientists from a number of disciplines, including material scientists, biologists, polymer scientists, molecular biologists, and chemists, are working together to develop more efficient biotechnological production processes.

These researchers are also working to develop new antimicrobial products for medical technology, hygiene, and health care. The use of metabolic engineering, targeted metabolism modification, can enhance the efficiency of the microorganisms that are used in these production processes.

In 2013, BASF acquired Verenium, an enzyme company based in San Diego, CA. Using proprietary and patented genomic technologies, Verenium extracts microbial DNA directly from collected samples to avoid growing microbes in a laboratory. Then, Verenium mines its collection of microbial genes, which number in the billions, using high-throughput screening technologies designed to identify unique enzymes as candidate products. In making these investments, BASF demonstrated its unmitigated belief in the strength of the biobased products industry. Now, BASF is working to integrate the Verenium technology into its business portfolio.

For example, BASF produces a biobased product known as polytetrahydrofuran 1000 (PolyTHF), which is used in outerwear, sportswear, and swimsuits. PolyTHF mainly is used as a chemical building block for thermoplastic polyurethane, which is used to make parts of ski boots and skates, shoe soles, and instrument panel 'skin' for automotive applications. It also is used to make hoses, films, and sheathing for cables and as a component of thermoplastic polyether esters and polyether amides. Other applications include cast elastomers, which are used, for example, in the production of wheels for skateboards and inline skates.

PolyTHF is derived from 1,4-butanediol (BDO), which BASF produces under license from Genomatica.[22] Although it is biobased, it is a bit more expensive than petroleum-based BDO. Cost of materials is a key issue that BASF always must consider. It is very important to evaluate customers' and brand owners' opinions of biobased products *versus* conventional products, particularly when the biobased products may be marginally less cost effective.

BASF is committed to biobased feedstocks, and to this end, in 2015, BASF expanded the scope of its license agreement with Genomatica. Using Genomatica's patented process, BASF produces BDO from renewable feedstocks in a large production facility. Under the expanded license agreement, BASF can produce up to 75,000 tons of renewable BDO per year, while Genomatica will continue to advance its patented process technology. Today, BASF produces more BDO than any other company, and it has the capability of producing this product in multiple locations. BDO is a versatile monomer, which can be used in the manufacture of many other chemicals. As such, BASF views BDO as an increasingly important product in its portfolio.[23]

BASF recognizes that a core unknown underlying the future of the biobased products industry is customers' perceptions. BASF's goal is to produce products to sell to customers in the most economical and sustainable way possible. The Company has invested in extended LCAs for many of its technologies, which involves exploring the various technological pathways to produce any given product. For some products, there are clearly huge advantages for chemical processes over fermentation. New chemical and fermentation processes are being developed, and these studies will continue.

Markus Pompejus, Vice President of Research, noted that biotechnology is the only pathway for certain products, especially those that involve enzymes. BASF invests in research to examine internal pathways for the production of chemicals in integrated production facilities rather than in isolated facilities, which allows it to produce at a more efficient scale in its major production sites in Europe and China.

BASF does not let the low price of oil detract the company from its long-term view. Mr. Pompejus pointed out that technology in isolation is not a strategy. Ac-

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[22] BASF, "BASF now offers bio-based PolyTHF", *BASF,* last updated 3/5/15, *https://www.basf.com/en/company/news-and-media/news-releases/2015/03/p-15-163.html*.

[23] BASF, "BASF and Genomatica expand license agreement for 1,4-butanediol (BDO) from renewable feedstock", *BASF,* last updated 9/24/15, *https://www.basf.com/eg/en/company/news-and-media/news-releases/2015/09/p-15-347.html*.

cording to Mr. Pompejus, a strategy involves questions concerning the best ways to produce products, *i.e.,* ways that are economically and environmentally optimal, and this involves evaluating barriers and tradeoffs. One of the most important issues in this industry is the lack of ability to predict the decisions that the government will make. Legislation that varies depending on who is in Congress can cause disruptions in long-term strategies. Predictability in legislation is a factor that supports the long-term approach to investments in biobased technology.

BASF is committed to collaborating with universities and small companies to conduct research. Mr. Pompejus emphasized that biobased is not about taking a wait-and-see attitude. He went on to explain that BASF has made a strong R&D commitment to industrial biotech with the full understanding that there is not a premium just because a product is sustainable and that these materials must be produced at the same cost level as non-biobased materials, or, alternatively, provide an extra form of value. Mr. Pompejus observed that there is no chemical that is a "pure" drop-in, as there are always performance differences. A monomer produced by fermentation is not a drop-in for a petroleum-derived material, as there always will be downstream processes that must adapt when the switch is made from a chemical raw material to a fermented chemical. The downstream impacts must always be considered. This is true even for a 99 percent pure chemical produced in two different ways. The minor side effects on the downstream process may cause it to perform in a somewhat different way.

Mr. Pompejus added that sometimes the process has to be changed, and familiarity with the whole supply chain allows BASF to do that internally.

C3. Case Study: Eastman Chemical Company



Using cellulose from wood pulp or cotton linters, Eastman Kodak developed cellulose nitrate, which was used in the film that launched the movie entertainment industry. An unfortunate property of cellulose nitrate film was that the heat from the projector's lamp often ignited it. This led to the development of cellulose acetate film, also known as "safety film", which became the industry standard by 1948. Because cellulose acetate film degraded over time, polyester film began to replace it in 1970. Polyesters, which are composed of mixed esters, also are used for filter media and coatings, with the latter producing a very clear, mirror-like image. The Eastman Kodak Company was the major producer of film for cameras prior to the digital camera era, when digital cameras virtually eliminated the Kodak film brand. The management of the Company understands how technology and the competitive ecosystem can change an entire industry in a very short period. In 1994, Eastman Chemical split off from the original Eastman Kodak Company.

Today, Eastman Chemical is one of the largest producers of cellulose acetate, which is used in a wide variety of applications, including pharmaceuticals, adhesives, automotive products, coatings, polishes, and food packaging.

Dr. Stewart Witzeman, an organic chemist who has been at Eastman for more than 30 years, noted that, to be successful, biotechnology requires a focus on technochemical analyses and on the ability to involve the multiple factors that impact innovation decisions. Eastman has made a specific strategic decision to focus on specialty materials rather than commodities. To support this decision, the Company established a group to develop innovation models that can balance the price of a barrel of oil *versus* corn and gas prices, capital costs, and feedstock prices. The models also consider the total lifecycle of feedstocks and products in relation to customers' needs.

Because Eastman is the only producer of mixed cellulose esters, the team focuses on how additional investments can drive the right market outcomes. For example, Eastman shut down its butanol facility when it became clear that the Company could not compete with the production of this chemical through petrochemical pathways. Strategically, it also was clear that adding butanol capacity was not consistent with the Company's direction in focusing on specialty materials.

The Company continues to drive innovation related to biobased products around a line of products focused on enzymatic analysis, some of which are biobased. For example, its GEM™ technology is focusing on the ingredients of sustainably manufactured cosmetic products. The Company's web site states "Sustainability . . . is embedded in everything we do. It's about balance."[24] Guided by the U.S. EPA's "Twelve Principles of Green Chemistry", GEM™ technology uses enzymes and closely controlled manufacturing conditions to eliminate high temperatures, strong acids, and unwanted byproducts, while using less energy than conventional manufacturing processes.[25] Eastman's adhesives also include many natural products, such as its rosin resins, derived from the sap in tree stumps.

In all of these cases, biobased feedstocks contribute to the improved performance of these products. Dr. Witzeman emphasized that Eastman focuses on superior performance at a competitive price and pointed to chemicals, such as PLA, that have had some performance problems over the years. He noted that many start-ups are able to identify a biobased material, but struggle with articulating the market application. Dr. Witzeman went on to say that having an innovation without a clear value proposition from the outset is a recipe for failure.

To overcome this problem, Dr. Witzeman asserted that companies should not focus on innovations that are an adjacency or a minor adjustment to a current product or material. Rather, to be truly groundbreaking, companies must begin with market analysis at a macro level: understand the competition and the pain points that exist in the market. They can then begin to determine what is required to solve those pain points and explore that with customers. Based on customer feedback, companies can then decide if they have something that is worth pursuing.

C4. Case Study: DuPont™



DuPont has a long history of research and innovation in the biobased products industry and is focusing on the innovative manufacturing of products made from biobased feedstocks. Its most successful product to date, Sorona®, was developed as a polymer and is currently used extensively in the carpet and apparel sectors. The Company also has invested in research on emerging technologies using plant-based feedstocks to produce new products.

A Global Marketing Manager of Biomaterials from DuPont commented on some of the leading challenges facing the biobased products industry: *From my perspective, one of the things that the commercial biobased industry as a whole is challenged with is the idea of getting consumers to recognize and pay for the value that sustainability offers them and society overall. The default for most consumers is to think short-term and buy the product that is the least expensive to do the job without regard to its longer-term impact on the environment. One of the ideas I believe we have to embrace is that sustainability and our need to make conscious consumer choices about living sustainably will become an increasingly bigger part of our daily lives.*

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[24] Eastman, "Sustainability: Embedded in everything we do", *Eastman,* accessed May 2016, *http://www.eastman.com/Company/About_Eastman/Our_Stories/Pages/Embedding_Sustainability.aspx*.

[25] Eastman, "Eastman GEMTM technology", *Eastman,* accessed May 2016, *http://www.eastman.com/Company/GreenProcess/Pages/Overview.aspx?utm_source=GEM%20Technology%20landing%20page&utm_medium=GEM%20Technology%20landing%20page&utm_campaign=GEM%20Technology%20landing%20page*.

But to economically compete in a sustainable world, we need to have higher performing products, allowing companies to extract value for that differentiated performance while using renewably-sourced feedstocks to achieve these product attributes. We want to do the right thing, but a higher level of awareness and value recognition is needed in the consumer base.

Another challenge to the biobased products industry concerns starch-based *versus* plant-based feedstocks. Plant-based feedstocks, such as agricultural waste or purposefully grown crops, can be used for biobased products, but because the supply chain and technologies for these feedstocks are still not well developed, the costs are still excessive. Therefore, the industry must continue to build on the success of the grain-based and starch-based agricultural inputs that already provide significant advantages in terms of GHG reductions, economic benefits to rural economies, and reducing our reliance on fossil fuels.

DuPont aims to create sustainable solutions for the masses, not just for those who can afford to pay a green premium. They believe that biobased product technology should be designed to benefit the greatest number of people. DuPont has a strong research program that is focused on developing other value-added polymers based on biotechnology and renewable feedstocks.

According to our interview, this means extending the amount of renewable feedstocks that can be produced sustainably by using biomass consisting of the residual, non-food parts of current food crops, as well as other non-food crops. These types of feedstocks also include industrial waste like woodchips and the skins and pulp from fruit pressing.[26] This, in turn, will require greater collaboration between entities to co-develop new technologies that are the products of two different complementary capabilities.

A good example is the case of Sorona® (produced from Bio-PDO™ manufactured by DuPont Tate & Lyle). This product is sold primarily for fiber applications, including apparel, residential carpets and rugs, commercial carpets, and automotive carpets, mats, and interiors.[27] The research into Bio-PDO™ began with the realization by Tim Gierke, Research Manager at DuPont Central Research & Development, that 1,3-propanediol (PDO) has three carbons and that three-carbon and six-carbon forms are prolific in nature. A team of DuPont scientists and engineers collaborated with polymer experts to discuss the possibility of producing PDO using biological processes. This led to a research project that lasted over a decade and that eventually resulted in a biological process that could produce the quantities of PDO required for a commercially viable product.

Next, DuPont scientists partnered with scientists from Genencor, an industrial biotech company that later was acquired by DuPont, to develop an organism that could use the glucose from cornstarch to produce PDO. They also developed a proprietary fermentation process that included meticulous cleaning and distillation to produce a pure form of Bio-PDO™.

Then, a commercial scale, $100 million dollar Bio-PDO™ plant was built in Loudon, TN, as a joint venture between DuPont and Tate & Lyle. Today, railcars full of corn arrive at the Tate & Lyle wet mill where glucose is produced from cornstarch and pumped from the wet mill to the Bio-PDO™ production facility, where microorganisms are added to the glucose. Five nine-story-tall fermenters are filled with glucose that contains the organisms. The organisms excrete Bio-PDO™, forming a broth that is separated and distilled, producing 99.97 percent pure Bio-PDO™. The remaining 0.03 percent is primarily water. The Bio-PDO™ is loaded into rail cars and shipped to customers who use it to make a variety of products.

One of these products is Sorona®. Carpeting made with Sorona® offers durability that is equal to or better than nylon carpeting, and it provides crush resistance and resilience. In addition, carpeting made with Sorona® is naturally permanently stain-resistant: the resistance is built into the fibers and does not diminish with time or use as occurs with topical treatments. Apparel made with Sorona® has exceptional softness, strength, quick drying time, and stretch and recovery characteristics. As a result, the sales of this product have increased in the various markets every year since its introduction.

There are several important points that should be emphasized evident in this case study:

- The timeline for product development was about 10 years, which is longer than most. This is clearly indicative of the need for longer-term planning horizons,

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[26] Inderwildi, O.R. and King, D.A., "*Quo vadis* biofuels?", *Energy & Environmental Science* 2, no. 4, (2009): 343–346, doi: 10.1039/B822951C.

[27] DuPont, "The Manufacturing Process of Bio-PDO™ and Bio-Based Fibers", *DuPont,* accessed 6/2/16, *http://www.dupont.com/products-and-services/fabrics-fibers-nonwovens/fibers/brands/dupont-sorona/articles/how-dupont-sorona-is-made.html*.

because biotechnology research often requires multiple iterations to produce compounds with the required characteristics, and then, the required process technology must be developed.

- DuPont found it important to envision and consider the end-to-end supply chain for a new product to be commercialized. Tate & Lyle had a technology that was suitable for the development of Bio-PDO™ that DuPont could use. If it had been necessary for DuPont to initiate the development of a new technology for this purpose, the project would have had a lower probability of success.
- From commercial and marketing perspectives, the performance characteristics of Sorona® carpet and apparel are unique, in that the product outperforms PET or nylon products based on several attributes in these categories. Sorona® continues to gain market share in competition with these products, and it has sustained its performance advantages over them.

These issues form an important set of "lessons learned" that researchers and manufacturers of biobased products should consider. Some of the key questions for executives to consider include the following:

1. From a market standpoint, does the technology serve a specific market need? What volume can be produced? Specialty products are certainly attractive since niche markets tend to have higher margins. However, companies should also consider the broader market and ask (1) whether their technology can address a larger, broader market and (2) what it will take that larger market to use their technology.
2. What complications will be involved in setting up the supply chain for the technology? What does the capital footprint look like for this technology? Is there a drop-in solution that exists within a current asset, and, if so, can a partnership or joint venture be established to utilize this capacity? This can make the difference between a $20 to $30 million capital investment to expand a facility and the $350 million typically required to build a new plant.
3. If the capital assets result in an acquisition, is the acquisition complementary to what the company already has in its portfolio. If so, would it help diversify the company and result in improving what the company already has?
4. Is the sustainable product using truly renewable materials? Often, this issue is overlooked, and it requires an understanding of many complicated issues. For instance, will it fall into the perceived "food *versus* fuel" issue, is the site itself sustainable, and how does it participate in the renewable materials cycle?

These issues require significant strategic insight and discussion during product development and scientific research targeting processes. A holistic approach is required, and all factors, such as markets, supply chains, and sustainability requirements, that come into play as the scenario for a new biomaterial evolve must be considered.

Recently, DuPont announced an intended merger with Dow with a subsequent plan to split into three separate companies. This activity will result in a large "specialty" company that has a significant interest in the biobased products industry. Future technology platforms include emerging biomaterials for various markets, such as paper and personal care, and fibers to replace existing products with biobased products.

C5. Case Study: The Coca-Cola Company



When Coca-Cola set out be more sustainable, it recognized from the outset that the entire end-to-end lifecycle of a beverage bottle had to be considered. Biobased feedstocks are used to make the PlantBottle™ packaging, and on the back end, when the consumer is through with it, the bottle can be recycled or repurposed. This can help keep the CO_2 the biobased feedstocks removed from the atmosphere sequestered inside these products, rather than released back into the atmosphere.

Coca-Cola's PlantBottle™ is made from 30 percent plant-based materials and 70 percent traditional, petroleum-based materials. Because the end product is still PET plastic, the PlantBottle™ package delivers the same performance as PET plastic bottles made from fossil fuels (*e.g.,* shelf life, recyclability, weight, chemical composition, appearance), but it reduces potential CO_2 emissions. PET plastic is made up of two components: MEG (mono-ethylene glycol), which makes up 30 percent of the PET by weight and is made from plants, and PTA (purified terephthalic acid), which makes up the other 70 percent.

Coca-Cola is exploring the development of furanic building blocks from plant-based sugars, under the name YXY. These furanics building blocks are the basis of next-generation, plant-based plastics and chemicals. Avantium, the company producing these furanic compounds, is focusing its efforts on using the YXY technology as a catalytic process to convert sugars to 2,5-furandicarboxylic acid (FDCA), a biobased alternative to terephthalic acid (TA). FDCA can be used to produce the polyester polyethylene-furanoate (PEF), a 100 percent biobased material that could replace PET in large markets, such as bottles, fibers, and film. Coca-Cola is working with Avantium, Danone, Gevo, and Virent to support the scale-up of Avantium's plant-based PEF. Virent's chemical allows the remaining 70 percent of the bottle to be plant-based.

PlantBottle™ packaging is available to consumers in more than 40 countries and, to date, the Company has produced over 40 billion bottles. This is a large, critical mass of PET that is used in a number of leading brands, such as Simply Orange, Minute Maid, Gold Peak Tea, Dasani, and SmartWater. Biobased PET is predominantly used for the packaging of carbonated soft drinks, which accounted for more than 75 percent of the market in 2013. The increasing consumption of beverages in the emerging markets of Brazil, Russia, India, China, and South America are expected to drive the growth of the biobased PET market. Coca-Cola has committed to promoting the use of biobased PET in packaging, which is expected to have a major impact on market growth in the near future.[28] The feedstock for PlantBottle™ packaging is sugarcane from Brazil, and it is moving toward cost parity with PET derived from crude oil. Coca-Cola sees a pathway for PlantBottle™ technology to emerge as the dominant PET option in the end, especially since oil prices are expected to increase.

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[28] Grand View Research, "Bio-Based Polyethylene Terephthalate (PET) Market By Application (Packaging (Bottles), Technical, Consumer Goods), And Segment Forecasts To 2020 Is Expected To Reach 5,800 kilo tons By 2020", last updated 12/1/14, *https://globenewswire.com/news-release/2014/12/01/687467/10110349/en/Bio-Based-Polyethylene-Terephthalate-PET-Market-By-Application-Packaging-Bottles-Technical-Consumer-Goods-And-Segment-Forecasts-To-2020-Is-Expected-To-Reach-5-800-kilo-tons-By-2020.html*.

Coca-Cola's has an on-going effort to take the 70 percent non-renewably-sourced portion of the bottle, and move it towards a 100 percent biobased resin. The Company is slowly making headway towards this goal.

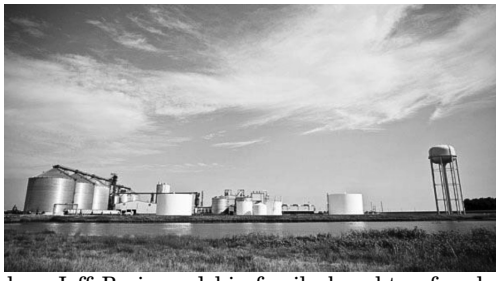
There are three driving forces behind Coca-Cola's decision to create and use the 100 percent PlantBottle™ package.

1. **Sustainability and carbon capture.** The response from consumers was overwhelmingly positive concerning PlantBottle™ packaging. The Company has also made significant strides in better communicating the technology used to create the PlantBottle™ to its consumers, distributors, and partners.
2. **Cost and line-of-sight around competitive elements.** This came about as the cane sugar feedstocks in Brazil proved to be cost-competitive. Coca-Cola also needed to prove that the sugarcane was being grown on arable land, was not competing for land or water with other crops, and that the byproducts from sugar extraction were not being wasted.
3. **Top-line growth and brand differentiation.** PlantBottle™ packaging has become a core element differentiating Coca-Cola beverages, especially with consumers' growing focus on sustainability. Coca-Cola has collaborated with the World Wildlife Fund to form a consortium that includes brands, such as Nestle, Danone, Unilever, Ford, P&G, Nike, and others, to set guidelines and industry standards that prevent others from jumping in with green washing claims or creating confusion.

Michael Knutzen, Global Program Director for PlantBottle™, indicated that Coca-Cola is the largest biobased PET buyer. According to Mr. Knutzen, Coca-Cola views itself as a catalyst for the industry to increase use of renewable materials, and it is working with its partners to do so. Mr. Knutzen went on to say that Coca-Cola is sharing their technology with other companies so they can all benefit from the PET supply chain that Coca-Cola is creating.

Mr. Knutzen remarked that one of the benefits Coca-Cola would like to see is for the polymer sector to enjoy the same benefits that the Renewable Fuel Standard (RFS) provides to biofuels. It is easier to incorporate ethanol into biofuels than to make plastic out of ethanol. Furthermore, fuel companies tend to have limited partnerships that provide tax benefits, while buyers of renewable plastics are not eligible for the same benefits.

C6. Case Study: POET



POET stared when Jeff Broin and his family bought a foreclosed ethanol plant in Scotland, South Dakota. POET has since grown from a single, small refinery into one of the largest producers of ethanol and other biorefined products in the world. The success of the first enabled POET to operate more than 25 production plants and form a vertically integrated business system with several business entities. In addition to biofuels, POET produces a variety of products, including Dakota Gold distiller's grains, Voila™ corn oil, and INVIZ™ zein. The Company is also focusing on the development of natural, renewable food sources and alternatives to petrochemicals. The Company has "an integrated business model that combines technology development with expertise in construction, operations, risk management, and marketing".[29]

POET is also on the forefront of encouraging the switch to a bioeconomy. The RFS has largely pushed the United States toward blending renewable fuel with transportation fuel. To diversify, the Company has moved into animal feed, which is another emerging market due to the trend towards higher protein diets. POET is also work-

[29] POET, "Company At a Glance", *POET,* accessed August 2016, *http://www.poet.com/at-a-glance*.

ing on developing cellulosic ethanol, with a ramp up of a 25 million gallon cellulosic plant. It is working to use corn to power its cellulosic operations, and feeding an adjacent corn ethanol plant with leftover raw materials.

POET has patented a unique technology using a raw starch hydrolysis process, called BPX, which converts starch to sugar with a proprietary blend of enzymes, whereas other ethanol producers use a jet cooker to break down starch with heat. BPX reduces the energy requirement in the plant by eight to 15 percent and increases the yield by 0.10 to 0.15 gallon per bushel. After years of development, the process was ramped up to commercial-scale production in 2004, and it is currently used in all of POET's biorefineries. The EPA recognizes BPX as an advanced corn ethanol technology under the second RFS regulations.

POET is working on the branding of their products. The American Petroleum Institute's (API's) press releases beginning in the mid-2000s were initially supportive of the RFS and of biofuels in general. However, as the production of biofuels has increased and has become more of a competitive threat, the petroleum industry has become less supportive. To educate the public and change this perception, POET has focused on three key messages related to biofuels and biobased products: biofuels are clean burning, based on renewable materials, and emit fewer toxic compounds than gasoline. The Company also recognizes that additional work is required to support public views concerning GMOs and to counter false conjectures related to the food *versus* fuel debate. One Company executive noted that the biobased products and biofuels industries have the potential to replace the petroleum industry, and loosely supported conjectures could hamper this potential. Rigor and focus are needed on these issues and the academic community can play a big role in this regard. The POET executive believes that rigorous analytical study on this subject will show the actual environmental impacts of both sources of fuel. The API must face the facts that there will be more fuel-efficient vehicles on the roads and that there will be increased competition from renewable fuels. While the Corporate Average Fuel Economy (CAFE) standards cannot be changed, surpassing the competition is always an option. When this option is exercised, there should be strong efforts to ensure that the public receives the right message.

C7. Case Study: Verdezyne



Verdezyne is a global manufacturer of industrial chemicals that has developed technology for producing a range of chemical intermediates via fermentation of renewable feedstocks, primarily byproducts of fatty acids. The Company has developed a proprietary platform for engineering yeast to metabolize multiple non-food-based renewable feedstocks and produce a number of widely used, high-value chemicals.

Verdezyne's first commercial plant in southern Malaysia is expected to produce its first commercial product, biobased dodecanedioic acid (DDDA), by the end of 2017. DDDA is a valuable intermediate used to produce high performance nylon 6,12; polyester resins; adhesives; and powder coatings. DDDA is used in many other applications as well, including, polyester polyols, adhesives, corrosion inhibitors, and coatings. Verdezyne uses a yeast platform to produce DDDA from low-cost, plant-oil feedstocks. DDDA is traditionally produced from butadiene using a multi-step petrochemical-based process.

Recently, Verdezyne was awarded the Bloomberg New Energy Pioneer Award as one of the 50 Hottest Companies in the Advanced Bioeconomy. The candidates were

assessed using the following three criteria: potential scale, innovation, and momentum. Verdezyne also recently received the 2016 Small Business Award at the Presidential Green Chemistry Challenge Awards.

Jenna Ngian, who joined Verdezyne in January 2015 as Vice President of Global Sales and Supply Chain, has over 25 years of experience in sales, marketing, product management, supply chain management, operations, and business process reengineering for leading chemical companies, including DuPont and INVISTA. Prior to joining Verdezyne, she was leading product management at Genomatica, where she worked to create brand reputation and brought supply chain expertise to the commercialization of the Genomatica's products. Her experience working in the traditional chemical industry was important for moving into the field of biobased products.

Ms. Ngian's perspective is based on her work at both traditional chemical companies and biobased chemical companies. One very important key difference between the two is financing. According to Ms. Ngian, financing is more than just an important issue—it is the biggest issue. The financing options available to a company can differ depending on the company's size. Most large chemical companies self-fund their expansions and other needs from equity or debt since they have relatively good access to financial markets, but smaller biotech companies must depend on funds from their external partners. Because the technology development cycle usually takes a long time, venture capital or development partners often become impatient, and many companies deplete their available resources before they reach the proof of technology or commercialization stages. Ms. Ngian believes that the government needs to play a bigger part in developing this industry, as do many other countries in the world except the United States. The implication is that the U.S. Government should be more like the governments of other countries who have played bigger roles in developing this sector.

The field of biotechnology is rapidly changing due to many different factors. First, the productivity of sequencing and synthesis has increased at an exponential rate. The cost of genome sequencing in 2001 was $100 million per sequence. By 2007, it was $10 million and in 2016, it is $1,000, which is only 0.01 percent of what it was 9 years ago. By 2020, it is expected to decrease to a penny. The cost of synthesis also has decreased to less than 0.6 percent of its base cost 15 years ago.[30] The biotechnology field is very different from other traditional members of the chemical sector, a fact that has made Verdezyne's strategy successful.

The second major change can be observed by studying the history of biotechnology. After the structure of DNA was discovered in 1953, the development of many other genome-related discoveries followed, such as gene expression, sequencing, and cloning. Decades later, these developments provided the basis for significant technologies the biobased industry now uses. Advancements in tools, methodologies, and digital technology have also aided in progressing this field. For example, at the onset of World War II, the United States and its allies lost access to the natural rubber supply from Southeast Asia. To prevent vulnerability due to the loss of this important material, the U.S. Government provided support for multiple large rubber companies working together to find a solution. With the sponsorship of the U.S. Government, the companies were able to pool their technologies, intelligence, and resources to produce general-purpose synthetic rubber at a commercial scale.[31]

This situation shows how biobased technologies emerged from a direct shortage in the market. Today, we are faced with a similar need: support for biobased product manufacturing, which should receive greater investment support from the government; the need, in this case, is driven by climate change and the need for sustainable materials.

The third major change is the environmental movement, which began in the 1970s with the first Earth Day, the Clean Air Act, the Clean Water Act, and others. The movement was further spurred by social and environmental issues, including climate change, food security, and major pollution events. However, business-led sustainability platforms did not gain popularity until the mid-2000s. The launch of the Global Social Compliance Programme in 2006 emphasized that social and environmental sustainability must be a collaborative effort among companies to drive positive change and that business efficiency along the supply chain is essential. More recently, the concept of corporate responsibility is driving a much greater focus

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[30] Timetoast, "History of Biotechnology", *Timetoast,* accessed 7/25/16, *https://www.timetoast.com/timelines/history-of-biotechnology--3*.

[31] American Chemical Society, "U.S. Synthetic Rubber Program", *American Chemical Society,* accessed 7/25/16, *http://www.acs.org/content/acs/en/education/whatischemistry/landmarks/syntheticrubber.html*.

on reducing the carbon footprint, using renewable materials, and conducting product LCAs.

The rapid decreases in the cost of biotechnology; the speed of commercially available tools, processes, and technologies that are much more efficient than before; and the increasing awareness of social and environmental concerns indicate the speed at which the biotechnology world is changing. As a result, massive growth in this field is expected over the next 10 years. However, some short-term barriers are already apparent.

A barrier that stands in the way of progress is the lack of an established supply chain. The petrochemical supply chain is well established, with pipelines, storage facilities, and dedicated refining facilities that were created along with the supporting regulatory and legal infrastructure. Instead, the biobased chemicals sector must deal with the daunting challenge of combining two long-established, separate supply chains: the agriculture and chemical supply chains.

Verdezyne is an excellent example of how a chemical company executive can make a difference in a new biobased chemicals company by addressing the issues associated with the integration of supply chains. The Company targeted many different nylons, such as nylon 6,6 and nylon 6,10, and nylon 6,12, which impart high functionality, stability, and resistance. Premium nylons command a higher price, and are used in coatings, adhesives, and in automotive products, such as fuel hoses.

The decision to build the production facility in Malaysia was based partly on funding sources. In 2005, the Malaysian Government established the National Biotechnology Policy (NBP) that sought to turn the biotechnology field into one of the key economic drivers in the nation with the goal of contributing five percent of the nation's GDP by 2020. The Malaysian Biotechnology Corporation (BiotechCorp) was given the responsibility for executing the objectives of the NBP. As such, it provided financial assistance and developmental services to facilitate and accelerate the growth of biobased companies. It also sought to create a conducive environment for promoting international investments in the biobased industry in Malaysia. These initiatives offered Verdezyne significant tax incentives, funding as much as the equivalent of $60 million U.S. dollars at favorable interest rates and access to plentiful sources of sugarcane feedstocks. Some individuals feel the U.S. Government should provide similar incentives to drive a similar level of support for building the required infrastructure to support the domestic development and application of technology within U.S. borders.

Verdezyne's product is identical to DDDA derived from petrochemicals. It is a "drop in" like many others, but it has been recognized in the industry as having the highest quality and the lowest color, which may or may not generate a small premium in the market price. Ms. Ngian noted that while Verdezyne has identified a niche market where there are not many DDDA players, Verdezyne always strives to be competitive.

C8. Case Study: Green Biologics



Green Biologics grew out of two different companies that eventually came together to become what it is today. Edward Green, an ethanol fermentation expert, founded Green Biologics in England in 2003 to advance technologies for the production of renewable chemicals and biofuels, such as butanol. In an article for *Chemical & Engineering News,* Green Biologics' Chief Technology Officer, Tim Davies recalled that there was a lot of buzz around biofuels and funding for research at that time. Green Biologics thought higher alcohols might be useful, so they began applying methods

of biology, metabolic engineering, biochemistry, fermentation, and process engineering to reinvent the acetone-butanol-ethanol (ABE) fermentation process.[32]

Green Biologics later began working with existing ABE plants in China, allowing the plants to use a strain of a butanol-producing microbe called *Clostridium* from its library of modified microbes to advance their existing processes. Mr. Joel Stone, who is the former President of Green Biologics' U.S. operations, remarked that Green Biologics was able to leverage the capability of the Chinese plants while using their own, more efficient organism. This, coupled with design capability for distillations systems designed in collaboration with the Chinese, resulted in a technology operating at commercial scale and generated sales for Green Biologics.

As Green Biologics grew its presence in Europe and Asia, an Ohio-based company called Butylfuel was formed by David E. Ramey and Thomas Grote. Like Green Biologics, Butylfuel's focus was on creating renewable chemicals and biofuels, and the company built a 40,000 L pilot fermentation plant to do so. In 2012, Green Biologics and Butylfuel merged, extending the company's operational presence to the United States. The newly merged Green Biologics shifted its emphasis to renewable chemicals, which, according to Mr. Stone, was because butanol as a chemical had a sizable market, and Green Biologics anticipated that there would be biobased demand.[33]

With the new company, the executives began efforts to de-risk their processes and eliminate duplication of effort across strain development, technology development, and other areas. As they continued to build the demonstration plant in the United States, it became clear that the economics of the ethanol market were not looking positive, and there were many distressed ethanol plants. This led to the idea that, after the demonstration plant was constructed, it would be best to avoid investing in a new plant, but to invest in and convert a distressed-asset plant instead.

Thus, Green Biologics found a smaller scale plant in Minnesota that would not work as an ethanol plant—because it did not have the scale of 100 million gallons a year, but it could produce 20 million gallons a year, which was ideally suited for what Green Biologics needed. The capital expense was reasonable, and, from an engineering standpoint, it was scalable to move from a demonstration plant to a commercial plant. A "creative deal" was negotiated, whereby Green Biologics entered into an agreement with a purchase option, using a monthly fee for up to 1 year, and an exercise option to close on the price of the facility in 12 months. This allowed the Company to "prove out" the technology moving from a demonstration plant. The deal was supported further by a grant from the State of Minnesota's Agricultural Department, which helped with the initial engineering work required for the plant. From a "de-risking" standpoint, this allowed the capital costs to be validated and effectively financed. Green Biologics exercised its option and took possession of the facility in December 2014. This led to additional engineering work, and, despite the incredibly difficult financial investment climate for biobased products in 2015, Green Biologics was able to raise over $76 million in funds in 2015. Squire Pacific was brought in as a new venture capital investor.

Several lessons from this experience are worth noting. Green Biologics started as a butyl fuel company, believing that it could successfully license the technology. It eventually moved to specialty line, butanol, which occurred through close collaboration, a frugal investment strategy, partnering between two companies with a similar set of leadership strategies, and a slow, but steady, scale-up from the bench, pilot, and demonstration phases to a full, commercial plan. This was achieved by spending a lot less than the hundreds of millions of dollars that other companies had spent.

III. State Overviews

A. State Incentives and Policies

In 2012, the Obama Administration announced The National Bioeconomy Blueprint, which outlined steps that agencies would undertake to drive the advancement of the bioeconomy.[34] The Federal Government sees enormous potential in the nation's abundant natural resources, capacity for emerging and advanced technologies,

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[32] Bomgardner, M. M, "Green Biologics Pursues A Biobased Meeting Of The Minds", *Chemical & Engineering News,* last updated 6/25/15, *http://cen.acs.org/articles/93/i26/Green-Biologics-Pursues-Biobased-Meeting.html?h=816950987*.

[33] Bomgardner, M. M, "Green Biologics Pursues A Biobased Meeting Of The Minds", *Chemical & Engineering News,* last updated 6/25/15, *http://cen.acs.org/articles/93/i26/Green-Biologics-Pursues-Biobased-Meeting.html?h=816950987*.

[34] White House, "National Bioeconomy Blueprint", *White House,* last updated April 2012, *https://www.whitehouse.gov/sites/default/files/microsites/ostp/national_bioeconomy_blueprint_april_2012.pdf*.

entrepreneurial spirit.[35] To realize both the immense potential of the bioeconomy and the important role that policy plays in championing the process, one can look to the emergent wood pellet subsector within the southeastern United States.

The success of the wood pellet subsector illustrates the importance of regulatory support. The Renewable Energy and Energy Efficiency Export initiative, supported by President Barack Obama, was created, in part, to improve U.S. export competitiveness in renewable energy. In 2010, the United States exported $128 million worth of wood pellets in response to the demand for a source of renewable energy.[36] In 2014, this figure grew to over $500 million, as growth was facilitated by the USDA Market Access Program's commitment to identifying and growing additional market opportunities for wood pellet exports in the European Union.[37] The same support for the broader biobased products industry must be demonstrated on a state level for the industry to maximize its potential.

A few states have specific policies in place to further the advancement of the bioeconomy and specifically the biobased products industry, as shown in *Table 3.* While this report does not include economic data on biofuels, we include biofuel incentives as examples of what could be done for biobased products, and to indicate movement by states towards increasing the utilization of biological feedstocks for industrial purposes in the United States.

Table 3. Overview of State Policies and Incentives for Biobased Products Development

	Tax Credit(s)	Tax Exemption	Loans	Production Payment	Grant(s)	Procurement Program
Iowa	X					
Massachusetts						X
Michigan			X			
Minnesota				X		
Oregon	X					
Virginia	X	X			X	
Washington	X					
Wisconsin	X					

Iowa

In April 2016, the Iowa Legislature passed the Biorenewable Chemical Tax Credit Program, a revenue-neutral tax incentive and economic development package that allocates $100 million in tax credits over 10 years to be applied to the manufacturing of 40 key building block chemicals. For each pound of biobased chemicals produced in a given year, a company can receive a $0.05 tax credit. Financial incentives are annually capped at $500,000 for companies 5 years and older, and $1,000,000 for companies less than 5 years old. The program, which represents the strongest existing incentive package for the global biobased chemical industry, was designed and implemented to attract national biobased chemical companies and new businesses to the state.[38]

The production of higher-value basic chemical compounds, which can utilize the co-products of existing corn and soybean manufacturing facilities, is a fast growing segment of the biobased products industry, representing a significant change for Iowa to develop a cluster of biobased chemical companies.[39] The hope is that the Iowa Biorenewable Chemical Tax Credit Program will achieve the same success as the tax credits of the Iowa ethanol industry, which produces a quarter of the ethanol in the United States. An analysis of the Iowa ethanol industry indicated that 32 percent of the industry is located in Iowa because of the support given by the state. Furthermore, since 2006, tax credits in excess of $61 Million have been provided in support of the state's 38 ethanol plants. Total capital spending on these plants has

[35] Biomass Research and Development Board, "Federal Activities Report On The Bioeconomy," *Biomass Research and Development Board,* last updated February 2016, *http://biomassboard.gov/pdfs/farb_2_18_16.pdf.*

[36] White House, "National Bioeconomy Blueprint", *White House,* last updated April 2012, *https://www.whitehouse.gov/sites/default/files/microsites/ostp/national_bioeconomy_blueprint_april_2012.pdf.*

[37] Lowenthal-Savy, D, "UK's renewable energy targets drive increases in U.S. wood pellet exports", *U.S. EIA,* last updated 4/22/15, *http://www.eia.gov/todayinenergy/detail.cfm?id=20912.*

[38] Cultivation Corridor, "Biorenewable Chemicals: The Iowa Advantage", *Cultivation Corridor,* accessed 6/1/16, *http://www.cultivationcorridor.org/biochem/.*

[39] Iowa Economic Development, "Renewable Chemical Production Tax Credit Program", *Iowa Economic Development,* accessed 6/1/16, *http://www.iowaeconomicdevelopment.com/userdocs/documents/ieda/RenewChemTaxCredit_042016.pdf.*

been nearly $4.5 billion, meaning that tax support equaled just 1.3 percent of the total capital spending.[40]

Massachusetts

Massachusetts offers an Environmentally Preferable Products (EPP) Procurement Program, which aims to help the Commonwealth use its purchasing power to reduce both the environmental and public health impacts of state government, in addition to stimulating market demand for environmentally preferable products and services.[41] As part of the Procurement Program, the state provides an Environmentally Preferable Products and Services Guide that assists buyers in finding products, services, and vendors. Since its inception in 1995, the program has increased spending on EPPs from roughly $5 million to an estimated $400 million. Furthermore, Massachusetts works to identify locally sourced products that are grown, harvested, and processed within the state. Certified products are provided a "Commonwealth Quality" brand designation by the Massachusetts Department of Agricultural Resources, which works to provide a guarantee that such products are grown and harvested within the state, utilizing production practices that adhere to a set of criteria and environmental standards.[42]

Michigan

In Michigan, the Department of Agriculture & Rural Development, in conjunction with the Michigan Economic Development Corporation, offers a variety of programs intended to help support the financing and growth of agricultural processing and support industries within the state.[43]

Minnesota

In 2015, the Minnesota legislature established the Bioincentive Program, which is intended to make Minnesota an excellent destination for commercial-scale advanced biofuel and biobased chemical plants. The program provides production payments to encourage commercial-scale production of advanced biofuels, biobased chemicals, and thermal energy production from agricultural, forestry, or solid waste sources.[44]

For companies to take advantage of the Renewable Chemical Production Incentive Program, chemicals must be at least 51 percent biobased. Manufacturing facilities must also (a) be located within Minnesota, (b) source 80 percent of their raw materials from Minnesota, and (c) produce a minimum of 750,000 pounds of chemicals per quarter to enter the program and for each quarter in which a reimbursement claim is made. Production payments range from $0.03 per pound of chemical produced from sugar, cellulosic sugar, or starch, to $0.06 per pound of chemical produced from cellulosic biomass.[45]

The producer payment incentive program, in addition to volumetric fuel blending requirements, was previously championed by Minnesota to build a strong first-generation ethanol industry.[46] Over the course of a decade, the State of Minnesota provided over $450 million to help construct 21 corn ethanol plants within the state, which jointly contribute over $5 billion annually to the Minnesota economy.[47] As opposed to alternative financial programs, the inherent advantage of a producer payment program is that payments are only made for actual production of eligible products, thereby negating the risks inherent in grants or loans.

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[40] Cultivation Corridor, "Biobased Chemicals: The Iowa Opportunity," *Cultivation Corridor,* last updated 1/14/16, *http://www.cultivationcorridor.org/assets/pdf/Iowa-Biobased-Chemicals-Full-Report.pdf*.

[41] E Commonwealth of Massachusetts Executive Office for Administration and Finance, "Environmentally Preferable Products (EPP) Procurement Program," *Mass.Gov,* accessed 6/14/16, *http://www.mass.gov/anf/budget-taxes-and-procurement/procurement-info-and-res/procurement-prog-and-serv/epp-procurement-prog/*.

[42] Massachusetts Department of Agricultural Resources (MDAR), Commonwealth Quality, *MDAR,* accessed 6/14/16, *http://thecqp.com/index.html*.

[43] Michigan Economic Development Corporation, "Agribusiness Financing Programs," *Michigan Economic Development Corporation,* accessed 6/1/16, *http://www.michiganbusiness.org/cm/files/fact-sheets/agribusinessfinancingprograms.pdf?rnd=1464620718277*.

[44] Minnesota Department of Agriculture, "Bioincentive Program", *Minnesota Department of Agriculture,* accessed 6/1/16, *http://www.mda.state.mn.us/grants/agri/bioincentive.aspx*.

[45] Minnesota Department of Agriculture, "Bioincentive Program", *Minnesota Department of Agriculture,* accessed 6/1/16, *http://www.mda.state.mn.us/grants/agri/bioincentive.aspx*.

[46] Bioeconomy Coalition of Minnesota, "Bioeconomy Production Incentive Program Created in Minnesota", *Bioeconomy Coalition of Minnesota,* accessed 6/1/16, *http://mnbioeconomy.org*.

[47] Bilek, A. and Jordan, B. "2015 Minnesota Legislative Session Recap: Bioeconomy Edition", *Great Plains Institute,* last updated 7/6/15, *http://www.betterenergy.org/blog/2015-minnesota-legislative-session-recap-bioeconomy-edition*.

Oregon

Oregon provides tax credits for the production, collection, and transportation of biomass resources that are utilized for energy production.[48] To be eligible for the tax credits, the biomass material must be (a) sourced from within the state and (b) utilized as biofuel, or used in the production of biofuel in Oregon.

Virginia

Virginia offers incentives, such as tax incentives, grants, and investment programs, for emerging life science technologies and companies within the state.[49]

Washington

Washington has passed a House Bill that restored preferential timber industry business and occupation tax rates for manufacturers of biocomposite surface products, in addition to existing incentives for timber harvesting and manufacturing/processing activities. Washington also offers a reduced tax rate for manufacturing wood biomass fuel.[50]

Wisconsin

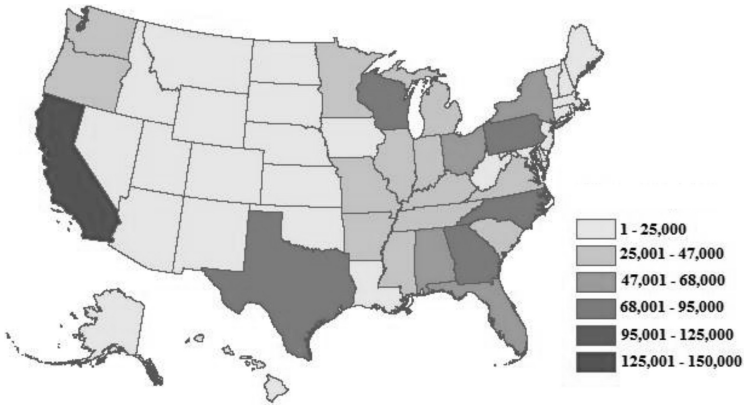
Wisconsin creates a competitive advantage within its state by offering a "Manufacturing and Agriculture Credit", which serves to virtually eliminate the tax on income for both manufacturing and agricultural activities occurring within the state.[51]

B. State Statistics

Figure 8 shows the number of biobased products industry jobs per 1,000 people in each state in 2013. *Table 4* shows the direct jobs contributed at the state level for the top ten states. Similarly, *Figure 9* shows the value-added by the biobased products industry in each state, and *Table 5* shows the top ten states by value-added contribution in the biobased products industry.

Figure 8: Direct Jobs Contributed by the Biobased Products Industry in Each State and the District of Columbia in 2013[52]

Jobs per State, 2013



[48] Business Oregon, "Renewable Energy", *Business Oregon,* accessed 6/1/16, *http://www.oregon4biz.com/Oregon-Business/Tax-Incentives/Renewable-Energy*.

[49] Virginia Biotechnology Association, "Incentives for Bioscience Research, Commercialization and Investment in the Commonwealth", *Virginia Biotechnology Association,* accessed 6/1/16, *https://www.vabio.org/?page=incentives*.

[50] Washington State Department of Revenue, "Incentive Programs: Deferrals, Exemptions, and Credits," *Washington State Department of Revenue,* accessed 6/1/16, *http://dor.wa.gov/content/findtaxesandrates/taxincentives/incentiveprograms.aspx/*.

[51] Wisconsin Department of Revenue, "Wisconsin Manufacturing and Agriculture Credit", *Wisconsin Department of Revenue* Retrieved, last updated 9/8/15, *https://www.revenue.wi.gov/taxpro/fact/manufandagr.pdf*.

[52] Esri, TomTom, Department of Commerce, Census Bureau, U.S. Department of Agriculture (USDA), National Agricultural Statistics Service (NASS). "USA States" *Basemap. ArcGIS Online,* accessed 3/3/16, *http://www.arcgis.com/home/item.html?id=1a6cae723af14f9cae228b133aebc620*.

Table 4. Top 10 States for Direct Jobs in the Biobased Products Industry in 2013

Rank	State	Direct Value-Added
1	California	145,080
2	North Carolina	90,040
3	Texas	88,680
4	Georgia	80,520
5	Pennsylvania	71,360
6	Wisconsin	68,250
7	Ohio	52,930
8	New York	52,300
9	Alabama	49,650
10	Florida	47,690

Figure 9: Direct Value-Added Contribution in Each State by the Biobased Products Industry in 2013 [53]

Billions of U.S. Dollars per State, 2013

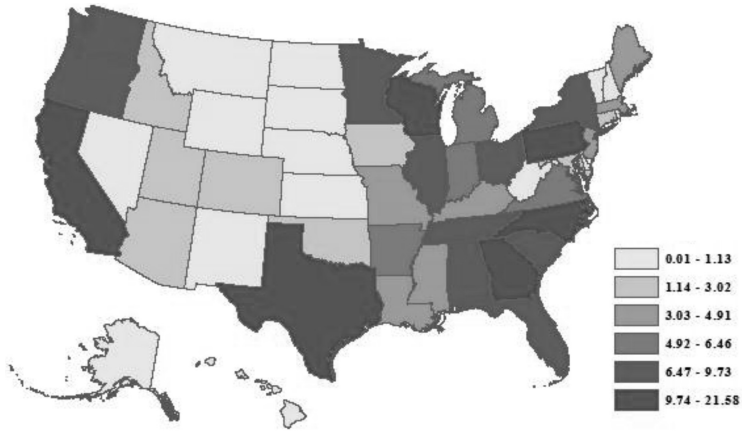


Table 5. Top 10 States for Direct Value-Added to the Biobased Products Industry in 2013

Rank	State	Direct Value-Added
1	California	$9,862,930,000
2	Georgia	$8,237,608,000
3	Texas	$6,828,425,000
4	Pennsylvania	$6,522,151,000
5	North Carolina	$6,437,140,000
6	Wisconsin	$6,252,403,000
7	Alabama	$4,977,941,000
8	Tennessee	$4,429,804,000
9	Ohio	$4,276,668,000
10	South Carolina	$4,227,162,000

C. National and State Facts Sheets

A major addition in this report from the 2015 report is a detailed analysis of all 50 states and the District of Columbia. This report contains a single page for each state. Each fact sheet offers a snapshot of companies and associations that are active in the biobased products industry overall within the state, and information

[53] Esri, TomTom, Department of Commerce, Census Bureau, U.S. Department of Agriculture (USDA), National Agricultural Statistics Service (NASS). "USA States" *Basemap. ArcGIS Online,* accessed 3/3/16, *http://www.arcgis.com/home/item.html?id=1a6cae723af14f9cae228b133aebc620.*

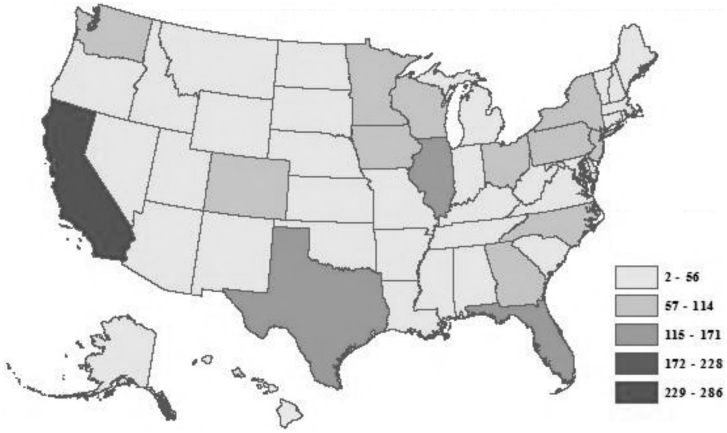
tive in the biobased products industry overall within the state, and information about the USDA's Rural Development office in that state. They also include the direct and total economic contributions of the biobased products industry in terms of value-added contribution and jobs supported. Each of the biobased products industry's seven major sectors' direct jobs and value-added are also provided. The numbers presented for each sector are limited to direct jobs for comparison of the biobased products industry size between states.

The national ranking by direct jobs and direct value-added for each state are also provided in *Appendix C* (direct jobs) and *Appendix D* (direct value-added). An alphabetical listing of the states with the number of direct jobs and value-added are in *Appendix E*.

This section closes with two case studies of organizations supporting the growth of the biobased products industry at the state level and beyond.

United States

Companies per State, 2016



Number of Companies participating in the BioPreferred Program (June 2016).[54]



Agriculture and Forestry
Direct Jobs: 263,500
Direct Value-Added: $15.8 B

Biobased Chemicals
Direct Jobs: 17,690
Direct Value-Added: $5.0 B

Biorefining
Direct Jobs: 570
Direct Value-Added: $155.0 M

[54] Esri, TomTom, Department of Commerce, Census Bureau, U.S. Department of Agriculture (USDA), National Agricultural Statistics Service (NASS). "USA States" Basemap. *ArcGIS Online,* accessed 3/3/16, *http://www.arcgis.com/home/item.html?id=1a6cae723af14f9cae228b133aebc620.*

Enzymes
Direct Jobs: 3,000
Direct Value-Added: $873.8 M

Forest Products
Direct Jobs: 1,059,660
Direct Value-Added: $93.3 B

Textiles
Direct Jobs: 164,370
Direct Value-Added: $9.6 B

Packaging
Direct Jobs: 1,200
Direct Value-Added: $11.4 M

Alabama



Total Jobs: 102,850
Direct Jobs: 49,650
Total Value-Added: $9.010 Billion
Direct Value-Added: $4.978 Billion

The total jobs or value-added is the sum of the direct, indirect, and induced effects.

Sector	Direct Jobs	Direct Value-Added
Agriculture & Forestry	10,740	$776.5M
Biobased Chemicals	260	$82.6M
Biorefining	<50	<$5M
Enzymes	50	$14.2M
Forest Products	33,420	$3.9B
Textiles	5,840	$266.0M
Bioplastic Bottles & Packaging	<50	<$5M

BioPreferred®

14 Alabama companies currently participate in the BioPreferred Program.

Example Biobased Product Firms

Agriculture & Forestry

Jasper Lumber Company (Jasper, AL; *jasperlumber.com*): Jasper Lumber Company has manufactured quality southern pine lumber for more than 25 years, offering a wide range of wood products. The company is the only lumber manufacturer in the southeast U.S. to hold certifications from both the Forest Stewardship Council and the Sustainable Forestry Initiative.

Biobased Chemicals

Alpha CLP (Winfield, AL; *alphaclp.com*): Alpha CLP manufactures a biobased, non-gumming firearm cleaner, lubricant, and protectant. The finished product is 99 percent biobased, utilizing vegetable oils during the production process.

Renewable Oil International, LLC (Florence, AL; *renewableoil.com*): Renewable Oil International is dedicated to developing and commercializing an advanced biomass distillation process based on fast pyrolysis technology. The objective is to cost effectively fractionate wood and other types of biomass into high-value products.

USDA Rural Development Alabama Office

Ronald Davis, State Director (*www.rd.usda.gov/al*)
4121 Carmichael Road, Suite 601, Montgomery, AL 36106–3683
Phone: (334) 279–3402

Alaska



Total Jobs: 1,980
Direct Jobs: 1,420
Total Value-Added: $120 Million
Direct Value-Added: $67 Million

The total jobs or value-added is the sum of the direct, indirect, and induced effects.

Sector	Direct Jobs	Direct Value-Added
Agriculture & Forestry	640	$46.8M
Biobased Chemicals	<50	<$5M
Biorefining	<50	<$5M
Enzymes	<50	<$5M
Forest Products	670	$17.8M
Textiles	110	<$5M
Bioplastic Bottles & Packaging	<50	<$5M

BioPreferred®

5 Alaska companies currently participate in the BioPreferred Program.

Example Biobased Product Firms

Agriculture & Forestry

Denali Organics, LLC (Chugiak, AK; *denaliorganics.com*): Denali Organics provides organic liquid fertilizer products, made with catfish byproducts and proprietary digestive enzymes. These fertilizers can be blended to meet a customer's specific requirements.

Biobased Chemicals

Polyseal Insulation (Palmer, AK; *polysealinsulation.com*): Polyseal Insulation offers a range of services including insulation, spray foam, roofing foam, and advanced coatings. Their Green Cellulose Insulation product is non-toxic and manufactured from at least 80 percent recovered, post-consumer paper fiber.

Forest Products

Tongass Forest Enterprises (Ketchikan, AK; *akforestenterprises.com*): Tongass Forest Enterprises specializes in producing custom wood building products. The company uses the byproduct from these products to produce wood pellets, as well.

USDA Rural Development Alaska Office

Jim Nordlund, State Director (*www.rd.usda.gov/ak*)
800 West Evergreen, Suite 201, Palmer, AK 99645–6539

Phone: (907) 761–7705

Arizona



Total Jobs: 27,730
Direct Jobs: 14,790
Total Value-Added: $1.968 Billion
Direct Value-Added: $912 Million

The total jobs or value-added is the sum of the direct, indirect, and induced effects.

Sector	Direct Jobs	Direct Value-Added
Agriculture & Forestry	3,510	$268.6M
Biobased Chemicals	120	$33.2M
Biorefining	<50	<$5M
Enzymes	<50	<$5M
Forest Products	10,360	$582.8M
Textiles	830	$29.5M
Bioplastic Bottles & Packaging	<50	<$5M

BioPreferred®

30 Arizona companies currently participate in the BioPreferred Program.

Example Biobased Product Firms

Agriculture & Forestry

Yulex (Phoenix, Arizona; *yulex.com*): Yulex manufactures 100 percent plant-based rubber. As the first commercial enterprise to produce biobased natural rubber latex in North America, Yulex, now collaborates with consumer, industrial, and medical market leaders to co-develop a variety of products.

Biobased Chemicals

GEMTEK (Phoenix, AZ; *gemtek.com/*): GEMTEK is dedicated to providing high performance cleaners, lubricants, solvents, and specialty chemicals derived from renewable plant-based resources.

Eco Safety Products, LLC (Phoenix, AZ; *ecosafetyproducts.com*): Eco Safety Products manufactures high-performance paints, stains, finishes, and chemicals that utilize sustainable biobased technology.

USDA Rural Development Arizona Office

Ernie Wetherbee, Acting State Director (*www.rd.usda.gov/az*)
230 North First Avenue, Suite 206, Phoenix, AZ 85003–1706
Phone: (602) 280–8701

Arkansas



Total Jobs: 64,590
Direct Jobs: 31,400
Total Value-Added: $5.903 Billion
Direct Value-Added: $3.165 Billion

The total jobs or value-added is the sum of the direct, indirect, and induced effects.

Sector	Direct Jobs	Direct Value-Added
Agriculture & Forestry	7,330	$512.9M
Biobased Chemicals	190	$58.0M
Biorefining	<50	<$5M
Enzymes	50	$8.2M
Forest Products	23,330	$2.6B
Textiles	860	$40.6M
Bioplastic Bottles & Packaging	<50	<$5M

BioPreferred®

12 Arkansas companies currently participate in the BioPreferred Program.

Example Biobased Product Firms

Agriculture & Forestry

Anthony Forest Products Company (El Dorado, AR; Urbana AR; *anthonyforest.com*): Anthony Forest Products operates a southern pine lumber producing mill in Urbana, and an engineered wood laminating plant in El Dorado. Some of the company's fastest growth has been in the engineered wood products sector.

Biobased Chemicals

AgSeal LLC (Harrison, AR; *agseal.com*): AgSeal services the growing needs of poultry and agriculture markets for energy saving retrofitting of facilities and structures. The company's foam sealants and insulation are biobased and made especially for poultry and agricultural applications.

Biobased Technologies (Springdale, AR; *biobased.net*): Biobased Technologies manufactures a high bio-carbon soy polyol, Agrol, which can replace some petroleum polyols. Agrol is used in a variety of products, including lubricants, furniture, adhesives, inks, and agricultural products.

USDA Rural Development Arkansas Office

Lawrence McCullough, State Director (*www.rd.usda.gov/ar*)
700 West Capitol Avenue, Room 3416, Little Rock, AR 72201–3225
Phone: (501) 301–3200

California



Total Jobs: 265,530
Direct Jobs: 145,080
Total Value-Added: $21.577 Billion
Direct Value-Added: $9.863 Billion

The total jobs or value-added is the sum of the direct, indirect, and induced effects.

Sector	Direct Jobs	Direct Value-Added
Agriculture & Forestry	42,310	$2.4B
Biobased Chemicals	1,250	$324.4M
Biorefining	<50	$7.3M
Enzymes	170	$42.9M
Forest Products	71,340	$5.7B
Textiles	31,090	$1.5B
Bioplastic Bottles & Packaging	90	$7.5M

BioPreferred®

262 California companies currently participate in the BioPreferred Program.

Example Biobased Product Firms

Biobased Chemicals

TerraVia (San Francisco, CA; *solazyme.com*): TerraVia, formerly Solazyme, has refined its efforts to focus on manufacturing algae oil for the food and personal care industries for use in products that include cooking oils, protein powders, and face lotions.

Verdezyne (Carlsbad, CA; *verdezyne.com*): Verdezyne leverages the power of biology to produce chemicals from renewable, non-food sources. Verdezyne's feedstocks are derived from the byproducts of vegetable oil production.

Bioplastic Bottles & Packaging

BeGreen Packaging LLC (Santa Barbara, CA; *begreenpackaging.com*): Be Green Packaging designs, manufactures, and distributes the only non-GMO Product Verified, tree-free, and compostable packaging for the food and consumer packaging industries. Renewable plant fibers are utilized to produce both consumer and food packaging products.

USDA Rural Development California Office

Janice Waddell, State Director (www.rd.usda.gov/ca)
430 G Street, #4169, Davis, CA 95616–4169
Phone: (530) 792–5800

Colorado



Total Jobs: 21,840
Direct Jobs: 11,500
Total Value-Added: $1.526 Billion
Direct Value-Added: $635 Million

The total jobs or value-added is the sum of the direct, indirect, and induced effects.

Sector	Direct Jobs	Direct Value-Added
Agriculture & Forestry	1,710	$54.9M
Biobased Chemicals	110	$31.9M
Biorefining	<50	<$5M
Enzymes	<50	<$5M
Forest Products	8,510	$476.6M
Textiles	1,200	$72.4M
Bioplastic Bottles & Packaging	<50	<$5M

BioPreferred®

60 Colorado companies currently participate in the BioPreferred Program.

Example Biobased Product Firms

Agriculture & Forestry

Natracare LLC (Greeley, CO; *natracare.com*): Natracare LLC manufactures feminine hygiene products using responsibly sourced, biobased materials. Natracare's products are compostable and made to limit the user's exposure to chemicals such as chlorine, plastic, pesticides, and petroleum derivatives.

Forest Products

Sustainable Flooring (Boulder, CO; *sustainableflooring.com*): Sustainable Flooring offers various flooring and walls products, designed for both residential and commercial applications. In addition to wood, the company utilizes bamboo and cork in the manufacturing process.

Bioplastic Bottles & Packaging

Eco-Products (Boulder, CO; *ecoproducts.com*): Eco-Products offers a full selection of disposable products, including plates, cups, containers, and silverware. All products are produced from recycled content or renewable resources (*e.g.,* corn, sugarcane, plant starch).

USDA Rural Development Colorado Office

Trudy Kareus, State Director (*www.rd.usda.gov/co*)
Denver Federal Center, Building 56, Room 2300, PO Box 25426, Denver, CO 80225–0426
Phone: (720) 544–2904

Connecticut



Total Jobs: 18,750
Direct Jobs: 8,970
Total Value-Added: $1.905 Billion
Direct Value-Added: $846 Million

The total jobs or value-added is the sum of the direct, indirect, and induced effects.

Sector	Direct Jobs	Direct Value-Added
Agriculture & Forestry	680	$19.2M
Biobased Chemicals	190	$47.0M
Biorefining	<50	<$5M
Enzymes	<50	$5.4M
Forest Products	7,200	$670.0M
Textiles	910	$109.5M
Bioplastic Bottles & Packaging	<50	<$5M

BioPreferred®

24 Connecticut companies currently participate in the BioPreferred Program.

Example Biobased Product Firms

Biobased Chemicals

Citrasolv (Ridgefield, CT; *citrasolv.com*): Citrasolv produces a line of [E]arth-and-people-friendly cleaning supplies that are derived from renewable resources. Citra Solv Concentrate, a multipurpose cleaning product, is 95 percent biobased.

New Polymer Systems INC (New Canaan, CT; *newpolymersystems.com*): New Polymer Systems has patents pending on processes that yield lightweight, hydrophobic lignocellulosic fillers, the core component of their NeroPlast branded products. NeroPlast can be utilized in a host of applications, including car parts, decking, pallets, and roofing and is a USDA Certified Biobased Product with 100 percent biobased content.

Bioplastic Bottles & Packaging

Green Valley Packaging (Danielson, CT; *vegware.us*): Green Valley Packaging is a key distributor of the Vegware brand of eco-packaging products in the food service sector. Feedstock inputs include sugarcane bagasse and corn starch.

USDA Rural Development Connecticut Office

Scott Soares, State Director (*www.rd.usda.gov/ct*)
451 West Street, Amherst, MA 01002–2999
Phone: (413) 253–4300

Delaware



Total Jobs: 4,170
Direct Jobs: 2,140
Total Value-Added: $5,501 Million
Direct Value-Added: $347 Million

The total jobs or value-added is the sum of the direct, indirect, and induced effects.

Sector	Direct Jobs	Direct Value-Added
Agriculture & Forestry	160	<$5M
Biobased Chemicals	60	$32.1M
Biorefining	<50	<$5M
Enzymes	<50	$8.9M
Forest Products	1,580	$290.7M
Textiles	330	$17.9M
Bioplastic Bottles & Packaging	<50	<$5M

BioPreferred®

5 Delaware companies currently participate in the BioPreferred Program.

Example Biobased Product Firms

Biobased Chemicals

DuPont Industrial Biosciences (Wilmington, DE; *dupont.com*): DuPont is a global leader in the development of renewably sourced biobased materials. By utilizing glucose as the basis for Bio-PDO, a biobased monomer, DuPont created an ingredient a biobased fiber, Sorona, which is used in a variety of everyday products.

Ensyn Corporation (Wilmington, DE; *ensyn.com*): Ensyn is a producer of advanced, drop-in cellulosic biofuel, produced from wood biomass and agricultural residues. Much of their biofuel production has been dedicated to the production of renewable chemicals and heating fuels for the specialty chemicals industry.

The Chemours Company (Wilmington, DE; *chemours.com*): Teflon, a brand of The Chemours Company, manufactures EcoElite, the first renewably sourced, nonfluorinated fabric treatment designed for durable water repellency. The product contains 60 percent renewable content.

USDA Rural Development Delaware Office

Bill McGowan, State Director (*www.rd.usda.gov/de*)
1221 College Park Drive, Suite 200, Dover, DE 19904
Phone: (302) 857–3580

Washington, D.C.



Total Jobs: 280
Direct Jobs: 220
Total Value-Added: $26 Million
Direct Value-Added: $18 Million

The total jobs or value-added is the sum of the direct, indirect, and induced effects.

Sector	Direct Jobs	Direct Value-Added
Agriculture & Forestry	<50	<$5M
Biobased Chemicals	<50	<$5M
Biorefining	<50	<$5M
Enzymes	<50	<$5M
Forest Products	180	$16.7M
Textiles	<50	<$5M
Bioplastic Bottles & Packaging	<50	<$5M

BioPreferred®

3 Washington, D.C. companies currently participate in the BioPreferred Program.

Example Biobased Product Firms

Forest Products

Kwai (Washington, D.C.; *kwaihome.com*): Kwai produces handcrafted materials utilizing fronds from areca palm trees. Finished materials are 100 percent biobased, and fully biodegradable.

Bioplastic Bottles & Packaging

TemperPack Technologies (Washington, D.C.; *temperpack.com*): TemperPack seeks to replace petrochemical-based packaging with more sustainable forms of packaging, utilizing renewable jute fiber as a feedstock. Additional feedstocks include post-consumer recycled plastic and paper.

USDA Rural Development Washington, D.C. Office

U.S. Department of Agriculture (*usda.gov/*)
1400 Independence Ave., S.W.
Washington, D.C. 20250
Information Hotline: (202) 720–2791

Florida



Total Jobs: 98,460
Direct Jobs: 47,690
Total Value-Added: $7.805 Billion
Direct Value-Added: $3.738 Billion

The total jobs or value-added is the sum of the direct, indirect, and induced effects.

Sector	Direct Jobs	Direct Value-Added
Agriculture & Forestry	14,800	$721.0M
Biobased Chemicals	410	$79.2M
Biorefining	<50	<$5M
Enzymes	<50	<$5M
Forest Products	28,850	$2.8B
Textiles	3,950	$170.9M
Bioplastic Bottles & Packaging	<50	<$5M

BioPreferred®

118 Florida companies currently participate in the BioPreferred Program.

Example Biobased Product Firms

Biobased Chemicals

Arizona Chemical (Panama City, FL; Pensacola, FL; *arizonachemical.com*): Arizona Chemical is the world's leading producer and biorefiner of pine chemicals. The company provides innovative, biobased chemical solutions to multiple industry sectors, including adhesives, roads and construction, tires, and coatings. Approximately 85 percent of the company's raw materials are made from renewable sources.

BioBag Americas, Inc. (Palm Harbor, FL; *biobagusa.com*): BioBag produces bags and plastic films derived from renewable agriculture feedstocks, including cornstarch and vegetable oils. Compostable products span both retail and commercial applications.

Naturally Green Products LLC (Seminole, FL; *naturally-greenproducts.com*): Naturally Green offers the most comprehensive line of USDA BioPreferred cleaning and floor care products. Product offerings include bathroom cleaners, dishwashing products, disinfectants, floor and carpet clearness, laundry products, and hand soaps and sanitizers.

USDA Rural Development Florida Office

Richard Machek, State Director (*www.rd.usda.gov/fl*)
Post Office Box 147010, 4440 NW 25th Place, Gainesville, FL 32614–7010
Phone: (352) 338–3402

Georgia



Total Jobs: 178,110
Direct Jobs: 80,520
Total Value-Added: $16.365 Billion
Direct Value-Added: $8.238 Billion

The total jobs or value-added is the sum of the direct, indirect, and induced effects.

Sector	Direct Jobs	Direct Value-Added
Agriculture & Forestry	17,940	$1.5B
Biobased Chemicals	620	$168.9M
Biorefining	<50	<$5M
Enzymes	70	$14.9M
Forest Products	41,970	$5.1B
Textiles	21,020	$1.6B
Bioplastic Bottles & Packaging	<50	<$5M

BioPreferred®

71 Georgia companies currently participate in the BioPreferred Program.

Example Biobased Product Firms

Biobased Chemicals

Arizona Chemical (Savannah, GA; *arizonachemical.com*): Arizona Chemical is the world's leading producer and biorefiner of pine chemicals. The company provides innovative, biobased chemical solutions to multiple industry sectors, including adhesives, roads and construction, tires, and coatings.

Forest Products

U.S. Floors (Dalton, GA; *usfloorsllc.com*): U.S. Floors is the leading producer of sustainable, biobased flooring, produced from cork, bamboo, and FSC Certified hardwood. U.S. Floors is currently the only producer of cork and bamboo flooring with manufacturing facilities in the U.S.

Bioplastic Bottles & Packaging

The Coca-Cola Company (Atlanta, GA; *coca-colacompany.com*): In 2009, the Coca-Cola Company unveiled the first-ever fully recyclable PET plastic beverage bottle made from plants. In 2012, the Company announced the formation of the Plant PET Technology Collaborative, a strategic initiative aimed at developing 100 percent biobased PET.

USDA Rural Development Georgia Office

Jill Stuckey, State Director (*www.rd.usda.gov/ga*)
Stephens Federal Building, 355 E. Hancock Avenue, Stop 300, Athens, GA 30601–2768
Phone: (706) 546–2162

Hawaii



Total Jobs: 2,840
Direct Jobs: 1,930
Total Value-Added: $138 Million
Direct Value-Added: $66 Million

The total jobs or value-added is the sum of the direct, indirect, and induced effects.

Sector	Direct Jobs	Direct Value-Added
Agriculture & Forestry	420	$9.4M
Biobased Chemicals	<50	<$5M
Biorefining	<50	<$5M
Enzymes	50	<$5M
Forest Products	1,040	$40.1M
Textiles	460	$15.1M
Bioplastic Bottles & Packaging	<50	<$5M

BioPreferred®

8 Hawaii companies currently participate in the BioPreferred Program.

Example Biobased Product Firms

Agriculture & Forestry

Hawaiian Earth Products, Ltd. (Kapolei, HI; *menehunemagichawaii.com*): Hawaiian Earth Products makes products that use waste from yard trimmings, such as compost and potting mix. After being collected as waste from several cities in Hawaii, these trimmings are converted into useful products, rather than being sent to a landfill.

Biobased Chemicals

Malie Organics (Kalaheo, HI; *malie.com*): Malie offers a range of personal care and beauty products, all produced from natural and organic feedstocks. Product ingredients are all sustainably grown and harvested.

Forest Products

Honsador Lumber LLC (Kapolei, HI; *honsador.com*): Honsador is Hawaii's largest lumber supplier. In addition to lumber and plywood, the company offers an array of finished products, including cabinetry, doors, and windows.

USDA Rural Development Hawaii Office

Chris Kanazawa, State Director (*www.rd.usda.gov/hi*)
Federal Building, Room 311, 154 Waianuenue Avenue, Hilo, HI 96720
Phone: (808) 933–8380

Idaho



Total Jobs: 25,660
Direct Jobs: 12,250
Total Value-Added: $1.724 Billion
Direct Value-Added: $886 Million

The total jobs or value-added is the sum of the direct, indirect, and induced effects.

Sector	Direct Jobs	Direct Value-Added
Agriculture & Forestry	3,350	$213.3
Biobased Chemicals	60	$9.1M
Biorefining	<50	$5.7M
Enzymes	<50	<$5M
Forest Products	9,440	$647.8M
Textiles	390	$11.3M
Bioplastic Bottles & Packaging	<50	<$5M

BioPreferred®

13 Idaho companies currently participate in the BioPreferred Program.

Example Biobased Product Firms

Agriculture & Forestry

Eagle Forest Products (Eagle, ID; *eaglefp.net*): Eagle Forest Products offers a wide variety of lumber and wood products. The company provides lumber to a number of industries, including flooring, construction, music, and landscaping.

Idaho Forest Group, LLC (Coeur d'Alene, ID; *idahoforestgroup.com*): The Idaho Forest Group, one of America's largest lumber producers, grows, harvests, manufactures, and distributes sustainable wood. In addition to lumber, available products include oriented strand board, paper and packaging materials, wood pellets, wood chips, and bark for power production.

Biobased Chemicals

Pro-Tek Chemicals (Glenns Ferry, ID; *protekchemical.com*): Pro-Tek manufactures more than ten biobased cleaning products that are readily biodegradable. Product offerings include cleaners, scrubs, polishes, and enzymes.

USDA Rural Development Idaho Office

Wallace Hedrick, State Director (*www.rd.usda.gov/id*)
9713 West Barnes Drive, Suite A1, Boise, ID 83709
Phone: (208) 378–5600

Illinois



Total Jobs: 90,930
Direct Jobs: 39,940
Total Value-Added: $8.385 Billion
Direct Value-Added: $3.543 Billion

The total jobs or value-added is the sum of the direct, indirect, and induced effects.

Sector	Direct Jobs	Direct Value-Added
Agriculture & Forestry	1,950	$63.0M
Biobased Chemicals	1,000	$235.0M
Biorefining	130	$48.2M
Enzymes	130	$222.2M
Forest Products	34,380	$3.1B
Textiles	3,100	$157.6M
Bioplastic Bottles & Packaging	80	$9.2M

BioPreferred®

123 Illinois companies currently participate in the BioPreferred Program.

Example Biobased Product Firms

Biobased Chemicals

ADM (Chicago, IL; *adm.com*): ADM is one of the world's largest agricultural processors, manufacturing a variety of food, animal feed, energy, and industrial products, which include those for construction, packaging, personal care, pulp and paper, and plastic. Oilseeds and corn are the company's primary feedstocks.

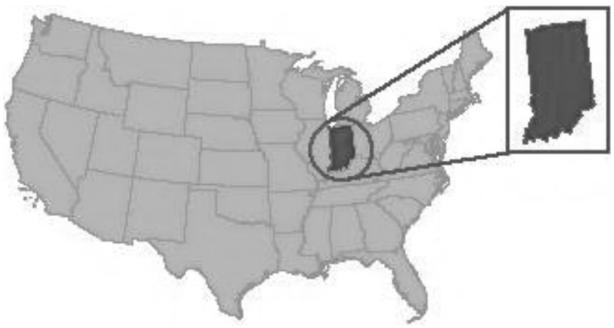
Elevance Renewable Sciences, Inc. (Woodridge, IL; *elevance.com*): Elevance Renewable Sciences is a specialty chemical company that creates chemicals from renewable feedstocks. Market uses include personal care products, detergents and cleaners, engineered polymers, lubricants, and other specialty chemical markets.

LanzaTech (Skokie, IL; *lanzatech.com*): LanzaTech's bioprocessing platform provides an economically robust route to carbon capture and re-use. The company's novel gas-to-liquid technology is the only process that converts waste gases (carbon monoxide and carbon dioxide) to fuels and chemicals.

USDA Rural Development Illinois Office

Colleen Callahan, State Director (*www.rd.usda.gov/il*)
2118 West Park Court, Suite A, Champaign, IL 61821
Phone: 217–403–6200

Indiana



Total Jobs: 85,530
Direct Jobs: 46,050
Total Value-Added: $5.820 Billion
Direct Value-Added: $2.843 Billion

The total jobs or value-added is the sum of the direct, indirect, and induced effects.

Sector	Direct Jobs	Direct Value-Added
Agriculture & Forestry	1,850	$63.9M
Biobased Chemicals	490	$157.5M
Biorefining	<50	$11.4M
Enzymes	60	$12.8M
Forest Products	41,740	$2.5B
Textiles	1,980	$95.2M
Bioplastic Bottles & Packaging	70	$5.4M

BioPreferred®

28 Indiana companies currently participate in the BioPreferred Program.

Example Biobased Product Firms

Biobased Chemicals

Toni Natural Products Co. LLC (Sunman, IN; *toninatural.com*): Toni Natural offers an assortment of products that contain 100 percent natural plant- and mineral-based compounds. These products include cleaning products, laundry detergents, fabric softeners, dishwashing liquid, soaps, shampoos, and lotions.

Trellis Bioplastics (Seymour, IN; *trellisbioplastic.com*): Trellis Bioplastics creates a wide range of bioplastic resins and consumer products, replacing upwards of 95 percent of the petroleum content used in traditional plastics. Starch-based feedstocks are currently used in manufacturing processes, with plans to expand feedstock use to include algae, distillery byproducts, wheat chaff, and rice hulls.

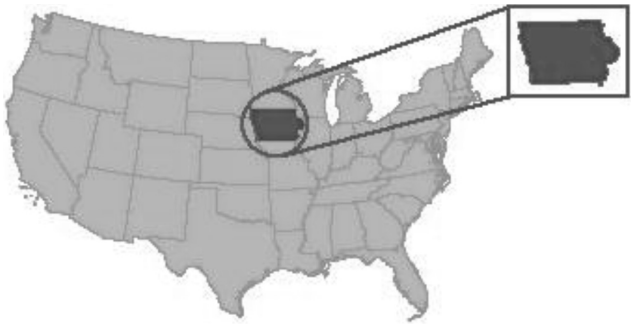
Enzymes

Enzyme Solutions Inc. (Garrett, IN; *enzymesolutions.com*): Enzyme Solutions is a leader in "green" cleaning technology, manufacturing both enzymes and enzyme products. Manufacturing, testing, formulation, and bottling are all conducted in Indiana.

USDA Rural Development Indiana Office

Philip Lehmkuhler, State Director (*www.rd.usda.gov/in*)
5975 Lakeside Boulevard, Indianapolis, IN 46278
Phone: (317) 290–3100 ext.4

Iowa



Total Jobs: 37,430
Direct Jobs: 20,110
Total Value-Added: $3.022 Billion
Direct Value-Added: $1.735 Billion

The total jobs or value-added is the sum of the direct, indirect, and induced effects.

Sector	Direct Jobs	Direct Value-Added
Agriculture & Forestry	1,400	$51.7M
Biobased Chemicals	230	$123.1M
Biorefining	80	$22.3M
Enzymes	140	$65.3M
Forest Products	17,620	$1.5B
Textiles	750	$45.1M
Bioplastic Bottles & Packaging	<50	<$5M

BioPreferred®

79 Iowa companies currently participate in the BioPreferred Program.

Example Biobased Product Firms

Biobased Chemicals

Avello Bioenergy (Ames, IA; *avellobioenergy.com*): In collaborating with Iowa State University, Avello is commercializing proprietary technology that provides quality, low-cost, profitable feedstocks for producing bulk chemicals, specialty chemicals, lignin based chemicals, adhesives, and flavors and fragrances.

Corn Oil ONE (Pleasant Hill, IA; *cornoilone.com*): Corn Oil ONE refines crude corn oil, thereby eliminating free fatty acids, moisture, and waxes. The refined corn oil product delivers the same advantages as soybean oil, making it available as an alternative feedstock for oleochemical and biobased industries.

Renewable Energy Group, Inc. (Ames, IA; *regfuel.com*): Renewable Energy Group is a leading North American advanced biofuels producer and developer of renewable chemicals. The company's growing industrial biotechnology business manufactures sustainable chemical products using renewable feedstocks such as corn, sugarcane, and cellulosic sugars.

USDA Rural Development Iowa Office

William Joseph Menner, State Director (*www.rd.usda.gov/ia*)
Federal Building, Room 873, 210 Walnut Street, Des Moines, IA 50309
Phone: (515) 284–4663

Kansas



Total Jobs: 17,070
Direct Jobs: 9,080
Total Value-Added: $1.129 Billion
Direct Value-Added: $504 Million

The total jobs or value-added is the sum of the direct, indirect, and induced effects.

Sector	Direct Jobs	Direct Value-Added
Agriculture & Forestry	910	$44.2M
Biobased Chemicals	140	$56.5M
Biorefining	<50	<$5M
Enzymes	60	$13.4M
Forest Products	6,890	$367.3M
Textiles	1,070	$35.9M
Bioplastic Bottles & Packaging	<50	<$5M

BioPreferred®

27 Kansas companies currently participate in the BioPreferred Program.

Example Biobased Product Firms

Biobased Chemicals

Corbion (Lenexa, KS; *corbion.com*): Corbion is the global market leader in lactic acid, lactic acid derivatives, and lactides. Product offerings include bioplastics, biochemical, and biomedical products.

Nowa Technology, Inc. (Prairie Village, KS; *nowatechnology.com*): Nowa Technology, Inc. uses solids extracted from wastewater treatment sludge to create useful products, including fertilizer. The Nowa Technology process efficiently creates useful products from a source that would otherwise be undesirable waste.

LC Bioplastics (Wichita, KS; *lcbioplastics.com*): LC Bioplastics manufactures a range of bioplastic resins and additives, including a line of ready-to-use finished goods such as custom film and bag products. Biohybrid resins, which are a blend of renewable thermoplastic materials and traditional polyolefins, increase the renewable content of a product by up to 50 percent in comparison to traditional packaging.

USDA Rural Development Kansas Office

Patricia Clark, State Director (*www.rd.usda.gov/ks*)
1303 SW First American Place, Suite 100, Topeka, KS 66604–4040
Phone: (785) 271–2700

Kentucky



Total Jobs: 53,190
Direct Jobs: 27,290
Total Value-Added: $4.037 Billion
Direct Value-Added: $2.128 Billion

The total jobs or value-added is the sum of the direct, indirect, and induced effects.

Sector	Direct Jobs	Direct Value-Added
Agriculture & Forestry	3,110	$98.3M
Biobased Chemicals	450	$11.9M
Biorefining	<50	<$5M
Enzymes	50	$11.3M
Forest Products	21,960	$1.8B
Textiles	1,780	$76.5M
Bioplastic Bottles & Packaging	<50	<$5M

BioPreferred®

12 Kentucky companies currently participate in the BioPreferred Program.

Example Biobased Product Firms

Biobased Chemicals

Owensboro Grain Company (Owensboro, KY; *owensborograin.com*): Owensboro Grain Company manufacturers an array of products from soybeans, including protein meal and hull pellets for animal feeds, crude and degummed oil, lecithin, and various blends of refined vegetable oils for human consumption, biodiesel, and glycerin.

RyDol Lubricants (Shelbyville, KY; *rydol.com*): RyDol manufactures and distributes specialty high-performance, biodegradable lubricants, solvents, and degreasers. Products contain soybean oil, grease, and methyl esters as base fluids.

Soy Technologies, LLC (Nicholasville, KY; *soytek.com*): Soy Technologies is a specialty chemical manufacturer that develops renewable, biobased chemicals. Available products include biobased solvents and emulsions, personal care products, paint thinners, and additional specialty products.

USDA Rural Development Kentucky Office

Thomas G. Fern, State Director (*www.rd.usda.gov/ky*)
771 Corporate Drive, Suite 200, Lexington, KY 40503
Phone: (859) 224–7300

Louisiana



Total Jobs: 49,070
Direct Jobs: 22,440
Total Value-Added: $4.906 Billion
Direct Value-Added: $2.649 Billion

The total jobs or value-added is the sum of the direct, indirect, and induced effects.

Sector	Direct Jobs	Direct Value-Added
Agriculture & Forestry	6,670	$451.0M
Biobased Chemicals	330	$151.8M
Biorefining	<50	$8.1M
Enzymes	70	$27.9M
Forest Products	14,810	$2.0B
Textiles	780	$26.7M
Bioplastic Bottles & Packaging	<50	<$5M

BioPreferred®

7 Louisiana companies currently participate in the BioPreferred Program.

Example Biobased Product Firms

Biobased Chemicals

Biosynthetic Technologies (Baton Rouge, LA; *biosynthetic.com*): Biosynthetic Technologies manufactures biobased synthetic molecules produced from organic fatty acids found in plant oils. Biosynthetic oils have numerous applications in the lubricant, chemical, and cosmetics industries. In conjunction with Albemarle, a specialty chemical company, the company operates a demonstration plant in Louisiana.

Myriant (Lake Providence, LA; *myriant.com*): Myriant developed a proprietary platform for the production of biobased chemical intermediates, which can be seamlessly integrated into existing chemical production processes in order to provide a wide range of consumer applications. A variety of feedstocks is utilized in the production process.

Giant Cleaning Systems, Inc. (Duson, LA; *giantcleaningproducts.com*): Giant Cleaning Systems manufactures a variety of industrial cleaners, including drill rigs, printing industry, and aircraft cleaners. Many of these products contain biobased materials.

USDA Rural Development Louisiana Office

Clarence Hawkins, State Director (*www.rd.usda.gov/la*)
3727 Government Street, Alexandria, LA 71302
Phone: (318) 473–7920

Maine



Total Jobs: 46,950
Direct Jobs: 20,500
Total Value-Added: $3.574 Billion
Direct Value-Added: $1.600 Billion

The total jobs or value-added is the sum of the direct, indirect, and induced effects.

Sector	Direct Jobs	Direct Value-Added
Agriculture & Forestry	6,020	$268.7M
Biobased Chemicals	<50	<$5M
Biorefining	<50	<$5M
Enzymes	<50	<$5M
Forest Products	13,390	$1.3B
Textiles	1,040	$47.1M
Bioplastic Bottles & Packaging	<50	<$5M

BioPreferred®

14 Maine companies currently participate in the BioPreferred Program.

Example Biobased Product Firms

Biobased Chemicals

Genesan LLC (Gorham, ME; *cleaneasier.com*): Genesan is a leading source of high-performance, ecological, and biotechnological cleaning products in the U.S. Collaborating with Pollet, a world leader in developing and manufacturing biobased cleaning solutions, over 54 percent of Genesan SKUs are classified as biobased and derived from natural sources.

Textiles

Biovation II, LLC (Boothbay, ME; *biovation.com*): Biovation manufactures non-woven material consisting of natural, or naturally derived, fibers. The material is manufactured using a sustainable biopolymer, polylactic acid.

Grow-Tech, LLC (South Portland, ME; *grow-tech.com*): Grow-Tech manufactures BioStrate, a biobased non-woven textile used by aquaponics and hydroponics farms to grow lettuce, microgreens, and tomatoes.

USDA Rural Development Maine Office

Virginia Manuel, State Director (*www.rd.usda.gov/me*)
967 Illinois Avenue Suite 4, Bangor, ME 04401–2767
Phone: (207) 990–9160

Maryland



Total Jobs: 18,150
Direct Jobs: 9,570
Total Value-Added: $1.613 Billion
Direct Value-Added: $801 Million

The total jobs or value-added is the sum of the direct, indirect, and induced effects.

Sector	Direct Jobs	Direct Value-Added
Agriculture & Forestry	1,050	$40.7M
Biobased Chemicals	170	$73.0M
Biorefining	<50	<$5M
Enzymes	60	$52.8
Forest Products	7,030	$546.8M
Textiles	1,310	$85.7
Bioplastic Bottles & Packaging	<50	<$5M

BioPreferred®

24 Maryland companies currently participate in the BioPreferred Program.

Example Biobased Product Firms

Forest Products

American Wood Fibers (Columbia, MD; *awf.com*): American Wood Fibers is a leader in the field of specialty forestry products. The company offers an array of products for people, pets, and livestock, all produced from wood shavings and wood flour. Industrial fiber applications include adhesives, absorbents, papers, and plastics.

Enviva Partners, LP (Bethesda, MD; *envivabiomass.com*): Enviva is the world's largest producer of wood pellets, owning and operating six plants within the southeastern U.S. Pellets are produced using sustainable practices that protect Southern forests.

Wicanders (Hanover, MD; *wicanders.com/us*): Wicanders developed Corktech, a technology that provides exclusive properties for floors and wall coverings made from cork.

USDA Rural Development Maryland Office

Bill McGowan, State Director (*www.rd.usda.gov/md*)
1221 College Park Drive, Suite 200, Dover, DE 19904
Phone: (302) 857–3580

Massachusetts



Total Jobs: 40,350
Direct Jobs: 19,140
Total Value-Added: $3.613 Billion
Direct Value-Added: $1.417 Billion

The total jobs or value-added is the sum of the direct, indirect, and induced effects.

Sector	Direct Jobs	Direct Value-Added
Agriculture & Forestry	1,460	$43.7M
Biobased Chemicals	340	$79.8M
Biorefining	<50	<$5M
Enzymes	<50	$14.7M
Forest Products	14,160	$1.1B
Textiles	3,280	$184.3M
Bioplastic Bottles & Packaging	<50	<$5M

BioPreferred®

49 Massachusetts companies currently participate in the BioPreferred Program.

Example Biobased Product Firms

Agriculture & Forestry

Bum Boosa Bamboo Products (Mashpee, MA; *bumboosa.com*): Bum Boosa produces biodegradable, eco-friendly bamboo products, which can be adopted as an alternative to products produced from tree-pulp and many types of plastic used in fiber production.

Biobased Chemicals

Metabolix, Inc. (Cambridge, MA; *metabolix.com*): Metabolix is an advanced biomaterials company, focused on delivering sustainable solutions to the plastics industry. Metabolix produces biobased polymers utilizing renewable carbon-based feedstock.

Myriant (Quincy, MA; *myriant.com*): Myriant manufactures a broad pipeline of biobased chemicals, including bio-succinic acid and its derivatives, in addition to other biobased chemical intermediates that perform equal to, or better than, petroleum-based chemicals. Grain sorghum and other cellulosic feedstocks are used in the production processes.

USDA Rural Development Massachusetts Office

Scott Soares, State Director (*www.rd.usda.gov/ma*)
451 West Street, Amherst, MA 01002–2999
Phone: (413) 253–4300

Michigan



Total Jobs: 81,820
Direct Jobs: 37,790
Total Value-Added: $6.426 Billion
Direct Value-Added: $2.882 Billion

The total jobs or value-added is the sum of the direct, indirect, and induced effects.

Sector	Direct Jobs	Direct Value-Added
Agriculture & Forestry	5,210	$243.2M
Biobased Chemicals	950	$169.8M
Biorefining	<50	<$5M
Enzymes	<50	<$5M
Forest Products	30,090	$2.4B
Textiles	1,880	$117.1M
Bioplastic Bottles & Packaging	70	$5.5M

BioPreferred®

52 Michigan companies currently participate in the BioPreferred Program.

Example Biobased Product Firms

Biobased Chemicals

Lear Corporation (Southfield, MI; *lear.com*): Lear Corporation produces SoyFoam, derived from soybean oil, for automotive interior applications on North American Ford and other customer vehicles.

KTM Industries, Inc. (Lansing, MI; *ktmindustries.com/products.html*): KTM Industries develops, manufactures, and markets new technologies that incorporate bioplastics. One of the company's products is Green Cell, a starch-based biodegradable foam.

Biorefining

Hydro Safe, Inc. (Dewitt, MI; *hydrosafe.com*): Hydro Safe products use vegetable-based oils as base fluids for a number of market products, including hydraulic oils, cleaners, and lubricants.

Bioplastic Bottles & Packaging

Green Cell Foam (Lansing, MI; *greencellfoam.com*): Green Cell Foam produces a unique natural packaging material, produced from high-grade, non-GMO cornstarch.

USDA Rural Development Michigan Office

James Turner, State Director (*www.rd.usda.gov/mi*)
3001 Coolidge Road, Suite 200, East Lansing, MI 48823
Phone: (517) 324–5190

Minnesota



Total Jobs: 81,670
Direct Jobs: 35,850
Total Value-Added: $7.371 Billion
Direct Value-Added: $3.392 Billion

The total jobs or value-added is the sum of the direct, indirect, and induced effects.

Sector	Direct Jobs	Direct Value-Added
Agriculture & Forestry	3,280	$146.9M
Biobased Chemicals	270	$74.1M
Biorefining	<50	$6.3M
Enzymes	50	$10.5M
Forest Products	28,880	$3.1B
Textiles	1,730	$81.6M
Bioplastic Bottles & Packaging	<50	<$5M

BioPreferred®

92 Minnesota companies currently participate in the BioPreferred Program.

Example Biobased Product Firms

Biobased Chemicals

BioAmber (Plymouth, MN; *bio-amber.com*): BioAmber manufactures succinic acid, which can be used to create of a number of consumer products, including polyurethanes, artificial leathers, cosmetics and personal care products, plastics, and dyes and pigments.

Cargill (Minneapolis, MN; *cargill.com*): Cargill offers a variety of biobased products, suitable for a number of industrial applications and markets.

NatureWorks, LLC (Minnetonka, MN; *natureworksllc.com*): NatureWorks is dedicated to driving environmental progress through developing the global market for biobased plastics and fibers. Industry partnerships include service ware, home textiles, food packaging, and apparel.

StarchTech, Inc. (Minneapolis, MN; *starchtech.com*): StarchTech is a global manufacturer of cornstarch-based loose fill packaging material produced from ReNew Resin.

USDA Rural Development Minnesota Office

Mary Colleen Landkamer, State Director (*www.rd.usda.gov/mn*)
375 Jackson Street, Suite 410, St. Paul, MN 55101–1853
Phone: (651) 602–7800

Mississippi



Total Jobs: 68,760
Direct Jobs: 40,350
Total Value-Added: $4.730 Billion
Direct Value-Added: $2.692 Billion

The total jobs or value-added is the sum of the direct, indirect, and induced effects.

Sector	Direct Jobs	Direct Value-Added
Agriculture & Forestry	9,330	$610.9M
Biobased Chemicals	170	$44.9M
Biorefining	<50	<$5M
Enzymes	<50	<$5M
Forest Products	29,400	$1.9B
Textiles	1,470	$84.0M
Bioplastic Bottles & Packaging	<50	<$5M

BioPreferred®

16 Mississippi companies currently participate in the BioPreferred Program.

Example Biobased Product Firms

Agriculture & Forestry

SpillEater (Flora, MS; *spilleater.com*): SpillEater manufactures natural, biobased spill absorbents, produced from cotton plants. Absorbents are available for a number of classifications, including all-purpose, oil, acid, and bodily fluid. Market segments include retail, transportation, manufacturing, and government.

Biobased Chemicals

ALGIX (Meridian, MS; *algix.com*): A subsidiary of ALGIX, Solaplast harnesses the potential of algae to produce biobased plastics for the replacement of traditional, petroleum-based plastics. Algae is sourced from areas that have historically had algae problems, enhancing the waterway.

Forest Products

Magnolia Forest Products, Inc. (Terry, MS; *magnoliaforest.com*): Founded in 1976, Magnolia Forest Products is a national supplier of quality, low-cost wood products, including wooden pallet parts, plywood, particleboard, oriented strand board, and furniture parts.

USDA Rural Development Mississippi Office

Trina George, State Director (*www.rd.usda.gov/ms*)
Federal Building, Suite 831, 100 West Capitol Street, Jackson, MS 39269
Phone: (601) 965–4316

Missouri



Total Jobs: 54,760
Direct Jobs: 27,290
Total Value-Added: $4.693 Billion
Direct Value-Added: $2.506 Billion

The total jobs or value-added is the sum of the direct, indirect, and induced effects.

Sector	Direct Jobs	Direct Value-Added
Agriculture & Forestry	4,460	$266.5M
Biobased Chemicals	450	$127.7M
Biorefining	<50	<$5M
Enzymes	130	$28.6M
Forest Products	20,850	$2.1B
Textiles	1,780	$75.3M
Bioplastic Bottles & Packaging	<50	<$5M

BioPreferred®

50 Missouri companies currently participate in the BioPreferred Program.

Example Biobased Product Firms

Biobased Chemicals

Gateway Foam Insulators (Warrenton, MO; *gatewayfoam.com*): Gateway Foam Insulators produces a soy-based spray foam insulation, BioBased 501, which exhibits the same air sealing capabilities as low-density polyurethanes, and is produced using soybean oil.

Soya Systems (Saint Louis, MO; *soya.com*): Soya Systems Products are the first shampoos and conditions in the world to contain hydrolyzed soya protein.

Bioplastic Bottles & Packaging

Biodegradable Food Service LLC (Richland, MO; *earth-to-go.com*): Biodegradable Food Service produces over 82 biobased, single-use food service products, in addition to eco-friendly lid options. Feedstock inputs include bamboo fibers, cornstarch, potato starch, as well as additional vegetable starches.

USDA Rural Development Missouri Office

Anita "Janie" Dunning, State Director (*www.rd.usda.gov/mo*)
601 Business Loop 70 West, Parkade Center, Suite 235, Columbia, MO 65203
Phone: (573) 876–0976

Montana



Total Jobs: 11,350
Direct Jobs: 6,340
Total Value-Added: $674 Million
Direct Value-Added: $3,334 Million

The total jobs or value-added is the sum of the direct, indirect, and induced effects.

Sector	Direct Jobs	Direct Value-Added
Agriculture & Forestry	1,860	$75.0M
Biobased Chemicals	<50	<$5M
Biorefining	<50	<$5M
Enzymes	<50	<$5M
Forest Products	4,280	$250.8M
Textiles	190	$5.6M
Bioplastic Bottles & Packaging	<50	<$5M

BioPreferred®

10 Montana companies currently participate in the BioPreferred Program.

Example Biobased Product Firms

Biobased Chemicals

Blue Marble Biomaterials (Missoula, MT; *bluemarblebio.com*): Blue Marble Biomaterials manufactures complex chemical compounds using refined green chemistry processes. Organic biomass material, including food co-products, spent brewery grain, and wood chips, is utilized in the production of chemical products.

Botanie Soap Inc. (Missoula, MT; *botaniesoap.com*): Botanie Soap manufactures all-natural soap, utilizing basic organic ingredients. The company's base oil blend includes combinations of certified organic coconut, palm fruit, sunflower, and safflower oils.

Forest Products

Bitteroot Valley Forest Products (Missoula, MT; *bvfpmontana.com*): Bitteroot Valley Forest Products provides a large range of specialty wood products, including logs, timber, siding, and wood shavings. The company works to incorporate beetle-kill and standing dead wood in some of their product lines.

USDA Rural Development Montana Office

John Walsh, State Director (*www.rd.usda.gov/mt*)
2229 Boot Hill Court, Bozeman, MT 59715
Phone: (406) 585–2580

Nebraska



Total Jobs: 11,890
Direct Jobs: 6,020
Total Value-Added: $895 Million
Direct Value-Added: $426 Million

The total jobs or value-added is the sum of the direct, indirect, and induced effects.

Sector	Direct Jobs	Direct Value-Added
Agriculture & Forestry	830	$30.5M
Biobased Chemicals	130	$56.8
Biorefining	<50	<$5M
Enzymes	120	$46.3M
Forest Products	4,650	$307.8M
Textiles	<50	<$5M
Bioplastic Bottles & Packaging	360	$18.8M

BioPreferred®

23 Nebraska companies currently participate in the BioPreferred Program.

Example Biobased Product Firms

Biobased Chemicals

The Clean Environment Company (Laurel, NE; *cleanenvironmentco.com*): The Clean Environment Company manufactures a variety of cleaning products produced from naturally derived, renewable ingredients. Product offerings include cleaners, solvents, and detergents.

Laurel BioComposite, LLC (Laurel, NE; *laurelbiocomposite.com*): Laurel BioComposite manufactures Bio-Res powder and pellets using distiller's grain. The powder and pellets can be blended with thermoplastics and thermosets in a variety of manufacturing applications, replacing petroleum-based resins at inclusion rates up to 40 percent in final products.

NatureWorks, LLC (Blair, NE; *natureworksllc.com*): NatureWorks is dedicated to driving environmental progress through developing the global market for biobased plastics and fibers. NatureWorks's manufacturing facility is located in Blair, Nebraska.

USDA Rural Development Nebraska Office

Maxine B. Moul, State Director (*www.rd.usda.gov/ne*)
Federal Building, Suite 308, 100 Centennial Mall North, Lincoln, NE 68508–3859
Phone: (402) 437–5551

Nevada



Total Jobs: 7,130
Direct Jobs: 3,840
Total Value-Added: $515 Million
Direct Value-Added: $229 Million

The total jobs or value-added is the sum of the direct, indirect, and induced effects.

Sector	Direct Jobs	Direct Value-Added
Agriculture & Forestry	300	$6.3M
Biobased Chemicals	<50	$5.5M
Biorefining	<50	<$5M
Enzymes	<50	<$5M
Forest Products	3,110	$193.9M
Textiles	390	$22.4M
Bioplastic Bottles & Packaging	<50	<$5M

BioPreferred®

14 Nevada companies currently participate in the BioPreferred Program.

Example Biobased Product Firms

Biobased Chemicals

Aervoe Industries Inc. (Gardnerville, NV; *aervoe.com*): Aervoe Industries manufactures paints, cleaners, lubricants, and other industrial products and aims to meet strict environmental requirements and specifications. Several products made by Aervoe Industries contain biobased materials.

Bio Pac Inc. (Incline Village, NV; *bio-pac.com*): Bio Pac produces an assortment of biodegradable cleaning products. Available offerings include dishwashing products, laundry products, household cleaning supplies, and hand and body wash. All products are void of petroleum distillates, dyes, perfumes, and chlorine.

Enzymes

Bio-Pure Products Inc. (Minden, NV; *biopureproducts.com*): Bio-Pure Products provides microbiology-based on-site organic waste management solutions for many industries. All products intend to replace dangerous chemicals with a unique combination of living microbes and enzymes, which together act to break down and digest organic waste.

USDA Rural Development Nevada Office

Sarah Jose Mersereau-Adler, State Director (*www.rd.usda.gov/nv*)
1390 South Curry Street, Carson City, NV 89703–9910
Phone: (775) 887–1222

New Hampshire



Total Jobs: 13,480
Direct Jobs: 7,090
Total Value-Added: $939 Million
Direct Value-Added: $404 Million

The total jobs or value-added is the sum of the direct, indirect, and induced effects.

Sector	Direct Jobs	Direct Value-Added
Agriculture & Forestry	1,840	$81.4M
Biobased Chemicals	<50	$7.6M
Biorefining	<50	<$5M
Enzymes	<50	<$5M
Forest Products	4,110	$240.3M
Textiles	1,080	$71.7M
Bioplastic Bottles & Packaging	<50	<$5M

BioPreferred®

18 New Hampshire companies currently participate in the BioPreferred Program.

Example Biobased Product Firms

Biobased Chemicals

Ink Mill (Sanbornton, NH; *inkmillcorp.com*): Ink Mill manufactures premium quality digital inks, including a line of inks produced with natural materials called, BTW BioSolvent Ink.

Forest Products

WE Cork, Inc. (Exeter, NH; *wecork.com*): For more than 100 years, WE Cork has offered an array of all-natural products derived from the bark of cork trees. Product offerings include flooring, expansion joints, insulation corkboard, and composition cork.

Bioplastic Bottles & Packaging

Stonyfield Farms, Inc. (Londonderry, NH; *stonyfield.com*): Stonyfield Farms, the world's largest organic yogurt producer, uses biobased plastic for its multipack yogurt cups. As a result, the company lowered its carbon emissions from packaging by 48 percent.

USDA Rural Development New Hampshire Office

Ted Brady, State Director (*www.rd.usda.gov/nh*)
87 State Street Suite 324, P.O. Box 249, Montpelier, VT 05601
Phone: (802) 828–6000

New Jersey



Total Jobs: 47,390
Direct Jobs: 21,950
Total Value-Added: $4.541 Billion
Direct Value-Added: $1.878 Billion

The total jobs or value-added is the sum of the direct, indirect, and induced effects.

Sector	Direct Jobs	Direct Value-Added
Agriculture & Forestry	1,280	$38.8M
Biobased Chemicals	770	$215.1M
Biorefining	<50	<$5M
Enzymes	150	$35.3M
Forest Products	16,660	$1.4B
Textiles	3,560	$205.7M
Bioplastic Bottles & Packaging	<50	<$5M

BioPreferred®

60 New Jersey companies currently participate in the BioPreferred Program.

Example Biobased Product Firms

Biobased Chemicals

AVEENO Active Naturals (Skillman, NJ; *aveeno.com*): Aveeno's Active Naturals brand uses a number of renewable, natural ingredients, including oat, soy, blackberry, and wheat. The company offers several skin, beauty, and hair care products.

Ingredion Incorporated (Bridgewater, NJ; *ingredion.com*): Ingredion has been a recognized leader in biomaterial innovation and application development since 1895. Biobased ingredients derived from feedstocks such as corn, tapioca, and potatoes, are used in a number of industry sectors, including personal care, household and fabric care, and biobased plastics.

National Bio+GreenSciences (Branchburg, NJ; *biogreencrystals.com*): National Bio+GreenSciences offers the world's first nutraceutical grade, zero waste, [E]arth friendly product line of cleaning supplies, formulated with plant- and mineral-based ingredients.

USDA Rural Development New Jersey Office

Howard Henderson, State Director (*www.rd.usda.gov/nj*)
5th Floor North, Suite 500, 8000 Midlantic Drive, Mt. Laurel, NJ 08054
Phone: (856) 787–7700

New Mexico



Total Jobs: 6,630
Direct Jobs: 4,210
Total Value-Added: $389 Million
Direct Value-Added: $208 Million

The total jobs or value-added is the sum of the direct, indirect, and induced effects.

Sector	Direct Jobs	Direct Value-Added
Agriculture & Forestry	1,120	$53.1M
Biobased Chemicals	<50	<$5M
Biorefining	<50	<$5M
Enzymes	<50	<$5M
Forest Products	2,740	$140.5M
Textiles	310	$12.0M
Bioplastic Bottles & Packaging	<50	<$5M

BioPreferred®

8 New Mexico companies currently participate in the BioPreferred Program.

Example Biobased Product Firms

Biobased Chemicals

BioShield Paint Company (Santa Fe, NM; *bioshieldpaint.com*): BioShield Paint Company manufactures a variety of paints, stains, thinners, and waxes, all of which are primarily produced from naturally derived raw materials such as citrus peel extracts, essential oils, seed oils, tree resins, and natural pigments.

Private Label Select (Ranchos de Taos, NM; *privatelabelselect.com*): Private Label Select manufactures lip balms, lip tints, glosses, and other high-quality personal care and cosmetics products. A pioneer in the natural and organic cosmetics industry, its manufacturing facilities were some of the first USDA certified organic.

Forest Products

Albuquerque Hardwood Lumber Company (Albuquerque, NM; *abqhardwoods.com*): Albuquerque Hardwood Lumber Company is the premier supplier of quality hardwood products in the southwestern U.S. In addition to lumber options, the company also offers wood panel products.

USDA Rural Development New Jersey Office

Terrence Brunner, State Director (*www.rd.usda.gov/nm*)
6200 Jefferson Street, Room 255, Albuquerque, NM 87109
Phone: (505) 761–4950

New York



Total Jobs: 100,630
Direct Jobs: 52,300
Total Value-Added: $9.236 Billion
Direct Value-Added: $3.848 Billion

The total jobs or value-added is the sum of the direct, indirect, and induced effects.

Sector	Direct Jobs	Direct Value-Added
Agriculture & Forestry	4,450	$170.0M
Biobased Chemicals	720	$237.7M
Biorefining	<50	<$5M
Enzymes	120	$33.6M
Forest Products	36,130	$2.6B
Textiles	11,260	$828.9M
Bioplastic Bottles & Packaging	<50	<$5M

BioPreferred®

83 New York companies currently participate in the BioPreferred Program.

Example Biobased Product Firms

Biobased Chemicals

AnelloTech (Pearl River, NY; *anellotech.com*): AnelloTech produces cost-competitive renewable chemicals form non-food biomass feedstocks. These chemicals can be used in a number of consumer goods, including beverage bottles, automotive and electronic components, clothing, footwear, and carpeting.

Forest Products

Ecovative (Green Island, NY; *ecovativedesign.com*): Ecovative is a leading biobased materials company, with products that span a range of applications, from furniture to packaging and insulation. Myco Board, one product offering, is a certified sustainable, engineered wood, which can be molded into desired shapes and designs.

Textiles

Carnegie Fabrics (Rockville, NY; *carnegiefabrics.com*): In 2013, Carnegie Fabrics introduced Xorel, the world's first and only biobased high performance interior textile. This line of fabrics is sourced from sugarcane plants and has a biobased content range from 60 to 85 percent.

USDA Rural Development New York Office

Scott Collins, Acting State Director (*www.rd.usda.gov/ny*)
The Galleries of Syracuse, 441 South Salina Street, Suite 357, Syracuse, NY 13202–2541
Phone: (315) 477–6400

North Carolina



Total Jobs: 179,380
Direct Jobs: 90,040
Total Value-Added: $13.631 Billion
Direct Value-Added: $6.437 Billion

The total jobs or value-added is the sum of the direct, indirect, and induced effects.

Sector	Direct Jobs	Direct Value-Added
Agriculture & Forestry	9,410	$625.9M
Biobased Chemicals	860	$349.8M
Biorefining	<50	<$5M
Enzymes	210	$103.6M
Forest Products	61,930	$4.3B
Textiles	17,870	$1.1B
Bioplastic Bottles & Packaging	<50	<$5M

BioPreferred®

61 North Carolina companies currently participate in the BioPreferred Program.

Example Biobased Product Firms

Enzymes

Novozymes North America (Franklinton, NC; *novozymes.com*): Novozymes is the world leader in biobased innovation, advancing both the biofuel and renewable chemical industries. Manufactured products include industrial enzymes, microorganisms, and biopharmaceutical ingredients.

Textiles

Cotton Incorporated (Cary, NC; *cottoninc.com*): Cotton Incorporated is the research and marketing company representing upland cotton. The company focuses its efforts in three key areas: fiber processing, product development and trend analysis, and dyeing and finishing.

Bioplastic Bottles & Packaging

Earth Renewable Technologies, Inc. (Brevard, NC; *earthrenewable.com*): Earth Renewable Technologies uses various plant-based resins, in conjunction with their patent pending, biobased microfiber-additive packaging, to produce superior plant-based alternatives to traditional plastic packaging. Feedstock sources include sugarcane and sugar beets.

USDA Rural Development North Carolina Office

Randall A. Gore, State Director (*www.rd.usda.gov/nc*)
4405 Bland Road, Suite 260, Raleigh, NC 27609
Phone: (919) 873–2000

North Dakota



Total Jobs: 5,600
Direct Jobs: 3,360
Total Value-Added: $429 Million
Direct Value-Added: $238 Million

The total jobs or value-added is the sum of the direct, indirect, and induced effects.

Sector	Direct Jobs	Direct Value-Added
Agriculture & Forestry	470	$21.1M
Biobased Chemicals	<50	$5.1M
Biorefining	<50	$5.8M
Enzymes	<50	<$5M
Forest Products	2,740	$200.8M
Textiles	120	$6.1M
Bioplastic Bottles & Packaging	<50	<$5M

BioPreferred®

5 North Dakota companies currently participate in the BioPreferred Program.

Example Biobased Product Firms

Agriculture & Forestry

Bison Forest Products LLC (Fargo, ND; *bisonforestproducts.com*): Bison Forest Products is a wholesale lumber supplier. In addition to its lumber offerings, the company provides quality wheat and barley straw.

Forest Products

Weekes Forest Products, Inc. (Fargo, ND; *weekesforest.com*): Weekes is the leading distributor of specialty building materials, commodity lumber, engineered wood components, and industrial materials. Among its specialty product offerings, Eco-Side is a 100 percent recycled, ecologically friendly siding option.

USDA Rural Development North Dakota Office

Ryan Taylor, State Director (*www.rd.usda.gov/nd*)
Federal Building, Room 208, P.O. Box 1737, 220 East Rosser, Bismarck, ND 58502–1737
Phone: (701) 530–2037

Ohio



Total Jobs: 117,370
Direct Jobs: 52,930
Total Value-Added: $9.730 Billion
Direct Value-Added: $4.277 Billion

The total jobs or value-added is the sum of the direct, indirect, and induced effects.

Sector	Direct Jobs	Direct Value-Added
Agriculture & Forestry	3,500	$165.5M
Biobased Chemicals	1,310	$443.6M
Biorefining	<50	<$5M
Enzymes	180	$4.4M
Forest Products	45,260	$3.5B
Textiles	3,070	$192.0M
Bioplastic Bottles & Packaging	100	$8.5M

BioPreferred®

92 Ohio companies currently participate in the BioPreferred Program.

Example Biobased Product Firms

Biobased Chemicals

Arizona Chemical (Dover, OH; *arizonachemical.com*): Arizona Chemical is the world's leading producer and biorefiner of pine chemicals. The company provides innovative, biobased chemical solutions to multiple industry sectors, including adhesives, roads and construction, tires, and coatings. Approximately 85 percent of the company's raw materials are from renewable sources.

Procter & Gamble (Cincinnati, OH; *us.pg.com*): Tide, a Procter & Gamble brand, recently launched the first biobased detergent, Tide purclean. The detergent is comprised of 65 percent biobased ingredients and aims to set the performance standard for natural detergents.

Renewable Lubricants (Hartville, OH; *renewablelube.com*): Renewable Lubricants is the world's leading developer and manufacturer of high-performance, biobased lubricants, producing utilizing soy, corn, canola, sunflower, and other biomaterials. The company offers more than 250 biobased and biodegradable products.

USDA Rural Development Ohio Office

Tony Logan, State Director (*www.rd.usda.gov/oh*)
Federal Building, Room 507, 200 North High Street, Columbus, OH 43215–2418
Phone: (614) 255–2400

Oklahoma



Total Jobs: 21,550
Direct Jobs: 10,320
Total Value-Added: $1.960 Billion
Direct Value-Added: $995 Million

The total jobs or value-added is the sum of the direct, indirect, and induced effects.

Sector	Direct Jobs	Direct Value-Added
Agriculture & Forestry	2,790	$138.1M
Biobased Chemicals	100	$40.5M
Biorefining	<50	<$5M
Enzymes	<50	<$5M
Forest Products	7,000	$773.2M
Textiles	730	$63.6M
Bioplastic Bottles & Packaging	<50	<$5M

BioPreferred®

8 Oklahoma companies currently participate in the BioPreferred Program.

Example Biobased Product Firms

Biobased Chemicals

Envia Energy (Oklahoma City, OK; *enviaenergy.com*): Envia Energy uses the latest developments in gas processing and Fischer-Tropsch technology to create high purity synthetic fuels and chemicals. Methane captured from landfills is used as a feedstock.

Forest Products

Forest Products Supply Co. (Oklahoma City, OK; *fp-supply.com*): Forest Products Supply is a leading wholesale distributor of lumber and building materials in the Midwest. Product offerings consist of over 2,500 products, ranging from general commodities to specialty products.

TO MARKET (Oklahoma City, OK; *tomkt.com*): TO MARKET prides itself on bringing alternative materials for interior paces to the commercial marketplace, designing and selling commercial flooring. Flooring products are manufactured utilizing recycled and sustainable content, including rubber and cork.

USDA Rural Development Oklahoma Office

David Ryan McMullen, State Director (*www.rd.usda.gov/ok*)
100 USDA, Suite 108, Stillwater, OK 74074–2654
Phone: (405) 742–1000

Oregon



Total Jobs: 92,520
Direct Jobs: 46,480
Total Value-Added: $7.798 Billion
Direct Value-Added: $4.159 Billion

The total jobs or value-added is the sum of the direct, indirect, and induced effects.

Sector	Direct Jobs	Direct Value-Added
Agriculture & Forestry	13,460	$1.1B
Biobased Chemicals	90	$17.5M
Biorefining	<50	<$5M
Enzymes	<50	<$5M
Forest Products	31,700	$3.0B
Textiles	1,230	$50.8M
Bioplastic Bottles & Packaging	<50	<$5M

BioPreferred®

49 Oregon companies currently participate in the BioPreferred Program.

Example Biobased Product Firms

Biobased Chemicals

Trellis Earth Products (Wilsonville, OR; *trellisbioplastic.com*): Trellis Bioplastics creates a range of biobased plastic resins and consumer products in efforts to replace traditional plastics. Trellis Earth branded food service disposables are currently the leading industry solution for "greening" the take-out food service sector.

Forest Products

DR Johnson Lumber (Riddle, OR; *drjlumber.com*): DR Johnson is the first APA/ANSI certified manufacturer for cross-laminated timber (CLT) in the U.S.

SierraPine (Medford, OR; *sierrapine.com*): SierraPine is North America's leading manufacturer of medium density fiberboard (MDF) and particleboard, which are used in a variety of applications including furniture, cabinetry, wall panels, shelving, and doors. SierraPine produces MDF and particleboard from recycled or recovered wood fiber and adhesives.

USDA Rural Development Oregon Office

Vicki L. Walker, State Director (*www.rd.usda.gov/or*)
1220 SW 3rd Avenue, Suite 1801, Portland, OR 97204
Phone: (503) 414–3300

Pennsylvania



Total Jobs: 151,090
Direct Jobs: 71,360
Total Value-Added: $13.667 Billion
Direct Value-Added: $6.522 Billion

The total jobs or value-added is the sum of the direct, indirect, and induced effects.

Sector	Direct Jobs	Direct Value-Added
Agriculture & Forestry	6,860	$309.2M
Biobased Chemicals	820	$170.5M
Biorefining	<50	<$5M
Enzymes	170	$52.7M
Forest Products	58,790	$5.8B
Textiles	5,370	$267.3M
Bioplastic Bottles & Packaging	70	$6.6M

BioPreferred®

79 Pennsylvania companies currently participate in the BioPreferred Program.

Example Biobased Product Firms

Biobased Chemicals

Armstrong World Industries (Lancaster, PA; *armstrong.com*): In response to increased market demand for non-PVC flooring products, Armstrong Flooring created a bio-flooring line that is made with 85 percent limestone and BioStride, a patented biobased polyester binder that is partly comprised of domestically produced corn.

Houghton International, Inc. (Norristown, PA; *houghtonintl.com*): Houghton International produces a variety of specialty chemicals, oils, and lubricants. The company has two hydraulic fluids that are USDA Certified Biobased Products and are derived from vegetable oil-based feedstocks.

Sun and Earth, Inc. (King of Prussia, PA; *sunandearth.com*): Sun and Earth has been producing non-toxic, all-natural cleaning supplies since 1988. *In lieu of* petroleum-based materials, the company produces products via plant-based, naturally derived ingredients.

USDA Rural Development Pennsylvania Office

Thomas P. Williams, State Director (*www.rd.usda.gov/pa*)
359 East Park Drive, Suite 4, Harrisburg, PA 17111–2747
Phone: (717) 237–2299

Rhode Island



Total Jobs: 6,670
Direct Jobs: 3,500
Total Value-Added: $522 Million
Direct Value-Added: $228 Million

The total jobs or value-added is the sum of the direct, indirect, and induced effects.

Sector	Direct Jobs	Direct Value-Added
Agriculture & Forestry	150	<$5M
Biobased Chemicals	70	$9.6M
Biorefining	<50	<$5M
Enzymes	<50	<$5M
Forest Products	2,190	$158.5M
Textiles	1,100	$56.0M
Bioplastic Bottles & Packaging	<50	<$5M

BioPreferred®

5 Rhode Island companies currently participate in the BioPreferred Program.

Example Biobased Product Firms

Biobased Chemicals

Spectral Chemical Co., Inc. (Warwick, RI; *spectralchemical.com*): Spectral Chemical Company offers a range of chemical and cleaning products, some of which are biobased products produced from soy-based feedstocks.

Toray Plastics, Inc. (North Kingston, RI; *toraytpa.com*): Toray Plastics is the only U.S. manufacturer of polypropylene, polyester, metallized, and biobased films. The company developed a biobased bio-axially oriented polyester film that is utilized in the manufacturing process of solar control window films for commercial and residential applications.

USDA Rural Development Rhode Island Office

Scott Soares, State Director (*www.rd.usda.gov/ct*)
451 West Street, Amherst, MA 01002–2999
Phone: (413) 253–4300

South Carolina



Total Jobs: 82,670
Direct Jobs: 38,430
Total Value-Added: $7.448 Billion
Direct Value-Added: $4.227 Billion

The total jobs or value-added is the sum of the direct, indirect, and induced effects.

Sector	Direct Jobs	Direct Value-Added
Agriculture & Forestry	6,870	$449.0M
Biobased Chemicals	560	$152.1M
Biorefining	<50	<$5M
Enzymes	<50	$5.1M
Forest Products	22,930	$3.0B
Textiles	8,370	$640.9M
Bioplastic Bottles & Packaging	<50	<$5M

BioPreferred®

15 South Carolina companies currently participate in the BioPreferred Program.

Example Biobased Product Firms

Biobased Chemicals

Ingevity (North Charleston, SC; *ingevity.com*): Ingevity manufactures specialty chemicals and high-performance carbon materials. Ingevity's biobased product offerings create value for many industries, including wood coatings, plastic stabilizers, mining, and specialty additives.

Sorbent Green LLC (Aiken, SC; *greensorb.com*): Sorbent Green develops, manufactures, and distributes biobased products for industrial and commercial applications. The biobased solvents offered are readily biodegradable, with zero volatile organic compounds.

Forest Products

Domtar (Fort Mill, SC; *domtar.com*): In addition to being a global leader in pulp production, Domtar is also North America's largest producer of uncoated freesheet paper. Domtar is committed to using fiber from responsibly managed sources, and was an early supporter of the Forest Stewardship Council.

USDA Rural Development South Carolina Office

Michele Cardwell, State Director (*www.rd.usda.gov/sc*)
Strom Thurmond Federal Building, 1835 Assembly Street, Room 1007, Columbia, SC 29201
Phone: (803) 765–5163

South Dakota



Total Jobs: 10,790
Direct Jobs: 6,160
Total Value-Added: $677 Million
Direct Value-Added: $332 Million

The total jobs or value-added is the sum of the direct, indirect, and induced effects.

Sector	Direct Jobs	Direct Value-Added
Agriculture & Forestry	670	$35.2M
Biobased Chemicals	<50	$13.3M
Biorefining	<50	<$5M
Enzymes	<50	$9.7M
Forest Products	5,230	$274.7M
Textiles	240	$11.1M
Bioplastic Bottles & Packaging	<50	<$5M

BioPreferred®

11 South Dakota companies currently participate in the BioPreferred Program.

Example Biobased Product Firms

Biobased Chemicals

Ultra Green Floor Sweep (Platte, SD; *ultragreenfloorsweep.com*): Ultra Green Floor Sweep produces an all-natural sweeping compound, which can be used to shine floors without the need for any water.

Biorefining

POET Biorefining (Chancellor, SD; *poet.com*): The POET Biorefining facility in Chancellor, the largest of the POET plants, processes 110 million gallons of ethanol each year. POET INVIZ zein, a natural, non-toxic edible protein product is extracted from the ethanol fermentation process and used as a biobased alternative for a number of industrial applications.

Forest Products

Pure Pulp Products (Plankinton, SD; *purepulpproducts.com*): Pure Pulp Products utilizes biomass waste as a sustainable substrate for packaging. Post-industrial waste from corrugated box manufacturing is re-purposed to create fiber that can be turned into an array of products, including food service plates and bowls, trays, and clamshells.

USDA Rural Development South Dakota Office

Bruce Jones, Acting State Director (*www.rd.usda.gov/sd*)
Federal Building, Room 210, 200 Fourth Street, SW, Huron, SD 57350
Phone: (605) 352–1100

Tennessee



Total Jobs: 100,980
Direct Jobs: 44,850
Total Value-Added: $8.981 Billion
Direct Value-Added: $4.430 Billion

The total jobs or value-added is the sum of the direct, indirect, and induced effects.

Sector	Direct Jobs	Direct Value-Added
Agriculture & Forestry	5,890	$322.2M
Biobased Chemicals	720	$174.9M
Biorefining	<50	<$5M
Enzymes	<50	<$5M
Forest Products	33,990	$3.7B
Textiles	4,320	$223.1M
Bioplastic Bottles & Packaging	<50	<$5M

BioPreferred®

27 Tennessee companies currently participate in the BioPreferred Program.

Example Biobased Product Firms

Biobased Chemicals

Colonial Chemical (Pittsburg, TN; *colonialchem.com*): Colonial Chemical is an industry forerunner in the development and manufacture of products that are derived from renewable ingredients. Products include cosmetic and industrial surfactants, performance additives, and key building-block ingredients for use in personal care, household, industrial, lubrication, and oilfield applications.

DuPont Tate & Lyle (Loudon, TN; *tateandlyle.com*): DuPont's facility in Loudon was the first to produce commercial shipments of Bio-PDO, thereby creating a renewably sourced ingredient for biobased fibers. Bio-PDO can be used in cosmetics, apparel, and industrial applications.

Forest Products

International Paper (Memphis, TN; *internationalpaper.com*): International Paper is a global leader in packaging and paper. Ecotainer packaging is a compostable solution for single-use packaging that is produced entirely from renewable resources.

USDA Rural Development Tennessee Office

Bobby Mack Goode, State Director (*www.rd.usda.gov/tn*)
3322 West End Avenue, Suite 300, Nashville, TN 37203–1071
Phone: (615) 783–1300

Texas



Total Jobs: 178,480
Direct Jobs: 88,680
Total Value-Added: $15.228 Billion
Direct Value-Added: $6.828 Billion

The total jobs or value-added is the sum of the direct, indirect, and induced effects.

Sector	Direct Jobs	Direct Value-Added
Agriculture & Forestry	24,440	$1.7B
Biobased Chemicals	1,680	$471.3M
Biorefining	<50	$5.4M
Enzymes	350	$101.2M
Forest Products	57,020	$4.4B
Textiles	6,750	$253.1M
Bioplastic Bottles & Packaging	60	$5.6M

BioPreferred®

136 Texas companies currently participate in the BioPreferred Program.

Example Biobased Product Firms

Biobased Chemicals

DSI Ventures, Inc. (Tyler, TX; *dsiventures.com*): DSI offers a comprehensive line of eco-friendly, biodegradable lubricant solutions. Feedstocks for the biobased lubricants include vegetable and citrus oils.

Samsill Corporation (Fort Worth, TX; *samsill.com*): Samsill Corporation manufactures business accessories and office supplies. The company's Earth's Choice™ Biobased binders are made using a biobased intermediate, and the binders are USDA Certified Biobased Products.

Bioplastic Bottles & Packaging

Accredo Packaging, Inc. (Sugar Land, TX; *accredopackaging.com*): Using renewably sourced resin from sugarcane feedstock, Accredo successfully pioneered sustainably produced packaging with a renewable content. The renewable packaging is predominantly used for the pre-packaged foods and consumer products markets.

USDA Rural Development Texas Office

Paco Valentin, State Director (*www.rd.usda.gov/tx*)
Federal Building, Suite 102, 101 South Main Street, Temple, TX 76501
Phone: (254) 742–9700

Utah



Total Jobs: 21,980
Direct Jobs: 10,770
Total Value-Added: $1.825 Billion
Direct Value-Added: $963 Million

The total jobs or value-added is the sum of the direct, indirect, and induced effects.

Sector	Direct Jobs	Direct Value-Added
Agriculture & Forestry	610	$12.9M
Biobased Chemicals	90	$32.4M
Biorefining	<50	<$5M
Enzymes	<50	<$5M
Forest Products	9,140	$896.6M
Textiles	980	$28.7M
Bioplastic Bottles & Packaging	<50	<$5M

BioPreferred®

11 Utah companies currently participate in the BioPreferred Program.

Example Biobased Product Firms

Biobased Chemicals

Prolix (West Jordan, UT; *prolixlubricant.com*): Prolix offers a biodegradable, non-petroleum based solvent/lubricant for firearms. The product can also be used to clean clocks, bike chain, knives, vehicle locks, lawn and garden equipment, and musical instruments.

Forest Products

Intermountain Wood Products (St. George, UT; Salt Lake City, UT; *intermountainwood.com*): Intermountain Wood Products offers a complete selection of wood products, including cabinet, casework, millwork, and flooring. In addition to using reclaimed wood, the company is also certified by the Forest Stewardship Council.

National Wood Products, Inc. (Salt Lake City, UT; *nationalwood.com*): National Wood Products is a multi-product, multi-location building products distributor. The company offers a range of lumber, plywood, and flooring products.

USDA Rural Development Utah Office

Wilson "David" Conine, State Director (*www.rd.usda.gov/ut*)
Wallace F. Bennett Federal Building, 125 South State Street, Room 4311, Salt Lake City, UT 84138
Phone: (801) 524–4321

Vermont



Total Jobs: 11,420
Direct Jobs: 6,500
Total Value-Added: $630 Million
Direct Value-Added: $278 Million

The total jobs or value-added is the sum of the direct, indirect, and induced effects.

Sector	Direct Jobs	Direct Value-Added
Agriculture & Forestry	1,820	$53.9M
Biobased Chemicals	<50	<$5M
Biorefining	<50	<$5M
Enzymes	<50	<$5M
Forest Products	4,390	$213.9M
Textiles	280	$7.6M
Bioplastic Bottles & Packaging	<50	<$5M

BioPreferred®

9 Vermont companies currently participate in the BioPreferred Program.

Example Biobased Product Firms

Agriculture & Forestry

Currier Forest Products (Danville, VT; *currierforestproducts.com*): Currier Forest Products is a Forest Stewardship Council certified Chain of Custody supplier of custom sawn forest products, including an array of flooring, timber, and lumber products.

The A. Johnson Co. (Bristol, VT; *vermontlumber.com*): The A. Johnson Co. produces an array of flooring, paneling, and lumber products. Timber is harvested in accordance with the guidelines of the Sustainable Forestry Initiative.

Biobased Chemicals

Seventh Generation (Burlington, VT; *seventhgeneration.com*): Seventh Generation was one of the first recipients of the USDA BioPreferred Program's certification label. The company boasts a number of plant-based offerings, including disinfectants, hand soaps, laundry supplies, and surface cleaners.

USDA Rural Development Vermont Office

Ted Brady, State Director (*www.rd.usda.gov/vt*)
87 State Street Suite 324, P.O. Box 249, Montpelier, VT 05601
Phone: (802) 828–6080

Virginia



Total Jobs: 75,540
Direct Jobs: 38,920
Total Value-Added: $6.456 Billion
Direct Value-Added: $3.145 Billion

The total jobs or value-added is the sum of the direct, indirect, and induced effects.

Sector	Direct Jobs	Direct Value-Added
Agriculture & Forestry	5,750	$309.0M
Biobased Chemicals	460	$135.9M
Biorefining	<50	<$5M
Enzymes	50	$15.3M
Forest Products	29,430	$2.3B
Textiles	3,730	$401.9M
Bioplastic Bottles & Packaging	<50	<$5M

BioPreferred®

45 Virginia companies currently participate in the BioPreferred Program.

Example Biobased Product Firms

Biobased Chemicals

Earth Friendly Chemicals (Virginia Beach, VA; *efchem.com*): Earth Friendly Chemicals manufactures "green" chemistry products valued by many markets seeking 100 percent biodegradable and non-toxic products. Biobased product offerings include residential and commercial cleaners, as well as industrial degreasers.

Forest Products

Blue Ridge Fiberboard (Danville, VA; *blueridgefiberboard.com*): Blue Ridge Fiberboard products are composed of all-natural, [E]arth-friendly wood chips. The binding agent utilized in the manufacturing process is also all-natural, consisting of vegetable starch that contains no added formaldehydes.

uDo Inc. (Arlington, VA; *udobrush.com*): uDo manufactures eco-friendly, bamboo-handled toothbrushes that are 92 percent biobased.

USDA Rural Development Virginia Office

Basil I. Gooden, PHD, State Director (*www.rd.usda.gov/va*)
Culpeper Building, Suite 238, 1606 Santa Rosa Road, Richmond, VA 23229
Phone: (804) 287–1550

Washington



Total Jobs: 82,640
Direct Jobs: 41,140
Total Value-Added: $7.867 Billion
Direct Value-Added: $3.808 Billion

The total jobs or value-added is the sum of the direct, indirect, and induced effects.

Sector	Direct Jobs	Direct Value-Added
Agriculture & Forestry	11,180	$890.2M
Biobased Chemicals	130	$23.3M
Biorefining	<50	<$5M
Enzymes	<50	$6.9M
Forest Products	27,780	$2.8B
Textiles	2,080	$89.2M
Bioplastic Bottles & Packaging	<50	<$5M

BioPreferred®

175 Washington companies currently participate in the BioPreferred Program.

Example Biobased Product Firms

Agriculture & Forestry

WISErg Corporation (Redmond, WA; *wiserg.com*): WISErg harvests food scraps and turns them into fertilizer. The company sells Harvester machines in which the waste is collected and the resulting fertilizer products.

Forest Products

Weyerhaeuser NR Company (Federal Way, WA; *woodbywy.com*): Weyerhaeuser makes construction products such as lumber, oriented strand board, and joists. Sustainability policies adopted by Weyerhaeuser include using third-party certifications such as the Sustainable Forestry Initiative (SFI) and the ISO 14001 Environmental Management System.

Bioplastic Bottles & Packaging

Grow Plastics, Inc. (Bothell, WA; *growplastics.com*): Grow Plastics currently utilizes NatureWorks's Ingeo biobased polymer to produce a variety of biobased plastic products. With an ability to produce nearly any shape or size, Grow Plastic offers a number of custom options.

USDA Rural Development Washington Office

Mario Villanueva, State Director (*www.rd.usda.gov/wa*)
1835 Blacklake Boulevard SW, Suite B, Olympia, WA 98512–5715
Phone: (360) 704–7740

West Virginia



Total Jobs: 17,490
Direct Jobs: 9,960
Total Value-Added: $1.107 Billion
Direct Value-Added: $601 Million

The total jobs or value-added is the sum of the direct, indirect, and induced effects.

Sector	Direct Jobs	Direct Value-Added
Agriculture & Forestry	1,920	$89.1M
Biobased Chemicals	210	$45.5M
Biorefining	<50	<$5M
Enzymes	<50	$6.5M
Forest Products	7,660	$463.8M
Textiles	200	$5.5M
Bioplastic Bottles & Packaging	<50	<$5M

BioPreferred®

One West Virginia company currently participates in the BioPreferred Program.

Example Biobased Product Firms

Agriculture & Forestry

AFP Lumber & Logs, LLC (Buckhannon, WV; *afpcorp.com*): AFP is a leading global provider of high-quality hardwood forest products, offering an array of lumber, timber, and forest products.

Allegheny Wood Products (Petersburg, WV; *alleghenywood.com*): Allegheny Wood Products offers a variety of wood products, suitable for the manufacturing of cabinets, flooring, furniture, moldings, and millwork. All of the company's facilities are Forest Stewardship Council Chain of Custody certified.

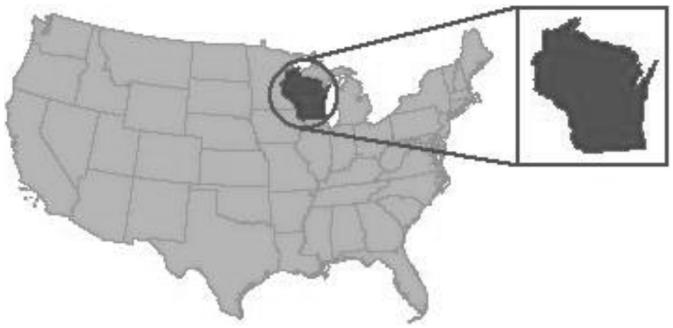
Forest Products

Carter Lumber (Ripley, WV; Parkersburg, WV; New Martinsville, WV; *carterlumber.com*): Carter Lumber, with three locations in West Virginia, is one of the nation's largest building materials suppliers, with product offerings including building supplies, lumber, flooring, and siding.

USDA Rural Development West Virginia Office

Robert Lewis, State Director (*www.rd.usda.gov/wv*)
1550 Earl Core Road, Suite 101, Morgantown, WV 26505
Phone: (304) 284–4860

Wisconsin



Total Jobs: 160,010
Direct Jobs: 68,250
Total Value-Added: $13.542 Billion
Direct Value-Added: $6.252 Billion

The total jobs or value-added is the sum of the direct, indirect, and induced effects.

Sector	Direct Jobs	Direct Value-Added
Agriculture & Forestry	5,280	$202.5M
Biobased Chemicals	470	$136.5M
Biorefining	<50	<$5M
Enzymes	130	$25.4M
Forest Products	60,760	$5.8B
Textiles	1,710	$112.1M
Bioplastic Bottles & Packaging	80	$6.7M

BioPreferred®

72 Wisconsin companies currently participate in the BioPreferred Program.

Example Biobased Product Firms

Biobased Chemicals

Virent (Madison, WI; *virent.com*): Virent converts soluble, biomass-derived sugars into products molecularly identical to those made with petroleum. Among its product offerings, Virent manufactured the first ever bio-polyester shirt produced from 100 percent renewable resources.

Enzymes

Enviro-Zyme International, LLC (Beloit, WI; *envirozyme.com*): Enviro-Zyme offers an assortment of products and services for residential, commercial, and industrial cleaning. Products are made with naturally occurring microbes.

Bioplastic Bottles & Packaging

Plastic Ingenuity (Cross Plains, WI; *plasticingenuity.com*): Plastic Ingenuity is one of the largest custom thermoformers in North America, offering packaging solutions that encompass every stage of packaging design and manufacturing. The Plastic Ingenuity team created new thermoforming methods that incorporate wood pulp into the packaging material, in addition to producing corn-based polylactic acid materials.

USDA Rural Development Wisconsin Office

Stan Gruszynski, State Director (*www.rd.usda.gov/wi*)
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Wyoming



Total Jobs: 2,350
Direct Jobs: 1,610
Total Value-Added: $117 Million
Direct Value-Added: $58 Million

The total jobs or value-added is the sum of the direct, indirect, and induced effects.

Sector	Direct Jobs	Direct Value-Added
Agriculture & Forestry	480	$13.6M
Biobased Chemicals	<50	<$5M
Biorefining	<50	<$5M
Enzymes	<50	<$5M
Forest Products	1,020	$36.5M
Textiles	110	<$5M
Bioplastic Bottles & Packaging	<50	<$5M

BioPreferred®

7 Wyoming companies currently participate in the BioPreferred Program.

Example Biobased Product Firms

Agriculture & Forestry

Bearlodge Forest Products, Inc. (Hulett, WY; *bearlodgeforestproducts.com*): Bearlodge Forest Products offers an array of wood products, including pallets, timber, lumber, and pellets and is certified with Timber Products Inspection.

Natures Composites (Torrington, WY; *naturescomposites.com*): Natures Composites manufactures sustainable, high-performing composite products, including fencing, decking, landscaping, lumber, and other composite building materials, produced from recycled high-density polyethylene reinforced with wheat straw cellulose.

Teton West Lumber Company (Cheyenne, WY; *tetonwest.com*): Teton West Lumber is committed to the health of Wyoming's forests by processing, and repurposing, beetle kill pine into useable lumber products, for both residential and commercial buildings.

USDA Rural Development Wyoming Office

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C1. Case Study: Michigan Biotechnology Institute



The Michigan Biotechnology Institute (MBI) was founded by the State of Michigan in the 1980s to help encourage start-ups in the biobased products industry with the goal of diversifying the state's economy away from the struggling automotive industry. According to Dr. Susanne Kleff, a biologist with a background in metabolic engineering who joined MBI 20 years ago, MBI's mission matured over the years to provide a not-for-profit entity that offered custom-tailored solutions to advance new biobased technologies for its own government-funded technologies and collaboratively for other companies all over the world.

MBI houses fermenters that range from lab-scale up to 1,000 gallons, and they provide the ability to manufacture products in the volumes required to support precommercial product development, application testing, and routine production. A general rule of thumb in the biobased products industry is that production at the 1,000 gallon scale identifies the technology's problems and demonstrates its robustness and viability. Other similar facilities in the United States have fermentation capacities in the range of 50–200 gallons.

MBI has developed successful technologies of its own, such as processes for organic acid production, and its current focus is on ammonium fiber expansion technologies (AFEX™), but these technologies failed to use the pilot facility at its full potential. This led to MBI's offering to collaboratively advance and scale-up technologies for and with other companies worldwide. Many well-known companies that have biobased capabilities have worked with MBI, including Genomatica, Bolt Threads, DuPont, OPX BIO (acrylic acids), Novozymes, Tepha Medical Devices, and others. Over the past 6 years, MBI had a 100 percent success rate in technology scale-up.

Very recently, the Process Development and Scale-up Branch of MBI joined Michigan State University's Bioeconomy Institute (MSU–BI) and its sister facility in Holland, Michigan, to expand its downstream processing capabilities. The Holland plant was an old Pfizer pharmaceutical production facility, and it is capable of downstream recovery and chemical extractions. This addition of a chemical pilot plant to the fermentation facility in Lansing provides a unique set of scaling capabilities that is unparalleled in the United States.

Dr. Kleff explained that the process of taking a new product from an idea or concept to commercialization encompasses many hurdles that many start-up entrepreneurs are not aware of, "We had startups who came to us with ideas, but they have only produced their products in shakeflasks or 2 liter fermenters. They come to us at a stage where they need to be able to produce a material for application testing, which means they need larger scale fermenters. Acquiring or constructing a facility of their own with larger fermenters would be time consuming, and would require substantial additional funding to demonstrate whether the technology is scalable and viable. An organism may be sensitive to the differences in pressure, gas exchange rates, or mixing times at the larger scale. This is essentially the 'derisking' process, to ensure the technology can be scaled. Our team is also able to work with the start-up on the economics of the technology and can provide realistic feedback. Most of the people who come to us know the targets they have to achieve."

MBI also receives grants for some of its technologies. Nevertheless, MBI requires that startups that wish to run product scale-ups in its facility must do so on a fee-for-service basis. Today, representatives from MBI attend meetings seeking contacts, but they indicated that many of their clients approach them after others have recommended them. MBI provides both the facilities and skilled staff members who are well trained and very familiar with fermentation and recovery processes. This provides start-ups with a much lower cost alternative to building their own pilot facilities. Dr. Kleff observed that very few of the companies who come to MBI have the capital to build a platform for a new facility that often requires full capacity

utilization to make it economical. As noted above, MBI does not limit itself to supporting only Michigan companies, but it works with many companies throughout the United States (*e.g.,* Bolt Threads in California), and has also begun working with companies from Europe and Asia.

Dr. Kleff emphasized that, given the current low prices of oil, it is important for the biobased products industry to move away from commodity chemicals and focus on the specialty chemicals sector.

C2. Case Study: Agricultural Utilization Research Institute (AURI)

The Agricultural Utilization Research Institute (AURI) helps develop new uses for agricultural products through science and technology, and it collaborates with businesses and entrepreneurs to bring ideas to reality. AURI was founded by the State of Minnesota to help businesses take advantage of innovative opportunities in four areas: biobased products, renewable energy, coproducts, and food.

AURI has three laboratories located in Crookston, Marshall, and Wauseca, MN. AURI also works closely with the faculty at the University of Minnesota. AURI does not engage in research itself, they provide the space and opportunity for entrepreneurs and other scientists to do research. Researchers conduct applied research on new ideas, which leads to products and businesses that can grow in the State of Minnesota. A significant part of the activity done by AURI involves program evaluation to ensure that the institute is effective. The group also has a Director of Innovation and Commercialization who involves project managers and directors across a variety of innovation networks. AURI intends to make the results of applied research available to businesses and to work with entrepreneurs to facilitate product formulation, troubleshooting, scale-up, and commercialization. Most of AURI's activity involves working side by side with clients in the field, helping them find resources to bring their ideas to market, and helping them network with other providers in the industry.

AURI receives 80 percent of its funding from the State of Minnesota, which is augmented by contributions from a private foundation, research and promotion councils, and some Federal funding. The State of Minnesota is committed to finding new alternative product channels for the agricultural communities, and this funding is seen as being vital for the growth of the biobased products industry in Minnesota. AURI provides assistance, but it does not take equity or intellectual property positions on the projects, even though it has been named on several patents. The bulk of the AURI's work is simply to help businesses move from the laboratory scale to commercialization.

AURI has developed some laboratory space that it has made available to entrepreneurs to conduct early work on formulations. In the early stages of chemical development, there is a need to develop formulations and develop the intellectual property that will enhance the ability to get venture capital funding.

The biobased products facility is intended for use in processing agricultural commodities and co-products at the scale of 1 to 10 kg. Processes have been developed and demonstrated for producing increased value materials by fractionation, chemical conversion, and purification. Key processes that can be piloted include:

- Chemical processing of straw, stover, and other biomass materials.
- Extraction and characterization of oils and high-value components from oilseed meal and other feedstocks.
- Transesterification and esterification reactions for demonstration of biodiesel processing.
- Small-scale fermentation and digestion processes for the production of fuels.
- Distillation and evaporation for process development.

The laboratory will host an "entrepreneur in residence", *i.e.,* someone occupies laboratory space when it becomes available. The laboratory space is free of charge, and some analytical work will be provided for the entrepreneur. There may be scientific support as well. A representative noted that some entrepreneurs need R&D assistance beyond the capacity and experience of AURI. To help them, AURI has additional paid assistance available for different R&D efforts.

The process typically starts with a meeting between the entrepreneur and AURI staff, who will get a feel for the business, the concept, and what the entrepreneur is hoping to achieve. This can lead to a deeper conversation concerning AURI's services and programs and to the development of a team to assist with the client's concept. In one case, a client sought to add fibers to plastics to strengthen the material so it would qualify for Leadership in Energy and Environmental Design (LEED) construction:

> *We brought in different partners to help with funding the R&D that was needed, and we brought in partners who provided $200K. We helped connect them to potential users of the plastics in window manufacturing. We are committed to helping them in the idea stage and through research and prototype partners along the path to commercialization.*

According to AURI staff members, there are only two criteria that must be met to qualify for these services. First, the product must fit into an area of service that requires the use of an agricultural commodity. Second, the science must be sound. The business must consider the competition and early discussions may involve evaluating the concept against the reality of the market through industry contacts. The idea must be technical viable and have and opportunities in the market before making further investments in the idea.

AURI also provides consulting to give business insight into other entities that should be part of the new business venture team. The Institute helps identify locations for commercialization and locations where contract packers can provide support. Moreover, the AURI provides introductions to a network of subject matter experts. For instance, the group will host Innovation Networks that focus on a supply net for a particular technology. AURI has held forums on paint stripping materials, duct coatings, and other areas. Users, vendors, and potential users are invited for ½ a day to share their experiences and to promote discussion. Individuals learn from the presenters, but there also are one-on-one conversations and product demonstrations.

As outlined in its annual report, AURI believes that the "Commercialization Chain" is very important to developing technologies. This is essential in creating a "technology cluster", which is a group of enterprises with common sets of knowledge and expertise that creates a network of support for growth. In a sense, Minnesota hopes to become the "Silicon Valley" for the biobased economy through its support of AURI.

In terms of the biobased products industry, AURI's staff members recognize that there is a strong need for high value uses for soy, sugar, and corn beyond biodiesel and bioethanol. Examples include PLA, high value plastics, butanol, and other waste streams. AURI believes that public-private collaboration is essential to grow this industry. Partnerships with larger companies should be beneficial because they will provide the ability to leverage existing facilities. In any case, an AURI staff member we interviewed believes that a long-term perspective is needed:

> *We have been around for 26 years, and we were not doing in the beginning what we are doing today. We have evolved over time through lessons learned. Investors cannot expect to see a return on biobased products in 2 years, because the innovation spectrum can take as long as 10 years to get to full fruition. This is the building of an entirely new industry, and investors have to be patient. This is a tough quality to find in investors. However, the State of Minnesota is willing to invest in the long-term, to put money into it, and allow the industry to develop and progress. This is not an easy sell, but it is the key to success.*

AURI and Minnesota stakeholders engaged the Battelle Technology Partnership to evaluate the state's potential for growth in the agbioscience sector. The study is a fascinating read, reflecting the development process, the benefits of public investment in growing the industry and the specific areas where Minnesota's core competencies could catalyze significant growth.

IV. Environmental Benefits

A broad analysis of the biobased products industry was performed using Economic Input-Output Life Cycle Assessment (EIO–LCA) modeling to determine an estimate of the petroleum use savings and GHG emissions reductions resulting from the pro-

duction and use of biobased products. Using the EIO–LCA methodology, calculated sector sales, and literature, GHG emissions reductions are estimated to be up to 10 million metric tons of CO_2 equivalents in 2014. The estimated petroleum savings from biobased product production and use are up to 6.8 million barrels of oil in 2014. Other environmental impact categories that are not estimated in this report could produce different impacts for biobased products as compared to petroleum-based products. Further analysis should include modeling of additional impact categories and the implications of other parameters such as land use change.

A. Economic Input-Output LCA

The EIO–LCA methodology was developed by Carnegie Mellon University's Green Design Institute as a method to estimate materials and energy resources required for various activities and the subsequent resulting emissions. The EIO–LCA method is one of several techniques used to examine the environmental impacts of a product over its lifecycle. In contrast to a process LCA, which examines a single process or product quantifying flows unique to that product, the EIO–LCA process uses "industry transactions—purchase of materials by one industry from other industries—and the information about direct environmental emission of industries, to estimate the total emissions throughout the supply chain".[55]

The EIO–LCA methodology builds upon the economic impact modeling methods developed by Nobel Prize winner Wassily Leontief, whose original work aimed to create a model of the U.S. economy and was expanded to include environmental metrics by Carnegie Mellon University. The EIO–LCA model and extensive documentation are available at *www.eiolca.net*.

B. Objectives and Methodology

The production and use of biobased products has the potential to reduce GHG emissions and petroleum use.[56] The reductions in environmental impacts and resource use depend on both product type and other factors influencing the production supply chain and products' lifecycles. Conducting an LCA for thousands of biobased products making up the bioeconomy was not feasible for this report. As a way to estimate the potential GHG emissions and petroleum use reductions, a range of GHG emissions and petroleum use reductions of 0 to 100 percent as compared to petroleum-based alternatives was used. A 0 percent reduction would indicate no difference as compared to petroleum-based products and a 100 percent reduction would indicate no fossil fuel use by biobased products. In reality, most of the biobased products will lie somewhere between 0 and 100 percent reduction; however, it is not possible to determine this for all the products making up the industrial sectors.

Only the biobased chemicals, biorefining, and bioplastic bottles and packaging sectors were considered as they can directly replace petroleum-based products. Other industry sectors, such as enzyme production, were not examined in this part of the study because the chemicals or products that enzymes directly replace are not always clear, as opposed to bioplastics, which generally displace other petroleum-based plastic products. This direct replacement assumption was required to perform the analysis described in this section.

The environmental metrics of GHG emissions and petroleum use are two key indicators of interest, but there are other important environmental impacts that should also be considered when making policy decisions. In a previous report by Golden, *et al.,* the authors examined a broader suite of environmental impacts in addition to GHG emissions specific to the biobased products industry.[57] These additional impact categories are important to consider and are acknowledged here, but the scope of this work is limited to GHG emissions and petroleum use reductions resulting from the use of biobased products as a substitute for petroleum-based products.

As each biobased product and production process will produce different environmental impacts, this work does not seek to give one number that represents all products; instead, a range of GHG emissions savings and petroleum displacement was determined based on percent reductions compared to petroleum-based materials. The calculated range of reductions was also compared to the peer-reviewed literature, which describes reductions in environmental impacts. The values used to determine the estimated impact reductions were determined using EIO–LCA with

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[55] Carnegie Mellon University Green Design Institute, "About the EIO–LCA Method", *Carnegie Mellon University Green Design Institute, http://www.eiolca.net/Method/index.html.*

[56] Cherubini, F., and Ulgiati, S., "Crop residues as raw materials for biorefinery systems—A LCA case study," *Applied Energy* 87, no. 1, (2010): 47–57.

[57] Golden, J.S., Handfield, R.B., Daystar, J., and McConnell, T.E., *An Economic Impact Analysis of the U.S. Biobased Products Industry: A Report to the Congress of the United States of America,* A Joint Publication of the Duke Center for Sustainability & Commerce and the Supply Chain Resource Cooperative at North Carolina State University, 2015.

the TRACI impact assessment method to calculate the GHG emission equivalents and petroleum use.[58] Economic data used in the environmental analysis was based on 2014 U.S. national data as reported in previous sections of this report.

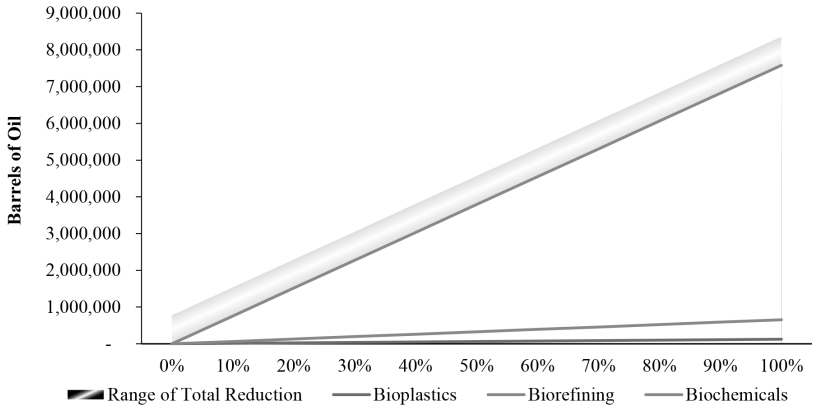
C. Results Overview

The petroleum saved by the biobased products industry are estimated to be as much as 6.8 million barrels of oil. In terms of GHG emissions reductions, the biobased products industry are estimated to be as much as 10 million metric tons of CO_2 equivalents. The avoided GHG emissions and petroleum use associated with direct replacement of petroleum-based products with biobased products are shown in *Figures 10* and *11,* respectively. The EIO–LCA model results were generated in terms of kg CO_2 equivalents and terajoules of petroleum, however, the petroleum use was converted to barrels of oil using a heating value of 6.077 MMBTU per barrel of oil.[59] For both impact measures, lines show the potential avoided impacts as a function of percent reduction compared to the petroleum-based alternative ranging from 0 to 100 percent. In addition to the range of avoided impacts, percent reductions from the peer-reviewed literature were also applied to the EIO–LCA output and reported in the following sections.

Figure 10: Potential Reductions in Petroleum Use by Biobased Products Manufactured in the United States with a Range of 0% to 100% Reduction in Petroleum Use as Compared to Non-Biobased Product Alternatives

Potential Reduction in Petroleum Use due to Biobased Product Utilization

Percent Reduction in Petroleum Use as Compared to Traditional Products



(Note: assuming a heating value of 6.077 MMBTU per barrel of oil).[60–63]

1. Avoided Petroleum Use

The avoided petroleum use resulting from biobased product use instead of petroleum counterparts would create petroleum savings up to 6.8 million barrels of oil. The potential petroleum use avoided by direct displacement with biobased chemicals

[58] Carnegie Mellon University Green Design Institute, "Economic Input-Output Life Cycle Assessment (EIO–LCA) U.S. 1997 Industry Benchmark Model", *Carnegie Mellon University Green Design Institute, http://www.eiolca.net/Models/index.html.*

[59] *http://www.eia.gov/totalenergy/data/monthly/pdf/sec13_2.pdf.*

[60] Cherubini, F., and Ulgiati, S., "Crop residues as raw materials for biorefinery systems—A LCA case study," *Applied Energy* 87, no. 1, (2010): 47–57.

[61] Yu, J., and Chen, L.X.L., "The Greenhouse Gas Emissions and Fossil Energy Requirement of Bioplastics from Cradle to Gate of a Biomass Refinery," *Environmental Science & Technology* 42, no. 18, (2008): 6961–6966, doi: 10.1021/es7032235.

[62] Harding, K. G., Dennis, J. S., Von Blottnitz, H., and Harrison, S.T.L., "Environmental analysis of plastic production processes: Comparing petroleum-based polypropylene and polyethylene with biologically-based poly-β-hydroxybutyric acid using life cycle analysis", *Journal of Biotechnology* 130, no. 1, (2007): 57–66.

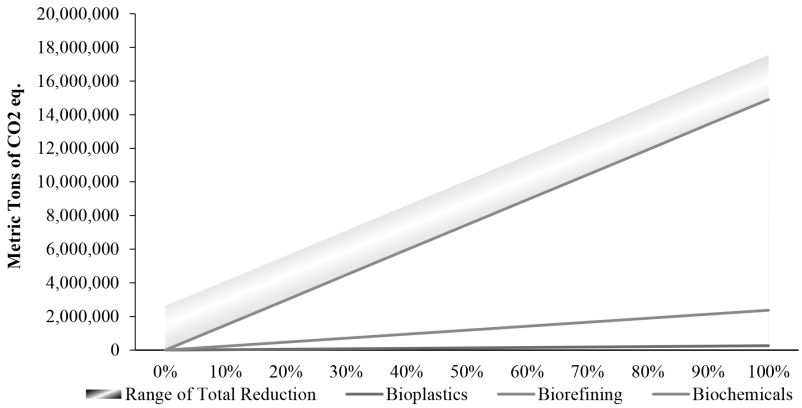
[63] Golden, J.S., Handfield, R.B., Daystar, J., and McConnell, T.E., *An Economic Impact Analysis of the U.S. Biobased Products Industry: A Report to the Congress of the United States of America,* A Joint Publication of the Duke Center for Sustainability & Commerce and the Supply Chain Resource Cooperative at North Carolina State University, 2015.

was the largest, as the biobased chemicals market size is significantly larger than the other two sectors. Cherubini and Ulgiati determined that biobased chemicals produced at a biorefinery using a switchgrass feedstock reduced fossil fuel usage well beyond 80 percent as compared to petroleum-based chemical production methods and corresponds to 6 million barrels of oil.[60]* The biorefining industry producing biochemicals are reported to use 80 percent less petroleum as traditional refineries and could generate petroleum savings of up to 552,000 barrels of oil.[60]* The bioplastic bottles and packaging avoided petroleum use potential was the lowest of the three sectors examined. Using data from Yu and Chen and Harding, *et al.,* bioplastic bottles and packaging displacement of petroleum plastics corresponded to a petroleum savings up to 77,000 and 61,000 barrels of oil, respectively.[61–62]* The previous economic impact report estimated a petroleum use reduction of 200,000 average passenger cars for a year.[63]* This previous estimate corresponds to a 26 percent reduction of petroleum use when biobased products are used instead of petroleum-based products. Given the data from the literature shown in this analysis, 26 percent appears to be a reasonable and conservative number.

Figure 11: Potential Reductions in Greenhouse Gas Emissions by Biobased Products Manufactured in the United States with a Range of 0% to 100% Reduction in GHG Emissions as Compared to Non-Biobased Product Alternatives[60–63]*

Potential Reduction in Greenhouse Gas Emissions due to Biobased Product Utilization

Percent Reduction in Greenhouse Gas Emissions as Compared to Traditional Products



2. Avoided GHG Emissions

The production and use of biobased products replacing petroleum-based products had the potential to reduce GHG emissions up to 10 million metric tons of CO_2 equivalents in 2014. The potential avoided GHG emissions for each sector grouping are shown in *Figure 11.* Since the biobased chemicals sector is the largest of the three sectors, it has the highest potential to reduce GHG emissions due to the higher volume of sales. Cherubini and Ulgiati estimated that chemicals produced from switchgrass at a biorefinery reduced GHG emissions compared to petroleum-based chemicals by 49 percent, which corresponds to approximately 7.5 million metric tons of CO_2 equivalents per year. The biorefining sector, with less industrial output than chemical production, has a lower potential to offset GHG emissions. With the same percent reduction of 49 percent, biorefining has the potential to offset GHG emissions up to 1.1 million metric tons per year.[64]

The bioplastic bottles and packaging sector was the smallest by sales of the three examined, but it had the highest GHG emission reductions reported in the lit-

*__Editor's note:__ the asterisk (*) marked footnote references should have been formatted as endnotes in the submitted document. The improper formatting is retained in the document, as submitted.

[64] Cherubini, F., and Ulgiati, S., "Crop residues as raw materials for biorefinery systems—A LCA case study," *Applied Energy* 87, no. 1, (2010): 47–57.

erature. Yu and Chen reported an 80 percent reduction of GHG emissions compared to petroleum-based plastics, and Harding, *et al.,* reported a 65 percent reduction compared to petroleum-based plastic.[65–66] When considering these two GHG reduction percentages, GHG emission reductions from bioplastics could correspond to 210,000 and 170,000 metric tons of CO_2 equivalents for the 65 percent and 80 percent reduction scenarios, respectively.

D. Limitations

While the EIO–LCA model is useful in many regards, it is dated and has limitations. The data describing the inter-industry transactions was developed from the 2002 benchmark U.S. input-output table and have likely changed considerably since then.

Additionally, the emissions associated with the various industries also have likely changed due to increased emissions regulations and changing energy production systems. For this study, the U.S. 2002 (428-sector) Producer model was used, and the adjusted industry output was deflated from 2013 dollars to 2002 dollars. For each of the three sectors examined (biobased chemicals, bioplastic bottles and packaging, and biorefining), a custom model was created by entering the adjusted output considered biobased for each of the sector groupings. In addition to the issues with the EIO–LCA model, there is also uncertainty surrounding the percentages of biobased products that make up the total industrial sectors. Because of these ambiguities, the results presented in this study are estimates and should be used cautiously in context. The aim of this analysis was to provide a range of estimates for GHG emission and petroleum use reductions. Additional work in this area is recommended but is outside the scope of the current study.

V. Recommendations

The following recommendations are based on literature reviews, conducting individual and group interviews through conference proceedings, individual meetings with representatives from the biobased products industry, and various non-governmental organizations. This includes workshops hosted by the authors in California, North Carolina, and Washington, D.C. in 2015 and 2016.

To be successful in driving the growth of this national industry will require the active participation of three distinct segments of our society. The first are consumers who we believe that upon being educated on the performance, economic and job benefits at the national and community level in addition to environmental benefits can be the voice to motivate retailers and brands to increase their use of biological feedstocks.

Second are the brands and retailers who can use their purchasing power, supply chains, and marketing strength to promote the industry. Finally, the Federal Government and especially the USDA BioPreferred Program has the ability to support education of the benefits of biobased products to consumers, retailers, and brands.

These recommendations reflect the opinions of the authors of the study based on their research and interviews. They do not necessarily reflect the opinions of the USDA.

Recommendation 1: Congress should continue to advance the biobased products industry for National Security and Domestic Industrial Strength.

The biobased products industry must be seen through the lens of National Security and Domestic Industrial Strength. This is a nonpartisan approach and domestic need. Through continued and increased support of the sectors, we are reducing our reliance on foreign supplies of oil used in petroleum-based products as well as creating needed American jobs throughout the country as has been presented in this report. Additionally, many of these jobs are being created in rural regions of our country where economic development needs are paramount.

It is telling that the Department of Defense considers the biobased products industry a matter of national security and important part of the U.S. economy. Former Deputy Secretary of Defense Gordon England said, "To be clear, this is not like the latest health food fad, where you go to a specialty shop and you buy a lot of additional expensive supplements and ingredients. This is about substituting an equally effective product or approach to meet a requirement you have that may well

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[65] Yu, J., and Chen, L.X.L., "The Greenhouse Gas Emissions and Fossil Energy Requirement of Bioplastics from Cradle to Gate of a Biomass Refinery," *Environmental Science & Technology* 42, no. 18, (2008): 6961–6966, doi: 10.1021/es7032235.

[66] Harding, K. G., Dennis, J. S., Von Blottnitz, H., and Harrison, S.T.L., "Environmental analysis of plastic production processes: Comparing petroleum-based polypropylene and polyethylene with biologically-based poly-β-hydroxybutyric acid using life cycle analysis", *Journal of Biotechnology* 130, no. 1, (2007): 57–66.

end up costing less in the end. Our strategy also supports our long-term national security interests by protecting and preserving the environment for the future generations, so they can enjoy life, liberty and the pursuit of happiness to the fullest here in America."[67]

Recommendation 2: Congress should enact a Short-term Production Tax Credit.

Tax policy needs to be changed throughout the supply chain to level the playing field with petroleum-based products. A national short-term Production Tax Credit (PTC) in the United States, coupled with a stronger commitment to market pull policies, would send a strong message to companies in the biobased products industry that the United States is serious about wanting to expand the domestic biobased products industry. More importantly, it would give companies in the biobased products industry the money and support they need to challenge the petroleum industry and the preferential tax treatment it receives. Increasing numbers of companies (including BASF, DSM, BioAmber, Elevance, and Amyris) are exploring global site options for commercial facilities because of the challenges of competing with the petroleum industry in the United States. PTCs would ensure that the United States is a competitive site for these new facilities and new jobs. In fact, the Union of Concerned Scientists documented[68] that between 2007 and 2014 in large part to a PTC, the United States wind capacity almost quadrupled and more than 550 manufacturing facilities located in 43 states produced 70% of the wind turbine and components installed in the United States.

The oil and natural gas sectors have long benefited from PTCs, which has provided great benefits for petroleum-based products as compared to biobased-sourced products. Some of the oil and gas credits include:[69]

- Deductions for the costs of drilling wells 26 U.S.C. 263(c).
- Deduction for oil and gas production 26 U.S.C. __199.

Deductions for the costs of oil shale exploration and development 26 U.S.C. 617 The tax incentives offered to the biobased products industry needs to place them on a level playing field with the petroleum industry, if biobased products are expected to compete on the market. If Congress creates PTCs for biobased product manufacturers, the United States could revitalize the manufacturing and plastics industries.

For a range of biobased product companies, a short-term PTC would provide collateral to help finance plants in the United States. This has been successfully done at the state level in Iowa. In July of 2016, Iowa's Biorenewable Chemical Tax Credit Program was enacted. The program provides a tax credit of up to $100 million over the next 10 years for products that are over 50% biobased, and intended for uses other than food, feed, and fuel.[70] However, there remains a need for PTCs at a national level to support biobased businesses throughout the United States.

On a national level, the Renewable Chemicals Act of 2015 was introduced to the Senate in November of 2015. If enacted, this bill would give a tax credit of $0.15 per pound of biobased content for producers of renewable chemicals who meet certain criteria. This credit would have an aggregate limit of $500 million and would be distributed over 5 years.[71]

Recommendation 3: Congress should direct the U.S. Department of Commerce to work with the USDA to Develop NAICS Codes in support of the biobased products industry.

The NAICS codes do not currently provide an effective means of tracking the economic and job contributions of the biobased products industry in the United States. This results from a lack of biobased products industry-specific codes that are representative of the biobased products sectors of the economy. Many economists and industry groups have recommended that NAICS codes be developed for biobased product sectors and that reporting requirements be established to allow more effec-

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[67] U.S. Department of Defense (DOD), "Bio-Based Products Enhance National Security", *U.S. DOD,* last updated 9/12/06, *http://archive.defense.gov/news/newsarticle.aspx?id=818*.

[68] Union of Concerned Scientists, "Production Tax Credit for Renewable Energy", *Union of Concerned Scientists,* accessed August 2016, *http://www.ucsusa.org/clean_energy/smart-energy-solutions/increase-renewables/production-tax-credit-for.html#.V7r_0rsrKM9*.

[69] Center for American Progress, "It Is Time to Phase Out 9 Unnecessary Oil and Gas Tax Breaks", *Center for American Progress,* accessed August 2016, *https://www.americanprogress.org/issues/green/report/2016/05/26/138049/it-is-time-to-phase-out-9-unnecessary-oil-and-gas-tax-breaks/*.

[70] Cultivation Corridor, "Biorenewable Chemicals: The Iowa Advantage", *Cultivation Corridor,* accessed 6/1/16, *http://www.cultivationcorridor.org/biochem/*.

[71] 114th Congress (2015–2016), "S.2271—Renewable Chemicals Act of 2015", *Congress.gov*, accessed August 2016, *https://www.congress.gov/bill/114th-congress/senate-bill/2271/text*.

tive tracking of purchases by Federal agencies. The codes are a necessary first step, but the goal should also be to improve data on the production, import, and export of biobased products. The incorporation of NAICS codes for the biobased product industry should be extended to Federal surveys of U.S. Industrial activity and trade. The appropriate U.S. agencies and industry should add biobased product NAICS codes similar to the biobased products industry specific codes that have been added in Europe (Nomenclature of Economic Activities—NACE codes) and are being added in Canada.

Recommendation 4: Congress should Fund the USDA BioPreferred Program at levels similar to its counterparts.

Federal agencies are required to purchase biobased products designated for mandatory Federal purchasing by the USDA BioPreferred® Program, except as provided by Federal Acquisition Regulation (FAR) Part 23.404(b). In general, Federal agencies are required to give preference to qualified biobased products over non-biobased alternatives, as prescribed by Title 7 of the *U.S. Code of Federal Regulations,* section 3201.3.

In addition to the mandatory Federal purchasing initiative, the 2002 Farm Bill authorized USDA to implement an initiative to certify biobased products that are deemed eligible to display the USDA Certified Biobased Product label. The presence of the label indicates that the products have been tested by a third party and verified for biobased content, thus meeting the established minimum biobased content requirement for the product category applicable to that product. The BioPreferred Program was reauthorized and expanded under subsequent U.S. Farm Bills in 2008 and 2014. Increasing the coverage and public awareness of the USDA Certified Biobased Product label is critical. Increasing funding for the BioPreferred Program would give the necessary funding for marketing and to educate consumers on the benefits and availability of biobased products. With additional resources, the BioPreferred Program could increase tracking and use of biobased products. Currently, the BioPreferred Program's budget is about $2.7 million annually. This is very small compared to the budgets of some other government programs like the EPA's Energy Star (about $50 million annually) or the USDA's National Organic Program (about $10 million annually).

In addition to the BioPreferred Program, there are other government drivers in the biobased products industry. For example, on March 19, 2015, President Obama released Executive Order 13693, "Planning for Federal Sustainability in the Next Decade",[72] which includes provisions to increase Federal agencies' accountability for achieving qualified biobased product purchasing requirements. Federal agencies have been directed to establish annual targets for the number of contracts awarded with biobased criteria and to report the dollar value of biobased products under those contracts.

Federal agencies also have been directed to ensure that contractors submit timely annual reports of their biobased purchases.

Recommendation 5: Congress should ensure Federal Policies Strengthen the Biobased Products Industry.

In terms of Federal policy, some of the ideas recommended from our interviews include:

- Fund and administer the USDA BioPreferred Program.
- Fund and administer the USDA Biorefinery Assistance Program, recently expanded to include facilities producing biobased chemicals and biobased products.
- Fund and administer the USDA Biomass Crop Assistance Program.
- Fund and administer the USDA/DOE's Biomass Research and Development Program.
- Work towards promoting the enactment of tax legislation for a biobased chemical Production Tax Credit (PTC), an Investment Tax Credit (ITC), Master Limited Partnerships (MLP), and Research & Development (R&D).
- Ensure biogenic CO_2 emissions related to biobased products are treated as carbon neutral in EPA's carbon accounting framework.

Recommendation 6: Biobased Products Industry Participants Should Work Together on the Challenges Facing Their Industry.

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[72] The President, "Executive Order 13693—Planning for Federal Sustainability in the Next Decade," *Federal Register*, accessed April 2015, *https://www.federalregister.gov/articles/2015/03/25/2015-07016/planning-for-federal-sustainability-in-the-next-decade*.

Based on our interviews, we identified six major challenges that should be addressed in the biobased products industry.

1. **Examine Public Perceptions *vs.* Scientific Evidence.** Undertake an extensive analysis concerning how the public, NGOs, policy makers, scientists, and institutional buyers perceive the spectrum of biobased feedstocks and biobased products. This includes quantifying the science or lack of science to provide clarity concerning which perceptions are inaccurate, which have a scientific basis, and which need additional research.
2. **LCAs and Land-Use Studies.** There is a need to create a common LCA structure that provides easy way to compare values and relates LCA results to both consumer and industry audiences. Stakeholders state that there is a need for shared life cycle inventory data and standardized definitions. A shared lifecycle inventory would reduce costs to individual firms and reduce the person-hours required to conduct lifecycle assessments.
3. **Supply Chain Mapping and Location Analyses.** Existing biobased product supply chains are limited by transportation disparities related to the location of biofuel producing sources. Government influence in the form of grants and tax rebates at the state and local levels can be used to help promote investments to streamline supply chain execution, create more integrated and collaborative facility designs, create shared facilities, and help to stimulate industry development and investment. Industry leaders should work to reduce the burden on upstream supply chain participants and drive more co-development activities to promote biobased in lower tiers of supply chain. Since suppliers source to different types of industries, there is a need to create a common vehicle for marketing products. An example would be a company deciding between two distinct marketing messages. A common platform for messaging would create efficiencies and improve opportunities for aligned investments. If suppliers and industries could work together to identify potential inefficiencies and work to solve them using a common approach, it could be easier to implement biobased products across the supply chain.
4. **Marketing Messaging and Impact Scores.** There is a need to conduct biobased products marketing research and develop marketing materials that support and promote the biobased products message, downstream, upstream, in industrial, and in government procurement processes. An example is an impact score that can translate LCA information to the end consumer to drive and influence buying behavior and decision-making via a standardized scorecard.

   Another example might be a biobased material identifier that could be used to award new business to sustainability-focused suppliers as part of a procurement initiative. Better communication with retailers through value-chain maps that provide a clear definition and value proposition for biobased products would create differentiated products that excel in performance.
5. **Government Policy and Acquisition Recommendations.** Biobased products industry stakeholders should provide input to government policies regarding grants and tax incentives to foster "downstream pull" investments in biobased product development, research, and innovation. Government policy makers should strive to create consistency across regulations and incentives for the biobased products industry, and incentives to drive increased utilization of biobased contracts, especially in light of the new General Services Administration focus on Category Management. Since plants sequester carbon, carbon credits could be given for using biobased products instead of petroleum-based products. Create more access to opportunities for industry to tap into tax incentives, tax credits, and producer credits, and to highlight the availability of these programs to biobased producers. Policy makers need education on biobased products that demystifies the misconceptions about the industry with solid data. Additionally, there is a need for education on how to sell to the government within the context of the biobased products industry, as legislative requirements have not meshed well with acquisition actions, and tracking has been problematic. The DOE's support also could be sought to drive additional support at various points in the value chain. Companies could commit to a certain percentage of biobased sources or get the government to enact policy like CAFE standards.
6. **Identify and Model Risks Facing the Biobased products Sector.** The interviewees also identified risks that should be considered for the biobased products industry. First, low oil prices may continue for several years, given the current reserves of oil and fracking, leading to a sustained lower price of

oil and reduced desire to explore the potential of biobased products. This is problematic considering the amount of time it takes to develop a biobased product. In addition, the amount of venture capital available for biobased products is decreasing. Scaling up new projects and the time required to bring capital investments to scale also are significant challenges.

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Appendix A

The Economic Input-Output Model (IMPLAN)

The Economic Input-Output Model

IMPLAN is an economic impact modeling system that uses input-output analysis to quantify economic activities of an industry in a predefined region. IMPLAN was designed in 1976 by the Minnesota IMPLAN Group Inc. under the direction of the U.S. Forest Service to help meet the reporting requirements for Forest Service land management programs. IMPLAN is now used extensively to quantify the economic impacts of various industrial activities and policies. The IMPLAN system is now managed by IMPLAN Group LLC of Huntersville, North Carolina.

IMPLAN quantifies the economic impacts or contributions of a predefined region in terms of dollars added to the economy and jobs produced (IMPLAN Group LLC 2004).[73] Data are obtained from various government sources including agencies and bureaus within the Departments of Agriculture, Commerce, and Labor.

The IMPLAN system's input-output model currently defines 536 unique sectors in the U.S. economy (which are North American Industry Classification System [NAICS] sectors, except in some cases in which aggregates of multiple sectors are used). The IMPLAN system uses its database to model inter-sector linkages, such as sales and purchases between forest-based industries and other businesses. The transactions table within IMPLAN quantifies the number of dollars each sector makes (sales) and uses (purchases). The table separates processing sectors by rows and purchasing sectors by columns; every sector is considered both a processor and purchaser. Summing each row quantifies an industry's output, which includes sales to other production sectors along with those sales to final demand. The total outlay of inputs, which are the sums of the columns, includes purchases from intermediate local production sectors, payments to local value-added, and imports (both intermediate and value-added inputs) from outside the study region. The transactions table can be used to explain a sector's economic relationships based on the value of the commodities exchanged between the industry of interest and other sectors.

Leontief (1936) defined the relationship between output and final demand as shown below:

$$x = (I - A)^{-1} y$$

where x is the column vector of industrial output, I is an identity (unit) matrix, A is the direct requirements matrix relating input to output, and y is the final demand column vector. The term $(I-A)^{-1}$ is the total requirements matrix or the "multiplier" matrix. Each element of the matrix describes the amount needed from sector i (row) as input to produce one unit of output in sector j (column) to satisfy final demand. The output multiplier for sector j is the sum of its column elements, or sector j's total requirements from each individual sector i. Employment and value-added multipliers also can be derived by summing the column's elements.

Employment in IMPLAN is represented as the number of both full time and part time jobs supported within an industry to meet final demand. Value-added is composed of labor income, which includes employees' compensation and sole proprietor (self-employed) income, other property income (OPI), and taxes on production and imports, less subsidies (TOPI, formerly was labeled 'indirect business taxes').[74] OPI in IMPLAN includes corporate profits, capital consumption allowance, payments for rent, dividends, royalties, and interest income. TOPI primarily consist of sales and excise taxes paid by individuals to businesses through normal operations. Output is the sum of value-added and the cost of buying goods and services to produce the product.

Key terms:

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[73] IMPLAN, Computer Software, IMPLAN, IMPLAN Group LLC, *http://www.implan.com*.

[74] IMPLAN refers to value-added in this context as "total value-added".

- Value-added: Value-added describes the new wealth generated within a sector and is its contribution to gross domestic product (GDP).
- Output: Output is an industry's gross sales, which includes sales to other sectors (where the output as used by that sector as input) and sales to final demand.

When examining the economic contributions of an industry, IMPLAN generates four types of indicators:

1. Direct effects: effects of all sales (dollars or employment) generated by a sector.
2. Indirect effects: effects of all sales by the supply chain for the industry under study.
3. Induced effects: A change in dollars or employment within the study region that represents the influence of the value chain employees spending wages in other sectors to buy services and goods.
4. Total effect: the sum of the direct, indirect, and induced effects.

Economic multipliers quantify the spillover effects, *i.e.,* the indirect and induced contributions. The Type I multiplier describes the indirect effect, which is described by dividing the direct effect into the sum of the direct and indirect effects.[75] A Type I employment multiplier of 2.00 for example, means that for every job in the industry of interest, one additional job is supported in that sector's supply chain.

Type II multipliers are defined as the sum of the direct, indirect, and induced effects divided by the direct effect (*Equation 1*). The Type II multiplier operates by extending the input-output model to include any contributions induced by final demanders. Type II multipliers differ by how they define value-added and account for any of its potential endogenous components. A particular Type II multiplier, the Type social accounting matrix (SAM) multiplier, considers portions of value-added to be both endogenous and exogenous to a study region (*Equation 2*). This generally incorporates labor payments to the households and their subsequent consumption of goods and services. These multipliers indicate the extent to which total activity is generated in the economy due to the sectors under study. A Type SAM value-added multiplier of 1.50, for example, indicates that for every $1.00 of value-added produced in an industry under study, $0.50 of additional value-added would be generated elsewhere in the economy by other industries.

Contributions Analyses of Biobased Products Sectors

A contributions analysis describes the economic effects of an existing sector, or group of sectors, within an economy. The results define the extent to which the economy is influenced by the sector(s) of interest. Changes in final demand, which generally are marginal or incremental, are not assumed here as they are in traditional impact analysis. Based on the number of sectors contained within each industry group, multiple sector contributions analyses were conducted. The bioeconomy at the national level was modeled using IMPLAN's 2013 and 2014 national databases. These models were constructed using the Supply/Demand Pooling method. The 50 states and District of Columbia were modeled using IMPLAN's 2013 database for each economy; these models were constructed using the IMPLAN National Trade Flows Model method. The models were closed with respect to households only in all cases. Output was the basis by which contributions were assessed, but had to be adjusted to eliminate sales and purchases internal to the sectors to avoid double counting. This required five steps using Microsoft Excel: (1) compile the total requirements matrix of detailed Type SAM output multipliers from IMPLAN for the respective economy; (2) from this matrix, build a truncated matrix of the biobased industrial groups' sectors and invert it; (3) calculate the direct contributions vector by multiplying the inverted contributions matrix by the groups' sector outputs found in the economy's transactions table; (4) multiply the economy's total requirements matrix by the direct contributions vector to obtain total output contributions; (5) calculate employment and value-added contributions based their respective sectoral output shares. Use of this method avoided the structural changes that result from customizing the model, and at the same time, it preserved the original relationships found in the modeled economy's transactions table.

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[75] U.S. Department of Commerce Bureau of Economic Analysis (BEA), *Interactive Data Application,* BEA web site, *http://www.bea.gov/itable/index.cfm*, accessed April 2015.

Equation 1: Type I Multiplier Calculation

$$\frac{\text{Direct Effect} + \text{Indirect Effect}}{\text{Direct Effect}} = \text{Type I Multiplier}$$

Equation 2: Type SAM Multiplier Calculation

$$\frac{\text{Direct Effect} + \text{Indirect Effect} + \text{Induced Effect}}{\text{Direct Effect}} = \text{Type SAM Multiplier}$$

Appendix B

Products Participating in the BioPreferred® Program by Category—2016

Number of Products	Category	Number of Products	Category
36	2-Cycle Engine Oils	66	Inks—Printer Toner (Greater Than 25 Pages Per Minute)
61	Adhesive and Mastic Removers	43	Inks—Printer Toner (Less Than 25 Pages Per Minute)
14	Adhesives	19	Inks—Sheetfed (Black)
71	Agricultural Spray Adjuvants	41	Inks—Sheetfed (Color)
136	Air Fresheners and Deodorizers	52	Inks—Specialty
38	Aircraft and Boat Cleaners—Aircraft Cleaners	50	Interior Paints and Coatings—Latex and Waterborne Alkyd
31	Aircraft and Boat Cleaners—Boat Cleaners	26	Interior Paints and Coatings—Oil-based and Solventborne Alkyd
4	Allergy and Sinus Relievers	148	Intermediate Feedstocks
5	Animal Bedding	9	Intermediates—Binders
337	Animal Cleaning Products	100	Intermediates—Chemicals
46	Animal Habitat Care Products	17	Intermediates—Cleaner Components
2	Animal Medical Care Products	35	Intermediates—Fibers and Fabrics
37	Animal Odor Control and Deodorant	14	Intermediates—Foams
130	Animal Repellents	43	Intermediates—Lubricant Components
1	Animal Skin, Hair, and Insect Care Products	20	Intermediates—Oils, Fats, and Waxes
1	Anti-Slip Products	45	Intermediates—Paint & Coating Components
2	Aromatherapy	45	Intermediates—Paint & Coating Components
4	Art Supplies	33	Intermediates—Personal Care Product Components
38	Asphalt and Tar Removers	87	Intermediates—Plastic Resins
13	Asphalt Restorers	5	Laboratory Chemicals
76	Automotive Care Products	2	Laundry—Dryer Sheets
26	Baby and Kids	223	Laundry Products—General Purpose
1,176	Bath Products	75	Laundry Products—Pretreatment/Spot Removers
270	Bathroom and Spa Cleaners	6	Lavatory Flushing Fluid
172	Bedding, Bed Linens, and Towels	79	Leather, Vinyl, and Rubber Care Products
5	Biodegradable Foams	179	Lip Care Products
172	Bioremediation Materials	8	Loose-Fill and Batt Insulation
15	Blast Media	856	Lotions and Moisturizers
2	Body Powders	14	Lumber, Millwork, Underlayment, Engineered Wood Products
526	Candles and Wax Melts	2	Massage Oils
114	Carpet and Upholstery Cleaners—General Purpose	5	Medical Supplies
120	Carpet and Upholstery Cleaners—Spot Removers	23	Metal Cleaners and Corrosion Removers—Corrosion Removers
104	Carpets	36	Metal Cleaners and Corrosion Removers—Other Metal Cleaners
117	Chain and Cable Lubricants	27	Metal Cleaners and Corrosion Removers—Stainless Steel
4	Clothing	63	Metalworking Fluids—General Purpose Soluble, Semi-Synthetic, and Synthetic Oils
1	Clothing—Utility Gloves	50	Metalworking Fluids—High Performance Soluble, Semi-Synthetic, and Synthetic Oils
51	Composite Panels—Acoustical	99	Metalworking Fluids—Straight Oils
35	Composite Panels—Countertops	286	Microbial Cleaning Products—Drain Maintenance Products
68	Composite Panels—Interior Panels	177	Microbial Cleaning Products—General Cleaners
22	Composite Panels—Plastic Lumber	197	Microbial Cleaning Products—Wastewater Maintenance Products
26	Composite Panels—Structural Interior Panels	228	Mobile Equipment Hydraulic Fluids
18	Composite Panels—Structural Wall Panels	265	Mulch and Compost Materials
30	Compost Activators and Accelerators	459	Multipurpose Cleaners
78	Concrete and Asphalt Cleaners	79	Multipurpose Lubricants
63	Concrete and Asphalt Release Fluids	11	Oral Care Products
1	Concrete Curing Agents	21	Other
2	Concrete Repair Materials	9	Other Lubricants
2	Concrete Repair Materials	30	Oven and Grill Cleaners
69	Corrosion Preventatives	78	Packing and Insulating Materials
1	Cosmetics	60	Paint Removers
96	Cuts, Burns, and Abrasions Ointments	14	Paper Products—Non-writing paper
8	De-Icers—Specialty	184	Paper Products—Office Paper
83	Deodorants		
14	Dethatchers		
66	Diesel Fuel Additives		
148	Dishwashing Products		
5	Disinfectants		
439	Disposable Containers		
539	Disposable Cutlery		
1	Durable Cutlery		
13	Durable Tableware		
35	Dust Suppressants		
10	Electronic Components Cleaners		

Products Participating in the BioPreferred® Program by Category—2016—Continued

Number of Products	Category	Number of Products	Category
692	Disposable Tableware	73	Parts Wash Solutions
75	Engine Crankcase Oil	75	Penetrating Lubricants
247	Erosion Control Materials	1	Perfume
2	Expanded Polystyrene (EPS) Foam Recycling Products	3	Pest Control—Fungal—Agricultural
		5	Pest Control—Fungal—Home and Garden
9	Exterior Paints and Coatings	2	Pest Control—Insect—Agricultural
1	Fabric Stain Preventers and Protectors	6	Pest Control—Insect—Home and Garden
14	Facial Care Products	2	Pest Control—Insect—Industrial
16	Feminine Hygiene	1	Pest Control—Weeds—Home and Garden
545	Fertilizers	3	pH Neutralizing Products
106	Films—Non-Durable	2	Phase Change Materials
43	Films—Semi-Durable	2	Plant Washes
2	Filters	48	Plastic Insulating Foam for Residential and Commercial Construction
2	Fingernail/Cuticle Products		
2	Fire Retardants	21	Plastic Products
8	Fire Starters, Logs, or Pellets	37	Pneumatic Equipment Lubricants
21	Firearm Cleaner	12	Polyurethane Coatings
43	Firearm Lubricants	27	Product Packaging
163	Floor Cleaners and Protectors	33	Roof Coatings
357	Floor Coverings (Non-Carpet)	3	Rugs and Floor Mats
14	Floor Strippers	5	Safety Equipment
6	Fluid-Filled Transformers—Synthetic Ester-Based	72	Sanitary Tissues
		577	Shaving Products
5	Fluid-Filled Transformers—Vegetable Oil-Based	1	Shipping Pallets
5	Foliar Sprays	12	Slide Way Lubricants
35	Food Cleaners	3	Solid Amendments
92	Foot Care Products	1	Solid Fuel Additives
23	Forming Lubricants	139	Sorbents
28	Fuel Conditioners	7	Specialty Fuels
46	Furniture Cleaners and Protectors	38	Specialty Precision Cleaners and Solvents
111	Gasoline Fuel Additives	20	Sponges, Scrub Pads, and Cleaning Tools
107	Gear Lubricants	241	Stationary Equipment Hydraulic Fluids
29	General Purpose De-Icers	202	Sun Care Products
272	General Purpose Household Cleaners	2	Thermal Shipping Containers—Durable
187	Glass Cleaners	1	Thermal Shipping Containers—Non-Durable
327	Graffiti and Grease Removers	58	Topical Pain Relief Products
23	Greases—Food Grade	6	Toys and Sporting Gear
48	Greases—Multipurpose	6	Traffic and zone marking paints
17	Grease—Other	2	Transmission Fluids
16	Greases—Rail Track	5	Turbine Drip Oils
12	Greases—Truck	4	Wall Coverings—Commercial
2	Greases—Wheel Bearing and Chassis Greases	10	Wastewater Systems Coatings
19	Hair Care Products—Conditioners	13	Wastewater Treatment Products
472	Hair Care Products—Shampoos	37	Water Clarifying Agents
1	Hair Styling Products	8	Water Tank Coatings
470	Hand Cleaners and Sanitizers—Hand Cleaners	11	Water Turbine Bearing Oils
130	Hand Cleaners and Sanitizers—Hand Sanitizers	36	Wood and Concrete Sealers—Membrane Concrete Sealers
11	Heat Generating Products		
1	Heat Transfer Fluid—Additive	90	Wood and Concrete Sealers—Penetrating Liquids
68	Heat Transfer Fluids		
389	Industrial Cleaners	28	Wood and Concrete Stains
3	Industrial Enamel Coatings	12	Woven Fiber Products
32	Ink Removers and Cleaners	2	Writing Utensils—Pens
21	Inks—News		

Note: If applicable, a product may be listed in up to four categories.
Source: USDA BioPreferred Program, May 2016.

Appendix C

States Ranked by Direct Jobs in the Biobased Products Industry—2013

Rank	Direct Jobs	State
1	145,080	California
2	90,040	North Carolina
3	88,680	Texas
4	80,520	Georgia
5	71,360	Pennsylvania
6	68,250	Wisconsin
7	52,930	Ohio
8	52,300	New York
9	49,650	Alabama
10	47,690	Florida
11	46,480	Oregon
12	46,050	Indiana
13	44,850	Tennessee
14	41,140	Washington

States Ranked by Direct Jobs in the Biobased Products Industry—2013—Continued

Rank	Direct Jobs	State
15	40,350	Mississippi
16	39,940	Illinois
17	38,920	Virginia
18	38,430	South Carolina
19	37,790	Michigan
20	35,850	Minnesota
21	31,400	Arkansas
22	27,290	Missouri
23	27,290	Kentucky
24	22,440	Louisiana
25	21,950	New Jersey
26	20,500	Maine
27	20,110	Iowa
28	19,140	Massachusetts
29	14,790	Arizona
30	13,250	Idaho
31	11,500	Colorado
32	10,770	Utah
33	10,320	Oklahoma
34	9,960	West Virginia
35	9,570	Maryland
36	9,080	Kansas
37	8,970	Connecticut
38	7,090	New Hampshire
39	6,500	Vermont
40	6,340	Montana
41	6,160	South Dakota
42	6,020	Nebraska
43	4,210	New Mexico
44	3,840	Nevada
45	3,500	Rhode Island
46	3,360	North Dakota
47	2,140	Delaware
48	1,930	Hawaii
49	1,610	Wyoming
50	1,420	Alaska
51	220	Washington D.C.

Appendix D

States Ranked by Direct Value-Added by the Biobased Products Industry—2013

Rank	Direct Value-Added	State
1	9,862,930,000	California
2	8,237,608,000	Georgia
3	6,828,425,000	Texas
4	6,522,151,000	Pennsylvania
5	6,437,140,000	North Carolina
6	6,252,403,000	Wisconsin
7	4,977,941,000	Alabama
8	4,429,804,000	Tennessee
9	4,276,668,000	Ohio
10	4,227,162,000	South Carolina
11	4,159,173,000	Oregon
12	3,848,271,000	New York
13	3,807,744,000	Washington
14	3,737,850,000	Florida
15	3,543,046,000	Illinois
16	3,391,516,000	Minnesota
17	3,165,255,000	Arkansas
18	3,144,753,000	Virginia
19	2,882,370,000	Michigan
20	2,842,703,000	Indiana
21	2,692,484,000	Mississippi
22	2,648,699,000	Louisiana
23	2,506,357,000	Missouri
24	2,127,702,000	Kentucky
25	1,877,652,000	New Jersey
26	1,735,341,000	Iowa

States Ranked by Direct Value-Added by the Biobased Products Industry—2013—Continued

Rank	Direct Value-Added	State
27	1,599,745,000	Maine
28	1,416,696,000	Massachusetts
29	995,033,000	Oklahoma
30	963,248,000	Utah
31	912,261,000	Arizona
32	885,697,000	Idaho
33	845,697,000	Connecticut
34	800,959,000	Maryland
35	634,553,000	Colorado
36	601,223,000	West Virginia
37	503,890,000	Kansas
38	425,733,000	Nebraska
39	403,884,000	New Hampshire
40	346,817,000	Delaware
41	333,014,000	Montana
42	331,892,000	South Dakota
43	277,682,000	Vermont
44	237,667,000	North Dakota
45	228,664,000	Nevada
46	227,704,000	Rhode Island
47	208,297,000	New Mexico
48	66,937,000	Alaska
49	65,890,000	Hawaii
50	57,902,000	Wyoming
51	18,364,000	Washington D.C.

Appendix E

Number of Companies Participating in the BioPreferred® Program, Direct Jobs, and Direct Value-Added in Each State (Alphabetical)

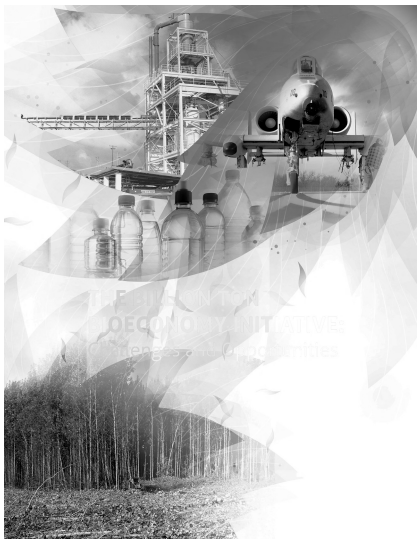
State	Number of Companies Participating in the BioPreferred Program (June 2016)	Direct Value-Added (2013)	Direct Jobs (2013)
Alabama	16	$4,977,941,000	49,650
Alaska	5	$66,937,000	1,420
Arizona	32	$912,261,000	14,790
Arkansas	14	$3,165,255,000	31,400
California	286	$9,862,930,000	145,080
Colorado	62	$634,553,000	11,500
Connecticut	28	$845,697,000	8,970
Delaware	7	$346,817,000	2,140
Florida	130	$3,737,850,000	47,690
Georgia	79	$8,237,608,000	80,520
Hawaii	8	$65,890,000	1,930
Idaho	13	$885,697,000	13,250
Illinois	132	$3,543,046,000	39,940
Indiana	30	$2,842,703,000	46,050
Iowa	79	$1,735,341,000	20,110
Kansas	28	$503,890,000	9,080
Kentucky	13	$2,127,702,000	27,290
Louisiana	8	$2,648,699,000	22,440
Maine	16	$1,599,745,000	20,500
Maryland	25	$800,959,000	9,570
Massachusetts	56	$1,416,696,000	19,140
Michigan	57	$2,882,370,000	37,790
Minnesota	97	$3,391,516,000	35,850
Mississippi	19	$2,692,484,000	40,350
Missouri	52	$2,506,357,000	27,290
Montana	10	$333,014,000	6,340
Nebraska	25	$425,733,000	6,020
Nevada	15	$228,664,000	3,840
New Hampshire	19	$403,884,000	7,090
New Jersey	70	$1,877,652,000	21,950
New Mexico	8	$208,297,000	4,210
New York	95	$3,848,271,000	52,300
North Carolina	71	$6,437,140,000	90,040
North Dakota	5	$237,667,000	3,360
Ohio	105	$4,276,668,000	52,930
Oklahoma	9	$995,033,000	10,320
Oregon	54	$4,159,173,000	46,480
Pennsylvania	90	$6,522,151,000	71,360
Rhode Island	7	$227,704,000	3,500
South Carolina	19	$4,227,162,000	38,430
South Dakota	11	$331,892,000	6,160

Number of Companies Participating in the BioPreferred® Program, Direct Jobs, and Direct Value-Added in Each State (Alphabetical)—Continued

State	Number of Companies Participating in the BioPreferred Program (June 2016)	Direct Value-Added (2013)	Direct Jobs (2013)
Tennessee	29	$4,429,804,000	44,850
Texas	147	$6,828,425,000	88,680
Utah	11	$963,248,000	10,770
Vermont	9	$277,682,000	6,500
Virginia	50	$3,144,753,000	38,920
Washington	77	$3,807,744,000	41,140
Washington D.C.	3	$18,364,000	220
West Virginia	2	$601,223,000	9,960
Wisconsin	78	$6,252,403,000	68,250
Wyoming	7	$57,902,000	1,610

APPENDIX D

The Billion Ton Bioeconomy Initiative: Challenges and Opportunities



Official Disclaimer

The Billion Ton Bioeconomy Initiative: Challenges and Opportunities is a product of interagency collaboration under the Biomass Research and Development Board and does not establish any new or explicitly reflect United States Government policy. Some information is based on activities conducted by the Executive Agencies as of May 2016. However, some of the views expressed in this document reflect stakeholder perspectives and do not represent United States Government policy. This report is not a policy or budget document nor an action plan, and it does not commit the Federal Government to any new activities or funding.

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Foreword

The Biomass Research and Development (R&D) Board (the Board) was created through the enactment of the Biomass Research and Development Act of 2000 "to coordinate programs within and among departments and agencies of the Federal Government for the purpose of promoting the use of biobased industrial products by (1) maximizing the benefits deriving from Federal grants and assistance; and (2) bringing coherence to Federal strategic planning." [1]

The Board is co-chaired by senior officials from the U.S. Departments of Energy (DOE) and Agriculture (USDA) and consists of senior decision makers from DOE, USDA, the U.S. Department of Transportation (DOT), U.S. Department of the Interior (DOI), U.S. Department of Defense (DOD), U.S. Environmental Protection Agency (EPA), National Science Foundation (NSF), and the Office of Science and Technology Policy (OSTP) within the Executive Office of the President. With its diverse membership, the Board facilitates coordination among Federal Government agencies that affect the research, development, and deployment of biofuels and bioproducts.

In February 2016, the Board released the Federal Activities Report on the Bioeconomy (FARB) to highlight the potential for a stronger U.S. bioeconomy, specifically some of the impacts of increasing biomass utilization threefold by 2030.[2] The goal of the Billion Ton Bioeconomy Initiative (Bioeconomy Initiative) is to develop innovative approaches to barriers in order to expand the sustainable use of America's biomass resources and maximize economic, social, and environmental outcomes.

Since the release of the FARB, the Board has engaged with the bioenergy stakeholder community to further develop the Bioeconomy Initiative. This report is foundational to the Board's objective to strengthen the commitment and coordination between the U.S. Government and the bioeconomy community. Early feedback from stakeholders has underscored the importance of biofuels, bioproducts, and biopower. This report addresses several challenges and opportunities that stakeholders have identified as critical to the success of the Bioeconomy Initiative.

Introduction

Overview of the Bioeconomy Initiative

The goal of the Bioeconomy Initiative is to develop and coordinate innovative approaches to expanding the sustainable use of America's abundant biomass resources, while maximizing economic, social, and environmental benefits. By increasing use of renewable plant material and waste feedstocks for biofuels, bioproducts, and biopower, the Bioeconomy Initiative has the potential to stimulate job growth and economic opportunities in certain industries;[3] support a secure, renewable energy future; and contribute to improved environmental quality. The Bioeconomy Initiative differs from "business as usual" by creating a sustainability framework that considers multi-dimensional impacts and benefits to prioritize the most promising sustainable pathways.

To achieve its goals, the Initiative will require collaborative data sharing; peer reviewed analyses; optimized financial mechanisms and contract services; research, development, demonstration, and deployment for feedstocks; conversion tech-

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[1] U.S. Congress (1999). H.R. 2827. 106th Congress, first session. *http://www.gpo.gov/fdsys/pkg/BILLS-106hr2827ih/html/BILLS-106hr2827ih.htm*

[2] *http://www.biomassboard.gov/pdfs/farb_2_18_16.pdf.*

[3] Some example opportunities are agricultural and forestry feedstock production and biorefineries. USDA has a broad renewable energy portfolio that supports growers, landowners, producers, pulp workers, and biorefinery workers in allied bioenergy industries. *http://www.usda.gov/wps/portal/usda/usdahome?contentid=usda-results-energy.html.*

nologies; manufacturing; infrastructure; harmonized policies and regulations; and market development of products.

The Need for the Bioeconomy Initiative

The last decade has been unstable for the emerging bioeconomy, wherein the bioeconomy is defined as the global industrial transition of sustainably utilizing renewable aquatic and terrestrial biomass resources in energy, intermediate and final products for economic, environmental, social, and national security benefits. While the Renewable Fuel Standard (RFS) and a variety of subsidies have helped first-generation biofuels penetrate U.S. markets and second-generation biofuels move closer to reality, the bioeconomy has yet to reach its full potential.

The economic recession of 2008 affected many bioproduct-related commodity markets, and the recent drop in oil prices has created further difficulties for biofuels to reach price parity with fossil fuels already on the market. The biobased sector has not received the amount of capital necessary to thrive in today's markets. This lack of investment in the U.S. bioeconomy contributes to the continued reliance on foreign and fossil-based energy supplies.

The U.S. consumes over 19 million barrels of petroleum per day. In 2015 ,when imported oil was at $40 per barrel, the U.S. spent nearly $1 billion every day on domestic and imported crude oil, with imported oil accounting for nearly ½ of this cost.[4] When imported oil was over $100 per barrel in 2012, the U.S. spent about $1 billion per day on just oil imports.[5] These dollars spent on oil imports could be reinvested to develop domestic, renewable biofuels.

Although the United States is a global leader in promoting the use of sustainably produced feedstocks to fuel economic activity and growth, more efforts are needed to overcome challenges and maximize opportunities associated with creating products from renewable sources. Our nation is transitioning from a fossil-based economy to an economy that is fueled by sustainable and renewable energy, of which biomass plays a critical role. As outlined in the FARB, to accelerate the expansion of the bioeconomy, the Board is formulating a collaborative effort across the government and is currently seeking input and cooperation from stakeholders in support of the Bioeconomy Initiative. The Bioeconomy Initiative is defined by several agreed-to principles:

- Bioenergy is part of an extensive, evolving renewable energy portfolio as well as an "All of the Above" energy strategy for the U.S.
- The Bioeconomy Initiative includes biomass-derived products—such as biofuels, bioproducts, and biopower.
- The development of America's bioeconomy must incorporate sustainability and consider environmental, economic, and social factors to minimize potential negative impacts and maximize benefits. The bioeconomy should be used to conserve, enhance, or repair ecological functions.

The investment community seeks to minimize risk and maximize process capability prior to investing in large facilities. Due to price parity issues, competing demands for and potential impacts on natural resources, and policy-related market uncertainties, the private sector remains hesitant to provide investments to continue scaling up advanced technologies. However, the potential for a domestic bioenergy and bioproducts industry—that reduces our reliance on foreign and fossil-based energy supplies through the sustainable use of agricultural, forestry, and waste biomass—remains a driving force behind diversifying the U.S. energy sector. If successfully expanded, the bioeconomy can keep energy dollars in the country as well as provide rural, energy, and manufacturing jobs and revitalize domestic manufacturing capabilities in biobased industries, while increasing the nation's competitive advantage and improving the environment.

Federal agencies are coordinating their efforts to overcome the technical and financial barriers that may preclude the expansion of a bioeconomy:

- DOE funds research, development, and demonstration of advanced biofuels to lower production costs.
- USDA supports the sustainable production of high-quality, nonfood feedstocks for conversion into bioproducts, bioenergy, bioheat, and biopower.

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[4] Energy Information Administration, *Monthly Energy Review,* July 2016, Tables 3.1 and 9.1. 2013.

[5] Energy Information Administration, *Monthly Energy Review,* July 2016, Tables 3.1 and 9.1. 2013.

- EPA implements the Renewable Fuel Standard[6] and regulates the processes and safety of biobased products.
- The U.S. Department of Navy supports the use of alternative fuels for its maritime fleet and national security.
- DOT funds research to develop alternative energy pathways for the U.S. transportation sector.
- DOI manages and conserves the public lands for the use and enjoyment of present and future generations under its mandate of multiple-use and sustained yield.
- The NSF funds research and education in engineering and areas that involve the transformation and/or transport of matter and energy by chemical, thermal, or mechanical means.
- The Executive Office of the President's OSTP ensures that the scientific and technical work of the Executive Branch regarding biobased products is properly coordinated so as to provide the greatest benefit to society.

Potential Benefits of the Bioeconomy Initiative

Informed by the Analysis Interagency Working Group[7] (AIWG) of the Biomass R&D Board, the Bioeconomy Initiative has the potential to benefit the environment, the economy, and national security. An expanded bioeconomy could help mitigate challenges associated with national resource management, environment, and public health if done in an appropriate manner.

While an expanded bioeconomy raises sustainability concerns such as increased nutrient runoff, soil disturbance, conversion of fragile lands, and water use, the Bioeconomy Initiative could be implemented in such a way as to encourage environmental benefits. For example, non-food crops capable of thriving on marginal lands, which require fewer inputs for production, could help to reduce nutrient run-off, soil erosion, and water usage relative to food crops. Using diverse sources of renewable biobased feedstocks—such as manures, biosolids, food waste, and sorted municipal solid waste—could help to reduce greenhouse gas (GHG) emissions, management costs, and water quality degradation, as well as provide revenue streams and renewable energy. Some of these potential benefits are discussed in the FARB and preliminary analysis of the bioeconomy.[8]

The Bioeconomy Initiative could also enable the development of rural economies by sustainably utilizing land resources, algae, and waste systems in rural America. Homegrown biofuels can help bolster U.S. renewable energy markets. There is significant opportunity for higher value bioproducts and materials to enter the market, reducing technology risks and ensuring feedstock supplies for biofuels. More biobased energy and product options could provide the United States with the flexibility to address environmental and energy challenges.

Stakeholder Engagement

To increase the potential benefits of the U.S. bioeconomy, the Bioeconomy Initiative relies heavily on public engagement. The Board's Operations Committee held five Bioeconomy Listening Sessions[9] to gather feedback on many of the areas impacting the growth of the bioeconomy. Bioeconomy stakeholders represent a wide number of sectors and interests: non-governmental organizations; international governments and organizations; environmental and industry groups; manufacturers; growers; and other members of the supply chain.

In the first phase, the Operations Committee gathered feedback from over 400 stakeholders across the United States. Session attendees reported that the Federal Government, research community, and industry could be doing more to build a Billion Ton Bioeconomy by 2030. Stakeholders identified areas that need support and suggested ways to address perceived gaps in Federal support. Suggestions addressed a variety of topics such as technical barriers, workforce readiness, and public engagement.

Stakeholders expressed dissatisfaction with access to capital and incentives necessary to develop and grow the Bioeconomy Initiative. One reason is the low oil

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[6] *https://www.epa.gov/renewable-fuel-standard-program*.

[7] *http://www.biomassboard.gov/board/working_groups.html*.

[8] Rogers J., Stokes B., Dunn J., Cai H., Wu M., Haq Z., Baumes H. 2016. *An Assessment of the Potential Products and Economic and Environmental Impacts Resulting from a Billion Ton Bioeconomy. Biofuels, Bioproducts & Biorefining.* (in press).

[9] Advanced Bioeconomy Leadership Conference in D.C. (2/29); International Biomass Conference & Expo in Charlotte (4/10); BIO World Congress on Industrial Biotechnology in San Diego (4/17); 38th Symposium on Biotechnology for Fuels and Chemicals in Baltimore (4/27); GoToWebinar hosted in D.C. (5/5).

prices which makes it hard for biofuels to compete, which in turn increases investor risks. Cheap oil, coupled with increased pressure to reduce biofuels mandates, are significant concerns to new start-up cellulosic plant developers.[10] Many investors believe "that the RFS will need to remain in place for the 20 year life of a prospective investment, or a strong belief that low oil prices will not last long."[11]

There are additional concerns regarding whether we have enough land to produce the needed food, forage, feed, and fiber in the future, as well as high volumes of biomass, in an expanded bioeconomy.[12] This land availability issue is further compounded with concerns over the potential impacts on food prices. There are also concerns about potential negative environmental impacts, including GHG emissions and land conversions.

Many of the stakeholders involved in these sessions believe that a Billion Ton Bioeconomy is possible by 2030, but it will require the support of Congress and policies that advance the Bioeconomy Initiative. Finally, stakeholders agreed that stronger market pull is critical to the success of the Bioeconomy Initiative.

With help from stakeholders, the Board will continue to find ways to overcome identified challenges, gaps, and barriers in order to create opportunities.

Expanding the Bioeconomy: Challenges and Opportunities

This report discusses seven key challenges and ten opportunities recognized by the bioeconomy community, as identified via the stakeholder input process outlined above. The Federal Government has a potential role to play in mobilizing support across the supply chain to develop sustainable bioeconomy systems. By mobilizing partnerships between industry, government, and academia, the Federal Government and stakeholders can spur progress towards validated technologies, which attract investment for the scale-up and deployment of the most promising solutions that deliver sustainable economic, environmental, and social outcomes. However, this report is not a policy or budget document nor an action plan, and it does not commit the Federal Government to any new activities or funding.

Challenges

Challenge: Major technical hurdles for development and scale.

Before there can be investment in large-scale biorefineries capable of utilizing 1 billion tons of biomass to produce fuels and bioproducts, investors must be confident that the technology is sound, and that its supply chain is economically and environmentally sustainable. Technology risk has been a major focus of the research programs funded by industry, NSF, DOE, and USDA, as innovations are moved from the lab to pilot- and demonstration-scale. New discoveries can support innovations at the applied and engineering scales to reduce technical risks. Developments in biotechnology, whether for biomass plants or conversion-enabling microbes, are reaching early adopters.

Collaboration among scientists, and the industries their inventions will support, has yet to be commonplace in the bioeconomy. Technical and environmental risks introduced by new catalysts or organisms for conversion are compounded by the diversity of the feedstocks locally, regionally, nationally, and seasonally as well as by the multitude of products that can be produced.

Challenge: Steep competition from traditional petroleum-derived resources.

Market uncertainty is a major challenge for the emerging bioeconomy. For more than 20 years, the variability in the cost of petroleum has led to waning interest in furthering the development of a bioeconomy. Through research and development, the cost of various renewable energy alternatives—such as wind, solar, and bioenergy—is continually dropping, which is revitalizing interest in renewables despite relatively low oil prices. However, for bioenergy, the uncertainty of the market limits the financial investment that is needed to scale-up and validate technology performance and the ultimate availability and price of bioproducts.

Historically, driving down the consumer price of biofuels has been challenging. Since 2012, DOE has demonstrated technologies that can be scaled-up to produce

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[10] Talbot, David. 2014. *Cheap Oil Could Kill Off Cellulosic Ethanol.* MIT TECHNOLOGY REVIEW. *https://www.technologyreview.com/s/532956/cheap-oil-could-kill-off-cellulosic-ethanol/*.

[11] Tyner, Wallace. 2015. *How will low oil prices affect biofuels?* WORLD ECONOMIC FORUM. February 6, 2015. *https://www.weforum.org/agenda/2015/02/how-will-low-oil-prices-affect-biofuels/*.

[12] Marshall, Elizabeth and Margriet Caswell. 2011. *Biofuels and Land-Use Change: Estimation Challenges.* AMBER WAVES, USDA. July 16, 2011. *http://www.ers.usda.gov/amber-waves/2011-june/biofuels-and-land-use-change.aspx#.V6yspjZTHcs*.

modeled mature, price-competitive cellulosic ethanol.[13] Current efforts focus on modeling mature, price-competitive "drop-in" biofuels for various types of transportation fuels. Biofuels have been supported by a variety of economic incentives, including grants, income tax credits, subsidies, and loans to promote biofuels research and development.[14] The RFS mandates the use of biofuels and monitors and tracks their use through RINs (Renewable Identification Numbers). It is unlikely that the consumer will voluntarily pay more for biofuels than for petroleum-derived fuels. Thus, price parity would enhance investments in biofuels.

Certain products, such as power and electricity, drop-in fuels, and biochemical replacements, can displace a portion of the existing products derived from fossil fuels with a renewable product; however, the products must reach the end user with consistent price and performance for consumer preference or demand to increase.

Challenge: A lack of necessary infrastructure.

Unless a new biofuel is truly compatible with existing infrastructure, lack of infrastructure for new biofuels is another challenge to increasing market penetration. Investments in new fuel dispenser pumps and potential vehicle improvements are costly and suffer from "the chicken or the egg" problem.

While it is potentially exciting to introduce new biobased products to the market, even those that are chemically identical to their fossil-based competitor may have some risk to the end user. Extensive testing of new products is required to ensure that there are no unforeseen performance issues with the bioproducts that are considered as replacements for fossil-based products, yet testing has lagged.

Challenge: Access to capital for large financial investments.

Overcoming technical, logistical, and market risks is difficult but essential to reenergize the financial community to invest in the bioeconomy. However, overcoming the "first-of-a-kind" barrier will require more than science and engineering as it is inherently more expensive to build and operate a pioneer facility. Publicly supported loan guarantee programs and mandated incentives, including the RFS, have led to pioneer commercial-scale demonstrations for cellulosic ethanol, but the availability of large financial investments is still lower than what is necessary in order to achieve a Billion Ton Bioeconomy.

Challenge: Uncertainties about sustainability—understanding environmental, social, and economic outcomes.

One area of uncertainty highlighted via the stakeholder engagement process is the role of sustainability in the bioeconomy, and efforts to understand the potential environmental, social, and economic benefits and impacts related to its expansion.

There are ongoing discussions and scientific processes focusing on the potential effects related to increasing production of biomass and its use as energy and/or for products, including continuing efforts to scientifically evaluate those potential effects. Major environmental concerns include potential impacts on soil and water quality, biodiversity, GHG emissions and carbon footprint, net energy values, and direct and indirect land use changes. Additionally, there are concerns about economic and social issues such as food and economic security. Another issue highlighted by stakeholders is efforts to evaluate and verify outcomes from the application of sustainability practices. The challenge identified there is to rely on relevant, credible, and validated data, develop and employ the necessary tools and methods, and adopt (scientifically proven) technologies to reduce the uncertainties concerning sustainability across the entire supply chain, but most certainly in feedstock production. The challenge includes not just being successful but also demonstrating and documenting that success to the public and policy makers.

While an increasing number of studies demonstrate the benefits from the use of biomass, questions remain about how the bioeconomy will evolve over time, and how the costs and benefits can be consistently evaluated relative to other energy options.

Challenge: Growth instability and increased investment risk caused by policy uncertainty.

The Energy Policy Act of 2005 and the Energy Independence and Security Act of 2007 have provided the most support for biofuels. The RFS mandates the use of sugar-, cellulosic-, and non-fossil-derived biofuels. Congress set very ambitious goals in the law for growth of cellulosic biofuels, advanced biofuels, and total renewable fuel. The RFS supports emerging technologies and is intended to give companies the stability they need to continue expanding investments. However, technologies for advanced fuels—made from cellulosic feedstock such as grasses and corn stover—have not developed as fast as Congress had anticipated and required volumes have

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[13] BETO, MYPP. *http://www.energy.gov/sites/prod/files/2016/07/f33/mypp_march2016.pdf.*
[14] *https://www.epa.gov/environmental-economics/economics-biofuels.*

had to be adjusted. This can be a challenge with any policy that requires new and/or emerging technologies.

Industry responds to incentives and/or clear supportive policy for investing in new infrastructure that supports the use of renewable fuels, power, or products and will not invest in a venture if profits cannot be made in the foreseeable future.

Challenge: The need for a strong and capable workforce.

As the United States experiences a shift in manufacturing competencies, new training could help the American workforce to meet the evolving demands of the bioeconomy. As an emerging industry, jobs will take time to develop, which could create difficulties for trade schools, community colleges, and universities looking to invest in developing programs.

The rural workforce—including farmers, forest landowners, harvesting equipment operators—will need to learn new ways of doing business, harvesting crops, and managing logistics as new feedstocks and end uses emerge.

Opportunities

Opportunity: Develop feedstock and fundamental innovations that reduce cost and technology risk in the supply chain.

The Bioeconomy Initiative focuses on developing feedstocks that do not disrupt existing markets for agricultural crops such as food, feed, and fiber. In bioenergy supply chains for the production of biofuels, the diversity of the feedstock is a key consideration because diversity can insulate producers against economic shocks to the system.[15] An advanced system reduces the variability of feedstock supply by allowing a wider range of sources that mitigate supply risks associated with feedstock outages, such as those associated with local weather, pests, and diseases. Feedstocks can be purpose-grown plants, wood, and wastes from agriculture, forestry, or industrial processing. Each of these feedstocks comes with characteristics that need to be understood for efficient conversion. In addition, large quantities of feedstocks of consistent quality need to be delivered to the biorefinery or distributed pre-processing center to reduce conversion risk. There are opportunities to densify feedstocks for more efficient transport, as well as to blend or otherwise pre-process feedstocks to ensure consistent quality and to enable larger volumes of delivered feedstocks at a lower cost to biorefinery.

The Importance of Food Security in the Bioeconomy

The food crisis of 2008 indicated how many factors contribute to the state of global hunger. Rising oil prices, increased ethanol production, growing middle class populations, as well as the increased need for meat in China and milk in India, have all been blamed for recent increases in food prices.[16] At the same time, shrinking energy resources and the possibilities that biomass can spur the development of a bioeconomy where energy, chemicals, and materials can all be produced without fossil fuels, have advanced the conversation regarding the impact of bioenergy production on food security and prices. It is a complex consideration that requires assessing the impact through careful analysis of many variables.

Through responsible planning, innovations could be applied to enable improved food production, while increasing the availability of biomass for fuels and chemicals. For example, landscape design principles can be used to integrate food and energy systems in a way that reduces waste, maintains crop yields, and contributes to multiple environmental and social goals. By proactively applying these design principles, the bioeconomy can potentially add resilience to agriculture and forestry production systems and may enhance their ability to provide food, feed, and fiber into the future.

The Bioeconomy Initiative applies innovations to overcome the barriers defined by this report, while prioritizing sustainability principles to ensure that as products from biomass increase in the marketplace, there are more positive outcomes across market sectors.

[15] Lamers, P., *et al.* 2015. *Strategic supply system design—a holistic evaluation of operational and production cost for a biorefinery supply chain.* BIOFUELS, BIOPRODUCTS, AND BIOREFINING 9: 648–660. doi: 10.1002/bbb.1575.

[16] *https://poldev.revues.org/145*.

Additionally, there is an opportunity to improve technologies, systems, and infrastructure that will enable higher productivity of biomass crops that could result in increased productivity of food, feed, and fiber, improved soil quality, and reduced water usage across the entire sector. Applying sustainability criteria to renewable feedstocks will likely add costs to these feedstocks; however, ensuring that petroleum products must also adhere to environmental standards will help to level the playing field and enable cost comparison on an "apples-to-apples" basis. Overall, an integrated, multi-disciplinary effort creates opportunities to reduce risks throughout the entire supply chain.

Opportunity: Seek opportunities to utilize low-cost waste resources.

Growing a sustainable, thriving bioeconomy could involve the development of biomass or bioprocess waste stream utilization strategies for higher-value applications. This includes the valorization of lignin and/or carbon dioxide, full utilization of all algal biomass components, and the incorporation of price-advantaged feedstocks like organic, municipal, and wet waste materials.

Converting waste streams to fuel, products, and chemicals can contribute to accelerating the widespread adoption of bioenergy technologies and to maximizing bioenergy's value proposition through valorizing underutilized biomass resources. These resources include landfill gas, municipal sludge, animal manure, industrial organic wastewaters (including ethanol stillage), food wastes, and organic fractions of sorted municipal solid waste that could otherwise incur social and economic costs.

In addition to improving economic value, reliability, and availability of aggregate biomass resources, waste streams can supplement or be blended with traditional biomass feedstocks, which directly contributes to the viability, quality, and resilience of individual biomass supply chains. To capture the value offered by waste streams, collaborations among government agencies, industry stakeholders, research institutions, and national labs could include the following activities:

- Promoting a better understanding of feedstocks and modifying those feedstocks to improve downstream processingefforts;
- Applying research concepts to conversion processes to achieve breakthroughs in operations;
- Developing and testing engineering concepts to known processes to reduce operational and capital costs and make liquid fuels/renewable chemicals more cost-competitive;
- Conducting detailed and rigorous resource availability and techno-economic analyses to identify feasible combinations of waste streams and target markets; and
- Supporting the development of a distributed conversion strategy.

Food-Energy-Water Nexus (FEW Nexus)

Several Federal programs are coordinating research, development, and demonstration to improve the understanding and management of sustainable food, energy, and water systems. This includes development of enhanced tools and methods for monitoring, data collection, and forecasting. In addition, efforts are underway to improve integrated decision-making at the Federal, state, and local levels to help ensure stewardship of U.S. resources.

One example of ongoing collaborations is the Innovations at the Nexus of Food, Energy and Water Systems (INFEWS) program sponsored by NSF and USDA. The overarching goal of INFEWS is to catalyze the interdisciplinary research efforts to transform scientific understanding of the FEW Nexus in order to improve system function and management, address system stress, increase resilience, and improve sustainability.

DOE is focused on the use of water with regard to energy production. In 2014, the *Water-Energy Nexus Challenges and Opportunities* report [17] identified six strategic areas to focus on, (1) energy efficiency of water management through end use; (2) optimization of energy production and its use of fresh water; (3) enhanced reliability of energy and water technologies; (4) safe and productive use of nontraditional water sources through improved technology; (5) responsible energy operations with respect to water quality, ecosystem, and seismic impacts; and (6) productive synergies among water and energy systems.

EPA is focused on partnerships with government agencies and business to achieve sustainable outcomes of advanced technologies. One such partnership is with the U.S. Army in support of its Net Zero Initiative, which is geared to dramatically reduce and even eliminate energy consumption, water use, and waste generation of military bases. To support this initiative, EPA is developing tools to assess the impacts of decisions and provide quality sustainability data.

Opportunity: Quantify, communicate, and enhance beneficial effects and minimize negative impacts.

Realizing the full benefits of the bioeconomy requires commitment to rigorous science-based quantification of benefits and impacts across multiple environmental, social, and economic dimensions. This will enable the development of technologies and practices that deliver the benefits of renewable energy and the bioeconomy, while maintaining healthy communities and natural ecosystems. As more sustainable business practices are encouraged, investments in renewable technologies—including biofuels, bioproducts, and biopower—could grow.

The Bioeconomy Initiative will create a sustainability framework that considers multi-dimensional impacts and benefits from the use of biomass. This framework will help the Bioeconomy Initiative simultaneously address pressing economic, social, and environmental challenges, including the preservation of ecosystem services and biodiversity; improved materials, water, and energy conservation; a shift from non-renewable to renewable feedstocks in industrial and consumer product manufacturing; the capture and recovery of non-renewable and renewable materials from wastes; improved air quality; improved economic opportunities; and public health.

Developing a Sustainability Framework

A framework is needed to help coordinate a sustainable approach to expanding the bioeconomy across agencies. The framework is not envisioned as a rigid, sustainability oversight tool, but rather a way to improve cooperation. At the Bioeconomy Federal Strategy Workshop, experts identified ways to make and ensure the approach to expanding the bioeconomy is sustainable:

- Coordinate **analyses and research that demonstrate the positive contributions** the bioeconomy can make to environmental sustainability-improving land use, water use, water quality, and air quality—as well as socioeconomic sustainability.
- **Establish a common framework** across agencies to reflect sustainable futures and establish **a common understanding of sustainability goals, impacts, and benefits from the bioeconomy.**
- Build a **library of economic, social, and environmental metrics** across agencies, and compile **data** on environmental, social, and economic impacts, costs, and benefits of specific practices, technologies, and bioeconomy pathways.
- Coordinate the development of **user-friendly models** that can improve decision-makers' understanding of options in designing the bioeconomy, its benefits, and impacts.

[17] *http://www.energy.gov/under-secretary-science-and-energy/downloads/water-energy-nexus-challenges-and-opportunities*.

- **Synthesize information on impacts, costs, and benefits** to address questions from diverse stakeholders. Measuring the economic, social, and environmental outcomes of bioenergy, biochemicals, and biopower will provide clarity on the short-term and long-term availability of resources; impacts of the use of renewable, non-renewable, virgin, and recycled resources; and the feasibility of creating closed-loop systems for optimal efficiencies.
- **Accelerate innovation on sustainable system design** that integrates economic, social, and environmental dimensions with consideration of synergies and trade-offs.

The Board and the Federal agencies involved with the Bioeconomy Initiative are dedicated to sustainability and will make it a paramount goal in implementation. However, achieving sustainability in the bioeconomy or any other sector is a tenuous goal. Even with the use of indicators and other metrics and tools, achieving sustainability is a challenge that is readily recognized. In developing a common framework, sustainability can reflect an approach, rather than an absolute. Agencies have diverse approaches to sustainability and different measures of success, according to various missions and areas of responsibilities that range from research to implementation to regulatory oversight. The sustainability framework will allow the agencies to contribute to a sustainable bioeconomy, while still accomplishing their missions. A framework is needed to help direct and coordinate all of these approaches. Working with industry and collaborators can exacerbate the difficulty of achieving sustainability, which highlights the need for an agreed-upon framework.

Opportunity: Increase public education on biomass-derived products in a bioeconomy.

Public perception plays a key role in market risk. A third-party analysis comparing bioenergy and bioproducts to fossil energy and fossil-based products could help communicate the underlying potential benefits of developing the bioeconomy.

By better understanding and communicating the potential economic, social, and environmental benefits of biofuels, bioproducts, and biopower, as well as developing more practices that will mitigate potential negative impacts, the Bioeconomy Initiative can garner more public acceptance and demand for a larger bioeconomy. There is an opportunity to raise awareness about the positive impacts of bioenergy and bioproducts and discuss the synergies of the bioeconomy with other renewable opportunities and economic sectors.

In recent years, industry has focused on the interconnectivity between global bioenergy production, the food and feed required to meet global needs, and the impacts of bioenergy production has on water resources and water quality. Industry must recognize the food, water, and energy sectors as a system of interdependent components and develop solutions based on multi-sector engagement to enhance the sustainability of the nation's food, water, and energy supplies. Through the Bioeconomy Initiative, the Board can help develop a greater coordination among these three sectors.

Bioproducts and Biomanufacturing

In April 2016, the National Science and Technology Council Subcommittee on Advanced Manufacturing published *Advanced Manufacturing: A Snapshot of Priority Technology Areas Across the Federal Government*.[18] The document highlighted both ongoing activities to strengthen U.S. manufacturing and emerging advanced manufacturing priority areas. Two of the five priorities support the growth of a bioeconomy through engineering biology to support biomanufacturing and advanced bioproduct manufacturing.

[18] *https://www.whitehouse.gov/sites/whitehouse.gov/files/images/Blog/NSTC%20SAM%20technology%20areas%20snapshot.pdf*.

Federal investments have helped establish the processes and platforms needed to generate high-value intermediate and end-use products, thus supporting the growth of bioproduct manufacturing in the United States. Areas for improvement include the demonstration of biomass feedstock delivery systems at commercial scale; development of technologies to reduce costs for conversion processes that produce intermediates with multiple product potential, including the use of lignin to produce chemicals with unique characteristics; and scale-up demonstrations of common processing steps to reduce risk for commercialization.

USDA, DOE, NSF, and DOD are actively involved in supporting engineering biology and biomanufacturing, and each agency has research programs working from fundamental discovery through applied research and scale-up.

Opportunity: Develop bioproducts that can accelerate biofuel production.

Without portfolio diversity and alternative revenue sources to ride out market fluctuations, many of the early stakeholders working to develop a bioeconomy experienced significant barriers to continued biofuels development. Bioproducts—which include high-value chemicals, reagents, materials, and other biobased intermediates—are a viable option to reduce petroleum use, while potentially offering a diversification of market risk to investors once technology risks have been overcome.

Within the bioeconomy, biofuels represent the product with the largest market share, yet carry challenging price requirements to compete with existing petroleum-derived fuels. The U.S. has become accustomed to readily available, low-cost fuels, which makes this a difficult and risky path to follow. Using biomass for power and electricity is less risky, but it derives the lowest economic value from the resources and must compete with other renewable technologies, such as solar and wind.

Generally, biochemicals provide the highest value use of biomass products, and successful technologies can have a positive return on investment, making these more likely to scale-up to commercial production. Coupling biofuels and bioproducts development can result in an accelerated timeline to reduce risks *versus* a fuels scenario alone.

Opportunity: Enable the testing and approval of new biofuels and bioproducts.

Biofuels and bioproducts must meet current specifications set for fossil-derived products, requiring various testing and approval procedures ahead of market entry. The ability to provide enough feedstocks, intermediates, and final products to enable testing is a barrier in the fledgling industry, but it also represents one of the greatest opportunities. Industry needs capital, new and repurposed, to perform the necessary testing of new products to ensure they meet industry standards. Industry also requires capital to develop new standards across the value chain for bioenergy and bioproducts. Acquiring this capital will require large public and private investments that will only materialize if there is a stronger demand push or market pull for these renewable fuels and products. Leveraging more progressive international markets by exporting fuels and products, as well as technologies, can help secure a stronger market pull that would enable more investment in U.S. pioneer technologies, thus lowering overall risk while providing benefits to the U.S.[19]

Co-Optimizing Fuels and Engines

Recognized as an integral part of the bioeconomy vision, DOE's Co-Optimization of Fuels and Engines (Co-Optima) initiative[20] seeks to accelerate widespread deployment of significantly improved fuels and vehicles. Two parallel research tracks are focused on the identification and co-development of fuel and engine technologies that, when used in tandem, offer the greatest combination of efficiency, GHG reduction, and performance.

[19] *https://www.whitehouse.gov/sites/whitehouse.gov/files/images/Blog/NSTC%20SAM%20technology%20areas%20snapshot.pdf*.

[20] *http://energy.gov/eere/bioenergy/co-optimization-fuels-engines*.

The Co-Optima initiative contributes to the Bioeconomy Initiative by accelerating the deployment of advanced biofuels, targeting 16 billion gallons per year of by 2030, and contributing to a potential 30% reduction in petroleum consumption nationwide *versus* the current 2030 projections.[21–22]

Opportunity: Expand the market potential for biomass.

To the extent that biomass products have demonstrable environmental advantages relative to fossil fuel-based or other alternatives, measures that monetize the value of environmental externalities will increase demand for biomass products. Without being able to monetize the value of externalities, the low cost of petroleum will result in a decreased market pull from industry to include renewables in their portfolios.

The airline industry and its need for jet fuel is an example of an exception due to multiple factors: industry commitments to achieving carbon neutral aviation growth by 2020; the U.S. and other member states development at the International Civil Aviation Organization (ICAO) of a global market-based mechanism limiting international aviation emissions; and the potentially devastating effects of price volatility associated with petroleum-based jet fuels.

Cellulosic ethanol has found a small niche in the oxygenate market where it will need to compete with starch-based ethanol for the 10% blend with gasoline. To further pursue this route will require expanding this market beyond the blend wall by increasing ethanol blends that are acceptable in current vehicles and by providing current or reasonable infrastructure upgrades, making room for both starch and cellulosic ethanol. Innovations and new technology also have the potential to increase this market by using ethanol as a precursor for new bioproducts that have a higher value for the production of polymers. The Bioeconomy Initiative can support the market and further enable pathways for biofuels and bioproducts, including aviation, maritime, and surface transportation applications.

Opportunity: Encourage private-sector financing.

Through strategic use of its convening power, the Federal Government has the ability to forge new partnerships and collaborations that could enable the development of policies and incentives to encourage private sector investment across the entire value chain, from feedstock production in the field to market driven product development and end-use.

Federal Alternative Jet Fuel Research and Development (R&D) Strategy

Commercial and military aviation are fundamental drivers of national economic development, mobility, and security. However, aviation faces significant energy and environmental challenges due to dependence on petroleum jet fuels. Drop-in alternative jet fuels (AJFs) can address these challenges by enabling a diverse, secure, and reliable fuel supply, increasing energy price stability, displacing fossil-based emissions that impact air quality and global climate, while also generating rural economic development. Efforts are needed to quantify emissions displacement using life-cycle analysis models.

In June 2016, the National Science and Technology Council's Aeronautic Science and Technology Subcommittee published the *Federal Alternative Jet Fuel Research and Development Strategy.*[23] The strategy was developed with input from the non-Federal stakeholder community by representatives from the U.S. Departments of Agriculture, Commerce, Defense, Energy, State, Transportation, EPA, NASA, and the NSF.

[21] *http://www.energy.gov/sites/prod/files/2016/08/f33/farrell_bioenergy_2016.pdf.*
[22] *http://energy.gov/eere/articles/co-optima-initiative-fuels-combustion-engine-efficiency.*
[23] *https://www.whitehouse.gov/sites/default/files/federal_alternative_jet_fuels_research_and_development_strategy.pdf.*

The document highlights current Federal agency AJF R&D expertise, responsibilities, and collaborations. It aligns Federal agency R&D efforts across the AJF development path and sets out prioritized Federal R&D goals and objectives to address key scientific and technical challenges that inhibit the development, production, and use of economically viable AJFs. This strategic approach is intended to contribute to the successful mobilization of both the Federal agency and the non-Federal stakeholder communities towards a common effort to develop and deploy cost-effective AJFs.

Creative public-private partnerships with the insurance industry to cover a range of areas from crop insurance to regulatory-risk insurance could be considered to survive the early stage of development and deployment for this new industry. Programs such as the BioPreferred Program at USDA support and encourage the use of bioproducts throughout the Federal system. Long-term secure product off-take contracts and long-term feedstock supply contracts are important for industry stakeholders when working to secure financing and ensure investors.

Opportunity: Support analysis as a foundation for stable, long-term policies.

If carefully crafted policies were in place to encourage the sustainable expansion of a U.S. bioeconomy, many of the challenges discussed above could be reduced. For decades, the Federal Government has employed many different types of policy incentives to encourage energy production in the United States. Moving forward, such policies must be based on sound science and reflect our best efforts to identify and mitigate any potential negative environmental, economic, and social impacts. There are ongoing Federal scientific processes, such as the EPA's technical review of the carbon implications of biomass use for energy at stationary sources, that can help us identify forms of biomass that reflect carbon benefits.[24] Information from such scientific processes can advance technical understanding of the role that biomass can play in GHG emissions strategies by enabling us to identify and promote biomass that is carbon-beneficial *versus* those that could result in CO_2 emissions increases or other potential consequences.

There are a number of policy pathways forward that can help foster thoughtful expansion of the bioeconomy. For example, policies that encourage the use of otherwise unused byproduct materials for renewable bioenergy and bioproducts should be considered. However, any policies relating to bioenergy must be founded on appropriate analysis and abide by current standards set in the Clean Air Act and meet established guidelines to maintain and improve the U.S. environment.

Opportunity: Ensure a ready workforce to meet the needs of the bioeconomy.

A growing bioeconomy will require a knowledgeable and well-trained workforce. U.S. K–12 and post-secondary education programs have put an increased focus on science, technology, engineering, and mathematics, but there is still room for growth. This will benefit the bioeconomy by providing a multidisciplinary workforce that will not only include engineers and scientists, but communications experts, human resource specialists, and other supporting positions as well. Additionally, workers will need experience across the supply chain, which could take the form of apprenticeships, internships, and volunteer opportunities in the growing industry.

Next Steps

The activity across the Federal Government is extensive, and agencies have made progress in understanding many aspects of an emerging bioeconomy, including the production and logistics of delivering feedstocks to a refinery, as well as innovations that have significantly reduced the cost of converting feedstocks into fuels and products. The Bioeconomy Initiative will expand the focus beyond biofuels, increasing the value and potential benefits of biomass.

The Federal Government has also made efforts to develop sustainable supply chains, establish standards, and has performed extensive testing of fuels for aviation and surface transportation. However, to further reduce the risks of the technology and overcome barriers to achieving a robust bioeconomy, the bioenergy community must do more.

The Board will continue to develop the Bioeconomy Initiative in partnership with stakeholders. Building on the release of the FARB, this report is the next step in

[24] Information regarding the EPA's draft technical report, *Framework for Assessing Biogenic CO_2 Emissions,* and the related scientific peerreview process can be found at: *https://www3.epa.gov/climatechange/ghgemissions/biogenic-emissions.html*.

forming the coalition to drive the Bioeconomy Initiative forward by identifying many of the obstacles that need to be addressed, and understanding how to move forward cooperatively.

APPENDIX E

Federal Activities Report on the Bioeconomy



February 2016

Official Disclaimer

The *Federal Activities Report on the Bioeconomy* is a product of interagency collaboration under the Biomass R&D Board and does not reflect any changes in policy. All information is based on current activities conducted by the Executive Agencies as of October 2015. The potential impacts of technical progress, pending or proposed legislation, regulations, standards, or any other changes that may have occurred after the publication date are not reflected in this report.

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Foreword

The Biomass R&D Board

The Biomass Research and Development (R&D) Board (The Board) was created through the enactment of the Biomass Research and Development Act of 2000 "to coordinate programs within and among departments and agencies of the Federal Government for the purpose of promoting the use of biobased industrial products by (1) maximizing the benefits deriving from Federal grants and assistance; and (2) bringing coherence to Federal strategic planning."[1] The Board is co-chaired by senior officials from the U.S. Departments of Energy (DOE) and Agriculture (USDA) and currently consists of senior decision makers from the DOE, USDA, U.S. Department of Transportation (DOT), U.S. Department of the Interior (DOI), U.S. Department of Defense (DOD), U.S. Environmental Protection Agency (EPA), National Science Foundation (NSF), and the Office of Science and Technology Policy (OSTP) within the Executive Office of the President. With its diverse membership, the Board facilitates coordination among Federal Government agencies that affect the research, development, and deployment of biofuels and bioproducts.

Purpose of the Federal Activities Report on the Bioeconomy

A *Federal Activities Report on the Bioeconomy* has been prepared to emphasize the significant potential for an even stronger U.S. bioeconomy through the production and use of biofuels, bioproducts, and biopower. This report is intended to educate the public on the wide-ranging, federally funded activities that are helping to bolster the bioeconomy. Further, the report will highlight some of the critical work currently being conducted across the Federal Government that either supports or relates to the bioeconomy.



Bioeconomy Vision

Introduction

Why a Bioeconomy

"Bioeconomy" is a popular phrase used broadly in today's energy conversation. The term emphasizes the integral role of abundant, sustainable, domestic biomass in the U.S. economy.

The benefits of the bioeconomy have been well documented.[2] Biobased products support the growth of plants, trees, and vegetation, which recycle carbon (CO_2) from the atmosphere, resulting in air quality improvements when compared to fossil fuel-based products. In addition, producing and utilizing biobased fuels reduces U.S. reliance on foreign oil (energy security) and creates jobs, particularly in rural areas.

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[1] U.S. Congress (1999). H.R. 2827. 106th Congress, first session. *http://www.gpo.gov/fdsys/pkg/BILLS-106hr2827ih/html/BILLS-106hr2827ih.htm.*

[2] *Renewable Chemicals & Materials Opportunity Assessment—Major Job Creation and Agricultural Sector Engine,* USDA, 2014. *http://www.usda.gov/oce/reports/energy/USDA_RenewChems_Jan2014.pdf; U.S. Economic Impact of Advanced Biofuels Production: Perspectives to 2030,* Bioeconomy Research Associates, 2009. *https://www.bio.org/sites/default/files/EconomicImpactAdvancedBiofuels.pdf; Bio-based Chemicals—Value-Added Products from Biorefineries,* IEA 2011. *http://www.ieabioenergy.com/wp-content/uploads/2013/10/Task-42-Biobased-Chemicals-value-added-products-from-biorefineries.pdf.*

What Is a Bioeconomy

For the purpose of this report, the bioeconomy is defined as:

"The global industrial transition of sustainably utilizing renewable aquatic and terrestrial biomass resources in energy, intermediate, and final products for economic, environmental, social, and national security benefits."[3]

Because of these and other benefits, biobased resources are an important component of the nation's "All of the Above" energy policy, which is focused on developing a range of available energy sources to meet future demands and increase the stability and security of the nation's energy supply.[4] In the Climate Action Plan, the President recognized that "biofuels have an important role to play in increasing our energy security, fostering rural economic development, and reducing greenhouse gas emissions from the transportation sector."[5] In addition to biofuels, the Federal Government has emphasized the potential for biopower, bioproducts, and renewable chemicals as key components of the national bioeconomy.

While the United States is a global leader in promoting the use of sustainably produced feedstocks to fuel economic activity and growth, the bioeconomy is still in its early stages. A transition is needed from a fossil-based economy to an economy that is fueled by sustainable and renewable energy, of which biomass plays a critical role. Assisted by public-private partnerships, development of new and innovative technologies in the United States is leading to renewable and drop-in fuels, biobased materials, and renewable chemicals that are replacing fossil-based products.

Bioeconomy and the Federal Government



Bioeconomy activities have already touched on the interests of many Federal agencies and offices. For example, USDA's interest stems from the development and production of feedstocks to end-use markets for those feedstocks; DOE's interest involves alternative inputs used to generate energy and co-products, technologies, and end-use markets; EPA leads development of the renewable fuel standard for biofuels, environmental approval of biotechnologies essential to the bioeconomy, regulates emissions from mobile and stationary sources of the bioeconomy, and the management of manures, municipal solid waste and biosolids—all potential feedstocks for the bioeconomy; NSF recognizes innovative technology underpins a strong bioeconomy and increased demand for scientists and engineers; DOD and DOT view the bioeconomy from an alternative fuels and power dimension and are interested in reducing energy price variability and identifying reliable and sustainable fuel supplies for all transportation modes, as well as tactical and non-tactical assets; and DOI seeks to add value to U.S. land.

The Federal Government as a whole sees great potential in the nation's abundant natural resources, the capacity for new and advanced technologies, and the entrepreneurial spirit of the American people. This potential offers the ability to triple

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[3] *An Economic Impact Analysis of the U.S. Biobased Products Industry—A Report to the Congress of the United States of America,* USDA 2015. *http://www.biopreferred.gov/BioPreferred/faces/pages/DocumentBrowser.xhtml#; Opportunities in the Emerging Bioeconomy,* July 25, 2014. *www.biopreferred.gov/files/WhyBiobased.pdf; Renewable Chemicals & Materials Opportunity Assessment—Major Job Creation and Agricultural Sector Engine,* USDA, 2014. *http://www.usda.gov/oce/reports/energy/USDA_RenewChems_Jan2014.pdf.*

[4] *https://www.whitehouse.gov/sites/default/files/docs/clean_energy_record.pdf.*

[5] *https://www.whitehouse.gov/sites/default/files/image/president27sclimateactionplan.pdf.*

the size of today's bioeconomy by 2030. To realize the full potential of a sustainable, domestic bioeconomy, collaboration among Federal agencies is needed, as are partnerships with state and local governments, universities, industries affecting the bioeconomy supply chain, and the American public. The Biomass R&D Board is a standing body that can facilitate effective implementation of this vision.

Path to the Billion Ton Bioeconomy Vision

Genesis of the Bioeconomy Vision



Since fall 2013, Board members have been planning a broad, new vision to promote the expansion of the bioeconomy. With 1 billion tons of biomass projected to be sustainably produced and available annually by 2030, the Board recognized the need to fully develop a Billion Ton Bioeconomy Vision.[6] The Board believes that a single, coordinated multi-department vision focused on developing and implementing a plan for utilizing this biomass for these purposes will increase economic activity, decrease reliance on foreign oil, and create market-driven demand for bioenergy and bioproducts.

The concept was discussed in parallel by the Biomass R&D Technical Advisory Committee (TAC). The TAC envisioned a new interagency effort that would help to replace more fossil carbon with renewable carbon in transportation fuels and related products. The TAC recommended that the new vision endeavor to rapidly expand emerging biofuels and bioproducts industries, targeting a potential 30% penetration of biomass carbon into the U.S. transportation market by 2030 in a sustainable and cost-effective manner to create jobs, reduce greenhouse gas impacts, and enhance national security.

Additional expected outcomes of a proposed Bioeconomy Vision by the TAC and Board include the following:

- Enhanced economic development by increasing direct and indirect jobs.
- A cost-effective energy supply that is synergistic with existing fossil-based energy markets.
- Enhanced economic, environment, and social sustainability.
- Improved national energy security and decreased dependence of national defense on foreign energy supplies.

Preliminary Analyses

Members from the Analysis Interagency Working Group of the Biomass R&D Board have developed some early benefits metrics. The results of these analyses will be peer-reviewed and published in 2016.

The Board Operations Committee also conducted preliminary analyses to determine the feasibility of having 1 billion dry tons of biomass sustainably available annually within the relatively short timeframe of 15 years.[7] These bio-feedstocks would be used to produce biofuels, bioproducts, renewable chemicals, and biopower.

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[6] *U.S. Billion-Ton Update,* August, 2011. *http://www1.eere.energy.gov/bioenergy/pdfs/billion_ton_update.pdf.*

[7] The Billion-Ton Update assumes that the geographic range where energy crop production can occur is limited to areas where production is under rain-fed conditions, without the use of supplemental irrigation.

Some preliminary analyses, led by members of the Board's Analysis Interagency Working Group, were conducted to determine the feasibility of reaching this target and harnessing some of the associated social, economic, and environmental benefits of the effort.[8]

The Goal of the Bioeconomy Vision

The goal of the Billion Ton Bioeconomy Vision (the Vision) is to develop and implement innovative approaches to remove barriers to expanding the sustainable use of America's abundant biomass resources, while maximizing economic, social, and environmental outcomes. By increasing use of renewable plant material and waste feedstocks for biofuels, bioproducts, and biopower, the Vision has the potential to stimulate job growth and economic opportunities; increase the nation's competitive advantage; support a secure, renewable energy future; and contribute to improved environmental quality. This interagency vision differs from "business-as-usual" with an intention to create a sustainability framework that considers multi-dimensional impacts and benefits from the use of biomass.



Interagency Collaboration

Founding Partnerships, Breaking Barriers

USDA, DOE, and EPA jointly released a progress report on the Biogas Opportunities Roadmap of 2014. The Roadmap identifies voluntary actions that can be taken to reduce methane emissions through the use of biogas systems. It outlines strategies to overcome barriers limiting further expansion and development of a robust biogas industry in the United States.

For more information on this activity and others like it, see ***Appendix II.***

Biomass already plays a significant role in the Administration's "All of the Above" energy strategy. The Vision is to take a systems approach to sustainably reach the full potential of biomass-derived products as a way of expanding our nation's economy.



[8] Analysis Interagency Working Group was established as part of the 2012 National Biofuels Action Plan. The focus of the group is to identify and address analysis needs in biofuels and bioproducts R&D. The IWG is co-led by the Departments of Agriculture and Energy and has representatives from these departments, EPA, and DOT. This Group, along with added members from national laboratories, provided input and recommendations to the initial Bioeconomy Vision analysis, as well as a formal review of the assumptions, data, references, and calculations. There were more than ten members including scientists and program managers with expertise in agricultural, forestry, modeling, statistics, GHG emissions, economics, transport systems, and many other areas.

This effort will increase the sustainable production of biomass feedstocks and capture of usable wastes; development of innovative and more efficient technologies to transform renewable carbon to intermediates and products; construction of more biorefineries and manufacturing facilities; and expansion of the market for biofuels, biochemicals, biopower, and other biomass-derived products. As a result, the bioeconomy will provide multiple economic, environmental, and social benefits to the nation.

The Vision requires new science and technologies from universities and laboratories; industry and manufacturing development; engagement with financial institutions; education and job training; and additional producers, contractors, and specialty personnel. Expanding the economic sector to the extent envisioned in such a short timeframe will require strong support, commitment, and involvement of many sectors and groups. The Board's Operations Committee will coordinate engagement and outreach efforts to achieve commitment and investment among these external stakeholders. The Committee will collaborate with bioeconomy partners to develop a strategic framework and plan of action for reaching target groups across various sectors.

The Role of the Biomass R&D Board

The purpose of the Bioeconomy Vision is to expand the sustainable production and use of biomass. The Board will have the primary responsibility for providing overall leadership and coordination of this vision. The Vision will coordinate and enhance Federal efforts, as well as facilitate collaboration between the government and its stakeholders.



There is already a high level of commitment and coordination among many Federal agencies, as well as a fairly comprehensive approach to remove barriers that may preclude the commercialization and expansion of the bioeconomy. To maximize the potential of the U.S. bioeconomy, the Vision seeks to further align and coordinate agency missions, and fully engage with the public to achieve success. By involving other agencies and stakeholders as part of a collaborative effort, the Vision will strengthen this commitment and coordination, while broadening the effort to assess impacts and benefits, and prioritize the design and efficient scale-up of production and utilization of the best biomass production and utilization pathways.

Federal departments, agencies, offices, and programs will provide the following:[9]

- Investments in research, development, and demonstration (RD&D), as well as an objective assessment of life-cycle performance of technology and system choices looking at RD&D, production, conversion, delivery, and use.

[9] As a separate body established to inform and advise the Board, the Biomass R&D Technical Advisory Committee, an independent rotating advisory group of about 30 bioenergy stakeholders, will be encouraged to provide recommendations on the Bioeconomy Vision to the Board.



- Workforce development, training, public outreach, extension/technology transfer.
- An understanding of the policies of all agencies to successfully implement regulations that enable and overcome challenges to the sustainable expansion of the bioeconomy.
- New and existing mechanisms to leverage public-private relationships and resources.
- DOE national labs, USDA, and other Federal research facilities that will apply their technical expertise and provide technologies to further break down technical barriers, and decision support tools for the advancement of a sustainable bioenergy industry.

Overview of the Billion Ton Bioeconomy Vision

Scope of the Bioeconomy Vision

The Vision includes assessing benefits and impacts, and evaluating approaches for sustainably expanding the production of biomass-based fuels, power, and products along the entire supply chain (from the production of feedstocks to their conversion and end use). These efforts will require analyses, financial mechanisms, contract services, research, development, and deployment for feedstocks, conversion technologies, manufacturing, infrastructures, policies and regulations, and market development of products.

Expanding the bioeconomy in a sustainable manner will increase energy diversity and long-term security. It will provide additional economic, environmental, and social benefits, such as reduced greenhouse gas emissions, job growth, and responsible management of diverse sources of biomass and waste materials. Efforts will result in a greener, stronger nation with diverse, new economic sectors that enhance U.S. competitiveness.



Interagency Collaboration

A More Sustainable Future Together

DOE and USDA engage with the Global Bioenergy Partnership to exchange information and findings on sustainability and greenhouse gas emissions of bioenergy. The Global Bioenergy Partnership (GBEP) was established in 2006 by a mandate from the G8 + 5 in 2005 and is the venue for the U.S. Government to discuss sustainability of bioenergy on an international level. Partners currently include 23 countries and seven United Nations organizations, with Brazil and Italy as co-chairs.

For more information on this activity and others like it, see ***Appendix II.***

The following are examples of existing and proposed Bioeconomy Vision approaches:

- The Vision will be developed with participation from Federal agencies that are not currently involved with the Biomass R&D Board, thereby expanding the commitment of the Federal Government to identify and develop sustainable pathways in support of the bioeconomy.
- The Vision will proportionately expand its focus on biofuels to include other uses of biomass to derive increased value and benefits.
- A national framework will be developed to coordinate Federal and external efforts to advance the bioeconomy.
- Emphasis will be placed on achieving an overall national bioeconomy goal; specific milestones and deadlines for that goal will be established.

Expected Benefits

Environmental Benefits



An expanded bioeconomy must help mitigate, and not exacerbate, challenges associated with resources, environment, and public health. The Vision is to potentially help address many of today's pressing environmental challenges: The preservation and/or enhancement of ecosystem services and biodiversity; improved materials, water, and energy conservation; shift from non-renewable to renewable feedstock availability, selection, and use in industrial and consumer product manufacture; capture and recovery of non-renewable and renewable materials from wastes; improved air quality; and improved public health. Environmental assessments can identify pathways that would result in environmental gains when accounting for their full life cycle. Some environmental benefits are highlighted below:

- **Reduced Greenhouse Gas Emissions**—Greenhouse gas emission footprints associated with biomass-derived products are often more favorable than their fossil-fuel derived counterparts. Preliminary analyses show that a Billion Ton Bioeconomy could potentially reduce GHG emissions by over 400 million tons annually of CO_2e, which is equivalent to an approximate 8% reduction in current U.S. emissions.
- **Optimizing Land Use**—The sustainable production of biomass makes use of multi-functional landscapes that improve ecosystem services such as soil health, water quality and availability, and accessibility of other natural resources for food, fuel, and fiber production. For example, the development of non-food crops capable of thriving on marginal lands, which require less inputs for production, often helps reduce nutrient run-off, soil erosion, and water use. Also, aquatic biomass developed on coastal and marine landscapes can provide similar benefits and expand the areal production of biomass for the bioeconomy.
- **Higher Purpose Use of Biobased Materials**—Opportunities exist to develop and utilize diverse agricultural, algal, and biogenic waste (*e.g.,* manures, biosolids, food waste, and municipal solid waste) feedstocks that, historically, have presented environmental and economic challenges. Using diverse sources of renewable biobased materials as feedstocks often reduces greenhouse gas, eliminates management costs, reduces water quality degradation, and provides revenue streams and renewable energy.
- **Capture, Re-use, and Market Value of Non-renewable Resources and Pollutants from Biogenic Wastes**—Innovative technologies can extract non-renewable resources (such as phosphorus from manures and biosolids) and transform them from costly pollutants into marketable products.

Economic Benefits



The Analysis Interagency Working Group of the Biomass R&D Board estimates that the bioeconomy currently contributes approximately $50 billion and over a quarter million jobs to the U.S. economy. The government's Billion Ton Bioeconomy Vision has established goals that would considerably increase U.S. economic production and job growth. Effects of a significantly larger bioeconomy would ripple across all U.S. economic sectors, creating new jobs in biomass production and logistics, facility operation and quality control, and distribution, as well as R&D, finance, supplies, and services that deal with the complexities of building and running new biorefineries. If targets are met, the bioeconomy could achieve the following milestones:

- **National Revenues:** The total direct revenue could reach approximately $250 billion annually, with a total economic impact of $660 billion each year including indirect economic outputs from the bioeconomy.
- **Job Growth:** The cumulative job benefit could be over a million new positions that cannot be outsourced from the United States. A strong bioeconomy will boost job growth in various sectors, especially in the high-paying technology field. Such progress would have positive effects throughout much of the agriculture, aquaculture, forestry, and service sectors of the economy.
- **Rural Development:** Sustainably utilizing our land resources, algae, and waste systems would provide economic development opportunities for both rural and urban America. Additionally, rural communities and economies would have the potential to benefit significantly as a result of the Bioeconomy Vision.

National Security Benefits

The volatility of oil prices and supply is a major concern to a nation still reliant on oil for the majority of its transportation needs. Biofuels are less susceptible to global events and can help bolster the U.S. renewable energy markets. Additionally, an expanded bioeconomy will contribute to the U.S. maintaining a competitive advantage in a global market. Specific benefits include the following:

- **Price Volatility:** The Billion Ton Bioeconomy will create more biobased energy options and provide flexibility to address environmental challenges and future volatility in global fuel prices.
- **Infrastructure Compatibility:** The bioeconomy will support development of a responsive, reliable, and efficient transport and distribution infrastructure that can safely deliver biofuel products to their end-use locations.



Interagency Collaboration

Scaling up for Success

To supply the U.S. Navy with a home grown, secure fuel supply, USDA, DOE and the Navy have been working together since 2011 to help commercialize new fuels that meet military specifications for jet fuel and diesel. These domestically produced renewable biofuels will help the U.S. military increase the nation's energy security, reduce greenhouse gas emissions, and create jobs in America.

For more information on this activity and others like it, see ***Appendix II.***

Challenge Areas

There is general agreement that expanding the bioeconomy would offer significant benefits; however, some major hurdles still exist. They include: (1) a lack of available, cost-competitive, biomass-derived products as compared to fossil resource (petroleum, natural gas, coal) products, (2) concerns over environmental issues associated with growing biomass and mitigating/reducing negative impacts, (3) reducing risks to warrant investment in biomass production systems, conversion facilities, and end-use infrastructure, (4) limited availability of land and resources (*e.g.,* water, fertilizer, labor, *etc.*) to produce 1 billion tons of biomass, (5) current inability to transport and dispense larger quantities of fuels, and (6) the need for large capital expenditures in a risk-averse financial environment. The goals of the Vision can only be accomplished when these challenges have been considered and mitigated. At the same time, it is critical that U.S. food, feed, and fiber production is sustained and enhanced.



There are four main barriers that restrict our ability to achieve Billion Ton Bioeconomy goals:

- **First, sustainably producing and accessing adequate, affordable feedstocks**—Biomass as the source of low-cost renewable carbon feedstock for conversion to fuels, power, and products add significant complexity to the agricultural and forestry industries for the production of biomass and to the waste management industries for the recovery of organic materials.
- **Second, developing and applying innovative, cost-competitive conversion technologies**—Conversion technologies for production of fuel from cellulosic feedstocks suffer from high energy requirements and low productivity (yield, selectivity, and rate of production), as well as high capital expenditures per gallon, which results in conversion technologies that are unable to achieve reinvestment economics. Solid fuels combustion systems are relatively commercial state-of-the-art technologies, but are still significantly inefficient conversion processes for electricity and thermal energy production. Current conversion technology cannot economical maximize value from by- and co-products. Using and blending waste resources into conversion system are still limited by non-robust conversion technologies.

- **Third, optimizing distribution infrastructure across the nation to allow movement of biomass and subsequent derivatives across the entire supply chain**—The lack of an updated distribution infrastructure and other market incentives, especially for fuels, directly impacts their use by consumers. Developing functional, compatible, and competitive distribution systems for end use, while expanding existing infrastructure (*i.e.,* feedstocks, distribution, end-use, and delivery) is critical to the success of the Bioeconomy Vision.
- **Fourth, educating the consumer**—Education of the positive aspects of biomass, re-use of waste streams, and production of biofuels and bioproducts.

Proposed Objectives of the Bioeconomy Vision

By leveraging existing expertise across the various agencies, this new vision could propel the United States to develop the leading bioeconomy in the world. The objectives of the Vision can be categorized into five distinct areas. A table has been provided to discuss the main themes of the Bioeconomy Vision.

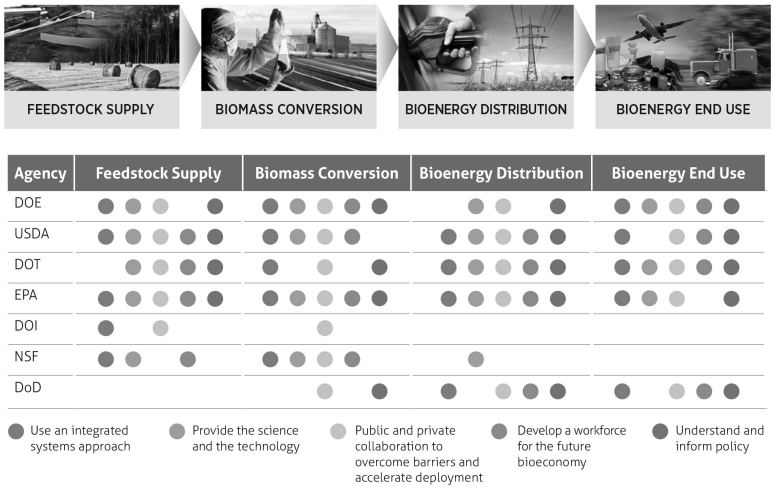
1 **Use an integrated systems approach**	Holistic, integrated supply chains that overcome barriers and reduce financial, environmental, and market risks. Objectives are: • Develop and deploy sustainable biomass systems that improve cost competitivenessand mitigate economic risk, while maintaining or enhancing environmental quality throughout their life cycle. • Utilize financial data and business models to reduce risks in commercialization in order to satisfy needs along the entire supply chain. • Utilize models and data across the Federal Government to understand and quantify tradeoffs and synergies to optimize the economic, environmental, and social benefits of the bioeconomy to minimize adverse impacts.
2 **Provide the science and the technology**	Science provides solutions to barriers and innovative technologies help drive the bioeconomy. Objectives are: • Make significant advances in transformational science and technology, throughout the supply chain, that are resource efficient, cost-effective, and environmentally neutral or enhancing. • Efficiently integrate and validate engineering, environmental, and economic data that are associated with biomass production, conversion to bioeconomy products, and use. • Adapt current infrastructure and design and develop new machinery for efficiency. • Integrate biophysical, environmental, and social models in systems development.
3 **Public and private collaboration to overcome barriers and accelerate deployment**	Expansion of the bioeconomy requires public and private collaboration across the entire sector: Federal, state, and local government, Tribes, business and industry, academia, producers, landowners, workers, and many others. Objectives are: • Identify and understand roles of the various factions and develop optional mechanisms for information sharing, consensus building, collaboration, and cooperation. • Work with producers (farmers, landowners/managers, waste managers) and communities to encourage/incentivize cellulosic and waste material biomass system adoption while understanding and mitigating risk.
4 **Develop a workforce for the future bioeconomy**	Millions of additional workers are needed in agricultural, aquatic, and forestal production, biorefineries R&D, transportation, manufacturing, and various allied fields. Objectives are: • Accelerate the emergence of trained professionals in all functions needed to establish a sustainable bioeconomy, including project design and production, transport, market penetration and use, specialized financial management, and regulatory approval. • Develop specific educational programs for professionals and technical students at various levels of higher education.

	• Provide career pathways information and activities for high school students.
5 **Understand and inform policy**	Policies seek to improve economic, environmental, and social outcomes, and drive direction and funding of new scientific endeavors and program implementation to accelerate the bioeconomy. Objectives are: • Analyze and understand the impact of national policy on the bioeconomy. • Inform local and state governments, industry, and other stakeholders about policies and their impact. • Integrate economic and environmental policy factors to reduce financial risks to investors, producers, and manufacturers, and to protect environmental quality across the supply chain.

Federal Agencies' Current Work in the Bioeconomy

Executive Agencies

As stated previously in this report, the bioeconomy involves many different agencies and mission areas within the Federal Government. The national bioeconomy is wide-reaching and multi-faceted, and relates to a range of different offices within many executive agencies, even beyond those represented on the Biomass R&D Board. *Appendix I* covers all Board agencies, and details specific offices and programs involved in the current bioeconomy in support of their specific mission areas (note that this is not an exhaustive listing for the entire Federal Government). The following chart presents a snapshot of the synergies and roles for each agency across the vast bioeconomy supply chain. For details on how each agency is currently supporting specific aspects of the bioeconomy, please see *Appendix I.*



Interagency Collaboration

As evident throughout this report, there is already significant collaboration between agencies to take advantage of the wide-ranging expertise across the government. Interagency activities take many forms and seek to confront varied challenges facing the bioeconomy today. These collaborative projects offer the chance to fully leverage Federal Government expertise, ensuring that activities produce valuable projects and achievements for the public.

Further, interagency projects offer some of the best opportunities for stakeholder organizations to work directly with multiple agencies on specific aspects of the bioeconomy. For more examples of interagency projects currently underway, please see *Appendix II.*

Looking Ahead

Bioeconomy Federal Strategy Workshop

In May 2015, the Board convened a workshop of Federal agencies to discuss options for expanding and developing the bioeconomy. A significant component of this activity involved sharing information on existing agency programs and activities

that intersect with or are directly focused on the bioeconomy. The Federal Government has numerous efforts underway to help expand the bioeconomy, and brief summaries of those activities are included in this report.

The workshop included many productive discussions given the extensive knowledge, experience, opinions, and insights across the agencies. Participants addressed issues concerning specific aspects of the supply chain, while also considering the sustainable expansion of the bioeconomy from a holistic perspective. Exchanges among the participants were enlightening, concluding that the effort would be challenging, but not insurmountable. Some key discussion points involved the following:

- Addressing technical and sociological challenges to using genetically modified organisms (GMOs) in developing sustainable feedstocks.
- Identifying the key role algae plays for the future of bioproducts and biochemicals. Sharing a common understanding of sustainability and achievement metrics, and discussing paths for practical implementation.
- Realizing that biomass production and use must be within the context of sustainability, resource availability, social concerns, and public perceptions.
- Being aware that, if done correctly, an expanded bioeconomy could significantly impact America's landscape with opportunities to improve ecological functions and ensure the mitigation of negative impacts of increased land use.
- Expansion of the bioeconomy will happen in the marketplace, and the market must simultaneously meet society's need for food, fiber, and forage, as well as energy and products.

Overall, the workshop helped Federal agencies identify processes for working together and with their many stakeholders. The following specific efforts were established at the meeting and are being addressed:

- Ensure consistent Federal messaging.
- Increase Federal agency coordination.
- Recognize opportunities for improvements across the supply chain.
- Integrate diverse national goals and objectives linked to the sustainable bioeconomy.
- Coordinate stakeholder interests and actions in both the public and private sectors.

Notably, the workshop became the bridge to building a national effort within the Federal Government to work together to expand the bioeconomy. Although many barriers and opportunities were identified and discussed, issues were not resolved at the meeting. The workshop was not intended to establish processes or undertake detailed planning. The workshop was the cornerstone for identifying roles and issues and building a vision that would conceivably bring together many Federal agencies, stakeholders, and the American public.

Building a National Coalition

The work has already started on building a national Federal Government coalition with the goal to expand the bioeconomy. Agencies have distinctive missions that relate to the bioeconomy that are currently being accomplished through various approaches and programs, authorized by various statutes. This coordinated effort will leverage these approaches and programs, as appropriate.



As described previously, many of these agencies have been coordinating similar efforts for over a decade through the Biomass R&D Board. The Board has the lead role in building the coalition while working through the agency's executive leaders, managers, and staff. However, this activity will not only involve agencies, but will be conducted in cooperation with many stakeholders and with the public. This report is the first step in building the coalition—the next step is engaging the public, beginning with agency stakeholders. From this collaborative engagement, an implementation plan will be developed to help direct the Vision.

The Federal Government's goal to expand biomass resources for economic, environmental, social, and energy security benefits will be facilitated by collaborative educational and engagement efforts. The global transition to full utilization of biopower, bioenergy, and biobased products is being driven by a wide array of groups. Reaching out to diverse stakeholders (non-governmental organizations; international governments and organizations; environmental and industry groups; manufacturers; and other members of the supply chain) to obtain multiple perspectives, share key data, identify opportunities, and understand motivations, business cases, and realities will help achieve the bioeconomy goal and its expected benefits.



Growth of the bioeconomy will require more than a "public awareness campaign". A Board committee is currently conducting efforts to identify and understand more about the various bioeconomy stakeholders. This effort will help determine the Board's future education and communications activities to address current barriers to growing the bioeconomy. These activities will include meaningful communication across the U.S. Government (developing and deploying consistent Federal messaging); stakeholder and public workshops (listening sessions to gather information about the Bioeconomy Vision and the role of education); and the potential establishment of a formal coalition to provide leadership and oversight of the Vision's strategy and practice. The information gathered from this direct engagement with the public will result in an overall plan for the Vision, to be detailed in an Integrated Bioeconomy Implementation Plan, to be released in 2016.

Appendix I: Federal Agency Activities

This *Appendix* includes details on the missions, activities, and linkages to the U.S. Bioeconomy within the Executive Agencies participating on the Biomass R&D Board. Each agency brings their own mission and expertise to the issues surrounding creating a bioenergy industry. Numerous sub-agencies, divisions, and program offices are included below, however due to the broad nature of the bioeconomy, there are more offices that play a part in this sector that are not listed. Additionally, information included in this appendix is only a snapshot of the work being done by each office. For additional details on these offices and agencies, please visit the website listed.



Department of Energy
www.energy.gov

Bioenergy Technologies Office

The Bioenergy Technologies Office seeks to develop and transform our renewable biomass resources into commercially viable, high-performance biofuels, bioproducts, and biopower through targeted research, development, and demonstration supported through public and private partnerships.

This Office conducts R&D, demonstration, and market transformation activities through an integrated supply chain approach addressing supply, conversion, distribution, and end-use. Cross-cutting areas—sustainability, strategic analysis, and strategic communications—develop and disseminate a body of knowledge and tools related to the economic, environmental, and social dimensions of advanced bioenergy. The process is managed through its Multi-Year Program Plan (MYPP).[1] Program of work includes feedstock supply assessment, logistics systems improvements, lower cost conversion technologies, and market development. Signature elements are the periodic national assessment, advanced and depot logistics, validated conversion pathways, feedstock/conversion interfaces and integration, market development, technoeconomic analyses, and sustainability analysis and research. Work is done through national laboratories, competitive R&D grants, consortia, and partnerships. The Office collaborates with other DOE Offices and departments.

The Bioenergy Technologies Office is dedicated fully developing the bioeconomy, and establishes partnerships with key public and private stakeholders to develop and demonstrate technologies for producing cost-competitive advanced biofuels from non-food biomass resources, including cellulosic biomass, algae, and wet waste (*e.g.,* biosolids). The Office pursues innovations for and testing of crucial bioenergy technologies including pilot- and demo-scale integrated biorefineries.

Vehicle Technologies Office

The Vehicle Technologies Office supports research and development that will lead to new technologies that reduce our nation's dependence on imported oil, further decrease vehicle emissions, and serve as a bridge from today's conventional powertrains and fuels to tomorrow's hydrogen-powered hybrid fuel cell vehicles. The Vehicle Technologies Office also supports implementation programs that help to transition alternative fuels and vehicles into the marketplace, as well as collegiate educational activities to help encourage engineering and science students to pursue careers in the transportation sector.

The Office supports research to improve how vehicles will use alternative fuels in the future. Work includes determining the impact of biofuels' properties on engines' efficiency, performance, and emissions. Activities include examining ways to increase alternative fuel vehicles' fuel economy, investigating the potential effects of upcoming blends, and improving the quality of current and future biofuel blends, especially biodiesel and E85. VTO's Clean Cities Program develops public/private partnerships to promote alternative fuels, vehicles, and infrastructure.

Fuel Cell Technologies Office

The Fuel Cell Technologies Office conducts comprehensive efforts to overcome the technological, economic, and institutional barriers to the widespread commercialization of hydrogen and fuel cells. The office's efforts will help secure U.S. leadership in clean energy technologies and advance U.S. economic competitiveness and scientific innovation.

This is the lead Federal agency for applied research and development (R&D) of cutting edge hydrogen and fuel cell technologies. The overall challenge to hydrogen production is cost reduction which includes the use of biomass. DOE is working closely with its national laboratories, universities, and industry partners to overcome critical technical barriers to fuel cell commercialization.

Advanced Manufacturing Office

The Advanced Manufacturing Office partners with industry, small business, universities, and other stakeholders to identify and invest in emerging technologies

[1] *http://www.energy.gov/eere/bioenergy/downloads/bioenergy-technologies-office-multi-year-program-plan-july-2014-update.*

with the potential to create high-quality domestic manufacturing jobs and enhance the global competitiveness of the United States.

Efforts leverage state, utility, and local resources to help manufacturers save energy, reduce climate and environmental impacts, enhance workforce development, and improve national energy security and competitiveness throughout the supply chain. The Office invests in emerging technologies that include the use of biomass for fuels, chemicals, materials, heat, and electricity. A specific example is developing polyacrylonitrile for the manufacture of carbon fiber.

Federal Energy Management Program Office

The Federal Energy Management Program (FEMP) works with key individuals to accomplish energy change within organizations. It brings expertise from all levels of project and policy implementation to enable Federal agencies to meet energy-related goals and to provide energy leadership.

The Program provides technical assistance to reduce the energy intensity of Federal facilities. FEMP also helps Federal agencies with funding mechanisms for their projects, such as energy-saving performance contracts (ESPCs). Such projects could include the use of biomass. FEMP works with the Federal fleet to increase the use of biopower, renewable and alternative fuels, and flexible-fuel vehicles.

Office of Fossil Energy

The Office of Fossil Energy (FE) plays a key role in helping the United States meet its continually growing need for secure, reasonably priced and environmentally sound fossil energy supplies. Put simply, FE's primary mission is to ensure the nation can continue to rely on traditional resources for clean, secure and affordable energy while enhancing environmental protection.

The Office's primary mission is to ensure the nation can continue to rely on traditional resources for clean, secure and affordable energy while enhancing environmental protection. The Office includes the National Energy Technology Laboratory. There are opportunities to integrate biopower applications into utility-scale electric generation and to use biomass and natural gas synergistically to maximize outputs.

Advanced Research Projects Agency—Energy

The Advanced Research Projects Agency—Energy (ARPA–E) advances high-potential, high-impact energy technologies that are too early for private-sector investment. ARPA–E awardees are unique because they are developing entirely new ways to generate, store, and use energy.

The focus of ARPA–E is on transformational energy projects that can be meaningfully advanced with a small investment over a defined period of time. ARPA–E empowers America's energy researchers with funding, technical assistance, and market readiness. An example is Plants Engineered to Replace Oil, PETRO, with its aim to develop non-food crops that directly produce transportation fuels. The PETRO activity conducts applied research and development to generate novel crop feedstocks that are directly a production of fuel molecules in planta, and improved photosynthetic activity. The production of new crop feedstocks is critical for advanced biofuels, bioproducts, and biochemicals, and the PETRO project will help develop the technology to expand the national bioeconomy. Another activity is the Transportation Energy Resources from Renewable Agriculture (TERRA) program, which conducts applied research and development of improved high throughput breeding tools (phenotyping/genotyping) to increase yields of energy crops. The expedited development of improved varieties of bioenergy feedstocks is what links TERRA to the Bioeconomy.

Office of Science: Office of Basic Energy Sciences

The Office of Basic Energy Sciences (BES) supports fundamental research to understand, predict, and ultimately control matter and energy at the electronic, atomic, and molecular levels in order to provide the foundations for new energy technologies and to support DOE missions in energy, environment, and national security. BES also plans, constructs, and operates major scientific user facilities to serve researchers from universities, national laboratories, and private institutions.

Within BES, the Physical Biosciences and Photosynthetic Systems programs support basic research to understand energy capture, conversion, and storage in plants and microbes.[2] The Physical Biosciences program combines experimental and computational tools from the physical sciences with biochemistry and molecular biology to understand the conversion and storage of energy in living systems. Supported research includes characterization of the biochemical and biophysical principles deter-

[2] *http://science.energy.gov/bes/csgb/research-areas/photochemistry-and-biochemistry/*.

mining the architecture and biosynthesis of biopolymers and the plant cell wall and studies of redox and active site protein chemistry that can provide a basis for development of highly selective and efficient bio-inspired catalysts. The Photosynthetic Systems program brings together biology, biochemistry, chemistry, and biophysics to uncover the fundamental science of biological capture of sunlight and its conversion to and storage as chemical energy. This research provides a scientific knowledge base that can inspire artificial photosynthesis and enable new strategies for more efficient generation of biomass as a renewal energy source. The Catalysis Science program develops fundamental understanding of the scientific principles enabling rational catalyst design and chemical transformation control.[3] Supported research includes basic studies of catalysis relevant to the conversion and use of renewable energy resources and the creation of advanced chemicals. The DOE Energy Frontier Research Centers Program[4] aims to accelerate transformative discovery to understand and manipulate matter on the atomic and molecular scales and address key scientific challenges for energy technologies. Located across the United States, the 32 multi-investigator, multidisciplinary Energy Frontier Research Centers bring together leading scientists to tackle the toughest scientific challenges preventing advances in energy technologies. Their efforts are laying the scientific groundwork for fundamental advances in solar energy, biofuels, transportation, energy efficiency, and carbon capture and sequestration.

BES research programs provide the fundamental knowledge base of chemical and biochemical processes and properties that underpins development of new methods and technologies for efficient and sustainable production of biofuels and bioproducts.

Office of Science: Office of Biological and Environmental Research

The Office of Biological and Environmental Research (BER) supports fundamental research aimed at expanding foundational knowledge of biological systems and enabling the development of secure and sustainable bioenergy solutions.

This Office supports basic research programs relevant to DOE missions in energy and the environment. To enable the development of sustainable bioenergy and bioproducts, BER focuses on genome driven systems biology approaches that advance understanding of plants, microbes, integrated communities, and their interactions with environmental variables. This foundational understanding is used to further the development of more sophisticated biosystems design capabilities applicable to improving biomass feedstock plants, microbes applicable to biomass deconstruction and conversion to biofuels/bioproducts, and photosynthetic microorganisms. BER research also examines the intersection between plants, their associated microbiomes, and their ecosystems in order to understand responses to changing environmental variables and identify factors critical to sustainable biomass production. BER science programs are conducted via research funding at DOE National Laboratories, competitive grants to academic institutions, cooperative agreements, and support of national scientific user facilities.

BER research programs advance fundamental understanding of biosystems of plants, microbes, and biological communities and enable the development of more sophisticated biodesign approaches for sustainable production of biofuels and bioproducts.

Loan Programs Office

The Loan Programs Office (LPO) accelerates the domestic commercial deployment of innovative and advanced clean energy technologies at a scale sufficient to contribute meaningfully to the achievement of our national clean energy objectives—including job creation; reducing dependency on foreign oil; improving our environmental legacy; and enhancing American competitiveness in the global economy of the 21st century.

LPO enables DOE to work with private companies and lenders to mitigate the financing risks associated with clean energy projects to encourage the development of clean energy on a broader and much-needed scale. The Loan Programs consist of three separate programs managed by two offices, the Loan Guarantee Program Office (LGP) and the Advanced Technology Vehicles Manufacturing Loan Program Office. LPO originates, guarantees, and monitors loans to support clean energy projects, including large scale biorefineries, through these programs.



[3] *http://science.energy.gov/bes/csgb/research-areas/catalysis-science/*.
[4] *http://science.energy.gov/bes/efrc/*.

Department of Agriculture
www.usda.gov

Agricultural Marketing Service

The Agricultural Marketing Service (AMS) administers programs that create domestic and international marketing opportunities for U.S. producers of food, fiber, and specialty crops.

The AMS Transportation Services Division (TSD) serves as the definitive source for economic analysis of agricultural transportation from farm to market. TSD experts support domestic and international agribusinesses by providing market reports, economic analysis, transportation disruption reports, technical assistance, and outreach to various industry stakeholders. Tracking developments in truck, rail, barge, and ocean transportation, TSD provides information and analysis on the four major modes of moving food from farm to table, port to market. On every first Wednesday of the month, and with data from public documents provided by the railroads, TSD updates rail tariff rate information for Ethanol[5] and Dried Distillers Grains with Solubles (DDGS).[6] Information provided through the updates is only for reference. Individual railroads should be consulted prior to conducting any business transactions.

AMS biofuels market reports and market intelligence reports apprise stakeholder of prices and volumes of select feedstocks, fuels, and transport metrics.

Agricultural Research Service

The Agricultural Research Service (ARS) is the chief scientific in-house research agency of the USDA which conducts research to develop and transfer solutions to agricultural problems of high national priority and provide information access and dissemination to:

a. ensure high-quality, safe food, and other agricultural products,
b. assess the nutritional needs of Americans,
c. sustain a competitive agricultural economy,
d. enhance the natural resource base and the environment, and
e. provide economic opportunities for rural citizens, communities, and society as a whole.

ARS priorities[7] are in two parts. Part One includes the U.S. regional based feedstocks production systems with a focus on sustainability and economic impact. ARS conducts advanced biofuels research at the USDA Regional Biomass Research Centers[7a] through biophysical and economic models validated for regional conditions to incorporate energy production into existing agricultural systems. Genetic improvement work is primarily directed at perennial grasses including switchgrass and Napier grass, non-food biomass sorghum including sweet sorghum, energy cane, and lipid seed crops including industrial rapeseed and field pennycress. ARS also is developing technology to sustainably harvest crop residues including corn stover, and utilize livestock manure, as well as develop inventories for removing invasive tree species and restoring western rangelands.

Part Two includes developing conversion technologies at its four ARS utilization centers (Albany, CA; New Orleans, LA; Peoria, IL; Wyndmoor, PA) to enable sustainable commercial production of biofuels by the agricultural sector in ways that enhance our natural resources without disrupting existing food, feed, and fiber markets. Research will optimize both the production of plant feedstocks and the biorefining of agricultural materials to bioenergy and value-added (biobased) coproducts. This research will strengthen rural economies, provide increased supplies of renewable transportation fuel, enhance energy security, and improve the U.S. balance of trade. ARS is committed to diversifying rural economies and employment through new biobased technologies and commercial coproducts.

Animal and Plant Health Inspection Service

The Animal and Plant Health Inspection Service (APHIS) protects and promotes U.S. agricultural health, regulates genetically engineered organisms, administers the Animal Welfare Act and carries out wildlife damage management activities.

Biotechnology Regulatory Services (BRS) implements the APHIS regulations for certain genetically engineered (GE) organisms that may pose a risk to plant health.

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[5] *http://www.ams.usda.gov/services/transportation-analysis/datasets/ethanol.*
[6] *http://www.ams.usda.gov/services/transportation-analysis/datasets/ddgs.*
[7] *http://www.ars.usda.gov/SP2UserFiles/Program/213/BioenergyResearchStrategy2010.pdf.*
[7a] *http://www.ars.usda.gov/research/programs/programs.htm?np_code=213&docid=24694.*

APHIS coordinates these responsibilities along with the other designated Federal agencies as part of the Federal Coordinated Framework for the Regulation of Biotechnology. APHIS' Plant Protection and Quarantine program vigilantly protects agriculture and the environment against pest and disease threats to ensure a diverse natural ecosystem and an abundant and healthy food supply for all Americans. An invasive pest is a non-native species whose introduction into the country can cause damage to the economy, natural resources, or human health.

Climate Change Program Office

Climate-smart agriculture (CSA) promotes "production systems that sustainably increase productivity [and] resilience (adaptation), reduc[ing]/remov[ing] greenhouse gases (mitigation), and enhancing achievement of national food security and development goals" (FAO 2015). The U.S. is a member of the Global Alliance for Climate-smart Agriculture (GACSA), a partnership of countries and organizations committed to sustainability, resilience, and greenhouse gas mitigation in agricultural systems in a changing climate. Federal and private research produces a diversity of practices, technologies, agricultural varieties and tools to assist farmers and ranchers in mitigating and adapting to climate change. In addition to critical research and research support, USDA provides data standardization, knowledge sharing, and collaborative platforms; monitoring and decision support tools; outreach and extension activities; and a far-reaching organizational infrastructure that allows the most effective transmittal of up-to-date information between scientists and producers, and among producers themselves, leading to favorable and regionally-specific outcomes.

The USDA Climate Change Program Office also focuses on assessing the lifecycle GHG emissions of Corn-Based Ethanol. EPA's 2010 Regulatory Impact Analysis (RIA) of the revised Renewable Fuel Standard (RFS2) included a lifecycle analysis (LCA) of the GHG emissions associated with corn-based ethanol. The LCA concluded that substituting (on an energy equivalent basis) corn-based ethanol for gasoline in transportation fuels would result in a reduction in CO_2 emissions of 20–21 percent by 2022. EPA's LCA was based on projected emissions pathways through 2022 for 11 distinct GHG source categories associated with corn-ethanol. Since 2010, new scientific studies, data, and industry trends have emerged that show the emission paths of several key categories have not developed as projected, and, the actual paths strongly suggest the GHG profile of corn ethanol is significantly better than the RIA LCA concluded. For example, the largest source category in the RIA LCA is projected emissions from indirect land use change—due to future clearing of tropical forest (mainly in Brazil) to expand commodity production. Actual data now show that in the period U.S. corn ethanol increased from 3.0 billion gallons to just under 14 billion gallons, deforestation in Brazil's Amazon dropped from 10,200[2] mile to just under 2,400[2] miles. With renewable fuels and GHG mitigation becoming higher policy priorities, USDA's Climate Change Program, Office has contracted with ICF International to do a retrospective analysis of the RIA LCA including a review of new information that has become available since 2010 related to each emissions category, quantification of new emissions estimates for each source category, development of an updated LCA reflecting the current GHG profile of corn ethanol.

Departmental Management

Departmental Management (DM) provides management leadership to ensure that USDA administrative programs, policies, advice and counsel meet the needs of USDA program organizations, consistent with laws and mandates; and provide safe and efficient facilities and services to customers.

DM's Environmental Management Division (in the Office of Procurement and Property Management) develops policy and implements programs and projects for USDA sustainable practices, environmental response and restoration, and biobased product market transformation.

USDA's BioPreferred program increases the development, purchase, and use of biobased products through two initiatives: mandatory biobased product purchasing requirements for Federal Government agencies (regulatory initiative) and voluntary bioproduct certification and labeling. Both parts of the program work in concert as end-use market tools in USDA's supply chain approach to hastening the global transition to the bioeconomy. An economic impact analysis recently released by the program finds that the biobased products industry contributed a total of $369 billion value to the U.S. economy. Biobased products industries directly employ approximately 1.5 million people, while an additional 2.5 million jobs are supported in other sectors. Environmentally, the increased use of biobased products currently displaces about 300 million gallons of petroleum per year—equivalent to taking 200,000 cars off the road. (All numbers as of 2013.) Numerous efforts are continually underway to increase biobased product procurement Federal Government-wide, track product

use, and evaluate how these products are helping Federal agencies meet their sustainability goals. The more than 2,200 products that have received certification to display the USDA Certified Biobased Product label are creating and increasing consumer and commercial awareness about a material's biobased content as one measure of its environmental footprint.

The two elements of the BioPreferred program work in concert as end-use market tools in USDA's supply chain approach to hastening the global transition to the bioeconomy. Further, DM operations work to make USDA facilities greener and reduce the greenhouse gas footprint of departmental assets.

Economic Research Service

The Economic Research Service (ERS) informs and enhances public and private decision making on economic and policy issues related to agriculture, food, the environment, and rural development.

The ERS strategic plan[8] specifically includes understanding the effects of alternative fuels on agricultural markets, the interactions of commodity, livestock, and food markets with biofuels, bioenergy impacts on rural communities, and the production impacts on natural resources and the environment. Research is focused on these economic analyses and on examining the influence of bioenergy and bioenergy policy on domestic and global agricultural markets, natural resources, the environment, rural communities, and implications for food prices.

To the extent that policies or market developments associated with the bioeconomy affect commodity markets, rural communities, the environment, food prices or other issues within the domain of the ERS mission, ERS disseminates data, information, and special studies that address these interactions. Specifically, as a Principal Federal Statistical Agency, ERS has a long-standing and ongoing role in the collection, analysis, and distribution of market data and forecasts for the commodities that most directly influence, and are influenced by, the bioeconomy. ERS maintains a comprehensive set of economic data on ethanol and biodiesel production, consumption, trade, as well as for feedstock and co-product markets, in addition to other metrics. Economic modeling at ERS evaluates the economic and competitive potential for forest residues and dedicated energy crops (*e.g.,* switchgrass) as feedstocks for electricity generation, under alternative scenarios such as a renewable portfolio standard or policies to reduce carbon dioxide emissions. Longer-term scenarios consider the role of bio-electricity combined with carbon dioxide capture and storage as a negative-emissions technology.

Farm Service Agency

The Farm Service Agency (FSA) equitably serves all farmers, ranchers, and agricultural partners through the delivery of effective, efficient agricultural programs for all Americans.

This Agency manages the Biomass Crop Assistance Program (BCAP)[9] that provides financial assistance to owners and operators of agricultural and private forestland who wish to establish, produce, and deliver biomass feedstocks. As part of the process, the agency does conservation and forest stewardship plans, cost analysis, and has a Programmatic Environmental Impact Statement (PEIS). FSA also has Interagency Agreements with U.S. Forest Service and Bureau of Land Management to support economically viable retrieval of forest residues from the National Forest System (NFS) for delivery to bioenergy at facilities, at a long haul distance from the NFS. In 2015, USDA announced the Biofuels Infrastructure Partnership (BIP), with USDA sourced funding of $100 million in grants, and that to apply states and private partners match the Federal funding by a 1:1 ratio. USDA is partnering with 21 states through the BIP to nearly double the number of fueling pumps nationwide that supply renewable fuels to American motorists.

Forest Service

The Forest Service (FS) sustains the health, diversity, and productivity of the nation's forests and grasslands to meet the needs of present and future generations.

Woody biomass utilization is an important component of the Forest Service Strategic Energy Framework,[10] which sets direction and proactive goals for the FS to contribute significantly and sustainably toward resolving U.S. energy resource challenges, by fostering sustainable management and use of forest and grassland re-

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[8] *www.ers.usda.gov/about-ers/strategic-plan.aspx.*

[9] *http://www.fsa.usda.gov/FSA/webapp?area=home&subject=ener&topic=landing.*

[10] *http://www.fs.fed.us/specialuses/documents/Signed_StrategicEnergy_Framework_01_14_11.pdf.*

sources. The Forest Service is part of the USDA Wood-to-Energy [11–13] initiative, an interagency effort to expand renewable wood energy development and use. The Forest Service's wood utilization program develops markets to reduce the cost of hazardous fuels treatments, forest management, and restoration activities. The Forest Service provides woody biomass feedstocks from hazardous fuels reduction treatments and restoration activities. FS researchers [14] work to develop sustainable forest biomass management and production systems; conversion technologies for biofuels, biopower, and bioproducts; and information and tools for decision making and policy analysis.

The USDA Forest Service's emphasis on biomass, wood products, and wood energy encourages market development for woody biomass and provides high quality data to inform business, management, and policy decisions. Forest Service activities reduce investor risk, provide for sustainable feedstocks, and develop new products and efficient fuels. These activities significantly contribute to U.S. energy security, environmental quality, and economic opportunity and firmly supporting the bioeconomy.

National Agricultural Statistics Service (NASS)

The National Agricultural Statistics Service (NASS) is responsible for conducting monthly and annual surveys and preparing official USDA data and estimates of production, supply, prices, and other information necessary to maintain orderly agricultural operations. NASS also conducts the Census of Agriculture which is currently conducted every 5 years.

Credible data is essential for a broad spectrum of uses ranging from simple visual inspection of data or data series to developing analytical frameworks to more in-depth analyses of policies, supply and demand drivers, markets dynamics, and price formation. NASS is the source of much of the data released by USDA and used by industry and analysts. NASS collects and publishes data on feedstocks relevant to bioenergy production and on grain crushings and coproducts.

In 2014 NASS started publishing on a monthly basis a particularly valuable report, *Grain Crushings and Co-Products Production* which is part of the *Current Agricultural Industrial Reports* (CAIR) program. Data are collected from all known mills that produce ethanol. In addition, an operational profile was completed for each facility to determine the presence of dry and/or wet alcohol mill and the nameplate production capacity. All operations which will produce alcohol will be selected for the monthly *Dry Mill Producers of Ethanol Survey* and/or *Wet Mill Producers of Ethanol Survey* which ask for quantities of grain used as feedstock and co-products produced.

NASS published the first *Fats and Oils: Oilseed Crushings, Production, Consumption and Stocks* in 2015. The data is a combination of all known crushing, rendering and refining facilities. Prior to the beginning of data collection, operations were contacted to verify that they met the scope of the project. The *Fats and Oils: Oilseed Crushings, Production, Consumption and Stocks* also publishes data on animal fats.

National Institute of Food and Agriculture

The National Institute of Food and Agriculture (NIFA) provides leadership and funding for programs that advance agriculture-related sciences. We invest in and support initiatives that ensure the long-term viability of agriculture.

NIFA seeks to facilitate the development of regional biomass systems for the sustainable production of biofuels and biobased products. Coordinated Agricultural Projects (CAPs) [15] that consist of partnerships between government, industry, nongovernment organizations, and universities, including 1890 land-grant universities, Tribal Nation colleges, and Hispanic serving institutions address the integration of the supply chain. The Biomass Research and Development Initiative (BRDI) is a joint effort between the U.S. Department of Agriculture (USDA) and the U.S. Department of Energy (DOE). Priorities are jointly set by USDA and DOE each year. USDA–DOE Plant Feedstock Genomics for Bioenergy [16]—This competitive grant program is committed to fundamental research in biomass genomics, providing the scientific foundation to facilitate use of lignocellulosic materials for bioenergy and biofuels.

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[11] *http://blogs.usda.gov/2010/10/25/wood-to-energy-efforts-expanding-restoring-economies-and-ecosysems/#more-29613.*

[12] *http://heatingthemidwest.org/wp-content/uploads//David-Atkins-HTM-20121.pdf.*

[13] *http://blogs.usda.gov/2013/09/13/funds-promote-development-of-rural-wood-to-energy-projects/.*

[14] *http://www.fs.fed.us/research/pdf/RD_Bioenergy_Strategy_March_2010.pdf*

[15] *http://www.nifa.usda.gov/newsroom/news/2011news/09281_biofuel_production.html.*

[16] *http://genomicscience.energy.gov/research/DOEUSDA/awards.shtml.*

NIFA programs support the entire Bioeconomy supply chain at the regional scale. This begins with research, development and deployment for feedstock development and management; logistics including harvesting, storage, and transportation; and conversion processes for biofuels and biomaterials. Supporting this research is a full examination of environmental, economical, and social sustainability of these bioeconomy systems. The mission of each NIFA program connected to the bioeconomy is to reduce risk for stakeholders. NIFA also supports programs that build the future bioeconomy workforce as well as outreach/extension programs that translate research for stakeholder awareness.

Natural Resources Conservation Service

Natural Resources Conservation Service (NRCS) provides America's farmers and ranchers with financial and technical assistance to voluntarily put conservation on the ground, not only helping the environmental but agricultural operations, too.

NRCS provides technical assistance to producers to assess the feasibility of growing and harvesting biomass residues and its impact on environmental sustainability in individual fields and farms. In addition, NRCS Plant Materials Centers evaluate potential feedstocks in cooperation with USDA–ARS and Universities, collect plant data to support conservation planning for biomass crops, provide demonstrations and training on the production of energy crops, and support best management practices for the production of biomass crops.

Office of Energy Policy and New Uses

Office of Energy Policy and New Uses (OEPNU) is part of the Office of the Chief Economist (OCE) and advises the Secretary of Agriculture on the economic implications of policies and programs affecting the U.S. food and fiber system and rural areas. OCE supports USDA policy decision making by analyzing the impact of proposals and coordinating a response among several USDA agencies.

The Office assists the Secretary of Agriculture in developing and coordinating Departmental energy policy, programs, and strategies. Research is currently underway on biodiesel fuels, ethanol fuels, and other sources of biomass energy. Measurement of atmospheric emissions associated with renewable energy also is under study. OEPNU's scope of work also includes renewable electricity and examines the integration of energy with agriculture, the environment, and rural communities.

Rural Development

Rural Development (RD) commits to helping improve the economy and quality of life in rural America. RD programs help rural Americans in many ways.

Rural Development offers technical and financial assistance to help agricultural producers, cooperatives, and other businesses improve the effectiveness of their operations, produce energy as a new cash crop, and process raw agricultural and forestry raw materials into value-added, biobased products. RD programs have funds available to complete energy audits, complete energy efficiency improvements, install renewable energy systems, construct biorefineries, support production of advanced biofuels and much more. USDA Rural Development is at the forefront of renewable energy financing, with options including grants, guaranteed loans and payments. RD programs, authorized through the Agriculture Act of 2014, fall into four main programs under the Energy Title: the Biorefinery, Renewable Chemical, and Biobased Product Manufacturing Assistance Program provides loan guarantees for the development, construction, and retrofitting of commercial-scale biorefineries and biobased product manufacturing facilities; the Repowering Assistance Program provides payments to eligible biorefineries to replace fossil fuels used to produce heat and/or power to operate the biorefineries with renewable biomass; the Advanced Biofuel Payment Program provides payments to producers in order to support and expand production of advanced biofuels refined from sources other than corn kernel starch; and the Rural Energy for America Program provides assistance to agricultural producers and rural small businesses to complete a variety of projects, including renewable energy systems, energy efficiency improvements, renewable energy development assistance, and energy audits. The mission area has helped contribute to effective public-private partnerships which connect industry with larger Departmental goals contributing to cleaner air and water as well as reducing waste contributing to a strong biobased economy in the U.S.

Environmental Protection Agency
www.epa.gov

Office of Air and Radiation/Office of Transportation and Air Quality

The Office of Air and Radiation/Office of Transportation and Air Quality (OTAQ) protects human health and the environment by reducing air pollution and greenhouse gas emissions from mobile sources and the fuels that power them; advancing clean fuels and technology; and encouraging business practices and travel choices that minimize emissions.

Renewable Fuel Standard Program

The Renewable Fuel Standard (RFS) Program began in 2006 pursuant to the requirements in Clean Air Act (CAA) section 211(o) that were added through the Energy Policy Act of 2005 (EPAct). The statutory requirements for the RFS program were subsequently modified through the Energy Independence and Security Act of 2007 (EISA), resulting in the publication of major revisions in the regulatory requirements on March 26, 2010. The fundamental objective of the RFS provisions under the Clean Air Act is clear: to increase the use of renewable fuels in the U.S. transportation system every year through at least 2022. These fuels must be derived from renewable feedstock, coming from qualifying land and demonstrate they meet certain minimum reductions of Greenhouse Gas Emissions over the fuels they are replacing. There are several categories of fuels specified in the law: Cellulosic biofuels which are required to have 60 percent or greater greenhouse gas (GHG) emissions benefits on a lifecycle basis than the petroleum based fuels they replace; advanced biofuels 50 percent or greater benefit; and conventional biofuels (other than grandfathered facilities) 20 percent or better benefit. Increased use of renewable fuels means less use of fossil fuels, which results in lower GHG emissions over time as advanced biofuel production and use becomes more commonplace. By aiming to diversify the country's fuel supply, Congress also intended to increase the nation's energy security. The law establishes annual volume targets, and requires EPA to translate those volume targets (or alternative volume requirements established by EPA) in accordance with statutory provisions. Since the initial promulgation of the RFS program regulations in 2007, domestic production and use of renewable fuel (also referred to as biofuel) volumes in the U.S. has increased substantially. Renewable fuels include corn starch ethanol, the predominant biofuel use to date, but Congress envisioned the majority of growth over time to come from advanced biofuels as the non-advanced (conventional) volumes remain constant starting in 2015, while the advanced volumes continue to grow. This program is currently the predominant biobased program with direct and significant intersection with the Bioeconomy Vision. The production of these renewable transportation fuels uses feedstocks that do and will likely continue to compete with feedstocks expected to play a role in the broader bioeconomy. As a broader Bioeconomy market develops, there could be market shifts and competition both in terms of feedstock availability, utilization, and diversification. Market economics will drive the Bioeconomy participants to select the most economical/profitable market. Shifts in feedstock competition, cost, availability and finished product values (Fuels, chemicals, energy, food, other) are likely to have impacts, potentially positive and negative, to existing and emerging markets, policies (mandated programs, subsidized programs, *etc.*). Evaluating the bioeconomy vision in this context is vital, given the additional complexity that is likely under such market circumstances.

Office of Air and Radiation/Office of Atmospheric Policy (OAP)

OAP protects human health and the environment through implementation of cross-cutting atmospheric programs.

Three programs have relevance to the Bioeconomy:

1. **Framework for Assessing Biogenic CO_2 Emissions from Stationary Sources**

   In November 2014, EPA released the second draft of the technical report, *Framework for Assessing Biogenic CO_2 Emissions from Stationary Sources.* EPA engaged in a targeted peer review on the revised Framework with EPA's Science Advisory Board in 2015.

   The intent of the Framework is to evaluate biogenic CO_2 emissions from stationary sources that use biogenic feedstocks, given the unique ability of biogenic material to sequester CO_2 from the atmosphere over relatively short time frames through the process of photosynthesis. It is a methodological framework for assessing the extent to which the production, processing, and use of biogenic material at stationary sources results in a net atmospheric contribution of biogenic CO_2 emissions. Biogenic CO_2 emissions are defined as

CO_2 emissions related to the natural carbon cycle, as well as those resulting from the production, harvest, combustion, digestion, fermentation, decomposition, and processing of biologically based materials. The Framework was developed as a policy-neutral framework for assessing biogenic CO_2 emissions from stationary sources—it was not developed as technical guidance in conjunction with any specific policy or program. However, it was designed to be flexible so that decisions on specific technical components can be made to accommodate different policy applications.

2. **AgSTAR**

The mission of AgSTAR is to promote the use of biogas recovery systems at livestock operations to reduce methane emissions and achieve other environmental benefits through outreach, education, tools and partnerships.

AgSTAR develops technical resources for farmers, state government representatives and other stakeholders. AgSTAR also participates in outreach events with livestock producers, renewable energy industry leaders, and state and local governments to raise awareness about the benefits of livestock biogas recovery systems and the Federal resources available for project planning and implementation. Finally, AgSTAR hosts a partnership program, which brings together representatives of universities, state and local governments, not-for-profits, and other related organizations to share information and encourage implementation of biogas recovery systems.

EPA is expanding the scope of AgSTAR's national mapping tool (*www2.epa.gov/agstar/agstar-national-mapping-tool*) to include sources of wasted food and other organic wastes, as well as facilities with capacity to receive these materials, and will be completed by fall 2016. This update will allow organic waste generators to find anaerobic digestion facilities and allow biogas project developers to understand the potential organics available in a given area.

AgSTAR promotes widespread adoption of commercially available technologies to capture and use methane in the agricultural sector for power, fuel and other products.

AgSTAR has an interagency agreement with USDA to coordinate efforts to promote biogas recovery in the agricultural sector.

USDA, DOE and EPA jointly released the Biogas Opportunities Roadmap in August 2014. The Roadmap builds on progress made to date to identify voluntary actions that can be taken to reduce methane emissions through the use of biogas systems and outlines strategies to overcome barriers limiting further expansion and development of a robust biogas industry in the U.S. EPA participates in the Biogas Opportunities Roadmap Working Group (along with DOE and USDA) to pursue these solutions and enhance Federal communication and collaboration regarding biogas activities.

3. **Landfill Methane Outreach Program (LMOP)**

The EPA's Landfill Methane Outreach Program (LMOP) is a voluntary assistance program that helps to reduce methane emissions from landfills by encouraging the recovery and beneficial use of landfill gas (LFG) as a renewable energy resource. LFG contains methane, a potent greenhouse gas that can be captured and used to fuel power plants, manufacturing facilities, vehicles, homes and more. By finding cost-effective ways to utilize landfill methane as energy, LMOP helps to reduce GHG emissions and prevent air pollution, encourage development of a renewable energy resource, promote local economic development, and reduce dependence on non-renewable fossil fuels.

LMOP forms partnerships with communities, landfill owners, power marketers, states, project developers, Tribes, and nonprofit organizations to overcome barriers to project development by helping them assess project feasibility, find financing, and market the benefits of project development to the community. LMOP offers a wide array of free technical, promotional, and informational tools as well as services to promote the development of LFG energy projects. Through its partnerships, LMOP creates a vital network of landfills, states, communities, and companies interested in LFG use.

LMOP encourages the development and beneficial use of LFG as a renewable fuel resource.

Office of Air and Radiation/Office of Air Quality Planning and Standards

The Office of Air and Radiation/Office of Air Quality Planning and Standards (OAQPS) preserves and improves the quality of the air that we breathe. To accomplish this, OAQPS compiles and reviews air pollution data; develops regulations to limit and reduce air pollution; assists states and local agencies with monitoring and

controlling air pollution; makes information about air pollution available to the public; and reports to Congress the status of air pollution and the progress made in reducing it.

On August 3, 2015, the EPA issued the first-ever national standards to address carbon pollution from existing fossil-fuel fired power plants, also known as the Clean Power Plan. Under the authority of Clean Air Act (CAA) section 111(d), the EPA is establishing a CO_2 emission performance rate for each of two subcategories of fossil fuel-fired Electric Generating Units (EGUs)—fossil fuel-fired electric steam generating units and stationary combustion turbines—that expresses the "best system of emissions reduction . . . adequately demonstrated" (BSER) for CO_2 from the power sector. The EPA is also establishing state-specific rate-based and mass-based goals that reflect the subcategory-specific CO_2 emission performance rates and each state's mix of affected EGUs. The guidelines also provide for the development, submittal and implementation of state plans that implement the BSER—again, expressed as CO_2 emission performance rates—either directly by means of source-specific emission standards or other requirements, or through measures that achieve equivalent CO_2 reductions from the same group of EGUs.

The EPA also issues preconstruction (*i.e.,* New Source Review (NSR) permits) and construction (*i.e.,* Title V) permits for sources that use biomass as feedstocks as long as these sources emit or have the potential to emit a non-greenhouse gas pollutant, in addition to greenhouse gases, at or above the applicable permitting thresholds.

OAQPS routinely interacts with various USDA offices, and also, through their Federal Advisory Committee, participates in the Agricultural Air Quality Task Force that provides advice to EPA on air quality issues impacting agriculture.

It is recognized that some biomass-derived fuels can play an important role in CO_2 emissions reduction strategies. It is anticipated that some states may consider biomass-derived fuels used in energy production as a way to mitigate CO_2 emissions, and will include them as part of their state plans to meet the emission guidelines in the Clean Power Plan or as part of their NSR's GHG Best Available Control Technology (BACT) review.

Office of Chemical Safety and Pollution Prevention

Office of Chemical Safety and Pollution Prevention (OCSPP) protects you, your family, and the environment from potential risks from pesticides and toxic chemicals. Through innovative partnerships and collaboration, OCSPP also works to prevent pollution before it begins. This reduces waste, saves energy and natural resources, and leaves our homes, schools and workplaces cleaner and safer.

Toxic Substances Control Act

EPA's Office of Pollution Prevention and Toxics (OPPT) manages programs under the Toxic Substances Control Act (TSCA). Under this law, EPA evaluates new and existing chemicals and their risks, and finds ways to prevent or reduce pollution before it gets into the environment.

The premanufacturing oversight portion of TSCA (Section 5) provides EPA with authority to review all new chemicals and new microorganisms subject to TSCA. These include microorganisms and chemicals used for a variety of applications such as biomass conversion for chemical production, waste and pollution control, and mining and resource extraction. Premanufacturing notification is required prior to commercial production for new substances subject to TSCA (Premanufacturing Notification [PMN] for chemicals, Microbial Commercial Activity Notice [MCAN] for microorganisms) to enable human health and environmental risk assessment [>]. Notification is also required (TSCA Experimental Release Application [TERA]), for all new microorganisms, for research activities that constitute environmental testing.

EPA conditionally exempts certain organisms used in contained systems from MCAN review and conditionally exempts all R&D done inside structures from TERA review, provided specified safety procedures are complied with. Only commercial research is subject to TSCA oversight, but much academic research has commercial intent and is covered.

With these procedures, TSCA oversight provides public confidence that activities in the commercial space that use newer technologies like biotechnology is subject to detailed risk assessment.

Biotechnology throughout the Federal establishment is subject to coordination under the Coordinated Framework for Regulation of Biotechnology, led by the Office of Science and Technology Policy and involving all the relevant regulatory agencies. That framework, last updated in 1992, is undergoing a review started in July 2015.

EPA'[s] Pollution Prevention (P2) and Green Chemistry Programs

The mission of EPA's Pollution Prevention (P2) Program is to prevent pollution at the source, promote the use of greener substances, and conserve natural resources. The P2 Program's authority comes from the 1990 Pollution Prevention Act, which established a national policy to prevent or reduce pollution at the source, wherever feasible. The Presidential Green Chemistry Challenge Awards Program [17] established in 1996, is one of several initiatives within the EPA's P2 Program. The Presidential Green Chemistry Challenge Awards Program promotes the environmental and economic benefits of developing and using green chemistry. The EPA manages the program in partnership with the American Chemical Society, and in the 20 years the program has been operating has received over 1,500 nominations and made 104 awards. Many of the recent awards are for using biobased feedstocks as substitutes for petroleum feedstocks to efficiently produce a wide range of products, from biofuels to biopolymers and specialty chemicals.

On July 13, 2015 EPA and the American Chemical Society held the 20th Annual Presidential Green Chemistry Awards. Among the six winners was an academic researcher who developed a process for using plant-based materials in the production of renewable chemicals and liquid fuels via a waste-free and metal-free catalytic process. One of the industry winners was a company that developed a blue-green algae to produce ethanol and other fuels; the algae uses CO_2 from air or industrial emitters with sunlight and saltwater to create fuel while dramatically reducing the carbon footprint, costs, and water usage, with no reliance on food crops as feedstocks. Another industry winner was a company that developed a safer, plant-based polyurethane for use in a variety of applications, including flooring, furniture, and foam insulation; perhaps most notably, the technology eliminates the use of isocyanate feedstocks. A fourth winner developed a cost-effective two-step process using supercritical water to deconstruct a wide range of renewable plant material and produce separate streams of cellulosic xylose and glucose for use as building block chemicals in a multitude of downstream technologies; after sugar extraction, remaining lignin solids can be burned to supply the bulk of the heat energy required for the process or utilized in higher-value applications like adhesives or thermoplastics.

Other recent awardees include: a vegetable oil (soy) dielectric fluid for electrical transformers that is less flammable, higher performing, and less environmentally risky if spilled, than traditionally used mineral oil; a carbohydrate-based firefighting foam certified for hydrocarbon fire suppression that does not include persistent (and potentially toxic) fluorinated surfactants; and high-throughput methods for using supercritical water (*versus* acids, enzymes, solvents) to economically break down plant material into low-value sugars that are used as building blocks for renewable chemicals and fuels. These awardees represent just a few of the highly innovative and high impact green chemistry technologies that have received recognition through this competitive awards program.

The EPA also has focused its P2 grant programs to include opportunities for grantees green chemistry innovations into the marketplace, with a focus on improving the environmental and economic performance of small and medium-sized companies. In FY 2015, the EPA issued more than 70 grants.

Many of the recent Presidential Green Chemistry Challenge Awards have been for technology innovations that focus on either transforming plant-based materials economically into feedstocks for manufacturing chemicals/feedstocks, or for transforming such feedstocks into valuable biobased products like fuels and/or polymers. These innovations in materials-transformation are key enabling technologies for the Bioeconomy.

Many companies that have received the Presidential Green Chemistry Challenge Award have also received grants or loans from other Federal programs to promote renewable, biobased economic development. EPA is increasingly looking to work with other Federal agencies (*e.g.,* USDA, DOE, NSF) on identifying supply chain opportunities (or barriers) associated with adoption of green chemistry innovations into the marketplace.

Office of Land and Emergency Management

The Office of Land and Emergency Management (OLEM) provides policy, guidance and direction for the Agency's emergency response and waste programs. OLEM develops guidelines for the land disposal of hazardous waste and regulation of underground storage tanks. OLEM provides technical assistance to all levels of government to establish safe practices in waste management. OLEM administers the Brownfields program which supports state and local governments in redeveloping and reusing potentially contaminated sites. OLEM also manages the Superfund pro-

[17] *www2.epa.gov/greenchemistry*.

gram, which responds to abandoned and active hazardous waste sites and accidental chemical releases. Finally, OLEM encourages innovative technologies to address contaminated soil and groundwater.

Office of Underground Storage Tanks

The Office of Underground Storage Tanks (OUST) carries out a Congressional mandate, under Subtitle I of the Solid Waste Disposal Act to develop and implement a regulatory program for underground storage tank (UST) systems (40 CFR Part 280) storing petroleum and certain hazardous substances.

In 1985, EPA created the Office of Underground Storage Tanks to carry out a Congressional mandate to develop and implement a regulatory program for underground storage tank (UST) systems. EPA works with its state, territorial, and Tribal partners to prevent and clean up releases from UST systems. Many UST systems are designed for 30 year lifespans or longer, and many existing UST systems have components that were installed before ethanol and biodiesel became commonly blended with gasoline and diesel for use as motor fuel.

Biofuels can be more aggressive towards certain parts of UST systems than their hydrocarbon counterparts, and may affect physical qualities of some components and cause them to swell or shrink or become hard or brittle. This incompatibility could cause a release of fuel to the environment. Biofuel blends also show higher rates of corrosion in UST systems which can prevent UST equipment, including release prevention equipment, from functioning correctly.

The Office of Underground Storage tanks has led several regulatory and research efforts to address biofuel compatibility and corrosion considerations for UST systems. In 2011, the office released guidance for owners and operators to assist them when determining and demonstrating compatibility of their UST systems to ensure their UST system can store biofuels compatibly. New requirements in the updated 2015 Federal UST regulation require owners notify implementing agencies of their intent to store biofuels and keep records demonstrating the compatibility of their UST systems. The clarity provided will help prevent biofuels from being stored in systems that are not compatible.

The office has also funded research into: the potential impacts to UST systems of storing E15 blends of ethanol; suitability testing of leak detection equipment in various percentages of ethanol blended fuel; development of protocols for certifying leak detection equipment; corrosion of equipment in USTs storing ethanol blended fuels; and any role of biofuels in internal corrosion of UST systems storing diesel fuel.

The Office of Underground Storage Tanks continues to work to find answers to existing and evolving compatibility and corrosion concerns with biofuels to ensure these fuels can be stored safely in UST systems.

Office of Resource Conservation and Recovery

The Office of Resource Conservation and Recovery (ORCR) is primarily responsible for implementing EPA's resource conservation, recovery and waste management goals under the Resource Conservation and Recovery Act (RCRA.) A principal responsibility is to build a national waste management program, implemented through EPA Regional Offices and State Programs. The Office is responsible for promoting sustainability and safe materials management, and fostering waste reduction and responsible management practices that will conserve natural resources, prevent future problems, and clean up problems from the past. Specific activities include:

Waste Reduction Model (WARM): In March 2015, EPA updated WARM to incorporate food wastes. EPA is currently working on updating the model to add anaerobic digestion as a waste management practice. WARM helps solid waste planners and organizations calculate the GHG benefits of alternative end-of-life waste management decisions. These new updates will allow them to consider the potential impacts of anaerobic digestion of food wastes compared to other optional practices when making decisions for their operations.

Reducing Wasted Food: Reducing the amount of food waste sent to landfills continues to be an opportunity for improvement across the United States. Food is the largest stream of materials in our landfills accounting for 21% of the American waste stream. This large volume of disposed food is a main contributor to the roughly 18% of total U.S. methane emissions that come from landfills, a powerful greenhouse gas. In November 2015, EPA will co-host a Food Recovery Summit in Charleston, SC to gather critical feedback and develop key connections with the private and public players needed to achieve significant wasted food reductions.

The Sustainable Materials Management (SMM) is a systemic approach to using and reusing materials more productively over their entire lifecycles, including pro-

duction of biofuels, biochemicals, and biopower, when appropriate. It represents a change in how our society thinks about the use of natural resources and environmental protection. By looking at a product's entire lifecycle we can find new opportunities to reduce environmental impacts, conserve resources, and reduce costs.

Office of Water

The Office of Water primarily supports the Clean Water Act, Safe Drinking Water Act, and portions of other Federal statutes. Many long-standing regulations and programs, and new initiatives are supportive of the bioeconomy, as doing so positively impacts our nation's waters.

Within the Office of Water's Office of Wastewater Management (OWM), primary regulatory duties include oversight of the regulation of industry and municipal wastewater discharges, in which most states are delegated to carry out the day-to-day aspects. Other activities within OWM include management of the Clean Water State Revolving Fund (CWSRF), which may provide financial assistance to support the bioeconomy through funding projects that produce biofuels and biopower from treatment of municipal wastewater. Many of these projects would be eligible for funding under the CWSRF's Green Project Reserve (GPR), a provision which requires, to the extent sufficient projects are available, that a portion of each state's capitalization grant be provided for green infrastructure, energy and water efficiency, and other environmentally innovative projects. Drinking Water State Revolving Funds (DWSRFs), managed by OW's Office of Groundwater and Drinking Water, are also eligible to be used in non-traditional ways that may support the bioeconomy. If funded by Congress, the new Water Infrastructure Finance and Innovation Act (WIFIA) program is another useful tool that will be able to provide low-cost financing for any project already eligible under the CWSRF or DWSRF programs. Through the use of these innovative financing tools, EPA hopes to find more integrated, lower long-term cost solutions to address the estimated $600 billion in infrastructure needs over the next 20 years.

Within OWM's Rural Branch, several voluntary collaborative initiatives have been launched that focus on the animal agriculture industry, such as energy and nutrient recovery from animal manures, for example. The Rural Branch is partnering with dairy and swine producers, USDA, industry trade associations, and academic experts to launch an innovation challenge to encourage the development and adoption of affordable and effective technologies that can extract and transform nutrients in dairy and swine manure (raw and/or digested) and sequester them into reusable and/or sellable products. The challenge is anticipated to launch in fall 2015. Following a call for submissions of technology concepts, EPA and collaborators will implement multiple phases for innovators to bring their concepts through technology designs, then prototypes, and ultimately to pilot-scale systems to be demonstrated at U.S. dairy and swine operations.

Annually, more than two billion livestock animals at animal feeding operations (AFOs) and concentrated animal feeding operations (CAFOs) generate over a billion tons of manure.[18] Manure can be used as a feedstock in renewable energy generation systems, such as anaerobic digesters and gasifiers, to generate biogas and synthetic natural gas (syngas). Manure can also be transformed into a range of value-added co-products, such as composts, potting soils, animal bedding, paper products, planting pots, particle boards, and concentrated nutrient products.

A few U.S. livestock operations (ten, most of which are poultry operations) are experimenting with gasification and combustion systems. Such combustion systems that are able to concentrate the majority of nutrients in manure in a mineral-rich ash product, which may be used as a fertilizer and soil amendment.

In the past decade, innovators have developed and demonstrated technologies that can recover a significant amount of N and P from manure, as well as from wastewater treatment plants (now being referred to as water resource recovery facilities [WRRFs]), and yield concentrated, dry, and potentially valuable nutrient products, such as struvite and ammonium sulfate fertilizer.

OWM regularly coordinates with EPA AgSTAR, the Office of Research and Development, as well as USDA's Agricultural Research Service (ARS), Natural Resource Conservation Service (NRCS), and Rural Development (RD) on development of innovative manure nutrient recovery technologies. OWM also coordinates with EPA's AgSTAR Program and the Office of Land and Emergency Management, USDA's Rural Development, and DOE's Bioenergy Technologies Office on development of the Biogas Roadmap, which supports the President's Climate Action Plan.

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[18] USDA. 2014. 2012 Census of Agriculture, USDA. 2005. *FY 2005 Annual Report Manure and Byproduct Utilization National Program 206.*

Within OW's Office of Wetlands Oceans and Watersheds (OWOW), the Nonpoint Source Branch provides grants (known as 319 Grants) that are targeted towards non-point sources (*i.e.,* other than regulated entities under the Clean Water Act). These grants may also be used in ways that support the bioeconomy. OWOW is responsible for projection of our nation's wetlands.

OW as an overall office collaborates with many other Federal agencies in issues that touch upon the bioeconomy, such as Department of Energy on energy and nutrient recovery from municipal waste water, and agencies active in climate adaptation.

Office of Research and Development

The Office of Research and Development (ORD) conducts leading-edge research and fosters the sound use of science and technology to fulfill EPA's mission to protect human health and safeguard the natural environment. ORD develops flexible tools that inform decision-making based on a holistic assessment of impacts to environmental, social, and economic dimensions enabling insights into the trade-offs associated with alternative decision options.

Net Zero

As ORD's Net Zero Initiative moves forward, a research area of particular interest is the nexus between Net Zero/Net Positive energy and Net Zero waste. Net Zero scientists are looking into the development and implementation of innovative technologies that recover waste streams to produce energy, like co-digestion. In the process of co-digestion, food waste, oils and grease are added to under-capacity anaerobic digesters in wastewater treatment plants to produce energy in the form of biogas.

This project links to the Bioeconomy by providing a sustainable method to utilize biomass resources for energy production, and will support ORD's mission to transition the term "waste" to "resource".

The Net Zero team is partnering with the U.S. Army and the U.S. Army Corp of Engineers to investigate the feasibility of co-digestion at Fort Huachuca, AZ.

National Research Area—Sustainable and Healthy Communities

The EnviroAtlas is a multi-scaled spatial data resource and analysis tool that covers the conterminous U.S. Focused on mapping the supply and demand of ecosystem services (with over 300 national-scale GIS coverages), the EnviroAtlas also contains coverages depicting drivers of change (*e.g.,* population, land use, resource exploitation, pollution, projected scenarios of climate change), demographics, economic data (*e.g.,* employment dependent on ecosystem services), as well as features of the built environment (*e.g.,* transportation). It is scalable from national to regional to local and includes analysis tools that allow evaluation of "what-if" scenarios. The EnviroAtlas is a useful tool for identifying sensitive resources (habitat for vulnerable species, limited water supplies) as well as opportunities for development. Future scenarios for land use and climate change can be used to explore possibilities of co-benefits or unintended consequences.

The EnviroAtlas is a multi-agency/multi-institution effort including collaboration with USFS, USGS, NRCS, Nature-Serve, and a number of academic institutions. It is a foundational component of the Administration's EcoInforma effort.

National Research Area—Air, Climate, and Energy

ORD conducts leading-edge research and fosters the sound use of science and technology to fulfill EPA's mission to protect human health and safeguard the natural environment. The Air, Climate, and Energy (ACE) Research Program conducts research to evaluate the potential environmental impacts of increased biofuel production and use. Research is examining the effects of changing biofuel content on vehicle emissions and toxicity, the potential change in nutrients associated with increased biofuel feedstock production, and changes in emissions due to co-firing of coal and biomass for power generation. Additional work addresses potential changes in environmental impacts across the full life cycle of production and use for biomass- and fossil-fueled energy.

The Program's research is designed to inform decision makers about the potential positive and negative impacts of large-scale adoption of biomass-based energy.

Work is coordinated with USDA to understand how increased biomass production may affect feedstock prices and with DOE to understand advances in biofuel conversion technologies.

National Research Area—Safe and Sustainable Water Resources

ORD through the Safe and Sustainable Water Resources (SSWR) research program includes projects that focus on the costs of nutrient release to the environment and systems research on best management practices for nutrient sources. As the bioeconomy relies on agricultural biomass as feedstock, SSWR nutrient research in-

forms practitioners in multiple sectors (*e.g.,* irrigation, cropland management, CAFO, wastewater, and transportation) about the potential impacts or benefits of agricultural practices in protecting water quality and watersheds. This work represents collaborative research with USGS and USDA.

The SSWR program also focuses on water reuse and resource recovery. SSWR conducts research on treatment technologies for fit-for-purpose water with an emphasis on low cost/low energy treatment systems. Resource recovery from wastewater and water reuse treatment aims to maximize energy recovery from biosolids through the generation and capture of methane.

EPA Regional Offices

Region 4

Regionally Applied Research Effort (RARE): Through a RARE project Region 4 provided funds to Mississippi State University in a research project that demonstrated the use of algae as a feedstock for biofuels. Region 4 is currently coordinating with EPA's ORD on a RARE project to investigate the use of common agricultural wastes in Region 4, such as corn stover and forestry wastes, in a process that will result in torrefied pellets that can be used as a bio-coal supplement to fossil coal as well as a bio-char that can be used as a soil amendment. The study will determine if the bio-coal pellets will have an equivalent heating content as fossil coal while reducing emission levels of controlled pollutants such as NO_X.

Southeast Regional Partnership for Planning and Sustainability (SERPPAS): Region 4 is a member of SERPPAS which is a six-state partnership of state and Federal agencies that promotes collaboration in making resource-use decisions supporting conservation of natural resources, working lands, and national defense. Specifically regarding biofuels, the Region coordinates the partnership's Biomass Workgroup. This Workgroup supports the sustainable use of forest resources to produce energy in order to support local economies, create clean energy jobs, reduce energy related greenhouse gas emissions, and enhance energy independence and security. The Workgroup's goals include advancing the use of forest biomass to energy initiative, bringing Federal and state agencies together to identify, address and communicate current and emerging issues in the use of biomass for energy, sharing information on successes and lessons learned regarding biomass energy, and increasing the range of technologies available for biomass projects in the region.

Region 4's Southeast Diesel Collaborative (SEDC) was established to reduce emissions from the existing diesel fleet, such as through the use of biodiesel. The SEDC has been very proactive in promoting the production and use of biodiesel and has coordinated with the Department of Energy's National Renewable Energy Laboratory as well as that Departments' Clean Cities programs. The SEDC has hosted two biodiesel workshops that discussed the intricacies of the production of biodiesel as well the implementation of biodiesel strategies for fleet managers. Biodiesel producers such as St. Johns County, Florida and Hoover, Alabama have been frequent speakers at SEDC conferences and workshops.

Region 4 has promoted the use of biomethane as a transportation fuel. The Region has coordinated tours of the Seminole Landfill biofuels facility with Dekalb, County, Georgia. State and local air directors as well as other EPA staff have toured this facility which collects landfill gases and cleans them to pipeline quality so they may be used in the County's waste haulers as well as being sold to the public as a transportation fuel. Additionally, representatives from the facility have been frequent speakers at Regional conferences and meetings.

Region 4 representatives served on the State of Georgia's "One Stop Shop" for biofuels. This was an effort by the state to provide a forum for biofuel and energy companies considering locating in Georgia to simultaneously meet with all the representatives from state and Federal agencies having jurisdiction on biofuel and energy production facilities. The goal is to expedite an understanding of necessary legal requirements.

Region 4 has worked to identify and promote the availability of alternate fuels along critical freight corridors such as the Region 4 portion of the I–75 (the Green Corridor project). Additionally, the Region has coordinated with the State of Tennessee in implementing its Green Corridors project for alternative fuels throughout interstates in that state. Region 4 has also worked with Colonial Pipeline in their efforts to ship biodiesel blends on its pipeline to central and southern Georgia.

The Region has been very active in promoting biodiesel. The Region worked with the National Park Service to promote and provide technical advice for the use of biodiesel in Park Service vehicles. The Region also coordinated with the Cherokee Indian Nation on the use of biodiesel and provided funds for the implementation of an overall biodiesel program that included two transit buses and six school buses. The Region has also provided grants to North and South Carolina for biodiesel

fleets, including freight locomotives in and around the Port of Charleston. Additionally the Region has coordinated with nonprofit organizations such as the Southern Alliance for Clean Energy (SACE) to promote the use of biofuels and the establishment of biofuel refueling networks.

Region 9

EPA Region 9 provided funds to demonstrate an ultra-low nitrogen oxides (NO_X) biogas powered engine installed at a dairy farm in the San Joaquin Valley, California. More information can be found at the Air District website.[19] EPA Region 9 funded refuse trucks fueled by renewable natural gas at a food waste facility in Sacramento, California. Through anaerobic digestion, food waste is converted into compressed natural gas to fuel refuse trucks and provide electricity and heat used at the facility. The remaining processed material is turned into fertilizer and soil amendments.[20]

EPA ORD and Region 9 are conducting research to compare different biogas management technologies by examining air quality, greenhouse gas and economics/operations. This analysis may enable governments, regulators and project developers to identify geographically-appropriate and cost-effective biogas management options. DOE and USDA's NRCS will continue to be involved with this research.

EPA Region 9 is publishing food recovery guides for six metropolitan areas in the Pacific Southwest, which will include listings for anaerobic digestion and fats, oils, and grease recycling opportunities. The guides are intended for food waste-generating businesses to facilitate greater food recovery. The guides are expected to be published November 2015.

In March 2015, EPA published a report titled "Food Waste to Energy: How Six Water Resource Recovery Facilities are Boosting Biogas Production and the Bottom Line."[21] This report presents the co-digestion practices, performance, and experiences of six such water resource recovery facilities. The report describes the types of food waste co-digested and the strategies—specifically, the tools, timing, and partnerships—employed to manage the material. Additionally, the report describes how the facilities manage wastewater solids, providing information about power production, biosolids use, and program costs.

Starting in 2012, EPA Region 9 convened a state/Federal/local working group to facilitate the proliferation of dairy digesters in California, which is the nation's largest dairy producer. EPA co-chaired the working group along with NRCS and California Department of Food and Agriculture, and the group included all relevant state and local agencies. The group accomplished several things including: (1) developing a coordinated permitting system of dairy digesters across the phalanx of agencies in California, (2) getting digesters included in the renewable energy mix required by California, and (3) developing criteria for the types of digesters that are ideal to be built in California. In 2014, $12 million from the California Department of Food and Agriculture was awarded to dairy digester projects in California as a result of this working group.

Department of [the] Interior
www.doi.gov

Bureau of Land Management

The Bureau of Land Management (BLM) manages and conserves the public lands for the use and enjoyment of present and future generations under our mandate of multiple-use and sustained yield.

Nearly ¼ of the lands—58 million acres—managed by the BLM are forests or woodlands. An estimated 14 million acres have been affected by the suppression of natural fire and are in need of active management to restore resilient species composition and stand structure. Forest and woodland management produces traditional wood products as well as woody biomass which primarily results from restora-

[19] *http://valleyair.org/grants/documents/technologyadvancement/C-4236_EF&EE_Final Report.pdf*.
[20] *http://westcoastcollaborative.org/files/grants/smaqmd-dera-fy13-refuse-truck-ag-tractor-replacements-wcc-factsheet.pdf*.
[21] *epa.gov/region9/organics/ad/epa-600-R-14-240-food-waste-to-energy.pdf*.

tion residues and smaller diameter material from forestry, fuels and rangeland treatments.

Biomass from BLM forest and woodland projects has become part of the feedstock that energy companies are relying on to meet various state and Federal renewable energy portfolio standards.[22]

From 2010 to 2014, BLM sold an average of 177,000 tons of biomass for energy through contracts and permits.[23] Additionally the BLM entered into a Memorandum of Agreement in 2014 with the USDA Farm Services Agency to implement the Biomass Crop Assistance Program (BCAP) that allows collection, harvest, storage, and transportation assistance for biomass delivered to certified bioenergy facilities from BLM lands. BCAP projects on BLM land meet environmental standards equivalent to forest stewardship plans and the biomass is limited to material generated as a byproduct of wildfire hazard fuels treatments or treatments to reduce or contain disease or insect infestations in accordance with the Agricultural Act of 2014.[24]



National Science Foundation

www.nsf.gov

The Division of Chemical, Bioengineering, Environmental, and Transport Systems (CBET) supports innovative research and education in the fields of chemical engineering, biotechnology, bioengineering, and environmental engineering, and in areas that involve the transformation and/or transport of matter and energy by chemical, thermal, or mechanical means.

Standing programs within the CBET Division of the ENG Directorate, including the Energy for Sustainability, Environmental Sustainability, Biochemical Engineering, Catalysis & Biocatalysis, and Process & Reaction Engineering programs, provide funding opportunities for supporting fundamental scientific research needed to develop future processes for advancing the bioeconomy. Awards typically range from $300–$400k for 3 years. There are no solicitations or proposal calls specifically for the bioecomony within CBET. However, many of unsolicited proposals, submitted primarily from the academic research community, are closely related to topics relevant to the bioecomony, as described below. Proposals on bioeconomy topics that are the most strongly recommended for funding through the peer review processes are considered for funding. CAREER awards offered through each program are designed to support early career, tenure-track faculty in these areas.

The standing programs identified above support research relevant to advancing the bioecomony in the conversion and sustainability areas through development and scientific understanding of (1) new chemical, catalytic, and biological processes for the conversion of renewable carbon resources (plant biomass, algae, CO_2) to biofuels, bioproducts, biochemicals, as well as their downstream separation; ([2]) new catalysts and synthetic biology approaches for supporting these processes; (3) biopower production though energy-positive waste water treatment, (4) new tools for life cycle, environmental, and sustainability analyses of biofuel and biorefinery processes.

Engineering Directorate, Emerging Frontiers in Research and Innovation

The Emerging Frontiers in Research and Innovation (EFRI) provides critical, strategic support of fundamental discovery at the frontiers of engineering research and education.

Each year, EFRI develops and issues two topics for through a formal solicitation process. Up to $16 million is available to support each topic on up to eight awards of approximately $2 million each. Proposals are recommended for funding through a highly-competitive peer review process.

Recent EFRI solicitations relevant to the bioeconomy in the conversion and sustainability areas were HYBI (NSF 08–599, Hydrocarbons from Biomass, FY09), and PSBR (NSF 12–583, Photosynthetic Biorefineries, FY13). The HYBI program supported research on new and potentially transformative approaches for chemical and

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[22] *https://www.doi.gov/sites/doi.opengov.ibmcloud.com/files/uploads/FY2016_BLM_Green book.pdf.*

[23] *https://www.doi.gov/sites/doi.gov/files/migrated/pmb/ppp/upload/DOI-APPR-02022015-v2-Final.pdf.*

[24] *http://www.fsa.usda.gov/Internet/FSA_File/ccc_2015_0001_0001.pdf.*

catalytic conversion of biomass constituents and algae to energy-dense molecules and drop-in hydrocarbon biofuels.

The PSBR program supported fundamental research to advance development and scientific understanding of biofuel and biorefinery processes by linking fundamental biology of phototrophic organisms, bioprocess engineering, and life cycle analysis through a multiscale analysis approach.

Biological Sciences Directorate

The Biological Sciences Directorate (BIO) Directorate programs support research advances at the frontiers of biological knowledge, increases understanding of complex systems, and provides a theoretical basis for original research in many other scientific disciplines.

The Plant Genome Research Project (PGRP) within the BIO Directorate supports academic research for the development and fundamental scientific understanding of functional genomics tools and sequence resources for use in the study of key crop plants and their models. From FY12 to FY14, the program supported approximately $120 million in research.

The Plant Genome Research Project supports the bioeconomy in the feedstocks area by advancing the development and genetic tools for key crop plants and their models.

Science, Engineering and Education for Sustainability

Science, Engineering and Education for Sustainability (SEES) is a cross-cutting initiative within NSF to advance science, engineering, and education to inform the societal actions needed for environmental and economic sustainability and sustainable human well-being. The SEES portfolio activities highlights NSF's unique role in helping society address the challenge(s) of achieving sustainability. Recent special solicitations and funding opportunities to support the bioeconomy in the context of SEES included:

The Sustainable Energy Pathways (SEP) solicitation (NSF 11–590, FY12) supported fundamental research on scalable approaches for sustainable energy conversion to useful forms, as well as its storage, transmission, distribution, and use, through a systems approach to designed to seek comprehensive understanding of the scientific, technical, environmental, economic, and societal issues.

The Sustainable Chemistry, Engineering, and Materials (SusChEM) Funding Opportunity (NSF 15–085) addresses the interrelated challenges of sustainable supply, engineering, production, and use of chemicals and materials.

The SEP program supported seven projects to advance the bioeconomy through fundamental research on biofuel production platforms in the context of their integrated scientific, technical, environmental, economic, and societal issues. The SusChEM initiative advanced the bioeconomy by supporting a variety of projects related to the sustainable production of biofuels, bioproducts, and biochemicals through sustainable carbon resources.

Department of Transportation
www.dot.gov

Federal Aviation Administration

The Federal Aviation Administration (FAA) strives to provide the safest, most efficient aerospace system in the world. FAA has taken a comprehensive approach to overcome barriers to the development and deployment of sustainable alternative (*e.g.,* renewable) jet fuels that are drop-in replacements to fuels derived from petroleum, as part of an effort to achieve carbon-neutral growth at 2005 emissions levels starting in 2020. These efforts include R&D via the *Continuous Lower Energy Emissions and Noise* (*www.faa.gov/go/cleen*) (CLEEN) and *Aviation Sustainability Center* (*www.ascent.aero*) (ASCENT) University Center of Excellence program programs to evaluate alternative fuels for safety, technical, and environmental performance; sponsorship with industry of the *Commercial Aviation Alternative Fuels Initiative* (*www.caafi.org*) (CAAFI), a broad stakeholder coalition; new fuel certification through ASTM International; a partnership with USDA, DOE, and the aviation industry to enable fuel supply development via the Farm to Fly 2.0 Initiative; and the joint development of a Federal alternative jet fuel R&D strategy in partnership with numerous Federal agencies. FAA also has bilateral agreements to leverage other

countries' efforts to develop, assess, and deploy alternative jet fuels, and participates in the United Nation's International Civil Aviation Organization (ICAO) activities on alternative jet fuels.

FAA's goal of goal of having 1 billion gallons of alternative jet fuel in use by 2018 has spurred rigorous research and rapid innovation in advanced feedstock and renewable aviation fuel pathway development. FAA-supported testing and demonstrations of many biobased jet fuels have shown a sharp reduction of air quality emissions with no adverse impact on aircraft engine operations. Broad deployment of renewable jet fuels may substantially reduce lifecycle aircraft exhaust emissions of aviation operations, and enhance public awareness of advanced biofuels.

National Highway Transportation Safety Administration

National Highway Transportation Safety Administration (NHTSA) works daily to help prevent crashes and their attendant costs, both human and financial.

Vehicle Corporate Fuel Economy (CAFE) standards are regulated by NHTSA; NHTSA sets and enforces the CAFE standards, while the Environmental Protection Agency (EPA) calculates average fuel economy levels for manufacturers, and also sets related GHG standards. NHTSA has proposed to require badges, labels and owner's manual information for new passenger cars, low-speed vehicles (LSVs) and light-duty trucks in order to increase consumer awareness regarding the use and benefits of alternative fuels, including biofuels.

E85 capable flex-fuel vehicles (FFVs) have long-qualified for a special calculation of their fuel economy performance under NHTSA administered CAFE regulations. These special calculations provide vehicle manufacturers with powerful credit incentives to develop and produce FFVs. The existence of the current national FFV fleet is largely attributable to this regulatory incentive (effective in its current form through model year 2016). Consumer education on biofuel end-use would be advanced by NHTSA's proposed rule to require vehicle OEMs to prominently exterior-label vehicles capable of running on biofuels, describe the capabilities and benefits of using alternative biofuels to owners' manuals provided for alternative fuel vehicles, and clearly label the fuel filler compartment of vehicles capable of running on biofuels.

Federal Highway Administration

The Federal Highway Administration (FHWA) strives to improve mobility on our nation's highways through national leadership, innovation, and program delivery.

The Congestion Mitigation and Air Quality (CMAQ) Improvement Program provides funding to state departments of transportation (DOTs), municipal planning organizations (MPOs), and transit agencies for projects and programs in air quality non-attainment and maintenance areas that reduce transportation-related emissions, including alternative fuels deployment. The FHWA Office of Real Estate Services has been cooperating with states to examine the both the potential and implications for bioenergy production within highway right-of-ways (ROWs).

Past and current CMAQ projects have provided for the purchase and development of alternative fuel refueling infrastructure, and conversion of public fleet vehicles to operate on alternative fuels, including biofuels. Generating biofuel feedstocks on highway ROWs would add highly-visible bioenergy production capacity, advance Federal and state sustainability goals, support a local green job market, and help reduce highway maintenance costs while potentially generating additional revenue for transportation agencies.

Pipeline and Hazardous Materials Safety Administration

Pipeline and Hazardous Materials Safety Administration (PHMSA) works to protect people and the environment from the risks of hazardous materials transportation.

PHMSA works with other Federal agencies, industry, standards organizations, and emergency responders, to ensure adequate design and operating standards for biofuel pipelines. PHMSA has examined the potential for ethanol-induced stress corrosion cracking in existing pipeline infrastructure used to transport ethanol and various ethanol-blended fuels. PHMSA also supports emergency responder education and training on optimal emergency response to spill incidents involving ethanol and other biofuels in transportation. In partnership with the Federal Railroad Administration (FRA), PHMSA has undertaken a comprehensive, system-wide approach to prevent and mitigate rail accidents involving flammable liquids, including biofuels. The joint-approach focuses on improvements to rail operations, ensuring proper classification of hazardous materials, and improving tank car survivability.

Safe and efficient pipeline and rail transport will be critical to bioeconomy expansion. Continued Federal efforts in research and development, resolving technical issues, and setting/clarifying safety standards are key to reducing transport acci-

dents, mitigating the consequences of an incident, and ensuring proper emergency response.

Maritime Administration

The Maritime Administration (MARAD) promotes the use of waterborne transportation and its seamless integration with other segments of the transportation system, and the viability of the U.S. merchant marine.

MARAD has been evaluating the use of renewable diesel fuel blends in commercial vessels. This has included recent at-sea testing and reporting on engine performance, fuel economy, air emissions, engine vibration, underwater radiated noise, and effect on the engine itself. MARAD has also conducted tests to determine the effects of long-term storage on renewable diesel blend quality.

Successful operational and storage testing is critical for advancing the deployment of biofuels in the waterborne transportation sector and the national merchant marine fleet.

Federal Transit Administration

Federal Transit Administration (FTA) strives to ensure personal mobility and America's economic and community vitality by supporting high quality public transportation through leadership, technical assistance and financial resources.

FTA has supported the expanded use of biofuels (*i.e.,* biodiesel) within the nation's transit bus fleet through a large number of field studies, fleet demonstrations, and funded deployments.

Widespread evaluation of biodiesel blend use among U.S. transit agency fleets generates key information regarding the impact of biofuels on transit bus engines, fuel systems, operations, and maintenance, and has helped establish industry best practices. Successful, highly-visible biodiesel transit bus deployments have helped raise the public's awareness of biofuels and their benefits.

Federal Railroad Administration

Federal Railroad Administration (FRA) works to enable the safe, reliable, and efficient movement of people and goods for a strong America, now and in the future.

FRA has been evaluating the use of biodiesel and renewable diesel fuel blends, as well as biobased lubricants in freight and passenger locomotives. FRA-sponsored feasibility studies have assessed biofuel use impacts on locomotive performance, fuel efficiency, exhaust emissions, and engine parts. In partnership with the Pipeline and Hazardous Materials Safety Administration (PHMSA), FRA has undertaken a comprehensive, system-wide approach to prevent and mitigate rail accidents involving flammable liquids, including biofuels. The approach focuses on improvements to rail operations, ensuring proper classification of hazardous materials, and improving tank car survivability.

Successful feasibility testing of biofuels in locomotives is critical for advancing the deployment of biofuels in the rail transportation sector and national rail passenger and freight fleet. Expanded rail tank car transport of biofuels is also critical to the growth of the bioeconomy, underscoring the need for rail transport safety improvements to prevent accidents, mitigate consequences in the event of an accident, and support emergency response.

Office of the Assistant Secretary for Research & Technology

Office of the Assistant Secretary for Research & Technology (OST–R) is committed to transform transportation by expanding the base of knowledge to make America's transportation system safer, more competitive and sustainable.

OST–R sponsors research focusing on the safe use of new fuels and energy technologies within the transportation system (including biofuels), and the safe, efficient distribution of biofuels and other energy resources across the transportation network. OST–R coordinates research across DOT modal administration, including efforts related to biofuels and bioenergy. OST–R supported research includes the Sun Grant Initiative Regional Competitive Grants Program, which funds research and demonstration activities related to biomass feedstock, biofuels, and biobased products, and analyses to determine the energy and environmental impacts of bioenergy. The Volpe National Transportation Systems Center, a part of OST–R, conducts model and tool development to analyze transportation needs and constraints associated with biofuel biomass collection, processing, and distribution.

OST–Rs efforts to encourage bioenergy research collaboration between government agencies and regional land-grant colleges and universities helps foster innovations, and bioeconomy workforce development. Modeling work by the Volpe Center helps agencies and bioeconomy industry stakeholders better understand how multimodal transportation capacity and infrastructure constraints impact biomass feedstock and biofuel movements (and *vice-versa*), transport-related environmental

impacts, and economic costs. Future policies, infrastructure investments, and other decisions supporting the bioeconomy may hinge upon robust scenario analysis models and tools.

Appendix II: Interagency Activities Supporting the Bioeconomy

As discussed in *Appendix I,* existing foundational pillars of the bioeconomy are in place to support further expansion. Each agency focuses on their own priorities and mission areas, but to fully develop a strong national bioeconomy, synchronization across the government is critical. Such examples of these interagency activities include EPA's Renewable Fuel Standard, the Farm to Fly 2.0 Initiative, the Defense Production Act Initiative, the Coordinated Agriculture Projects, the Farm to Fleet Initiative, the Rural Energy for America Program, the Biogas Roadmap, and the Biomass Crop Assistance Program.

Feedstock Partnerships Across the Government

The U.S. Department of Agriculture (USDA) and the Department of Energy (DOE) have compatible goals in the developing and promoting the use of biomass for biofuels, biopower, and biobased products.[25–29] Collectively the two Departments have a well-established portfolio covering agronomics, silviculture, genetics, engineering, economics, modeling, and many other scientific disciplines and resource areas. Several USDA agencies have research, technology, deployment or assistance programs associated with various aspects of the production and use of biomass from America's agricultural and forestry lands. DOE has feedstocks development and logistics RDD&D activities distributed across a program, an office, and an agency. USDA has feedstocks plant materials and genetic development, sustainable management and production systems development, logistics, improving interfaces in the supply chain, and integration with conversion activities. Much of the Federal Government's expertise in these areas is within the Departments and RDD&D activities are completed with National Laboratories, university and industrial partners.

A long standing collaboration between USDA and DOE is the Plant Feedstock Genomics for Bioenergy Program. Initiated in 2006, the program funds fundamental science projects that accelerate plant breeding programs and improve biomass feedstocks by characterizing the genes, proteins, and molecular interactions that influence biomass production. In addition, the two agencies jointly fund a competitive program in support of the development of a biomass-based industry through the Biomass Research and Development Initiative. The technical areas under consideration include feedstocks development, biofuels and biobased products development, and biofuels development analysis. Projects span research through early stage demonstration.

The Federal Working Group, "Woody Biomass Utilization Group" led by USDA, DOE and DOI with members also including EPA and DOD promotes and supports the utilization of woody biomass and woody biomass products and residues from forest and woodland health, management and restoration treatments wherever environmentally, economically and legally appropriate. The group has annual plans of work and many accomplishments including a resource center, special projects, and partnering with stakeholders.

Waste Resource Development

USDA, DOE and EPA jointly released the *Biogas Opportunities Roadmap* in August 2014. The Roadmap builds on progress made to date to identify voluntary actions that can be taken to reduce methane emissions through the use of biogas systems and outlines strategies to overcome barriers limiting further expansion and development of a robust biogas industry in the United States. EPA participates in the Biogas Opportunities Roadmap Working Group (along with DOE and USDA) to pursue these solutions and enhance Federal communication and collaboration regarding biogas activities. A Progress Report is expected to be published in fall, 2015.[30]

Additionally, EPA's AgSTAR program partners with USDA to promote the use of biogas recovery systems at livestock operations to reduce methane emissions and

[25] *http://energy.gov/quadrennial-technology-review.*
[26] *http://www1.eere.energy.gov/biomass/pdfs/mypp_april_2011.pdf*
[27] *http://www1.eere.energy.gov/biomass/pdfs/biomass_two_pager.pdf.*
[28] *http://www.whitehouse.gov/sites/default/files/rss_viewer/growing_americas_fuels.PDF.*
[29] *http://science.energy.gov/~*/media/ber/pdf/Biofuels_strategic_plan.pdf.
[30] *Biogas Opportunities Roadmap: http://www3.epa.gov/climatechange/Downloads/Biogas-Roadmap.pdf.*

achieve other environmental benefits through outreach, education, tools and partnerships. AgSTAR develops technical resources for farmers, state government representatives and other stakeholders. AgSTAR also participates in outreach events with livestock producers, renewable energy industry leaders, and state and local governments to raise awareness about the benefits of livestock biogas recovery systems and the Federal resources available for project planning and implementation. AgSTAR hosts a partnership program, which brings together representatives of universities, state and local governments, not-for-profits, and other related organizations to share information and encourage implementation of biogas recovery systems.[31]

NSF, EPA and DOE jointly hosted the *Energy-Positive Water Resource Recovery (EPWRR) Workshop* in April of 2015 to envision a transition from the wastewater treatment facilities of today to a new generation of Water Resource Recovery Facilities (WRRFs), nationwide, and identify specific opportunities to stimulate and support this transition. Future WRRFs could effectively manage more diverse waste streams, generate biogas for a number of biofuel platforms, produce water and fertilizer, and help communities recover other valuable resources. Participants of this collaborative interagency workshop provided information to Federal stakeholders about ongoing industry efforts and how Federal activities could best amplify and help realize the industry vision for the WRRF of the Future that would continue to assign top priority to wastewater treatment for the protection of public health and the environment, but also expand its slate of services and products in support of healthy, economically vibrant communities.

Looking Beyond Ground Transportation

In 2014, the U.S. Departments of Energy, Navy, and Agriculture announced three awards to construct commercial scale integrated biorefineries capable of producing renewable jet and diesel that is compatible with military fuel specifications. The partnership between the Federal Government and private industry to make cost-competitive drop-in biofuels a reality while strengthening the nation's capability to lead the global clean energy market and diversifying potential fuel sources for the Department of Defense. The feedstock used to power these facilities comes from municipal solid waste, woody biomass, and waste oils and fats, and will be converted into more than 100 million gallons of renewable jet and diesel fuel annually. This means many additional professional jobs for engineers, plant operators, construction workers, and feedstock suppliers. The renewable jet fuel and diesel that will be produced from these facilities has been extensively tested and qualified by the Department of Defense and proven operate seamless with existing infrastructure, engines, and military operations.[32]

To date fuel blends consisting of up to 50% synthetic hydrocarbons made via the Fischer-Trospch and Hydroprocessed Esters and Fatty Acids pathways are acceptable in military fuel specifications. Additional pathways are being tested. Following adoption into fuel specifications, the Department of Defense has now moved to accept drop-in biofuels as part of its worldwide bulk fuel supply, which totals over 5 billion gallons. Jet and naval distillate fuel purchased for the Army, Navy, Marine Corps, and Air Force can be supplied by biofuel producers capable of meeting military specifications and cost-competitive with conventional fuels.[33]

Similar to the nation's military, the U.S. airline industry has a large demand for jet fuel—almost 22 billion gallons annually. In 2014, as part of an effort to meet the demand of renewable aviation fuels, DOE, USDA and FAA committed to Farm to Fly 2.0. The Federal Government, working closely with the aviation industry, will endeavor to enable commercially viable, sustainable renewable jet fuel and necessary supply chains in the U.S. in order to support the goal of 1 billion gallons jet fuel from biomass for use by 2018.[34]

With Farm to Fly 2.0 as a model, the DON and USDA are working together in another partnership, Farm-to-Fleet, to ensure markets for renewable biofuel blends as part of the regular, operational fuel purchase and use by the military. $161.33 million of USDA Commodity Credit Corporation (CCC) funds are made available to defray premiums (up to a limit) associated with USDA-approved, U.S.-grown feedstocks for the acquisition of naval distillate or jet fuel. An award was made with the help of CCC funds in October 2015 to AltAir Fuels in Paramount, CA for 77.66

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[31] For more information on AgSTAR please visit: *http://www2.epa.gov/agstar*.

[32] For more information about the DOE–DoN–USDA partnership please visit: *http://www.energy.dla.mil/Pages/DefenseProductionAct.aspx*.

[33] For more information on Farm to Fly 2.0 please visit: *http://energy.gov/eere/bioenergy/articles/farm-fly-20-energy-department-joins-initiative-bring-biofuels-skies*

[34] For more information on Farm-to-Fleet visit: *http://www.usda.gov/wps/portal/usda/usdamediafb?contentid=2013/12/0237.xml&printable=true&contentidonly=true*.

million gallons of F–76 naval distillate fuels consisting of 10% drop-in biofuels made using Midwestern-grown waste beef fats as a feedstock. Farm to Fly 2.0 will continue to seek awards in the domestic bulk fuel supply awards.

Developing a Sustainable Future

DOE and USDA are actively involved in the Sustainability and Greenhouse Gas Accounting working groups of the Global Bioenergy Partnership. The Global Bioenergy Partnership (GBEP) was established in 2006 by a mandate from the G8 + 5 in 2005 and is the preferred venue for USG to talk about sustainability of biofuels internationally. Partners currently include 23 countries and seven United Nations organizations, with Brazil and Italy as co-chairs. Significant achievements include a GHG Methodological Framework (United States co-chaired with United Nations Foundation) and continued work on development of Sustainability Criteria and Indicators (chaired by United Kingdom). Partners: DOE, USDA, EPA, USTR, and Commerce collaborate with State Department, the National Security Council, and the National Economic Council on a U.S. position going into each of the quarterly GBEP meetings.[35]

APPENDIX F

February 21, 2017

Hon. MIKE ENZI,
Chairman,
Senate Committee on the Budget,
Washington, D.C.;
Hon. DIANE BLACK,
Interim Chairwoman,
House Committee on the Budget,
Washington, D.C.;
Hon. THAD COCHRAN,
Chairman,
Senate Committee on Appropriations,
Washington, D.C.;
Hon. RODNEY FRELINGHUYSEN,
Chairman,
House Committee on the Budget,
Washington, D.C.;
Hon. BERNARD SANDERS,
Ranking Minority Member,
Senate Committee on the Budget,
Washington, D.C.;
Hon. JOHN YARMUTH,
Ranking Minority Member,
House Committee on the Budget,
Washington, D.C.;
Hon. PATRICK LEAHY,
Ranking Minority Member,
Senate Committee on Appropriations,
Washington, D.C.;
Hon. NITA LOWEY,
Ranking Minority Member,
House Committee on the Budget,
Washington, D.C.

Dear Chairmen and Ranking Members:

The undersigned organizations, representing America's agriculture, nutrition, conservation, rural development, finance, forestry, energy, trade, local government, plant/animal health, agricultural sciences and veterinary medicine, labor, outdoor recreation, equipment manufacturing, cooperatives, hunters, anglers and crop insurance sectors, strongly urge you to reject calls for additional cuts to policies within the jurisdiction of the Senate Committee on Agriculture, Nutrition and Forestry or the House Committee on Agriculture.

Almost 3 years ago, Congress passed a bipartisan farm bill that made a significant contribution to deficit reduction. This bipartisan legislation was estimated to contribute $23 billion to deficit reduction over 10 years at the time of passage. This was the first time a farm bill voluntarily reduced spending before Congress began considering the bill. It was the only reauthorization bill in that Congress that voluntarily offered savings. These difficult cuts resulted from hard choices made to reform and reduce the farm safety net, conservation initiatives, and nutrition assistance.

In fact, the Congressional Budget Office's (CBO) January 2017 baseline estimates that the 2014 Farm Bill has cost far less than projected. According to CBO, nutrition and crop insurance alone will spend nearly $100 billion less, while mandatory Federal spending outside the Agriculture Committees' jurisdiction has risen over the same time period.

We have all begun preparing for the 2018 Farm Bill and recognize that passing a bill with additional funding reductions would be extremely difficult, if not impossible. Therefore, as the Senate and House Agriculture Committees begin preparing for the 2018 Farm Bill, it is imperative that the committees not be hamstrung by

[35] For more information on the Global Bioenergy Partnership please visit: *http://www.globalbioenergy.org/*.

further budget or appropriations cuts to any farm bill program. Instead, we strongly encourage you to recognize the substantial savings already achieved, which far exceed expectations, and to provide the committees the opportunity to complete their work through regular order, without arbitrary budget cuts or caps. With the agriculture and rural economy struggling, households across the country struggling to meet their basic needs for nutrition, and farm income down 46 percent from only 3 years ago, it would be perilous to hinder development and passage of the 2018 Farm Bill with further cuts.

During consideration of the 2014 Farm Bill, the Agriculture Committees made the difficult choices necessary to deliver a bipartisan bill. Budget cuts made in that bill should be recognized as Agriculture's contribution to deficit reduction. We know the committees will once again face challenging budgetary and policy choices in the development of the 2018 Farm Bill. That is why it is so important you ensure the Committee process for the farm bill can proceed with some budget flexibility.

Thank you for your consideration.

Sincerely,

Academy of Nutrition and Dietetics
Ag Processing Inc
AgChoice Farm Credit
AgCountry Farm Credit Services
AgCredit
AgFirst Farm Credit Bank
AgGeorgia Farm Credit, ACA
AgriBank, FCB
Agriculture Energy Coalition
AgStar Financial Services, ACA
Alabama Farmers Federation
Alabama Food Bank Association
Alabama Peanut Producers Association
Alabama Soybean & Corn Association
Alaska Food Coalition
Aldo Leopold Foundation, Inc.
Algae Biomass Organization
Alliance to End Hunger
American Academy of Pediatrics
American Agri-Women
American Agriculture Movement Inc.
American Association of Avian Pathologists
American Association of Bovine Practitioners
American Association of Crop Insurers
American Association of Mycobacterial Diseases
American Bankers Association
American Cotton Shippers Association
American Crystal Sugar Company
American Dairy Science Association
American Farm Bureau Federation
American Farm Bureau Insurance Services, Inc.
American Farmland Trust
American Feed Industry Association
American Fisheries Society
American Forest & Paper Association
American Forest Foundation
American Forests
American Heart Association
American Insurance Association
American Malting Barley Association
American Mushroom Institute
American Rivers
American Seed Trade Association
American Sesame Growers Association
American Sheep Industry
American Society of Agronomy
American Society of Farm Managers and Rural Appraisers
American Soybean Association
American Sugar Alliance
American Sugar Cane League
American Sugarbeet Growers Association
American Veterinary Medical Association
American Water Works Association
American Wood Council
AmericanHort
Appalachian Mountain Club
Applegate Partnership and Watershed Council
Aquatic Plant Management Society
Archery Trade Association
Arizona Farm Bureau Federation
Arizona Pork Council
Arkansas Farm Bureau Federation
Arkansas Forestry Association
Arkansas Hunger Relief Alliance
Arkansas Soybean Association
Arkansas Wildlife Federation
Aspen American Insurance Company
Associated Milk Producers Inc.
Association of American Veterinary Medical Colleges
Association of Arizona Food Banks
Association of Equipment Manufacturers
Association of Fish and Wildlife Agencies
Association of Illinois Soil and Water Conservation Districts
Association of Kansas Food Banks
Association of Public and Land-grant Universities
Association of Texas Soil and Water Conservation Districts
Association of Veterinary Biologics Companies
Audubon Arizona
Audubon Arkansas
Florida Peanut Producers Association
Food Bank Council of Michigan
Food Bank of Alaska
Food Research & Action Center (FRAC)
FoodCorps
Food Pantry
Forest Stewards Guild
Forestry Association of South Carolina
Freestore Foodbank
Frontier Farm Credit
Garden Valley Neighborhood House
Generations United
Georgia Farm Bureau
Georgia Food Bank Association
Georgia Peanut Commission
Grange Insurance Audubon Center
Greater Cleveland Food Bank
GreenStone Farm Credit Services
Growth Energy
GROWMARK
Hardwood Federation
Headwaters Chapter, Izaak Walton League of America
Hudson Crop Insurance Services
Humboldt State University Dept. of Forestry
Hunger Free Colorado
Hunger Free Vermont
Hunger Solutions Minnesota
Hunger Solutions New York
Hunger Task Force
Idaho Hunger Relief Task Force
Idaho Wildlife Federation
Illinois Council Trout Unlimited
Illinois Farm Bureau
Illinois Hunger Coalition
Illinois Pork Producers Association
Independent Community Bankers of America
Independent Insurance Agents & Brokers of America
Indiana Farm Bureau
Indiana Forestry & Woodland Owners Association
Indiana Soybean Alliance
Intertribal Timber Council
Iowa Corn Growers Association
Iowa Environmental Council
Iowa Farm Bureau Federation
Iowa Soybean Association
Irrigation Association
Islamic Relief USA
Kansas Appleseed Center for Law and Justice
Kansas Association of Wheat Growers
Kansas Cooperative Council
Kansas Farm Bureau
Kansas Grain Sorghum Producers Association
Kansas Pork Association
Kentucky Association of Food Banks
Kentucky Farm Bureau
Kentucky Soybean Association
Kiddie City Child Care Community
PYCO Industries, Inc.
Land Trust Alliance
Laurie M. Tisch Center for Food, Education & Policy, Teachers College Columbia University
Lee Miles Hunger Center
Louisiana Association of Cooper[a]tives
Louisiana Farm Bureau Federation
Louisiana Food Bank Association
Louisiana Forestry Association
Louisiana Wildlife Federation
Lower Clear Fork SWCD
Lower Mississippi River Foundation
Lutheran Services in America
Maryland & Virginia Milk Producers
Maryland Farm Bureau
Maryland Forests Association, Inc.
Maryland Hunger Solutions
Massachusetts Association of Conservation Districts
Massachusetts Farm Bureau Federation, Inc.
Massachusetts Law Reform Institute
Meals on Wheels America
Michigan Agri-Business Association
Michigan Bean Shippers
Michigan Farm Bureau
Michigan Forest Association
Nebraska Pork Producers Association
Nebraska Soybean Association
Nebraska Wheat Board
Nebraska Wheat Growers Association
Nevada Wildlife Federation
New England Forestry Foundation
New Jersey Anti-Hunger Coalition
New Jersey Farm Bureau
New Mexico Appleseed
New Mexico Sorghum Association
New Mexico Association of Food Banks
New Mexico Wildlife Federation
New York Farm Bureau
North Carolina Farm Bureau
North Carolina Pork Council
North Central Weed Science Society
North Dakota Soybean Growers Association
Northeast Organic Dairy Producers Alliance
Northeast Organic Farming Association—Interstate Council
Northeast Organic Farming Association of New York
Northeast Organic Farming Association of Vermont
Northwest Farm Credit Services
NTCA—The Rural Broadband Association
Ohio AgriBusiness Association
Ohio Association of Foodbanks
Ohio Corn & Wheat Growers Association
Ohio Ecological Food and Farm Association
Ohio Environmental Council
Ohio Farm Bureau Federation
Ohio River Foundation
Ohio Soybean Association
Oklahoma Association of Conservation Districts
Oklahoma Farm Bureau
Oklahoma Pork Council
Oklahoma Sorghum Association
Oklahoma Soybean Association
Oregon Cherry Growers, Inc.
Oregon Farm Bureau
Oregon Food Bank
Oregon Small Woodlands Association
Organic Trade Association
Our Lady of Mt. Carmel St. Vincent dePaul Society
PA Association of Conservation Districts
Panhandle Peanut Growers Association
Partners for a Hunger-Free Oregon
PennFuture
Pennsylvania Farm Bureau
People's Community Church
Personal Ag Management
Pheasants Forever
Pinchot Institute for Conservation
Pollinator Partnership
Prairie Rivers Network
Producers Cooperative Association
Project Bread
Public Health Institute
Quail Forever
Rain and Hail Insurance Society
Resource Management Service, LLC
RESULTS
Rio Grande Valley Sugar Growers
Rural & Agriculture Council of America
Rural Advancement Foundational International
Schlitz Audubon Nature Center
School Nutrition Association
Second Harvest Food Bank CCL
Second Harvest Food Bank of North Central Ohio
Second Harvest Food Bank of the Mahoning Valley
Select Milk Producers, Inc.
Share Our Strength
Shared Harvest Foodbank
Shoesole Management Team
Silveus Insurance Group
SNF Agriculture
Society for Nutrition Education and Behavior
Society of American Foresters
Society of St. Andrew
Society of St. Vincent de Paul, Cleveland
Soil and Water Conservation Society
Soil Science Society of America
South Carolina Appleseed Legal Justice Center

Audubon California
Audubon Center at RIverlands
Audubon Connecticut
Audubon Dakota
Audubon Florida
Audubon Great Lakes
Audubon Minnesota
Audubon Mississippi
Audubon Nebraska
Audubon New York
Audubon North Carolina
Audubon of the Western Everglades
Audubon Pennsylvania
Audubon Rockies
Audubon South Carolina
Audubon Texas
Audubon Vermont
Audubon Washington
Aullwood Audubon Center and Farm
Aurora Cooperative
B.A.S.S. LLC
Beartooth Fertilizer Inc.
Biotechnology Innovation Organization
Blue Diamond Growers
Bluestem Communications
Bongards Creameries
Bread for the World
C&H Associates
California Association of Food Banks
California Association of Resource Conservation Districts
California Farm Bureau Federation
California Pork Producers Association
California Rice Commission
CarbonVerde, LLC
Catch-A-Dream Foundation
Center for Heirs' Property Preservation
Center for Law and Social Policy
Central Aroostook Soil & Water Conservation District
CGB Diversified Services
Chesapeake Bay Foundation
CHS Inc.
City Bank Texas
CoBank, ACB
Colorado Sorghum Association
Colorado Wildlife Federation
Congressional Hunger Center
Connecticut Forest & Park Association
Conservation Federation of Missouri
Cooperative Network
Cottonseed and Feed Association
Crop Insurance and Reinsurance Bureau
Crop Insurance Professionals Association
Crop Science Society of America
D.C. Hunger Solutions
Dairy Business Milk Marketing Cooperative
Delaware Association of Conservation Districts
Delaware Farm Bureau
Delta Waterfowl
Ducks Unlimited
eGovernment Payments Council of the Electronic Funds Transfer Association
Empire State Forest Products Association
Empower Missouri
Endangered Habitats League
Entomological Society of America
End Hunger Connecticut!
Environmental and Energy Study Institute
Environmental Defense Fund
Environmental Law & Policy Center
Equity Cooperative Livestock Sales Association
Fair Food Network
Farm Credit Bank of Texas
Farm Credit Council
Farm Credit East
Farm Credit Mid-America
Farm Credit of the Virginias
Farm Credit Services of America
Farmer Mac
FarmFirst Dairy Cooperative
Federation of Virginia Food Banks
Feeding America
Feeding Illinois
Feeding Indiana's Hungry
Feeding Pennsylvania
Feeding Texas
Feeding Wisconsin
First District Association
Florida Farm Bureau Federation
Florida Forestry Association
Florida Impact
Michigan Pork Producers Association
Michigan Soybean Association
Mid-Ohio Foodbank
Mid-West Dairymen's Co.
MidAtlantic Farm Credit
Midwest Dairy Coalition
Midwest Organic and Sustainable Education Service—MOSES
Milwaukee Riverkeeper
Minnesota Association of Soil and Water Conservation Districts
Minnesota Corn Growers Association
Minnesota Farm Bureau Federation
Minnesota Milk Producers Association
Minnesota Pork Producers Association
Minnesota Soybean Growers Association
Mississippi Farm Bureau Federation
Mississippi Peanut Growers Association
Mississippi Pork Producers
Mississippi Soybean Association
Missouri Coalition for the Environment
Missouri Farm Bureau Federation
Missouri Pork Association
Missouri Soybean Association
MKC
Montana Association of Christians
Montana Cattlemen's Associaton
Montana Cattlemen's Association Foundation
Montana Farm Bureau Federation
Montana Food Bank Network
Montana Food Security Council
Montana Grain Growers Association
Montana Partnership to End Childhood Hunger
Montana Wildlife Federation
N.C. Association of Food Banks
National All-Jersey
National Alliance of Forest Owners
National Association for the Advancement of Animal Science
National Association of Clean Water Agencies
National Association of Conservation Districts
National Association of Counties
National Association of Farmer Elected Committees
National Association of Forest Service Retirees
National Association of Mutual Insurance Companies
National Association of Nutrition and Aging Services Programs
National Association of Plant Breeders
National Association of Professional Insurance Agents
National Association of Resource Conservation & Development (RC&D) Councils
National Association of Retired ASCS/FSA Office Employees
National Association of State Departments of Agriculture
National Association of State Foresters
National Association of University Forest Resource Programs
National Association of Wheat Growers
National Barley Growers Association
National Barley Improvement Committee
National Black Growers Council
National Bobwhite Conservation Initiative
National Cattlemen's Beef Association
National Christmas Tree Association
National Co+op Grocers
National Coalition for Food and Agricultural Research
National Conservation District Employees Association
National Corn Growers Association
National Cotton Council
National Cotton Ginners' Association
National Cottonseed Products Association
National Council of Farmer Cooperatives
National Council on Aging
National Deer Alliance
National Farm to School Network
National Farmers Union
National Milk Producers Federation
National Organic Coalition
National Parks Conservation Association
National Peach Council
National Pork Producers Council
National Potato Council
National Sorghum Producers
National Sunflower Association
National Sustainable Agriculture Coalition
National Wild Turkey Federation
National Wildlife Federation
National Woodland Owners Association
National Young Farmers Coalition
NAU Country Insurance Company
South Carolina Farm Bureau
South Carolina Peach Council
South Dakota Farm Bureau
South Dakota Soybean Association
South Dakota Wildlife Federation
South East Dairy Farmers Association
Southeastern Lumber Manufacturers Association
Southern Oregon Forest Restoration Collaborative
Southern Peanut Farmers Federation
Southern States Cooperative
Southwest Council of Agribusiness
Southwest Georgia Farm Credit
Soyfoods Associat[i]on of North America
Stewardship Alliance of Northeast Elko
Sugar Cane Growers Cooperative of Florida
Sustainable Northwest
Tennessee Farm Bureau Federation
Tennessee Justice Center
Tennessee Pork Producers Association
Tennessee Soybean Association
Texas Agricultural Cooperative Council
Texas Farm Bureau
Texas Grain and Feed Association
The American Chestnut Foundation
The American Phytopathological Society
The Community Pantry
The Conservation Fund
The Fertilizer Institute
The Food Depot
The Food Trust
The Foodbank, Inc.
The Hardwood Federation
The Izaak Walton League of America
The Jewish Federations of North America
The Lyme Timber Company
The Nature Conservancy
The Trust for Public Land
The Wetlands Initiative
Theodore Roosevelt Conservation Partnership
TN Environmental Council
Trout Unlimited
U.S. Apple Association
U.S. Canola Association
U.S. Cattlemen's Association
U.S. Dry Bean Council
U.S. Sweet Potato Council
USA Dry Pea & Lentil Council
Union of Concerned Scientists
United Egg Producers
United Fresh Produce Association
United Way Worldwide
USA Rice
U.S. Rice Producers Association
Utahns Against Hunger
Vermont Foodbank
Vineyard Community Church
Virginia Conservation Network
Virginia Farm Bureau Federation
Virginia Forestry Association
Washington Association of Conservation Districts
Washington Farm Bureau
Virginia Soybean Association
Washington Farm Forestry Association
Watershed Research & Training Center
Weed Science Society of America
West Ohio Food Bank
West Virginia Rivers Coalition
Western Center on Law and Poverty
Western Growers Association
Western Landowners Alliance
Western Peanut Growers Association
Western Society of Weed Science
Western United Dairymen
Wholesome Wave
Wildlife Management Institute
Wildlife Mississippi
Windmark Crop Division, City Bank Texas
Wisconsin Farm Bureau Federation
Wisconsin Pork Association
Women Involved in Farm Economics

WoodWorks—Wood Products Council
Wyoming Farm Bureau
World Wildlife Fund
Wyoming Wildlife Federation
NC Forestry Association
Nebraska Appleseed
Nebraska Farm Bureau Federation
Nebraska Grain Sorghum Board
Nebraska Grain Sorghum Producers Association

SUBMITTED STATEMENT BY RON MOORE, PRESIDENT, AMERICAN SOYBEAN ASSOCIATION

Chairman Scott, Ranking Member Scott, and Members of the Subcommittee and full Committee, the American Soybean Association (ASA) is pleased to provide this written statement for the record on the Energy Title programs for the next farm bill and their role in providing markets for agricultural products and economic growth for rural America.

There are several Energy Title programs in which soybean producers have a strong interest, including the Biobased Market Program (Section 9002), the Bio-

diesel Fuel Education Program (Section 9006), and the Bioenergy Program for Advanced Biofuels (Section 9005). ASA recognizes that these Energy Title programs do not have baseline going forward, increasing the challenge of extending these programs and building on the benefits they have provided. However, these programs remain high priorities for ASA and we believe that the relatively low cost and the benefits they provide warrant their continuation with an increased level of mandatory funding.

Section 9002, Biobased Market Program: The Biobased Market Program continues and expands the Federal biobased procurement program and voluntary labeling program. This is an effective and important program for promoting the emerging biobased industry, which has significant potential to enhance agricultural markets, meet the growing demand for biobased alternatives in chemicals, plastics, cleaners and other industrial products, and contribute new jobs to the economy.

The U.S. biobased products industry in 2014 added $393 billion to the U.S. economy and created 4.22 million jobs, according to a 2016 report from authored by Duke University's Center for Sustainability & Commerce, and North Carolina State University's Poole College of Management. This study, authorized in the 2014 Farm Bill Energy Title, also reported that the state of Georgia ranks second, only behind California, in direct economic value addition from the biobased products industry in 2013. Georgia's direct value addition from biobased totaled $8,237,608,000. With 80,520 biobased-sector jobs, Georgia ranked fourth among states benefiting from the biobased industry's ability to create jobs.

The soybean industry continues to partner with companies and invest resources into biobased product development. Funding from soybean farmers' check-off dollars has been invested with private-sector partners to develop soy biobased products.

Through its use of soybean oil to displace petroleum in carpet and artificial turf and grass, the Dalton, Georgia-headquartered company, Universal Textile Technologies (UTT), is a global leader in the biobased and textile industries. UTT manufacturers, BioCel™, a soy-based polyol technology developed with support from the soybean check-off. America is literally walking on thousands and thousands of square feet of soy-backed carpet available from major companies like Masland and Signature Accord. SYNLawn, a synthetic grass company, uses BioCel everywhere from New York City rooftops and playgrounds to North Dakota backyards to water-conscious resorts and residences in California and New Mexico.

The Biobased Market Program, established and expanded through previous farm bills, plays an important role in the development of the biobased products industry in the United States. By providing a procurement preference for Federal Government purchases, the program helps pull products into the market and encourages investment and development of biobased products. ASA supports providing mandatory funding through the farm bill for USDA to more effectively administer the programs and further promote biobased markets.

Section 9006, Biodiesel Fuel Education Program: The Biodiesel Education Program plays a vital role in helping expand marketplace acceptance and use of biodiesel as a low-carbon, renewable diesel replacement fuel. It supports technical outreach efforts to engine manufacturers, truckers, and fuel marketers that allow the use of higher biodiesel blends in conventional diesel applications. The education program serves to expand and increase market penetration, thus promoting growth for the entire industry. This translates into higher production, more jobs, and more economic value, especially in rural communities. Specifically, the biodiesel education program had a large part to play in building automakers trust in, and support for, biodiesel blends and growing the number of terminals, distributors, and retail outlets carrying biodiesel.

ASA urges the continuation of this modest program that has achieved great success in expanding biodiesel acceptance and availability.

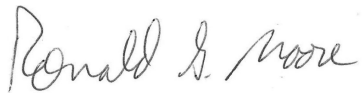
Section 9005, Bioenergy Program for Advanced Biofuels: The Bioenergy Program for Advanced Biofuels is a program of significant interest and opportunity for producers of bioenergy and bioproducts, particularly biodiesel. The biodiesel industry is still working to establish itself in the competitive fuels marketplace and the Bioenergy Program plays a beneficial role is supporting domestic producers facing market fluctuations and uncertainty and competition from subsidized foreign biomass-based diesel imports.

Many of the approximately 170 biodiesel production facilities in the U.S. are located in rural areas. Biodiesel is produced from soybean and other vegetable oils as well as animal fats. Nearly all of the feedstock used to produce biodiesel is grown or originates in rural areas. For the soybean industry, biodiesel provides a valuable market for soybean oil that has historically provided a drag on overall soybean prices and it has provided an outlet and market for soybean oil whose use in food production for baking and frying has declined due to trans fat issues.

While ASA recognizes the funding challenges that exist, we believe that the Bioenergy Program for Advanced Biofuels can continue to play a role in supporting the development of advanced biofuels, bioenergy, and biobased products and we support the reauthorization and funding of the program in the next farm bill.

We appreciate the Committee holding this hearing on rural development and energy programs and providing ASA the opportunity to submit this statement for the record. As always, we look forward to working with you on the development of a farm bill that includes an Energy Title and mandatory funding for priority programs.

Sincerely,



RON MOORE,
President,
American Soybean Association.

SUBMITTED STATEMENT BY COBANK ACB

The farm bill is a unique piece of legislation that is reauthorized every 4 to 5 years. The first agricultural act was authorized during Roosevelt's "New Deal" period. The Agricultural Adjustment Act of 1933 was authorized to aid farmers during troubling times. In 1938, this piece of legislation was updated to require farm programs be looked at every 5 years, ensuring Congress paid attention to the volatile markets and changing times of the ever growing economy. Today, the farm bill authorizes hundreds of programs. This piece of legislation provides food assistance to disadvantaged individuals, opportunities for emerging agricultural research, security for livestock and crop producers, and capital for infrastructure investment in rural communities.

The Rural Development Title of the farm bill was created as an avenue to enhance the communities where agricultural producers live, so that the heart of the country will not have to leave home in order to thrive. Since 1973, every farm bill has included a rural development section. Of importance, there is no overarching statutory framework that underpins Federal rural policy. Title VI of the farm bill is the main policy tool to address emerging rural and small community issues. Issues including adequate housing, business creation, human capital concerns, rural poverty, adequate medical care, and infrastructure needed to serve these communities are all addressed in this one area of the omnibus farm bill.

Rural populations and job opportunities continue to decline. The need for investment to improve and enhance rural America is more urgent than ever. According to the U.S. Census, manufacturing now accounts for over 20% of rural private-sector earning and nearly 11% of rural jobs. That economic activity depends on the answers to important questions. How do we get people to go to rural America? How do we keep them there? How should the government help rural America thrive and put rural residents in a position to compete in the global marketplace? When we answer these questions we help our communities thrive.

The Rural Development title, addresses these questions every day. CoBank is proud to be a partner in those efforts. It is our mission to serve the hard working individuals, companies, producers, and customers that call our rural communities home. We work with those who have been overlooked. We do so by finding solutions to broadband issues in rural Utah, improving health care facilities for rural Minnesota, and we ensure that rural Iowa communities have access to clean water. We accomplish each of these missions in partnership with the United States Department of Agriculture (USDA).

CoBank is a member of the Farm Credit System, a nationwide network of banks and retail lending associations chartered to support the borrowing needs of U.S. agriculture and the nation's rural economy. CoBank is a national cooperative bank, with the mission to serve rural America. The bank provides loans, leases, export financing and other financial services to agribusinesses and rural power, water and communications providers in all fifty states. In addition to serving our direct retail borrowers, we also provide wholesale loans and other financial services to our affiliated Farm Credit Associations across twenty-three states and serving approximately 70,000 farmers, ranchers, and other rural businesses.

The mission of CoBank includes serving "as a dependable provider of credit and other value-added financial services to agriculture and rural infrastructure busi-

nesses for the benefit of rural America." Our mission parallels' that of USDA's Rural Development office, which is, "We promote economic development by supporting loans to businesses through banks, credit unions and community-managed lending pools. We offer technical assistance and information to help agricultural producers and cooperatives get started and improve the effectiveness of their operations." Our two entities are naturally complementary. We serve the same entities to better the same communities, and to improve the lives of rural America's residents.

A strong Rural Development title is necessary to bridge the growing divide between rural and urban America. As individuals leave the farm for the urban life, what is left is sometimes forgotten. The deteriorating infrastructure in our small and local communities is omnipresent. The idea that water treatment facilities have not been replaced in over sixty years is unacceptable. With water quality issues being prevalent throughout the country like we have most recently seen in Flint, Michigan, the fact that we are not able to take care of the issues in our back yard, is unsettling for most. The Rural Development title of the farm bill, when funded adequately and administered efficiently, has the ability to repair all of the issues that disadvantage most small and rural communities. Access to the capital to finance improvements to a local water treatment facility, access to broadband that allows for a teleconference with a doctor in an urban community 5 hours away from home, and financial incentives to attract a meat processing facility to a rural community all serve to improve the quality of life and economic activity of rural America. None would be possible without the programs that the Rural Development title authorizes.

Several programs that are important to CoBank customers are included below.

Water and Wastewater Loan Programs

The Water and Wastewater Loan Program is vital to the health of any rural community. Without clean water a community cannot exist. The program extends affordable access to clean and reliable water for households and businesses in rural areas. Infrastructure in these communities has exceeded its lifespan and the deterioration of these facilities is hurting communities. In most recent years, much of the country went through a major drought. Many were often faced with the tough decision between increasing water prices to deter usage, rationing water, or penalizing farmers for excessive water use? The irony of this situation is that many rural areas hurting the most were losing sometimes fifty percent of the water moving through their pipes. For many towns it was cheaper to waste water than to update their local communities' water infrastructure. This program must be continued.

Communities and Facilities Loan Program

The Community Facilities Loan Guarantee Program encourages private lenders, like CoBank, to assist rural communities in building facilities that are essential to the lives of their residents. This program permits the investment in the purchase, construction, and improvement to equipment or necessary facilities. Public facilities, healthcare facilities, utility services, and public safety and educational services are considered essential as well. CoBank has recently partnered with a local farm credit association in Minnesota to finance improvements at a local rural hospital Improving their existing structure and expanding capacity to assist rural constituents who without this project may not be able to receive or seek necessary treatment without burdensome travel. This program is important and could be streamlined to make it even more useful.

Farm Bill Broadband Loan and Loan Guarantees and Telecommunications Infrastructure Loan and Loan Guarantees

It is no surprise that many rural areas still struggle with obtaining adequate access to rural broadband. Broadband is now a necessity everywhere: for any small rural community, every rural medical office, every farmer, and every household with a child in school. No one will stay or plant their roots in rural America if they cannot access services to which they have become accustomed or if they cannot find meaningful work.

The Farm Bill Rural Broadband Access Loan and Loan Guarantee Program (Farm Bill Broadband Program) allows for cooperatives, like CoBank, to provide loans to provide funds for construction, improvement, and acquisition of facilities and equipment. Without the capital to purchase these materials, broadband would not be feasible for many rural communities.

Further, the Telecommunications Infrastructure Loan and Loan Guarantees Program provide financing for improvements, expansions, constructions, some acquisitions, some opportunities for refinancing, and additionally to finance broadband capable telecommunications service. These programs are essential, and should be streamlined, where possible, to make them easier to deploy.

Business & Industry Loan Guarantees

Business & Industry Loan Guarantees (B&I Loans) have the unique ability to allow farm credit banks, like CoBank, to offer the private credit structure by guaranteeing rural business loans. This allows entities participating in the loan to extend more credit than they typically would be able to, to bring investment needed to improve rural America and to improve the agricultural economy as a whole.

Rural Energy for America Program—Renewable Energy Systems and Energy Efficiency Improvement Loan and Grants

The Rural Energy for America Program (REAP) allows for guaranteed loan financing, and grant funding to agricultural producers and small rural businesses. REAP allow these entities to make investments and to enhance their operations and increase their energy efficiency to bring down their operating costs. This program allows cooperatives to invest in their customers by helping them weather the long term and constantly changing commodity prices we are experiencing.

CoBank supports the passage of a strong Rural Development Title and will continue to advocate for the same. Improvements are always possible, but continuing the important progress USDA has made and working to enhance these programs to improve rural America is of the utmost importance to CoBank and the customers we serve.

SUBMITTED STATEMENT BY NATIONAL BIODIESEL BOARD

Chairman Scott, Ranking Member Scott, and Members of the Subcommittee and full Committee, the National Biodiesel Board (NBB) appreciates the opportunity to submit this statement for the record for the hearing titled, "The Next Farm Bill: Rural Development & Energy Programs". The biodiesel industry is extremely proud of the contribution to energy & economic growth that our industry provides the nation, especially in rural America. The U.S. biodiesel industry experienced a record year in 2016, with approximately 2.9 billion gallons of biomass-based diesel utilized nation-wide, all of which is produced using co-products and waste products derived from agricultural sources.

NBB is the national trade association representing the biodiesel industry. NBB has significant roots and ties to U.S. agriculture. It was founded in 1992, with significant investment from the U.S. soybean industry, and since that time, the NBB has developed into a comprehensive industry association that coordinates and interacts with a broad range of cooperators including industry, government and academia. NBB's membership is comprised of biodiesel producers; state, national and international feedstock and feedstock processor organizations; fuel marketers and distributors; and technology providers.

Biodiesel producers include farmer-owned cooperatives and other farmer-owned companies, agribusinesses and independently owned biodiesel producers. The American Soybean Association, United Soybean Board, numerous state soybean associations, and the U.S. Canola Association play an active and important role in our organization, and our Governing Board consists of several active soybean farmers.

About Biodiesel

Biodiesel is a renewable, low carbon diesel replacement fuel. Biodiesel is refined to meet the D6751 fuel specification set forth by ASTM International. Biodiesel is made from surplus soybean and canola oil, waste greases like recycled cooking oil, animal fats, algae, and inedible corn oil derived from the ethanol production process. There are approximately 170 biodiesel production plants spread all across the U.S.

Biodiesel is primarily marketed as a five percent (B5) blending component with conventional diesel fuel, but can be used in concentrations up to twenty percent (B20). It is distributed utilizing the existing fuel distribution infrastructure with blending occurring both at fuel terminals and "below the rack" by fuel jobbers.

Biodiesel is the first and currently the only fuel being produced in commercial quantities that qualifies as an Advanced Biofuel for purposes of the Renewable Fuel Standard, which means that it achieves a minimum of 50% greenhouse gas emissions reductions relative to petroleum. Along with significant reductions in greenhouse gas emissions, it dramatically reduces nearly every major toxic air pollutant, according to the EPA.

The Biodiesel Industry is Creating Jobs and Making a Positive Contribution to the Economy, Especially in Rural America: In 2016, the NBB estimates that the U.S. biodiesel industry supports over 48,000 jobs in all sectors of the economy. Biodiesel also makes a significant contribution to rural economic development. Many of the approximately 170 biodiesel production facilities in the U.S. are located

in rural areas and nearly all of the feedstock used to produce biodiesel is grown or originates in rural areas.

While the biodiesel market was initially reliant on surplus vegetable oils as the primary feedstocks, animal fats and greases are now a prominent and growing portion of the industry. In fact, biodiesel and renewable diesel are now one of the largest markets for animal fats, utilizing over 1 billion pounds of fats annually and adding millions of dollars of value to animal production each year. Animal fats are used in biomass-based diesel to produce biodiesel, renewable diesel, and renewable aviation fuel. The livestock, rendering and biodiesel industries employ tens of thousands of workers nationwide, with many of these jobs in rural areas across the country.

Biodiesel provides a valuable market for soybean oil that has historically been in surplus and whose use in food production has declined in recent years due to trans fat issues. In addition to providing a growing and valuable market for rendered animal fats, biodiesel helps increase production of soy meal used for livestock feed. Soybeans are 80% meal and 20% oil. Between 2005 and 2009, the increased demand for soybean oil has subsequently increased the production of soybean meal, which has lowered soybean meal prices for livestock feed by $16 to $48 per ton from where they would have otherwise been.[1]

Biodiesel & the Farm Bill

Given its agricultural roots and the benefits it provides to U.S. farmers and rural communities, programs supporting biodiesel are an appropriate piece of the farm bill. NBB has a particular interest in two existing farm bill energy title programs—the Biodiesel Fuel Education Program (Section 9006) and the Bioenergy Program for Advanced Biofuels (Section 9005). NBB recognizes that these Energy Title programs do not have baseline funding going forward, which creates a challenge to extending these programs and building on the benefits they have provided.

Section 9006, Biodiesel Fuel Education Program

The Biodiesel Fuel Education Program plays a vital role in helping expand marketplace acceptance and use of biodiesel as a low-carbon, renewable diesel replacement fuel. NBB urges the continuation of this program in the next farm bill.

Through competitive grants to nonprofit entities, this program supports technical outreach efforts to engine manufacturers, truckers, and fuel marketers that will eventually allow the use of higher biodiesel blends in conventional diesel applications. This program helps educate on the different characteristics and benefits of biodiesel and to clear up misperceptions that have developed. Since 2003, the NBB has achieved great success in garnering and promoting OEM (Organization of Engine Manufacturers) support for biodiesel through the OEM biodiesel education program. The OEM biodiesel education program had a large part to play in building automakers' trust in, and support for, biodiesel blends.

Section 9005, Bioenergy Program for Advanced Biofuels

Section 9005 of the 2008 Farm Bill also authorized and provided mandatory funding for USDA to implement the Bioenergy Program for Advanced Biofuels to make payments to producers of advanced biofuels and bioenergy to support a stable and expanding production base. The Bioenergy Program has been beneficial to many biodiesel producers as the industry is working to establish itself in the competitive marketplace. The program helps with the development and expansion of new markets for agricultural feedstocks including vegetable oils and animal fats. The markets that biodiesel provides for these agricultural waste and co-products increases value for farmers and ranchers. As such, we urge the Committee to reauthorize and fund this program.

Conclusion: The U.S. biodiesel industry is proud to produce the only domestic, emissions-reducing, commercial-scale Advanced Biofuel that is readily available and accepted in the marketplace. The U.S. biodiesel industry has both the capacity and available feedstock to increase production and further expand markets for agricultural feedstocks.

We are proud of the significant economic, energy, and environmental benefits associated with biodiesel production. Accordingly, the U.S. biodiesel industry urges continued mandatory funding for the Biodiesel Education Program as well as reauthorization and funding of the Bioenergy Pr[og]ram for Advanced Biofuels. These investments help the small but growing biodiesel industry gain a sustainable presence in the U.S. fuels marketplace.

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[1] *Economic Impacts of Biodiesel Production on The Soybean Sector, Revisited:* Centric Consulting Group, LLC, December 2010.

Again, the NBB appreciates the opportunity to submit this statement for the hearing record. We look forward to working with you on the development of the farm bill and the continuation of the programs that support the growing U.S. biodiesel industry.

SUBMITTED STATEMENT BY RURAL COMMUNITY ASSISTANCE PARTNERSHIP

Thank you Chairman Scott, Ranking Member Scott, and Members of the Subcommittee, for this opportunity to submit written testimony on the importance of USDA Rural Development (RD) programs to rural America.

The Rural Community Assistance Partnership (RCAP) is a nonprofit national network of regional service providers that for nearly 45 years has helped small, low-income, rural communities address water, wastewater, and other community development needs in all 50 states, Puerto Rico, and the Virgin Islands. Our staff of assistance providers deliver onsite training and technical assistance to small water and wastewater systems to help these systems meet Federal and state regulatory requirements, finance and manage capital improvement projects, and to develop and sustain technical, managerial, and financial capacities.

For many years, the RCAP network has partnered with USDA to bridge the gap between RD and the communities they serve. RCAP assists rural communities with funding applications and every phase of the project planning and development process, as well as providing training and technical assistance after construction is complete, helping communities understand how to properly manage and operate their system in a fiscally sustainable manner. We work to ensure that RD borrowers are able to meet the terms of their Letters of Condition and that they are able to repay their loans on time. Every year, the RCAP network helps over 2,000 rural communities address their water and wastewater needs.

Providing these basic services is a challenge for many rural communities. Rural residents are three times more likely than their urban counterparts to lack water and sanitation; they also typically pay nearly three or four times the amount for water and sewer services. Due to their limited customer base, small utilities lack the economies of scale that reduce the costs of infrastructure construction, operation, and maintenance to levels that are affordable to low-income residents. Few rural communities can access the municipal bond market or find banks that are willing to invest in such long-term, low-yield transactions. Many turn to RD as their lender of last resort.

USDA–RD Water and Wastewater Programs Have Been Enormously Successful

RD's water and wastewater programs are a key component of economic development in rural America. Every water and wastewater construction dollar generates nearly $15 of private investment and adds $14 to the local property tax base. Without the basic infrastructure funded by RD—clean drinking water for household needs, sufficient quantities of water to support local industry, and sanitary sewers to remove sewage and industrial byproducts to protect public health—local employers will relocate or close factories and small businesses will decline and eventually disappear. The entrepreneurs and small business owners who are the engines of our economy won't open new businesses, shops or restaurants on Main Street without basic services. Infrastructure is the foundation of economic development, and to promote economic growth in rural America, you need to ensure that businesses' and residents' basic needs—like water and sewer services—are met. Opportunities for continued economic growth in rural communities are substantial. Agricultural production, oil and gas development, mining operations, alternative energy pursuits, and tourism are all vibrant economic sectors that depend on thriving rural communities. RD programs play a part in making available to rural communities water and wastewater utilities, essential community facilities, affordable housing, and broadband.

The Water and Environment Programs at RD have enjoyed tremendous success over the past few decades. The agency boasts a portfolio of more than 18,000 active water/sewer loans, more than 19 million rural residents served, and a delinquency rate of just 0.43%. This success is partly attributable to the field presence RD has historically maintained in rural areas. With staff in field offices throughout the country, RD is uniquely positioned to evaluate the credit-worthiness of small utilities and can distribute Federal funds quickly and efficiently to areas of need. In drought years, or after natural disasters, community leaders benefit from being able to turn to a local RD staffer whom they know and trust and who is familiar with their system and its needs, though recent staff reductions in RD offices nationally

have started to hinder the ability of RD to serve rural communities with these critical services. To build on the past successes of the Water and Environment Programs, the farm bill should reauthorize the water and wastewater loan and grant programs, the technical assistance and training grant program, and the water infrastructure revolving loan fund program at or near the levels in the current farm bill.

Technical Assistance Is Key to Ensuring RD's and Rural Communities' Success

Despite RD's many successes, a substantial number of small, low-income towns and counties have difficulty accessing RD programs. The application process and eligibility requirements for each program are slightly different, and each poses unique challenges. Local leaders are most often volunteers who lack professional staff and the resources to find out what funding sources are available or the requirements for funding eligibility. Their first look at the Letter of Conditions on an RD loan can make the process seem overwhelming and discourage worthy applications. With help from an experienced technical assistance provider, however, even communities with no staff and limited planning resources can develop the local leadership capacity to manage needed infrastructure projects. Technical assistance plays a vital role in ensuring that the programs serve the communities they were designed to benefit in a cost-effective manner.

While there are many calls for reducing the requirements associated with obtaining water and wastewater financing from RD, RCAP's opinion is that these requirements are for the most part necessary to ensure that the Federal Government is making financial support available to the neediest communities while ensuring the security of the Federal investment. The extremely low default rate on these loans is a testament to the efficacy of existing requirements. Common environmental review requirements among all Federal and state infrastructure programs would be one area for improvement. Oftentimes projects have multiple funding sources with varying environmental review/assessment requirements, and standardizing them across Federal programs would reduce the burden on applicants to conduct multiple separate reviews.

Overall, the water and wastewater Technical Assistance and Training Grant Program has been so successful that many state RD offices and local community officials have asked the RCAP network to assist with other, non-water-related RD-funded projects. In the last farm bill, Congress authorized a new set-aside program for the Rural Housing Service's Essential Community Facilities (CF) Program to fund technical assistance because State RD Offices have requested RCAP for assistance with borrowers under the CF program. If implemented properly, the CF technical assistance and training program will provide much-needed support for the CF program, as has been the case with the water and wastewater programs. Under current and projected economic outlooks, essential community facilities constitute an important foundation for rural community growth. Reauthorizing this dedicated CF technical assistance program will ensure that these facilities are planned for, constructed, operated and managed in an efficient manner that benefits the entire community and promotes economic development opportunities.

Reauthorize Revolving Funds for Financing Water and Wastewater Projects

7 U.S.C. §1926(a)(2)(B) authorizes a program for nonprofit entities to capitalize revolving loan funds for the purposes of financing eligible borrowers with predevelopment or other short-term capital costs (such as site acquisition or engineering costs or for equipment replacement, small service extensions or emergency repairs). RCAP would recommend that this program be maintained at currently authorized levels and the maximum for eligible loans to small-system borrowers be increased from $100,000 to $200,000, as costs for even the smallest repairs have increased significantly. Both RCAP and the National Rural Water Association have utilized this program to capitalize revolving loan fund programs that have assisted small communities to extend services, meet regulatory requirements, make emergency repairs and fund pre-development costs associated with major capital construction projects. These types of loans are typically not available from RD or the State Revolving Funds, nor do small communities have much hope of securing these loans from private sources. Demand for these loans far surpasses amounts authorized and appropriated for this purpose.

Household Water Well Program: 7 U.S.C. §1926(E)

This section allows RD to make grants to nonprofit organizations to loan money to individuals to finance the construction, refurbishing and servicing of individually owned household water well systems in rural areas. While this program, combined at times with state housing programs, has benefited low-income families in isolated

rural areas that would otherwise be unable to obtain water except through a household well, the farm bill should require that none of these loans go to residences in areas where RD has funded or is considering funding a community water system. Funding individual homeowner loans can adversely impact small customer bases within areas funded by RD's community water loans by reducing the potential number of customers who are ultimately responsible for servicing the Federal debt. Furthermore, encouraging multiple wells into potentially sensitive and increasingly depleted aquifers can negatively impact other users from both a water quality and water quantity perspective.

Conclusion

Solving the challenges facing rural communities requires a multi-pronged approach that includes adequate funding, along with steps to ensure that funding is available to all communities that truly need it, and a comprehensive approach to technical assistance to maximize the efficiency and effectiveness of RD's programs. It also includes an emphasis on rural economic development and cost-effective investments in infrastructure that provide maximum return on scarce Federal, state, and local resources. The farm bill reauthorization is an opportunity to replicate the success of the water/wastewater technical assistance program and modify existing programs, while protecting taxpayer investment in our nation's water and sewer infrastructure.

We know that there is a long road ahead for the next farm bill reauthorization, but we stand ready and willing to assist you in pushing for its adoption and look forward to opportunities to work with you and your colleagues to ensure that it meets the needs of our rural communities. We thank you for your commitment to rural America and your earnest efforts to ensure a robust rural economy.

SUBMITTED QUESTIONS

Response from Hon. Bob Fox, Chair, Board of Commissioners, Renville County, MN; Member, Board of Directors, National Association of Counties*

Question Submitted by Hon. Stacey E. Plaskett, a Delegate in Congress from Virgin Islands

Question. In your testimony, you mention the importance of the Community Facilities Direct Loan and Grant Program within USDA Rural Development.

The specific language establishing the program provides loans, grants, and loan guarantees for "essential community facilities" in certain rural areas.

It has been over 20 years since the Virgin Islands has had sufficient resources to build a new school.

Would the construction of a new school in a qualified rural community be included in the program's authority to fund "essential community facilities"? If not, should the program be expanded to include this?

Answer.

Response from Dennis L. Chastain, President and Chief Executive Officer, Georgia Electric Membership Corporation; on behalf of National Rural Electric Cooperative Association*

Question Submitted by Hon. Tom O'Halleran, a Representative in Congress from Arizona

Question. You mentioned that the needs of rural co-ops have changed and your emphasis has moved to making the grid smarter. I have native constituents that remain without electricity. What improvements to RUS do you believe will help the rural co-ops that are still working on expanding their grids?

Answer.

Response from Steve Fletcher, Manager and Operator, Washington County Water Company, IL; President, National Rural Water Association

Question Submitted by Hon. Tom O'Halleran, a Representative in Congress from Arizona

Question. You said it was a disaster for your customers when they turn on the faucet and don't have water. For many of my Tribal constituents, this disaster is daily life. What do you think what can we do better in the farm bill to encourage development of clean water systems in extremely rural communities?

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*There was no response from the witness by the time this hearing was published.

Answer. We understand that on the Navajo Nation in your state many residents are still hauling water. Many Tribal water systems share the same problems that many small communities experience, and we also recognize they have unique challenges such as sovereignty, cultural norms, many lack resources, capacity issues, high operator turn-over, *etc.* The Circuit Rider concept is very effective in addressing and identifying solutions to these unique issues because of established long-term relationships predicated on trust and the vast experience of the Circuit Riders.

For decades, we have been working with these difficult situations on tribal lands in your home state of Arizona and in New Mexico, North and South Dakota, Minnesota and other states fulfilling the needs of their constituency. Currently in Arizona, the Rural Water Association of Arizona has two full-time Circuit Riders devoted to drinking water and one full-time Circuit Rider devoted to wastewater systems. You could expand this program to allow for a dedicated Circuit Rider for Tribal areas in states that have a large number of federally recognized tribes.Below are a few suggestions to address these unfortunate circumstances for tribal areas and extremely remote rural areas through the Farm Bill and the existing programs:

1. Water Stations—For some areas due to the remoteness and/or the ability to finance and manage an affordable community water system, an innovative and affordable solution could include financing a watering station at a suitable water source where the residents and/or the community could obtain safe and affordable water. Then using sanitized water containers, the residents and/or the community could fill their containers with clean water and transport the water and return to the filling station on an as needed basis.

   For instance, in the Maricopa Mountain area there are three (3) well sites that are 60 miles south of Phoenix, approximately 1,500 people live in this area and they are still hauling water. Populations located around feed lots with agriculture land is another concern with nitrates that have contaminated the ground water and the wells have to reach 3,000′ before they are able to access clean water that is safe enough to drink.

   We have been told this type of facility, a water station, has been financed before by Rural Development even though the authority is somewhat vague and left up to interpretation from each state office. The current regulation (*1780.9(e)(1)(iii)* (*https://www.gpo.gov/fdsys/pkg/CFR-2017-title7-vol12/pdf/CFR-2017-title7-vol12-sec1780-9.pdf*))* states that allowable activities include "Purchasing or renting equipment necessary to install, operate, maintain, extend, or protect facilities." You may want to add language to clearly define that funds may be used for this purpose and include critical equipment, like the vehicle and containers necessary to transport the water, as an eligible purpose for loan and grant funding.
2. Existing programs—Leverage existing programs currently authorized in the farm bill to create a sustainable safe drinking water supply for the community. For example, the USDA Rural Development Water and Wastewater Loan and Grant program provides funding to communities with populations of less than 10,000 for clean and reliable drinking water infrastructure. With the help of an Arizona Rural Water Circuit Rider, the community could assess their water supply sources, identify the needed infrastructure, and develop a proposal for the review of USDA Rural Development. One hundred percent of the loans and grants from this program are targeted to small and rural communities, and therefore make it an attractive option for the extremely rural community to consider, especially if their goal is to have a sustainable water supply of their own wells.

   As you are aware, each annual appropriations bill includes a specific set-aside for loans and grants for Federally Recognized Native American Tribes (7 U.S.C. 1926) Unlike the standard grant programs that is capped at 75% grant, grant funding may be up to 100% of the eligible project cost for tribal areas.
3. Native American Circuit Rider Program—There is also a program created by the Appropriations Committee, the Native American Circuit Rider Program that is specifically targeted for a qualified national Native American organization to provide technical assistance for rural water systems for tribal communities. Since inception, this program has historically received $800,000 annually. You may want to review this program and make additional changes spe-

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* **Editor's note:** *See* ATTACHMENT. The hyperlink in the parenthesis is the offical hyperlink from the U.S. Government Publishing Office; the hyperlink as submitted is: *http://federal.elaws.us/cfr/title7.part1780.section1780.9.*

cifically to address the unique needs of Tribal communities. As previously mentioned, the Rural Water Association of Arizona had a designated Native American Circuit Rider, but that funding was lost. You could explore the possibility to add a preference and/or additional resources within the standard Circuit Rider program (7 U.S.C. 1926(a)(22) for system capacity and development for Native Americans.

4. The Grassroots Source Water Protection Program (16 U.S.C. 3839bb–2)—This program is administered through the Farm Service Agency and is another resource for Tribal areas and remote rural communities. You may want to explore expanding this authorization to provide priority in addressing the critical water sources for Tribal lands and extremely remote low-income communities. Recently in Arizona, we have had requests in Tribal areas to provide this service in order to mutually develop Source Water Protection plans necessary to identify threats and preserve and protect their valuable water sources.

5. Unserved and underserved communities—Unfortunately, many unserved or underserved rural areas within the United States lack the technical, financial, and managerial capacity to adequately operate, maintain or provide safe and affordable water and wastewater service necessary to protect and enhance the public health and economic vitality within in their communities. The National Rural Water Association held a district/regional water meeting last year with many utilities and Rural Development employees to discuss this and other issues.

   One solution presented was to consider providing a financial incentive, in the form of a direct loan at the poverty interest rate, to encourage local utilities to provide service to these communities. The intent is to allow contiguous and local utilities located outside of the unserved or underserved service areas that have the capacity and experience to provide this essential water and or wastewater service.

   We thought this would be another positive tool to provide Rural Development additional authority to address these situations. Here are a few details of the proposed concept. We would welcome further discussions and suggestions and would also encourage you to reach out to Rural Development and get their comments. Key points—

Assistance

The Secretary may make direct water and wastewater loans at the poverty interest rate as authorized under Section 307(a)(3) of the CONACT (7 U.S.C. 11927 (a)(3)) for such projects in cities, towns, or unincorporated areas with populations at or below 10,000 in communities that lack the technical, financial, and managerial capacity to adequately operate, maintain and serve the present population, as determined by the Secretary.

Eligible applicants

Eligible applicants shall be contiguous and local utilities outside of the service area with demonstrated experience and capacity, as determined by the Secretary, in delivering water and or waste water programs administrated through the Rural Utilit[ies] Service and can further demonstrate the capacity to provide service to the unserved or underserved area.

Justification

Presently, there are many unserved or underserved rural areas within the United States lack the technical, financial, and managerial capacity to adequately operate, maintain or provide safe and affordable water and wastewater service necessary to protect and enhance the public health and economic vitality in their communities. Many contiguous and local utilities located outside of the unserved or underserved service area have the capacity to provide essential water and or waste water services to these unserved or underserve areas. This proposal provides a financial incentive in the form of financing direct water and waste water loans at the poverty interest rate that will further enhance the ability to provide essential water and waste water services to these communities in need.

Eligible utilities for funding should be limited to have demonstrated experience and capacity, as determined by the Secretary, in delivering water and or waste programs administrated through the Rural Utilit[ies] Service and can further demonstrate the capacity to provide service to the unserved or underserved area.

6. Other resources—In 2016, the Inter-Tribal Council of Arizona, Inc. (ITCA) was awarded $600,000 proposing to provide tribal operator certification training and examination events, training workshops on water utility workforce retention, public relations, and operator safety awareness. ITCA will implement a tribally-led capacity development program that provides technical assistance; SDWA training and regulatory updates; asset management training; and utility specific Effective Utility Management team exercise assessment workshops. ITCA will conduct 12 workshops (two for each region).

ATTACHMENT

Code of Federal Regulations

Title 7—Agriculture

Volume: 12
Date: 2017–01–01
Original Date: 2017–01–01
Title: Section A
§ 1780.9—Eligible loan and grant purposes.

Context:

Title 7—Agriculture.
Subtitle B—Regulations of the Department of Agriculture (Continued).
Chapter XVII—Rural Utilities Service, Department of Agriculture (Continued).
Part 1780—Water and Waste Loans and Grants.
Subpart A—General Policies and Requirements.

§ 1780.9 Eligible loan and grant purposes.

Loan and grant funds may be used only for the following purposes:

(a) To construct, enlarge, extend, or otherwise improve rural water, sanitary sewage, solid waste disposal, and storm wastewater disposal facilities.

(b) To construct or relocate public buildings, roads, bridges, fences, or utilities, and to make other public improvements necessary for the successful operation or protection of facilities authorized in paragraph (a) of this section.

(c) To relocate private buildings, roads, bridges, fences, or utilities, and other private improvements necessary for the successful operation or protection of facilities authorized in paragraph (a) of this section.

(d) For payment of other utility connection charges as provided in service contracts between utility systems.

(e) When a necessary part of the project relates to those facilities authorized in paragraphs (a), (b), (c) or (d) of this section the following may be considered:

(1) Loan or grant funds may be used for:

(i) Reasonable fees and costs such as: legal, engineering, administrative services, fiscal advisory, recording, environmental analyses and surveys, possible salvage or other mitigation measures, planning, establishing or acquiring rights;

(ii) Costs of acquiring interest in land; rights, such as water rights, leases, permits, rights-of-way; and other evidence of land or water control or protection necessary for development of the facility;

(iii) Purchasing or renting equipment necessary to install, operate, maintain, extend, or protect facilities;

(iv) Cost of additional applicant labor and other expenses necessary to install and extend service; and

(v) In unusual cases, the cost for connecting the user to the main service line.

(2) Only loan funds may be used for:

(i) Interest incurred during construction in conjunction with multiple advances or interest on interim financing;

(ii) Initial operating expenses, including interest, for a period ordinarily not exceeding one year when the applicant is unable to pay such expenses;

(iii) The purchase of existing facilities when it is necessary either to improve service or prevent the loss of service;

(iv) Refinancing debts incurred by, or on behalf of, an applicant when all of the following conditions exist:

(A) The debts being refinanced are a secondary part of the total loan;

(B) The debts were incurred for the facility or service being financed or any part thereof; and

(C) Arrangements cannot be made with the creditors to extend or modify the terms of the debts so that a sound basis will exist for making a loan; and

(v) Prepayment of costs for which RUS grant funds were obligated.

(3) Grant funds may be used to restore loan funds used to prepay grant obligated costs.

(f) Construction incurred before loan or grant approval.

(1) Funds may be used to pay obligations for eligible project costs incurred before loan or grant approval if such requests are made in writing by the applicant and the Agency determines that:

(i) Compelling reasons exist for incurring obligations before loan or grant approval;

(ii) The obligations will be incurred for authorized loan or grant purposes; and

(iii) The Agency's authorization to pay such obligations is on the condition that it is not committed to make the loan or grant; it assumes no responsibility for any obligations incurred by the applicant; and the applicant must subsequently meet all loan or grant approval requirements, including environmental and contracting requirements.

(2) If construction is started without Agency approval, post-approval in accordance with this section may be considered, provided the construction meets applicable requirements including those regarding approval and environmental matters.

(g) Water or sewer service may be provided through individual installations or small clusters of users within an applicant's service area. The approval official should consider items such as: quantity and quality of the individual installations that may be developed; cost effectiveness of the individual facility compared with the initial and long term user cost on a central system; health and pollution problems attributable to individual facilities; operational or management problems peculiar to individual installations; and permit and regulatory agency requirements.

(1) Applicants providing service through individual facilities must meet the eligibility requirements in § 1780.7.

(2) The Agency must approve the form of agreement between the applicant and individual users for the installation, operation, maintenance and payment for individual facilities.

(3) If taxes or assessments are not pledged as security, applicants providing service through individual facilities must obtain security necessary to assure collection of any sum the individual user is obligated to pay the applicant.

(4) Notes representing indebtedness owed the applicant by a user for an individual facility will be scheduled for payment over a period not to exceed the useful life of the individual facility or the RUS loan, whichever is shorter. The interest rate will not exceed the interest rate charged the applicant on the RUS indebtedness.

(5) Applicants providing service through individual or cluster facilities must obtain:

(i) Easements for the installation and ingress to and egress from the facility if determined necessary by RUS; and

(ii) An adequate method for denying service in the event of nonpayment of user fees.

Response from R. Craig Cook, Chief Operations Officer, Hill Country Telephone Cooperative, Inc.; on behalf of NTCA—The Rural Broadband Association

Question Submitted by Hon. Stacey E. Plaskett, a Delegate in Congress from Virgin Islands

Question. The Minority Leader in the Senate has proposed an allotment of $20 billion for broadband deployment as part of a $1 trillion plan to spur infrastructure

investment and job creation. This is proposed in association with the President's announcement to make new investment in infrastructure a priority on his agenda. The funding would be made available to projects currently eligible under existing programs at the Department of Agriculture.

Will your organization be advocating for inclusion of supplemental broadband investment in any forthcoming infrastructure investment package?

Answer. NTCA—The Rural Broadband Association and its 800+ members that provide broadband in rural areas strongly support including resources for broadband investment in any infrastructure legislation. NTCA began advocating for including resources to enable greater broadband deployment in an infrastructure package with a December 22, 2016 letter to the National Governors Association, and followed that with a joint telecom-association letter to House and Senate Commerce Committee leaders and a letter to President Trump signed by over 100 organizations that represent rural and/or telecommunications stakeholders.

According to the FCC, over 39 percent of Americans living in rural areas still lack access to advanced telecommunications capability. That's a lot of people who are unable to experience new capabilities in delivering health care, educating children, promoting public safety, and managing energy, to say nothing of the new jobs created in areas with robust broadband along with unprecedented access to employment opportunities presented in established industries.

America's most sparsely-populated rural areas often do not present a business case for the highly capital intensive undertaking of providing advanced broadband service. The Universal Service Fund High Cost Program helps the small broadband providers represented by NTCA and also other companies that serve rural America make the business case to deliver and then sustain broadband networks. However, the High Cost Program has been under the same hard cap since 2011, and currently lacks the resources to help rural broadband providers meet the Communications Act principle of reasonably comparable telecommunications rates and services in rural and urban areas. An infrastructure bill could help make up this shortfall by providing support that restores the business case for sustainable broadband investment.

We are pleased to see broad agreement among elected officials and stakeholders on the importance of supporting broadband infrastructure, but the details of how that support is distributed will be key to achieving the goal of expanding broadband access. In a February 27, 2017 letter to Senators Thune and Nelson and Representatives Walden and Pallone, NTCA, ITTA, USTelecom, and WTA recommended the following foundational principles "to ensure that such broadband investment maximizes consumer benefits, ensures efficiency, produces results quickly, and is subject to accountability":

> Any new broadband investment program must ensure sufficient resources to meet the challenges of delivering broadband to rural America. In order to truly realize universal broadband access by all Americans, in all regions of the nation, any funding should flow to areas currently lacking meaningful access to broadband services in order to establish and sustain such services. Adequate broadband services must meet reasonable and realistic service parameters—*e.g.,* with respect to speed, latency, and price—and funding should flow to broadband investment that best meets national broadband goals regardless of the technology or technologies employed. To promote fiscal responsibility, funding should not be made available for duplicative networks that overbuild another provider's existing broadband infrastructure.
>
> In addition, leveraging existing Federal expertise, gained through programs such as the Federal Communications Commission's Connect America Fund, in promoting and sustaining broadband access will maximize speed-to-market and efficiency of distribution mechanisms, and minimize administrative burdens and costs. Strict yet reasonable accountability for broadband program investments is essential, and requirements should include build-out and performance targets. Federal and state tax regulatory, permitting, and other requirements should be coordinated and reconciled to maximize the benefits of the broadband investment program.

We appreciate your interest broadband infrastructure and look forward to working with you and your colleagues on the House Committee on Agriculture as Congress develops an infrastructure package.

ATTACHMENT

February 27, 2017

Hon. JOHN THUNE,
Chairman,
Senate Committee on Commerce, Science, and Transportation,
Washington, D.C.;
Hon. GREG WALDEN,
Chairman,
House Committee on Energy and Commerce,
Washington, D.C.;
Hon. BILL NELSON,
Ranking Minority Member,
Senate Committee on Commerce, Science, and Transportation,
Washington, D.C.;
Hon. FRANK PALLONE, JR.,
Ranking Minority Member,
House Committee on Energy and Commerce,
Washington, D.C.

Dear Chairman Thune, Ranking Member Nelson, Chairman Walden, Ranking Member Pallone:

Our associations are composed of well over a thousand companies and cooperatives that today offer robust broadband over networks spanning thousands of miles and reaching millions of rural consumers and businesses. Yet, extending these networks into parts of rural America still lacking access, delivering affordable services, and upgrading existing networks to allow rural consumers to benefit from the capabilities of broadband all remain formidable challenges. Just over a year ago, the FCC found that over 39 percent of Americans living in rural areas still lack access to advanced telecommunications capability. It was nearly 7 years ago that the very first sentence of the FCC's National Broadband Plan declared that "[b]roadband is the great infrastructure challenge of the early 21st century." Indeed, that remains the case.

We are encouraged that one of the foremost priorities of the new Administration is to improve the infrastructure supporting the lives and livelihoods of all Americans. We are heartened by the recognition of how critical broadband infrastructure has been and will continue to be in improving Americans' collective well-being. Broadband has unleashed new capabilities in delivering health care, educating children, promoting public safety, and managing energy. It has enabled, and holds the promise of continuing to enable, the birth of entire new industries, in the process creating new jobs while also offering job seekers unprecedented access to employment opportunities presented in established industries. It facilitates the vast sharing of knowledge and has spawned a "sharing economy." Its position as an engine of economic growth is manifest.

All of these benefits of broadband, however, are only available to those who have access. In light of the benefits of universal broadband access coupled with its currently remaining an unrealized national ambition, we urge you to ensure that broadband infrastructure is a key priority in any new, comprehensive Federal infrastructure investment program. And in making it so, we recommend several foundational principles to ensure that such broadband investment maximizes consumer benefits, ensures efficiency, produces results quickly, and is subject to accountability.

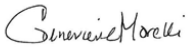
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In addition, leveraging existing Federal expertise, gained through programs such as the Federal Communications Commission's Connect America Fund, in promoting and sustaining broadband access will maximize speed-to-market and efficiency of distribution mechanisms, and minimize administrative burdens and costs. Strict yet reasonable accountability for broadband program investments is essential, and requirements should include build-out and performance targets. Federal and state tax regulatory, permitting, and other requirements should be coordinated and reconciled to maximize the benefits of the broadband investment program.

We are at the beginning of an exciting new process to address our nation's critical infrastructure needs and to contribute to an improved way of life for all Americans. There is much work to be done in the coming months. We look forward to engaging

with you on how to ensure that this work results in all Americans reaping the myriad benefits that new broadband infrastructure investment will foster.

Sincerely,



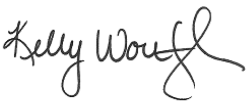
GENEVIEVE MORELLI,
President,
ITTA—The Voice of Mid-Sized Communications Companies;



SHIRLEY BLOOMFIELD,
Chief Executive Officer,
NTCA—The Rural Broadband Association;



JONATHAN SPALTER,
Chief Executive Officer and President,
USTelecom—The Broadband Association;



KELLY WORTHINGTON,
Executive Vice President,
WTA—Advocates for Rural Broadband.

Response from Hon. James C. Greenwood, President and Chief Executive Officer, Biotechnology Innovation Organization

Question Submitted by Hon. Collin C. Peterson, a Representative in Congress from

Question. Mr. Greenwood, does the language in Section 9003, the Biorefinery, Renewable Chemical, and Biobased Product Manufacturing Assistance Program need to be modified to ensure standalone renewable chemical producers can qualify? What has been your members' experience with the program?

Answer. Yes. Unfortunately, USDA's interpretation of Section 9003 limits renewable chemical facilities that can apply for the program. BIO urges the Committee to amend the language in Section 9003 to ensure standalone renewable chemical facilities are eligible in the next farm bill. This will speed the research, development and commercialization of biorefineries and job creation.

Question Submitted by Hon. Tom O'Halleran, a Representative in Congress from Arizona

Question. In your testimony, you mention BCAP and the use for woody biomass. The use of woody biomass has a great potential for the forest health of my district. Can you elaborate on what the problems were with using BCAP for woody biomass and how these problems have been address? And how do you see this program benefitting forest health?

Answer. For continued growth of the biobased economy and growth of domestic bioenergy and bioproducts, access to sustainable agricultural, forestry and waste biomass is critical to its development. Biomass Crop Assistance Program (BCAP) helps overcome the challenge of accessing this biomass by providing financial assistance to owners and operators of agricultural and non-industrial private forest land who wish to establish, produce, and deliver biomass feedstocks.

After adoption of BCAP in the 2008 Farm Bill, P.L. 110–246, an increase in price for wood shavings, wood chips, sawdust, and other wood "scraps" for products such as composite panels, particle board, and fiberboard, and bark and wood chips for mulch caused concern for some manufacturing and nursery industries about the impact BCAP was having on the cost of these raw materials.

The 2008 BCAP language prohibited material collected or harvested from National Forest System and other public lands that would otherwise be used for higher value products. However, this prohibition did not initially apply to renewable biomass harvested from private land.

USDA worked to address these concerns in its rulemaking of the 2008 Farm Bill. The 2014 Farm Bill explicitly addressed this issue in Section 9010, where the definition of "eligible material" in previous law was rewritten to include the following exclusion: "(vi) any woody eligible material collected or harvested outside contract acreage that would otherwise be used for existing market products." (For more information, please see CRS Report R41296 Biomass Crop Assistance Program (BCAP): *Status and Issues,* page 14, Jan. 12, 2015)

Continuation of BCAP with mandatory funding will help ensure it can be a valuable tool to maintain and improving forest health. As the U.S. Department of Energy 2016 Billion-Ton Report noted, "Removal of excess biomass from fuel treatment operations (reducing biomass to help forests increase fire resistance) and thinning operations designed to reduce risks and losses from catastrophic fires and improve forest health." (Please see *https://energy.gov/sites/prod/files/2016/12/f34/2016_billion_ton_report_12.2.16_0.pdf*).

BCAP incentivizes owners and potential owners of forest biomass to undertake removal of hazardous fuels and insect/disease projects on BLM- or Forest Service-managed lands, and orchard clearings. A new, improved BCAP that has steady mandatory funding would positively impact all of these biomass sources, produce new fuels, chemicals and power while reducing unhealthy forest biomass.

THE NEXT FARM BILL
(SPECIALTY CROPS)

THURSDAY, MARCH 9, 2017

HOUSE OF REPRESENTATIVES,
SUBCOMMITTEE ON BIOTECHNOLOGY, HORTICULTURE, AND RESEARCH,
COMMITTEE ON AGRICULTURE,
Washington, D.C.

The Subcommittee met, pursuant to call, at 2:03 p.m., in Room 1300 of the Longworth House Office Building, Hon. Rodney Davis [Chairman of the Subcommittee] presiding.

Members present: Representatives Davis, Gibbs, Denham, Yoho, Bacon, Dunn, Lujan Grisham, Lawson, Panetta, Costa, McGovern, and Blunt Rochester.

Staff present: Mykel Wedig, Patricia Straughn, Keith Jones, Kellie Adesina, Troy Phillips, and Nicole Scott.

OPENING STATEMENT OF HON. RODNEY DAVIS, A REPRESENTATIVE IN CONGRESS FROM ILLINOIS

The CHAIRMAN. This is a hearing of the Subcommittee on Biotechnology, Horticulture, and Research entitled, *The Next Farm Bill: Specialty Crops.* This hearing will come to order.

We apologize for the delay and also for the fact that votes will probably interrupt this hearing. We will see how far we get before votes are called, and let the witnesses know what we intend to do to ensure that we either continue the hearing, or if we are all fast, you know what, we might get done before votes are called.

First off, welcome to our witnesses. Good afternoon. Thank you for being here at today's Biotechnology, Horticulture, and Research Subcommittee hearing. Today's hearing continues our series where each of the six Subcommittees look at all aspects of the next farm bill.

As we begin this work, the Committee will consider the needs of stakeholders who depend upon farm bill programs. Today, we are focusing on issues important to specialty crop producers and products. At the time of the most recent Census of Agriculture in 2012, the value of farm-level specialty crop production totaled nearly $60 billion, representing about ¼ of the value of U.S. crop production. The sheer diversity of the category, ranging from fruits and vegetables, to tree nuts, nursery crops, and floriculture, makes the task of developing specialty crop policies particularly challenging.

The 2014 Farm Bill developed and extended many highly successful programs that have helped the specialty crop industry. A

great example is the Specialty Crop Block Grant Program, through which mandatory funding is distributed to all 50 states, including the great State of Illinois, with specialty-crop-intensive states receiving more funding. It has given states the flexibility they need to tailor their funds to their specific regional needs.

Another example of a successful specialty crop program within the farm bill is the Plant Pest and Disease Prevention Program. Specialty crop producers are constantly bombarded by new pests and diseases. The Plant Pest and Disease Prevention Program provides early plant pest detection and surveillance through APHIS. It also funds a system of clean plant centers that safely distribute disease-free, or clean plant material to producers of nursery stock for high-value, high-risk crops such as apples, peaches, berries, and citrus. Commercial growers of these crops benefit from access to healthy stocks of new varieties in the event of their plants being compromised by disease.

Additionally, while new stocks are helpful, when devastating diseases hit, and the witnesses here today know that they do hit often, research is crucial to finding a cure or an eradication pathway. The Specialty Crop Research Initiative in Title VII of the farm bill sets aside mandatory funding to make sure that specialty crops are not left on the sidelines when it comes to research funding.

I do believe it is important to highlight that other Subcommittees' work directly impacts specialty crop producers. For example, we have made significant strides over the past several years in expanding crop insurance coverage to a variety of specialty crops.

While I am proud of the successes we have enjoyed up to this point, we live in an ever-changing world. To that end, I look forward to reviewing current programs and hearing about improvements needed in the next farm bill.

[The prepared statement of Mr. Davis follows:]

PREPARED STATEMENT OF HON. RODNEY DAVIS, A REPRESENTATIVE IN CONGRESS FROM ILLINOIS

Good afternoon and welcome to today's Biotechnology, Horticulture, and Research Subcommittee hearing. Today's hearing continues our series where each of the six Subcommittees look at all aspects of the next farm bill.

As we begin this work, the Committee will consider the needs of stakeholders who depend on farm bill programs. Today, we are focusing on issues important to specialty crop producers. At the time of the most recent Census of Agriculture in 2012, the value of farm-level specialty crop production totaled nearly $60 billion, representing about ¼ of the value of U.S. crop production. The sheer diversity of the category, ranging from fruits and vegetables, to tree nuts, nursery crops, and floriculture, makes the task of developing specialty crop policies particularly challenging.

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While I am proud of the successes we have enjoyed up to this point, we live in an ever-changing world. To that end, I look forward to reviewing current programs and hearing about improvements needed in the next farm bill.

With that, I'd like to turn it over to Ms. Lujan Grisham for any comments she'd like to make.

The CHAIRMAN. And I would like to turn it over to my new Ranking Member on this Subcommittee, my good friend, Ms. Lujan Grisham, for her opening comments.

OPENING STATEMENT OF HON. MICHELLE LUJAN GRISHAM, A REPRESENTATIVE IN CONGRESS FROM NEW MEXICO

Ms. LUJAN GRISHAM. Thank you, Mr. Chairman. He made me sound younger by far than I actually am. I will take that every day. And I also want to add my welcome and thank you to the panelists who have joined us here today.

Our objective, I think I can say that for both of us, is really simple. We want to make sure that we are looking at which programs work, and which programs need additional investments or strategies as we undertake the next cycle for the farm bill. Also, as part of my thank you today, we recognize that specialty crops producers are engaged in a continuous cycle of growing, so it means so much to us that you are here participating in today's hearing.

As I read today's testimony, I am struck by the extraordinary diversity in your businesses in products, practices, and size. You grow at a level of tens of acres, hundreds of acres, and thousands of acres, producing a wide diversity of crops: apples, oranges, carrots, pinto beans, lettuce, grapes, and, of course, New Mexico chile. I am further struck by the fact that you as specialty crop producers are on the frontlines of delivering fresh, healthy, and wholesome food to America and to the world's tables. And as a mother and a grandmother, I know how important it is to provide my children and my granddaughter with the nutritious foods that she needs. And as a twelfth generation New Mexican, I know how difficult, frankly, it can be for individuals living in most of New Mexico, in rural areas and food deserts, especially in Indian Country, to access fresh and healthy foods. I just came from a meeting, Mr. Chairman, in my office where members of the Navajo Nation were talking about their inability to actually get to a highway because their bridges and roads are impassable and completely unsafe. It is really very difficult to do.

Our job in Congress is to assist and promote what you do as producers, and I look forward to working with the Chairman as we write a new farm bill, to provide you with the tools so that you can invest in your businesses, research new technology to improve yields, improve pest resistance and plant health, and find many new markets for your crops, both domestically and internationally.

I believe this will expand access to the abundant, healthy, and nutritious food contained within the specialty crop and organic sectors for more and more of our constituents and citizens.

I am looking forward to this discussion today. And with that, I thank you again, and I yield back, Mr. Chairman.

The CHAIRMAN. Thank you, Ms. Lujan Grisham. We are going to work in other committees on that infrastructure bill to help the Navajo Nation.

To our witnesses, welcome. It is always great to be the Chairman from a state like Illinois and have your first witness from the State of Illinois. I want to welcome my friend, James Field. James is part of Frey Farms, and the founder of Frey Farms has sat in that exact same chair in the past for a hearing such as this when I didn't chair them. So can we please give our best to Sarah, and we appreciate her time that she spent here.

Frey Farms operates facilities and farms in Illinois, Florida, Georgia, Missouri, Indiana, West Virginia, and Wisconsin. And their production operations specialize in growing, packing, and shipping of fresh market produce including watermelons, cantaloupes, sweet corn, fall ornamentals, hard squash, and fresh market pumpkins. If you shop at local stores like I do, many of them have the Frey Farms label on them, especially the last Springfield Wal-Mart store in Springfield, Illinois, that I toured. And just so everybody knows, Frey Farms started out of the back of a pick-up truck, selling produce on the sides of roads, with Sarah as a young teenager with her father, I believe. And it is a testament that somebody can take an idea and turn it into the American Dream. And it started right there where you are at. I want to welcome James for your opening remarks please.

STATEMENT OF JAMES FIELD, JR., DIRECTOR OF BUSINESS DEVELOPMENT, FREY FARMS, LLC, KEENES, IL

Mr. FIELD. Thank you, sir. Thank you, Chairman Davis, Ranking Member Lujan Grisham, and all other Members of the Subcommittee for allowing me to speak here today on specialty crops under the farm bill. We appreciate the work that you have done to allow our industry to be more competitive.

And I would like to tell you a little more about myself. I am the Director of Business Development for Frey Farms. And as the Chairman stated, we farm in seven, eight states now, I believe, and so we have great understanding of the agricultural industry across this nation.

We are a member of the United Fresh Produce Association, which represents growers, shippers, processors, and sellers of fresh fruits and vegetables across the country. Sarah Frey, our CEO, serves on the United Fresh Executive Board, and has served on the Government Relations Committee as well.

Before we discuss the farm bill programs, I would like to discuss with you what I believe is the most pressing issue facing agriculture today, and there is probably a large consensus of that in this room as well.

Frey Farms participates in the H–2A Program. This is the only program through which nondomestic workers can be recruited for our seasonal agricultural needs. The problem with this program is

that we don't receive an adequate number of workers every year to supply the workforce that we need during harvest time. Given the highly sensitive nature of harvesting fresh fruits and vegetables, it is critical that we get workers when we need them.

According to the Council of Agricultural Employers, the H–2A Program provides approximately 150,000 guest workers each year, which is only about ten percent of the 1½ million seasonal ag workers needed in this country. The majority of farmland in the U.S., as you well know, is based in rural communities, far away from the larger labor pools in urban areas. On top of that, the seasonality of harvesting specialty crops is such that it moves very quickly across the country based on the weather, geographical locations, and climates of these areas where specialty crops are grown. So we move very quickly within our business from Florida to Georgia, Missouri, Arkansas, Indiana, Illinois, and West Virginia, kind of being an outlier for us. But we grow throughout the country, try to follow the weather, and that requires us to hire a great deal of labor who work seasonally, and only in sporadic parts throughout those states. It is a very short harvest window of, as short as 2 to 3 weeks sometimes, for certain specialty crops that we grow. We have to have those workers at that specific time. And the migratory nature of the business is such that it makes it very hard for us to locate a domestic labor force. It is unfeasible and impractical to relocate domestic families every few weeks across the country. The lack of access to domestic labor, combined with an overburdened Federal Guest Worker Program, means that fruit and vegetable providers are in a daily struggle to secure an adequate workforce at harvest time.

There is a high level of uncertainty in agriculture as it relates to the future of migratory workers right now. And the reality is this, the vast majority of the nation's foreign-born farmworkers do not have proper work authorization. And the emphasis on enforce, without an accompanying legal guest worker program, puts our entire industry at jeopardy.

We want our workforce to be legally authorized to work in this country. Frey Farms and the industry as a whole have long advocated for reforms to the nation's immigration system to deal with this issue. And the ag community would like to work with you and other lawmakers to find a solution to this problem. Having said that, for the 2014 Farm Bill, this Committee acted on recommendations from farmers like us and implemented the following programs: $75 million annually for the Animal Plant and Health Inspection Service, $9 million annually for the Technical Assistance for Specialty Crops, $20 million for the Market Access Program, $75 million annually for the Specialty Crop Block Grant Program, $80 million in annual funding for the Specialty Crop Research Initiative, and my personal favorite is the $184 million spent on the Fresh Fruits and Vegetables Program, which serves over four million low-income elementary school students, affording them the ability to have a fresh fruit and vegetable snack daily in school. And that is very important to us at Frey Farms because there are over 107,000 students in the State of Illinois who benefit from this program, and over $5.4 million are allocated to it. And to us it is very, very important that these students receive this nutritional

help because a lot of times at home, these are many of the same recipients who are SNAP or Supplemental Nutrition Assistance Program recipients, and a lot of times their Supplemental Nutrition Assistance Program has to be spent on things that can last longer than fresh product. So for many of them, their fresh produce is gotten at school through this program, so we really appreciate that.

These programs have been effective in helping fresh produce deliver on their mission to ensure that all Americans have access to abundant and affordable fresh fruits and vegetables. I speak on behalf of Frey Farms and the entire agriculture community when I say that we need your support on agricultural immigration reform. Your efforts to enact meaningful specialty crop programs in the farm bill are greatly appreciated. We know we have friends here who want our industry to succeed, and for that we thank you.

And with that, Mr. Chairman, I am happy to take any questions.

[The prepared statement of Mr. Field follows:]

PREPARED STATEMENT OF JAMES FIELD, JR., DIRECTOR OF BUSINESS DEVELOPMENT, FREY FARMS, LLC, KEENES, IL

Thank you Chairman Davis, Ranking Member Grisham, and all Members of the Subcommittee for the opportunity to share my thoughts about the treatment of specialty crops under the farm bill. This Subcommittee's work to promote specialty crops—and on crafting Federal policies that allow providers to be competitive in the marketplace—is appreciated by fresh fruit and vegetable providers across the country.

First, a bit about myself and the business I represent. My name is James Field. I am the Director of Business Development for Frey Farms, headquartered in Keenes, IL. Frey Farms specializes in growing, packing, and shipping fresh market fruits and vegetables. We are best known as the nation's largest fresh pumpkin producer. Our farms and facilities are located in Florida, Georgia, Missouri, Arkansas, Indiana, West Virginia, and Illinois.

Frey Farms is a member of the United Fresh Produce Association, which represents growers, shippers, processors and sellers of fresh fruits and vegetables across the country. The CEO of Frey Farms, Sarah Frey, has served on United Fresh's Government Relations Council and is a member of its board of directors.

Through United Fresh and on our own, Frey Farms has actively engaged with policymakers on a variety of issues that impact the specialty crop sector, including the farm bill, so we are thankful for the opportunity to share our perspective on farm bill programs that impact our ability to do business.

Before we discuss farm bill programs, it is not possible to give a full and accurate perspective on Federal policies that most affect our sector without mentioning immigration. Frey Farms participates in the H–2A program. Administered by the Department of Labor, H–2A is the only Federal program through which agriculture employers can recruit seasonal agricultural guest-workers. We do our best to make the program work for our operation, but it is very difficult. Frequently we, like other participants in the program, do not get the adequate number of workers we need in a timely manner. Given the highly time-sensitive nature of harvesting fruits and vegetables, it is essential to get workers when we need them.

According to the National Council of Agricultural Employers (NCAE), the H–2A program provides approximately 150,000 guest-workers a year—or only ten percent of the nearly 1.5 million seasonal ag workers needed in this country. Yet, the program is being used in increasing numbers—doubling the last 5 years—in a trend that is expected to continue.

The vast majority of farm land in this great nation is located in rural communities, far away from the larger labor pools needed to fill the jobs that are necessary for harvesting specialty crops. The seasonality of harvesting specialty crops also poses a tremendous hurdle in recruiting an adequate domestic workforce. In order to maintain a steady supply of fresh fruits and vegetables, farming moves across the country rapidly with the changing of the seasons. Many of the specialty crops grown in the United States have harvest windows as short as a few weeks due to the geographic location and regional climates associated with the farmland. Relo-

cating a domestic family every few weeks is logistically unfeasible. Therefore, the lack of access to domestic labor, combined with an overburdened Federal guest-worker program means fruit and vegetable providers are in a near daily struggle to secure an adequate workforce. There is a high level of uncertainty in agriculture right now as it relates to the future of migratory workers.

The reality is this: The vast majority of the nation's foreign-born farm workers do not have proper work authorization and the emphasis on enforcement without an accompanying *effective legal* ag guest-worker program, puts our industry, and our nation's ability to sustainably and affordably feed our people, in jeopardy.

I want to be clear: we support strengthening our nation's ability to uphold the law.

We want our workforce to be legally authorized to work in this country, and this is why Frey Farms, and the produce industry as a whole, have long advocated for reforms to our nation's immigration system to deal with this issue.

I want to express that we at Frey Farms, and the agriculture industry at large, would like to work with you, and other law makers, to find solutions. We believe those who are working in agriculture without proper documentation should to be able to make their presence known and join the H–2A program. When their seasonal harvest work is finished, these workers would return to their home country as the current H–2A program requires and transportation would be provided for by their American employer. Moreover, the legality of these working immigrants would no longer be in question and the regulations for proper execution of the law would firmly be in place. These workers would be allowed to return under the lawful rules of the H–2A program and the American farmer could operate without the stress and anxiety of wondering where their next group of laborers will come from.

Without the farm labor we need, we cannot deliver produce items to the people of our country. Fresh fruits and vegetables are left to rot in fields every year due to the lack of a reliable labor pool. Given that approximately 80 percent of the farm bill budget goes to supporting supplemental nutrition programs, more commonly known as food stamps, this is an egregious offense to the people of this country. Allowing fresh food to go to waste is not a problem that solely affects our industry, but impacts each and every American.

Farmers are inherently trying to provide healthy, sustainable, and competitively priced fresh fruits and vegetables, while working against the factor of time and the perishable nature of these very items. H–2A is however slow, inefficient, and riddled with bureaucratic inefficiencies the H–2A program may be, it is the only workforce solution that we have. The foundation is in place to help agriculture bridge the gap between its current supply and the vastly disparate demand for labor. We recognize that immigration policy does not pass through this Committee—but it most certainly affects the day-to-day business viability of the men and women who supply most of America's fresh produce, dairy, and horticultural commodities. Given your support on past measures, we know that is important to you.

We urge you to do what it takes to ensure that whatever immigration legislation Congress debates does not become final without a mechanism for addressing agriculture's real and urgent labor needs. Failure to address these needs will undermine all the good work you have done to support specialty crops through legislation like the farm bill—and ultimately—you would fail to serve the farmers and ranchers this Subcommittee is designated to represent. I, and many others in the produce community, do not believe that is what you want to do.

By ensuring agriculture's labor concerns are met, you will show once again that you recognize how important this sector is to the overall well-being of America, just as you did when you passed a farm bill and invested heavily in programs designed to allow produce providers to act on their own initiative and be competitive. I'd like to elaborate on a few of those farm bill programs and urge your continued support for them.

Since 2002, United Fresh has coordinated the Specialty Crop Farm Bill Alliance, a group of nearly 120 organizations nationwide that represent almost every specialty crop commodity produced in this country.

The purpose of the Alliance is to review the farm bill and make recommendations about programs most relevant to specialty crops. The Alliance identified a few basic thematic priorities in the most recent farm bill: market competitiveness, research, nutrition, international market access and pest and disease control. This priorities further our goals to increase consumption of fruits and vegetables by promoting the nutritional and economic well-being of Americans. They also provide tools and services that growers generally cannot control themselves.

In the past, the Alliance assessed prior program funding levels and current program usage and gave Congress funding recommendations for the programs that met

these basic priorities. In the 2014 Farm Bill, the Agriculture Committee acted on those recommendations to provide:

- $75 million annually for the Animal Plant Health Inspection Service (APHIS) Section 10201 program. This helps prevent the introduction or spread of plant pests and diseases that threaten U.S. agriculture and the environment, while ensuring the availability of a healthy supply of clean plant stock;
- $9 million annually for the Technical Assistance for Specialty Crops (TASC) program and $20 million for the Market Access Program (MAP). Both of these programs are designed to address various barriers to agriculture exports;
- $184 million for the Fresh Fruit and Vegetable Program, or FFVP, which provides a fresh fruit or vegetable snack to four million low-income elementary school students in all 50 states. In Illinois, where Frey Farms is headquartered, the program allocates $5.4 million to provide such snacks to more than 107,000 students. As the Members of the Subcommittee may be aware, FFVP has been evaluated by outside experts and found to be highly effective at increasing students' fresh fruit and vegetable consumption;
- $75 million annually for the Specialty Crop Block Grant program to enhance the competitiveness of specialty crops. The 2014 Farm Bill also authorized funding for multi-state block grants; and
- $80 million in annual funding for the Specialty Crop Research Initiative to develop and disseminate science-based tools to address the needs of specific crops and their regions.

These programs have been effective in helping fresh produce providers to deliver on their mission to ensure that all Americans have access to an abundant and affordable supply of nutritious fresh fruits and vegetables.

We in the produce-sector are aware that Congress must address a great many pressing needs across America. But few initiatives are as important, or pay such dividends as helping Americans enjoy the health benefits of fresh fruits and vegetables. Given your past support for these initiatives, it is clear that this Subcommittee understands this.

On behalf of the fresh produce industry, I urge you to continue the progress we have made together by ensuring that these programs are maintained and are not cut below their current funding levels.

The produce industry also looks forward to working with you to address agriculture's needs on issues such as trade, infrastructure and implementation of the Food Safety Modernization Act (FSMA).

All of these issues also go right to the heart of whether a produce provider can stay in business or not, so your time, attention and support on these matters is very much appreciated. I reiterate again however, that no program or policy is more critical and vital to the continued success of agricultural legislation as that of the H–2A program and immigration. I thank you on behalf of Frey Farms, and the agricultural community as a whole, for the continued work and service that you dedicate to our livelihoods.

Again, thank you for the opportunity to share my thoughts about the farm bill programs most important to the specialty crop sector, and on the pressing need of immigration reform. As I stated before, reforms to our nation's immigration system to provide a steady and reliable stream of guest workers has the power to make or break our industry. This is why we are looking to you for more than just support; we are looking for *action* on agricultural immigration reform. This Subcommittee's efforts to enact meaningful specialty crop programs in the farm bill has not gone unnoticed. We know that we have friends here who want our industry to succeed, and we want to work with you to guarantee that future success.

With that, Mr. Chairman, I will be happy to take questions from you.

The CHAIRMAN. Thank you, Mr. Field.

And the rest of the panel will notice that I probably gave a home state advantage and a little extra time to the witness from Illinois. We would appreciate, for time's sake, if everybody could keep their testimony within 5 minutes. I say that because I am going to ask that my colleague, Mr. Yoho, who is sitting a few chairs down from me, to introduce the next witness. And I know that he would gladly take over 5 minutes to do that. So I would like to yield to Mr. Yoho.

Mr. YOHO. Thank you, Mr. Chairman. The benefits of the gavel. Thank you.

I get the distinct honor and privilege of introducing a Florida native, Mr. Larry Black, of Peace River Packing Company in Fort Meade, Florida. Peace River Packing Company, a family business established in 1928, is a fully integrated citrus service company, active in growing, harvesting fresh fruit, packaging and processed fruit sales. The company runs over 3,300 acres of citrus property, and he is the past President of Florida Citrus Mutual and development of the Foundation Board. And we appreciate you being here, and I look forward to hearing the insight that you have about what is going on in our state of citrus greening.

And with that, I am going to yield back, but we look forward to hearing from you. Thank you all of you for being here.

The CHAIRMAN. Mr. Black, you are recognized for 5 minutes.

STATEMENT OF N. LARRY BLACK, JR., GENERAL MANAGER, PEACE RIVER PACKING COMPANY, FT. MEADE, FL

Mr. BLACK. Chairman Davis, Ranking Member Grisham, Congressman Yoho, and Congressman Lawson, good afternoon.

Huanglongbing, also known as HLB or citrus greening, is a bacterial disease spread by a vector, the Asian citrus psyllid. HLB has seriously affected citrus production throughout the world for over 100 years. Since 2005, my home state, Florida, has been severely impacted. The Asian citrus psyllid and HLB are also found in Texas and California. There is a national citrus crisis, and one of our signature specialty crops is threatened.

Throughout history, whenever this disease has appeared, citrus production has been compromised with the loss of millions of trees. The disease attacks the vascular system of the tree, compromising yields, eventually rendering the tree unproductive.

At our 1998 peak, Florida citrus plantings exceed 850,000 acres, and we produced over 300 million boxes of oranges, grapefruit, and tangerines. We are now down to about 80 million boxes of production and ½ million acres. Much of the decrease is due to HLB.

Huanglongbing and the Asian citrus psyllid are not native to the State of Florida or the United States. Like citrus canker, which has also been an ongoing problem for the industry, HLB is an example of an imported pest and disease that has resulted in reduced citrus acreage and fruit production. We have lost packing houses and juice plants. University economists have estimated since 2011, HLB has cost our industry $4.5 billion in lost economic activity, and over 8,000 jobs. Today, Florida Citrus Mutual estimates those losses to be double that amount.

While yields have been drastically decreased, the cost of growing citrus has skyrocketed. Production costs are now over $2,100 per acre; triple the cost prior to HLB.

The silver lining, despite the tough times, the Florida citrus industry is still a major economic driver for the State of Florida, providing an estimated $10 billion in annual economic impact. Citrus forms the backbone of many communities throughout the state's interior. Citrus not only directly supports processing plants and packing houses, but also businesses such as banks, truck dealerships, plant nutrition companies, restaurants, equipment sales, *et cetera.*

The Florida citrus industry, along with state and Federal Governments, are making a historic commitment to researching solu-

tions to solve HLB. Currently, more than 300 research projects designed to beat HLB are underway across the globe. Citrus growers, the State of Florida, and the Federal Government have collectively spent, or have appropriated over $250 million over the past 6 years on research. Half of this investment was from the 2014 Farm Bill.

While there is no silver bullet to stop the spread of HLB, the research investment is yielding tools the growers can use right now to counter the disease. They include a combination of bactericides, nutritional therapies, innovative growth design, thermal therapy, and tolerant root stocks. The future of our nation's citrus industry is in the hands of our research scientists. Early HLB detection, ACP management, breeding will be crucial elements in the long-term success of our production. These tools will be needed for Florida producers to continue to provide the most nutrient-filled and great-tasting juice to consumers.

So what can Congress do? First, it is imperative the next farm bill include an extension of the Emergency Citrus Disease and Extension Program which was created by the 2014 Farm Bill. The trust fund has enabled promising new research that offers long-term solutions to citrus greening and the hope for the future of our industry. We are only 3 years into the program and more time is needed.

The farm bill also provides necessary funding to several other specialty crop programs, such as the Specialty Crop Research Initiative, block grants, the National Clean Plant Network. We urge Congress to continue to invest in these crucial programs, and seek to increase the allocation to these programs when available.

While a long-term solution is being developed through research, citrus producers are working hard to maintain as much production as possible to keep our industry intact. For now, our goal is to get more trees in the ground to sustain the Florida citrus industry. Fruit is the life blood of the industry, and planting is necessary.

Thank you very much, and I stand ready for questions.

[The prepared statement of Mr. Black follows:]

PREPARED STATEMENT OF N. LARRY BLACK, JR., GENERAL MANAGER, PEACE RIVER PACKING COMPANY, FT. MEADE, FL

Regarding Huanglongbing

My name is Larry Black and I am a fifth-generation citrus grower from Lakeland, Florida. I currently serve as General Manager of Peace River Packing Company. Peace River manages more than 3,300 acres of citrus groves in central Florida. Peace River Packing Company is a fully integrated citrus services company, active in growing, harvesting, fresh fruit packing, and processed fruit sales.

I am also past President of Florida Citrus Mutual and I serve on the Citrus Research and Development Foundation Board.

Huanglongbing (HLB, or citrus greening) is a bacterial disease spread by the Asian citrus psyllid (ACP). HLB has seriously affected citrus production worldwide in Asia, Africa, the Indian subcontinent, the Arabian Peninsula, Brazil and since 2005, my home state—Florida. The vector—the Asian Citrus Psyllid (ACP)—and the disease are also found in Texas and California. Although HLB has most severely affected Florida, this is a national citrus crisis.

Throughout history, wherever the disease has appeared, citrus production has been compromised with the loss of millions of trees. It attacks the vascular system of a tree, severely compromising yields, and eventually rendering the tree unproductive. Trees are often dead within 3 years.

At its 1998 peak, Florida citrus plantings exceeded 850,000 acres and produced 300 million boxes of oranges, grapefruit, and tangerines. We are now down to about

80 million boxes of production and 500,000 acres. Much of the decrease is due to HLB.

Huanglongbing and the Asian Citrus Psyllid are not native to the state of Florida or the United States. Like citrus canker, which has been an ongoing problem for the industry, HLB is another example of an imported pest and disease that has resulted in reduced citrus acreage and fruit production; [w]e have lost packinghouses and juice plants. The processing plants that remain are running below capacity. University of Florida economists have estimated since 2011, HLB has cost our industry $4.5 billion in lost economic activity and 8,257 jobs. Today, Florida Citrus Mutual estimates those losses to be double that amount.

And while yields have dramatically decreased, the cost of growing citrus in this environment has skyrocketed; production costs in Florida total over $2,100 per acre, triple the cost prior to HLB. The "perfect storm" has forced many growers out of business.

The silver lining is despite the tough times, the Florida citrus industry is still a major economic driver for the State of Florida providing an estimated $10.7 billion in annual economic impact. Citrus forms the backbone of many communities throughout the state's interior. Citrus not only directly supports processing plants and packinghouses but also ancillary businesses such as banks, truck dealerships, plant nutrition companies, restaurants and equipment stores. These businesses would have a hard time surviving if it were not for Florida citrus.

Consequently, the Florida citrus industry, along with the state and Federal Governments, has made a historic commitment to researching solutions to HLB. Currently, more than 300 research projects designed to beat HLB are underway across the globe. Citrus growers, the state of Florida and the Federal Government have collectively spent or appropriated more than $250 million over the past 6 years on research. Half of this investment was provided through the 2014 Farm Bill.

While there is no "silver bullet" to stop spread of HLB, the research investment is yielding tools that the grower can use right now to counter the disease. These include a combination of:

- Bactericides.
- Nutritional Therapies.
- Innovative Grove Design.
- Thermal Therapy.
- Tolerant Rootstocks.

The future of the Florida, Texas and California citrus industries is in the hands of our research scientists. Early HLB detection, ACP management, conventional breeding, and engineered resistance will all be crucial elements in the long-term success of our national citrus production. These tools will be needed for Florida producers to continue providing the most nutrient-filled and great tasting juice to consumers.

What can Congress continue to do?

First, it is imperative that the next farm bill include an extension of the Emergency Citrus Disease Research and Extension Program which was created by the 2014 Farm Bill. The Trust Fund has enabled promising new research that offers long-term solutions to citrus greening, and hope for the future of our industry. But we're only 3 years into the program, and more time is needed.

The farm bill also provides necessary funding to several other important specialty crop programs—such as the Specialty Crop Research Initiative (SCRI), Specialty Crop Black Grants, the National Clean Plant Network. We urge Congress to continue to invest in these critical programs and seek to increase the allocation to these programs to the extent funds are available.

While a long-term solution is being developed through research, citrus producers are working hard to maintain as much production as possible to keep their businesses, critical infrastructure, and the domestic citrus industry intact. These efforts include various cultivation techniques—such as more intensive planting and certain remedial measures that can have the effect of slowing the spread of the disease and maximizing short-term productivity. These techniques are costly but necessary.

For now, our goal is to get more trees in the ground to sustain the Florida citrus industry. Fruit is the lifeblood of the industry and we need to replant 30 million additional trees to restore our crops to the pre-HLB levels and support existing infrastructure.

The strategy is to create incentives for growers that will mitigate some risk and prompt them to invest.

Last September, the House overwhelmingly passed, under suspension, H.R. 3957—the Emergency Citrus Disease Response Act, introduced by Rep. Vern

Buchanan. The legislation would allow a producer the full deduction of the cost of replacing damaged or lost citrus trees, rather than capitalizing the trees then depreciating over a 14 year period. Unfortunately, the Senate took no action. Congress should take up and enact this legislation this year.

In addition, we urge Members of this Committee to weigh in with your colleagues on the Appropriations Committee to fully fund both the Citrus Health Response Program (CHRP) at $58 million and the USDA's Multi-Agency Coordination Group. These two programs provide important resources for short and medium-term solutions for the industry.

In closing I would just like to point out resilience is a hallmark of the Florida citrus grower. Growers are proud to produce products that support the economy, are nutritious, and taste good. Many families, including mine, have grown citrus for three, four and five generations while facing many crises including drought, freezes, hurricanes and disease. Our industry has a bright future ahead of it, but we need the Federal Government's continued investment and support during this crisis.

Thank you for your time and allowing me to testify on the industry's behalf.

The CHAIRMAN. Thank you. Sorry we are rushing.

They just called votes, but we are going to try to get the witnesses to offer their testimony before we go, so we can come back directly to the question and answer session.

So our next witness is Sean Gilbert with Gilbert Orchards/Sundquist Fruit, in Yakima, Washington. Mr. Gilbert, you are recognized for 5 minutes.

STATEMENT OF SEAN GILBERT, GENERAL MANAGER, GILBERT ORCHARDS, INC. AND SUNDQUIST FRUIT, YAKIMA, WA

Mr. GILBERT. Thank you. Thank you, Chairman Davis and Ranking Member Lujan Grisham, for the opportunity to testify before the Subcommittee.

Today, I am representing my family's fruit business that has been farming in the Yakima Valley since 1897, where we grow apples, cherries, pears, and wine grapes. I am also representing a broad community of fruit farmers and their employees in our state and across the country who share a common interest in continuing to produce delicious, healthy, safe, and American-grown fruit for generations to come.

The Pacific Northwest is home to many family-owned orchards that provide approximately ⅔ of the apples and about ¾ of the pears and sweet cherries grown in the United States. Together, these crops are valued at over $3 billion annually, and create tens of thousands of jobs, with about ⅓ of this value coming through foreign trade.

Like all farming, tree fruit production is an inherently risky business, where the whims of weather, pest and disease can decimate an entire year's crop or an entire orchard. Through crop insurance programs funded by the farm bill that fill in where private-sector insurance comes up short, growers are able to confidently reinvest in modern orchards that are better for our employees and our customers, and out-compete the other fruit growing regions of the world.

A number of research programs funded through the farm bill have yielded critical new tools for tree fruit growers, and warrant continued or enhanced support. I would like to highlight two great stories that resulted from federally funded research. The ARS Laboratory in Wapato, Washington, has given growers new methods to combat pests like codling moth, an apple maggot that can destroy

fruit in one orchard and jeopardize export markets. My dad, Craig, who was an early adopter of organic, says simply, "Organic farming in Washington would not be possible without USDA's ARS in Wapato." Also a project partially funded by the Specialty Crop Research Initiative grant led to the development of a vision system that is a critical piece of the most promising automated harvester for fresh apples we have ever seen.

Before I move on to other issues, I want to note that tree fruit growers do not expect taxpayers to fund all of our research needs. Our state's growers have paid annual assessments to fund research since 1969, and in 2013 we voted to impose an additional assessment to fund a $32 million endowment at Washington State University to support new research.

I would also like to highlight the value of the Clean Plant Network. The Clean Plant Center, located in Prosser, Washington, has played a vital role in the maintenance and distribution of virus-free tree fruit material that encourages us to invest in new orchards with confidence.

Another area I would like to address is organic production, which is close to my heart personally, and has become a vital part of our industry. My family has embraced organic practices throughout our organization, giving us more ecologically diverse orchards, while giving consumers the right to choose how their fruit is grown. The membership requirements and appointment process for the National Organic Standards Board have not been reviewed since the Board was first created in 1990. The makeup of the organic industry has changed substantially since then, and I ask that the Subcommittee work with stakeholders to ensure that the makeup of the NOSB better represents the organic industry producers and consumers. I believe this is a needed step in ensuring that organic practices have the widespread impact on American agriculture they deserve, while meeting ever-growing consumer demand.

Another area of increasing concern to me is the Food Safety Modernization Act. Let me be clear, our industry is committed to producing the safest possible fruit for consumers; however, two areas of regulation in particular are unreasonable and not based on risk: the water testing requirements and the definition for *packinghouses* that regulates differently based on size, not risk. I am pleased that FDA Acting Commissioner, Dr. Stephen Ostroff, informed us that the agency recognizes these problems, and is reconsidering the language on these issues.

While it does not fall under the Subcommittee's jurisdiction, I would like to highlight the Market Access Program, which, through a 2016 study, showed a remarkable $24 in export gains for every additional $1 spent on foreign market development. Given the clear effectiveness of the program, I believe that MAP funding should be increased to $400 million annually.

Last, I would like to address the need for a stable, legal agricultural workforce. The bottom line is that the H–2A Program is insufficient for meeting the needs of our growers, and it disproportionately hurts small farmers. We need a guest worker program that is affordable, reliable, and reasonable, and a solution that provides a pathway to legal status for the current workforce so that this expertise is not lost. The culture of fear that looms over our

immigrant population puts at risk our industry's ability to supply the best-tasting, safest produce in the world, grown in America. I encourage bold, effective action to address this issue.

Once again, I would like to thank the Subcommittee for giving me this opportunity, and I am happy to answer any questions.

[The prepared statement of Mr. Gilbert follows:]

PREPARED STATEMENT OF SEAN GILBERT, GENERAL MANAGER, GILBERT ORCHARDS, INC. AND SUNDQUIST FRUIT, YAKIMA, WA

Thank you, Chairman Davis and Ranking Member Lujan Grisham, for the opportunity to testify before the Subcommittee today on the ways that the next farm bill can serve the needs of specialty crop growers like myself. I am Sean Gilbert, General Manager of Gilbert Orchards, Inc. I am a fifth generation farmer and packer. Our family's growing and packing operations consist of organic and conventional apples, cherries, pears, stone fruit, and wine grapes.

The Pacific Northwest is home to family-owned orchards that provide approximately 66 percent of the apples, 74 percent of the pears, and 78 percent of the sweet cherries grown in the United States. Together, these crops are valued at an average of $3 billion annually, and create tens of thousands of jobs in rural communities throughout our region.

Exports are vital to our industry, with approximately ⅓ of the apples, pears, and cherries grown in the region going to other countries. We compete in a global environment, not only against fruit imported into the United States, but also against these same competitors in the more than 50 countries we export to around the world. Mexico is our top market for apples and pears, and Canada is our largest market for cherries and our second largest market for apples and pears. Many of the other most commercially-important markets for our products are in the Asian region.

Like other types of farming, tree-fruit production is an inherently risky business, where the invasion of a pest or disease, or just 1 day of the wrong weather, can decimate an entire year's crop. I and my fellow growers rely on programs funded by the farm bill to help address some of these risks and continue to produce and market fruit of the highest quality.

For example, research conducted at the USDA Agricultural Research Service (ARS) laboratory in Wapato has yielded critical new tools to combat harmful pests like codling moth and apple maggot that can not only destroy fruit in one orchard, but also jeopardize export markets for the entire industry. The ARS laboratory in Wenatchee has done important work on issues ranging from developing new harvest and storage techniques that improve post-harvest storage of specific apple varieties like Honeycrisp, to providing new tools for managing apple replant disease.

ARS laboratories outside our region have also made significant contributions. For example, the ARS laboratory in Geneva, New York, runs an apple rootstock breeding program that has been very beneficial to growers like me by developing plant material with built-in resistance to pests and diseases. Work coming out of the Kearnsville, West Virginia, laboratory on the brown marmorated stink bug and out of the Beltsville, Maryland, laboratory on post-harvest fungicide resistance have also been of great value.

These and other ARS laboratories throughout the United States have been level-funded for years, while expenses continue to rise. This has led to the inability of these laboratories to fill open positions and a reduction in overall research capacity. I would ask the Subcommittee to consider increasing the authorization levels for the Agricultural Research Service to allow some of this research capacity to be built back up.

Under the research umbrella, I would also like to highlight the value of the Specialty Crop Research Initiative (SCRI). In spite of its relatively short existence in comparison to other farm bill research programs, the SCRI has yielded important results in a variety of areas for myself and other tree-fruit growers. For example, as the Subcommittee is likely aware, access to an adequate labor supply to grow and harvest our crops has become an increasingly significant problem. During the first year of the SCRI program, a grant was provided to a group led by Carnagie-Mellon that developed a machine vision system that is a critical component of an automated robotic harvester that is now being developed and tested by a California company with support from the industry-funded Washington Tree Fruit Research Commission.

Another example of an SCRI success is the RosBREED program, which is delivering breeding tools to accelerate the commercialization of tree-fruit varieties with enhanced disease resistance and superior consumer attributes—reducing production costs and increasing returns.

I would ask the Subcommittee to, at a minimum, extend the SCRI at its current funding level of $80 million per year, and to consider building upon this number.

The Specialty Crop Block Grant (SCBG) program has also been a useful program for the tree-fruit industry. One especially beneficial component of this program is that it allows for funding to be pooled by multiple states for projects that have a more regional or national benefit. This has allowed for collaboration with groups like the Center for Produce Safety to combine private and public resources from different states to fund top-priority projects to enhance food safety for produce. I would ask the Subcommittee to again, at a minimum, extend funding for this program at its current level.

While not specific to specialty crop growers, I would also like to recognize the value of the Agriculture and Food Research Initiative (AFRI). This program, and its predecessor, has helped support projects of value to the tree-fruit industry for decades, and I would hope that the Subcommittee would consider extending or enhancing its funding level in the next farm bill.

Before I move on to other issues, I do want to highlight that tree-fruit growers do not expect taxpayers to fund all of our research needs. Since 1969, when the Washington state industry voted to create the Washington Tree Fruit Research Commission, growers have paid an assessment on every box of fruit sold commercially to fund research that we believe to be of value to the industry. The WTFRC has a board and several committees composed of industry members that determine how these funds are distributed to individual research projects. More than $3.8 million industry dollars were allocated directly to research projects by the WTFRC last year.

Also, growers voted in 2013 to impose an additional assessment on each box of fruit sold to fund a $32 million Tree Fruit Endowment at Washington State University to support new research and extension positions focusing on enhancing orchard and post-harvest operations. This is the largest contribution to WSU in the University's history. I am a member of the Tree Fruit Endowment Advisory Committee that helps oversee the allocation of these funds.

The research conducted at the ARS laboratories and supported through the SCRI, SCBG, and AFRI programs help leverage these grower dollars and keep our industry competitive in the global marketplace—which in turn supports tens of thousands of jobs throughout our region.

Another area of importance that I would like to highlight is the invaluable work done by U.S. Animal and Plant Health Inspection Service (APHIS) in both protecting our domestic industry from the invasion of foreign pests and diseases, and in negotiating new market access with other countries for our products.

While many of these activities by APHIS are funded outside the farm bill, one important program that does fall within this area is the Clean Plant Network. This program provides funding to the Clean Plant Center Northwest (CPCNW) in Prosser, Washington, which in turn has played a vital role in developing rapid and accurate techniques for virus testing, virus elimination, and maintenance and distribution of domestic virus-free tree-fruit material. Planting a new orchard is a considerable expense that does not yield income for several years, and the CPCNW provides growers with the ability to ensure that they are not introducing viruses into these new plantings. The Center also serves as a quarantine site for the importation of foreign fruit tree cultivars.

The funding provided through the Clean Plant Network is critical to the CPCNW's success, and I would like to thank Congress for including funding for this program in the baseline for the current farm bill. That being said, there is more need both in the current centers and by industries that are not yet a part of the program for the services that the CPN provides, so I would ask the Subcommittee to increase funding for this program in the next farm bill.

Another area where USDA plays a valuable role is in supporting the registration of crop protection compounds. In some cases, specialty crop producers have a hard time maintaining access to these crop protection tools because registrants don't want to go to the expense of providing the data necessary to EPA to ensure that the product continues to be registered for these "minor" crops. This is because the registrants prioritize the uses of larger commodities where the returns are higher.

The Minor Crop Pest Management, or IR–4, program which is currently funded by the National Institute of Food and Agriculture (NIFA), provides assistance to the growers of "minor" crops in funding the research needed to support the registration of these products. Otherwise, growers would have to shoulder this burden and in

some cases would lose access to these products due to the expense of re-registration. I would ask that the Subcommittee ensure that NIFA is still able to support such important work in the next farm bill.

While this is not referenced in the current farm bill, the National Agricultural Statistics Service (NASS) currently conducts a "Chemical Use Survey" that provides information on the percentage of a crop that has been treated with a specific pesticide. When used in conjunction with the Pesticide Data Program, the information from these surveys is critical to developing more highly-refined risks assessments to support re-registration of these products.

In recent years, NASS has considered either reducing the frequency of these biannual surveys or stopping them completely. The data included in these surveys is critical to maintaining access to important crop protection tools, and I would request that the Subcommittee consider adding language to the farm bill to ensure the continuation of these surveys on a biannual basis.

Another area I would like to address is organics, which is becoming an increasingly important part of my operation. Gilbert Orchards, Inc. has been growing and packing organic apples for over 25 years and have expanded organics to all commodities we grow, making up twenty percent of our acreage.

Regionally, the Pacific Northwest is the national leader in the production of organic apples, pears, and cherries. Over eleven million boxes of organic apples are now harvested from more than 14,000 acres in Washington state, amounting to over 70 percent of the entire organic apple crop in the United States. There is also a significant amount of organic pears and cherries, with more than 1,800 acres planted of each across the Pacific Northwest. Organic tree-fruit production in the Pacific Northwest is increasing, with additional acreage being transitioned to organic each year.

The Organic Agriculture Research and Extension Initiative (OAREI), funded at $100 million in the current farm bill, has provided valuable research dollars to find new crop protection approaches that fit into the organic arena. With organic production increasing so substantially year-after-year, I would ask that the Subcommittee consider increasing funding for OAREI in the next farm bill.

I would also like to take this opportunity to raise a second issue that the Subcommittee should consider as you work on the next farm bill. The membership requirements and process for the formation of the National Organic Standards Board (NOSB), which advises USDA on every product and process that is allowed in organic production, has not been reviewed since the NOSB was first created in 1990. Alternatively, organic production and the makeup of the organic industry has changed substantially in the nearly 27 years since the NOSB was first authorized. I ask that the Subcommittee work with the variety of stakeholders that currently operate in, or have an interest in, the organic marketplace, to modernize the makeup of the NOSB to better represent the current state of the organic industry.

Another area that has become of increasing concern to myself and other tree-fruit growers is implementation of the Food Safety Modernization Act (FSMA). The U.S. Food and Drug Administration (FDA), which has zero experience regulating on-farm practices, has now finalized seven regulations to implement this law.

Let me be clear, our industry is committed to delivering a safe food product to consumers and is no stranger to food safety requirements. Over the last decade, food safety requirements from competing retailers have led to our orchards and packinghouses seeing countless food safety auditor visits each year.

However, there are two issues in-particular that I would like to highlight for the Subcommittee's consideration as you develop the next farm bill. First, the water testing requirements included in the Produce Safety rule are unnecessarily burdensome, costly, and not based on risk. I am pleased that FDA Acting Commissioner, Dr. Stephen Ostroff, informed industry representatives on February 16 of this year that the agency recognizes that fact and is reconsidering the entire water quality section of the rule.

Initial compliance dates for the Produce Safety rule are in January of 2018, but Dr. Ostroff and his staff indicated that those dates would likely need to be delayed for the water quality requirements. I would ask the Subcommittee to support efforts to ensure that any water testing requirements imposed by FDA are risk-based and reasonable to implement on the farm level.

A second concern with FSMA implementation is the way the regulations treat produce packinghouses. The Preventive Controls for Human Food rule includes a "farm" definition that incorporates some packinghouses while exempting others that conduct identical activities, by basing the definition on the location of the packinghouse or the ownership of the packinghouse and produce handled.

These vague and daunting proposed rules leave many growers and packing facilities confused about implementation and feelings of unfair treatment. Providing a

safe, high quality, and healthful product to consumers is the highest priority for our family-owned operation. Not only does our business depend on it, but our growers and their families eat the harvested fruit from their orchards. However, that FDA's vague farm definition is based off of ownership and structure, not risk, presents a much increased risk to the an operation such as ours.

This definition has implications for whether a facility falls under the Produce Safety rule or the Preventive Controls rule; whether certain transportation activities are exempted under the Sanitary Transportation rule; whether a facility must follow the Intentional Adulteration rule; and how the FDA's draft *Listeria* guidance applies to a facility. I am pleased that Dr. Ostroff told industry representatives at that same February 16 meeting that the agency recognizes the problems with an ownership-based farm definition, and is considering alternatives.

I believe that the farm definition should be based on what activities a packinghouse conducts, and not extraneous details like ownership or location that have nothing to do with the level of risk, and would ask the Subcommittee to support such a definition.

Before closing, I would be remiss if I did not mention my support for several programs that, while not falling under this Subcommittee's jurisdiction, still have a significant impact on myself and other tree-fruit growers. As I mentioned earlier in my testimony, approximately ⅓ of Pacific Northwest tree-fruit is exported to other countries. The Market Access Program (MAP) has been a pivotal part of our industry's success in expanding overseas markets.

MAP, which is administered by USDA's Foreign Agricultural Service (FAS), forms a highly successful partnership between nonprofit U.S. agricultural trade associations, farmer cooperatives, nonprofit state-regional trade groups, small businesses and USDA to share the costs of international marketing and promotional activities such as consumer promotions, market research, trade shows, and trade servicing. MAP has been tremendously successful and extremely cost-effective in helping maintain and expand U.S. agricultural exports, protect and create American jobs, strengthen farm income and help to offset the government-supported advantages afforded international competitors. A recent 2016 study by Informa Economics IEG, working with Texas A&M University and Oregon State University economists, showed that between 2002 and 2014 a return on investment by MAP of a remarkable $24 in export gains for every additional $1 spent on foreign market development. Given the tremendous cost-benefits and effectiveness of the program, I strongly believe that MAP funding should be increased to $400 million annually, with the increase phased in as part of the next farm bill.

Another program that has been helpful in both maintaining and expanding overseas market access is the Technical Assistance for Specialty Crops (TASC) program. I would request that the Subcommittee continue to provide adequate support for this program.

I would also like to highlight crop insurance, which does not fall under this Subcommittee's jurisdiction but has long been recognized by our industry as a critically important management tool. It is estimated that approximately 72 percent of apple orchards nationwide are covered by Federal crop insurance, which provides an important safety net to growers should a catastrophic event occur.

Last, while not traditionally a topic addressed by the farm bill, I cannot address the impact of Federal policies on specialty crop growers without mentioning the need for a stable, legal workforce. It is becoming increasingly difficult to find the skilled workers necessary to grow, harvest, and pack the crop. The H–2A program is burdensome and costly, yet critical to our business. Visa processing delays by the U.S. Department of Labor often cause workers to arrive days or weeks late—which can be a disaster for perishable tree-fruit.

The bottom line is that this program is insufficient for meeting the needs of our growers and packers. We need a guest-worker program that is affordable, reliable, and reasonable, and that provides a pathway to legal status for the current workforce so that this expertise is not lost.

As I conclude my testimony, I do want to note that my industry is represented on the Specialty Crop Farm Bill Alliance, which is in the early stages of developing specific requests on behalf of the entire specialty crop industry for many of the programs I have mentioned today.

Once again, I would like to thank the Subcommittee for giving me the opportunity to testify before you today on the priorities of the tree-fruit industry for the next farm bill. I am happy to answer any questions the Subcommittee may have.

The CHAIRMAN. Thank you. That is very good and on the time.

I would like to yield to Ms. Lujan Grisham to introduce our next witness.

Ms. LUJAN GRISHAM. Given that votes have been called, I will forgo a glowing, fabulous description of our New Mexico witness, Jay Hill, who is a farmer in Mesilla Valley, which is in southern New Mexico, and grows a variety of fabulous crops, including New Mexico chile, and simply to say to Mr. Hill, thank you for being here.

STATEMENT OF JAY HILL, OWNER-OPERATOR, HILL FARMS AND WHOLESOME VALLEY FARMS, MESILLA PARK, NM

Mr. HILL. Chairman Davis, Ranking Member Lujan Grisham, and Members of the Subcommittee, thank you for inviting me to join you this afternoon.

My name is Jay Hill, and I am a specialty crop farmer in the Mesilla Valley, southern New Mexico. My family and I are growing carrots, lettuce, pinto beans, chile, along with another 63 varieties of specialty crops. We grow these for wholesale and retail markets, as well as for a new store that will be opening this spring called FARMesilla. We also own a pinto bean processing facility, and have recently acquired greenhouses that we are in the process of installing a hydroponic production system in, in order to expand our growing season to year-round. We are looking to further diversify our expanding family-owned and operated business, just as many others are aspiring to do.

I sit before you today to discuss the success of the Specialty Crop Block Grant Program. Although I have not yet directly been a recipient of these funds, my family as well as so many others throughout our diverse state, have benefitted from these funds. Beginning in the early 2000s, these funds were used to carry forward some of the green chile research being done at New Mexico State University. As a result of this research, NMSU has released several chile pepper varieties, such as the Heritage 6–4 and Big Jim, that are now commonly grown in southern New Mexico, and sought after by retailers and consumers alike throughout the country.

As a result of cheaper labor costs in other chile-producing countries, competition and pressure from imported markets have affected the processing industry. The New Mexico Department of Agriculture responded by seeking out specialty crop funding to further develop our retail markets for the fresh green chile. Since 2006, funds have been used to conduct training for more retailers, recipe development, and create promotional events in target markets, and so much more.

Just as these promotional efforts have driven consumer demand, similar promotional efforts have been undertaken by our chile growers and shippers in the retail industry. Specifically, our growers and shippers worked together to create a New Mexico pavilion at the largest produce trade show in the country, the Produce Marketing Association's Fresh Summit. Over 20,000 qualified retail buyers walk the show each year, and over 60 countries are represented there. It is the Specialty Crop Block Grants that allow producers like myself to step off the farm and exhibit and connect with potential buyers. As a direct result of all these efforts, over 3,000 retail stores across the United States as well as Canada now offer fresh New Mexico green chile. These chains are many you may recognize: Wegmans, The Fresh Market, and Whole Foods.

To further quantify the success of our outreach on green chilies, planted acreage in New Mexico grew 11 percent in 2016. At the same time, Specialty Crop Block Grant funds have been used to develop markets for New Mexico green chile throughout food service channels, further benefitting both chile producers and value-added processors. Establishments right here in Washington, D.C., such as Stanton and Greene have served New Mexico green chile. And, in fact, our famous green chile is being served just down the street in two of USDA's cafeterias; the South Café and Whitten Café.

While I have chosen to focus my testimony on the progression of the New Mexico green chile industry as a result of the Specialty Crop Block Grant program, there are many, many other specialty crop programs that have worked as well, such as SCRI. The block grant program, however, allows producers such as myself to innovate and try new things that otherwise would not have been possible. It allows recipients to gain from other's lessons learned. Some of these stories will be highlighted in my written testimony.

To conclude, I would like to recognize the efforts by Congress, USDA, as well as New Mexico Department of Agriculture, and the other states involved in the program. The collaboration between the Federal and state governments have resulted in the ability to efficiently administer the program and meet the specific needs of each state or territory. The program has also supported an overarching goal of bolstering specialty crop marketability. The Specialty Crop Block Grant Program is key to the 2018 Farm Bill, that will help agribusinesses like mine to grow and progress. These program enabled me to showcase our chile-roasting process in an Iowa grocery store, and these humble beginnings were the steppingstones to becoming a successful producer and processor with national distribution.

I appreciate the opportunity to be with you today, and I am happy to answer any questions you may have.

[The prepared statement of Mr. Hill follows:]

PREPARED STATEMENT OF JAY HILL, OWNER-OPERATOR, HILL FARMS AND WHOLESOME VALLEY FARMS, MESILLA PARK, NM

Introduction

Chairman Davis, Ranking Member Lujan Grisham, and Members of the Subcommittee, thank you for inviting me to join you this afternoon. My name is Jay Hill. I am a specialty crop farmer from the Mesilla Valley in southern New Mexico. My family and I are growing carrots, lettuce, pinto beans, chile, along with another 63 varieties of other specialty crops. We grow these for wholesale and retail markets as well as for our new store that will open this spring called FARMesilla. We also own a pinto bean processing facility and have recently acquired some greenhouses and we are in the process of installing a hydroponic production system in order to expand our growing season year-round. We are looking to further diversify our expanding, family-owned and operated business just as many others are aspiring to do.

I sit before you today to discuss the success of the Specialty Crop Block Grant Program. Although I have not yet been a direct recipient of these funds, my family and I, as well as so many others throughout our diverse state, have benefited from this program since its inception.

Success Story

Beginning in the early 2000s, these funds were used to carry forward some of the chile research being done at New Mexico State University. As a result of this research, NMSU has released several chile pepper varieties, such as the Heritage 6–

4 and Big Jim, that are now commonly grown in Southern New Mexico and sought after by retailers and consumers alike throughout the country.

As a result of cheaper labor costs in other chile producing countries, competition and pressure from imported chile for the processing industry began to increase and many growers began seeking alternative markets for their product. The New Mexico Department of Agriculture responded by seeking out specialty crop funding to further develop retail markets for fresh green chile outside of New Mexico. Since 2006, funds have been used to conduct training for the retailers, recipe development, create promotional events in target markets, and more.

Just as promotional efforts drove consumer demand, similar promotional efforts have been done by our chile growers and shippers for the retail industry. Specifically, our growers and shippers worked together to create a New Mexico pavilion at the largest produce trade show in the country: the Produce Marketing Association's Fresh Summit. Over 20,000 qualified retail buyers walk this show each year and over 60 countries are represented there. It is this grant program that allowed producers like myself to step off the farm and exhibit at the show and connect with potential buyers.

As a direct result of all these efforts, over 3,000 retail stores across the United States as well as Canada now offer fresh New Mexico green chile during harvest season. Chains that many of you may recognize are Wegmans, The Fresh Market, and Whole Foods. To further quantify this success, planted acreage of New Mexico green chile grew by 11% in 2016.

At the same time, these funds have been used to develop markets for New Mexico-grown chile throughout foodservice channels further benefiting both chile producers and value-added processors. Establishments right here in Washington D.C. such as Stanton & Greene have served New Mexico chile. In fact, our famous green chile has been served right here in two of USDA's cafeterias: the South Café and the Whitten Café.

While I have chosen to focus my testimony on the progression of the New Mexico chile industry as a result of this grant program, there are many other successful specialty crop stories to be told. This grant program allows producers, such as myself, to innovate and try new things that otherwise would not have been possible. It also allows recipients to gain from others' lessons learned. Some of these stories are highlighted in my written testimony.

Conclusion

To conclude, I would like to recognize the efforts by Congress, USDA, as well as the New Mexico Department of Agriculture and the other states involved in the program. The collaboration between the Federal and state governments has resulted in the ability to efficiently administer the program and meet the specific needs of each state or territory. The program has also supported the overarching goal of bolstering specialty crop research and marketability. The Specialty Crop Block Grant Program is a key program to the 2018 Farm Bill that will help agribusinesses, like mine, progress and grow. The program enabled me to first showcase our chile roasting process in an Iowa grocery store parking lot. These humble beginnings were the stepping stones to becoming a successful producer and retailer nationwide.

I appreciate the opportunity to be with you today and I am happy to answer any questions that you may have.

APPENDIX A

Recent Program Highlights from the New Mexico Department of Agriculture Funding Summary

- 2014–2017 Funding Cycle:
  - New Mexico received $550,749.99.
  - 8 projects funded.
- 2015–2018 Funding Cycle:
  - New Mexico received $507,181.82.
  - 9 projects funded.
- 2016–2019 Funding Cycle:
  - New Mexico received $495,628.39.
  - 9 projects funded.

Sample Projects

- **2013–2016 Wine Trail Signage and Tourism Promotion Project ($63,700):**

The original intent of this project was to improve awareness of New Mexico wines by establishing wine trails and marking them with roadside signage. However, many of the wineries and tasting rooms do not qualify for the type of roadside signage that was needed. After several unsuccessful requests for exemptions to the existing signage guidelines, the New Mexico Wine Growers' Association (NMWGA) decided to change their strategy.

With this change in direction, future efforts aimed at improving awareness of New Mexico wines included creating a New Mexico wine trails app for smart phones, developing various promotional materials, as well as creating advertisements such as billboards. Individually, these tools helped the NMWGA reach their various target markets.

As the project was coming to a close, the NMWGA asked to utilize the remainder of their funding primarily for winery participation in the Finger Lakes wine competition. As a result, *all* of the New Mexico wines that entered into the competition were awarded medals. The focus of their advertising campaign is now centered around these award-winning wines, helping to not only increase awareness for all New Mexico wines but to increase awareness of the quality of wines as well.

- **2014–2017 Taos Veterans Farmers Project ($12,785):**

The Not Forgotten Outreach (NFO) Farmers Project provides veterans and Gold Star Families (survivors of fallen heroes) with horticulture therapy and beginning specialty crop farmer training. NFO utilizes previously uncultivated land by means of Memorandums of Understanding with elderly landowners as well as hoop houses for season extension purposes in the Taos area in northern New Mexico.

By the end of the second year, NFO had introduced 17 military families and three beginning veteran farmers to land reclamation, planting specialty crops, and preparing the crops for various wholesale and retail sales throughout their community. NFO also hosted an aquaponics workshop for 32 individuals that included both military families and civilians. Nine veterans whom attended the workshop are extremely interested in producing specialty crops via aquaponics farming techniques.

Just recently, NFO joined forces with Taos Village Farms and gained the use of 90 acres. The 90 acres includes a 40′x90′ greenhouse, cold storage space, 7 acres of drip line irrigated field crops, 1 acre of hops, and 40 acres of irrigated land.

- **2015–2018 and 2013–2016 Mitigation of Alternate Bearing in New Mexico Pecans ($84,997.39 and $93,000 respectively):**

Pecans are among the largest economic contributors to New Mexico's agricultural economy, with production exceeding $60 million annually. One of the most important horticultural constraints for profitable pecan production in New Mexico is alternate bearing, which is the annual cycling of pecan trees between heavy and light crop load. The mechanism behind alternate bearing is the year-to-year variation in formation and development of female flowers.

The transition to flowering in pecan trees cannot be visualized until bloom but the "decision" to become a flower takes place prior to bloom. Neither the timing nor location of the source for the genetic signal for a shoot meristem to transition from vegetative to floral is known in pecan trees. Therefore, a practical approach to address this problem is to utilize genetic techniques to determine how flowering occurs in pecan trees. New Mexico State University is using the Specialty Crop Block Grant Program to do this important research. This research will allow better resolution for timing of such alternate bearing mitigation approaches such as mechanical hedge pruning, fruit thinning, and plant growth regulator applications. These genetic studies are necessary in understanding how flower induction in pecan trees occurs, which will give the pecan growers an invaluable tool to use with their horticultural practices for mitigating alternate bearing in pecan trees.

The results of this research will further help southern New Mexico pecan growers produce a more consistent crop from year to year. Consistency in production and quality is key to capturing and maintaining market share.

- **2015–2018 Cooking with Kids Community Connections for a Healthy Future ($60,274.65):**

The goal of this project is to increase purchases of specialty crops through: addressing the nutritional health of families in New Mexico by providing hands-on food and nutrition education using New Mexico-grown specialty crops; connecting New Mexico specialty crop farmers with local school children through

the Cooking with Kids Farmers in the Schools program; and to train farmers in demonstration and sampling skills to market their crops.

The Cooking with Kids program has experienced great success in increasing first year sales of specialty crops through their in-school programing efforts for K–6th graders. Further, agricultural producer participation in these education programs is on track to meet or exceed their target goals for the 2 year project. An unexpected outcome was identifying additional needs for Spanish-speaking farmers. The program's Year 2 efforts will focus on facilitating a Spanish-language training on developing and selling value-added products. The training will include: (1) a translated presentation from the New Mexico Environment Department on guidelines and requirements, (2) a presentation on strategies and lessons learned from farmers who are successfully marketing value-added products, and (3) a focus group discussion with current market customers on the types of products they would like to purchase at market.

APPENDIX B

Information from the New Mexico Farm & Livestock Bureau

The 2014 U.S. Farm Bill was estimated to contribute $23 billion to deficit reduction over 10 years. This was the first time a farm bill has voluntarily reduced spending before consideration and the only reauthorization bill that offered a savings. The Agriculture Committees made difficult decisions to deliver a bipartisan bill. As you all begin preparing for the 2018 Farm Bill we would ask that the substantial savings that have been achieved be taken into consideration. Agriculture and rural New Mexico struggles, New Mexicans have difficulty meeting their nutritional needs. Farm income is down and so the development and passage of the 2018 Farm Bill without further cuts is essential.

For New Mexico, the 2018 Farm Bill is important, while many farmers and ranchers take advantage of the various farm bill programs it is ultimately the consumers, citizens and our country that truly benefits from a safe, abundant and affordable food supply. We cannot say that one program is more important than the other and so careful consideration must be given to all programs.

As a Board of Director for New Mexico Farm and Livestock Bureau, a producer and consumer, I respectfully ask that you consider the contributions that agriculture has already made to reducing the deficit. We ask that you pass a 2018 Farm Bill with the funding needed to support our farmers and ranchers while ultimately benefiting all consumers.

APPENDIX C

Information from the National Association of State Departments of Agriculture

The Specialty Crop Block Grant program (SCBGP) is a critical area of collaboration between the State Departments of Agriculture, the specialty crop industry, and USDA. Since 2009, the state departments of agriculture have distributed nearly $393 million in grants to 5,400 project partners that have enhanced the competitiveness of specialty crops in the United States. These projects are not just increasing consumer access to safe and healthy food but are expanding economic opportunities across rural America.

While we highlight this program as a success, program funding recipients have growing concerns that the flexibility the SCBG program was built upon is eroding due to increased and unnecessary bureaucratic processes. This is especially evident in the establishment of certain performance measures for the program. While we all want to ensure the wise use of tax dollars, we are concerned these requirements—especially new sales reporting requirements for marketing projects—are simply not feasible for many of the kinds of projects that have made this program so successful. We ask this Subcommittee to take these concerns into consideration as we work towards a flexible, locally responsive program in the next farm bill.

The CHAIRMAN. With that, I really appreciate your opening comments, Mr. Hill.

Ms. Davis, since we share the same last name, you are going to have to have a little bit of patience with me. I am going to recess this hearing so that we can go vote. We have been trying to get them to hold it open as long as possible, and they are now texting me asking where we are at.

So with that being said, this hearing is in recess, and we will come back immediately after votes to listen to your opening statement and take questions. Thank you.

[Recess.]

The CHAIRMAN. I think Ms. Lujan Grisham is on her way back, but since we only have one more witness left to offer opening remarks, I would like to call the hearing back to order and let Ms. Davis feel free to offer her opening remarks, and then Ms. Lujan Grisham, our Ranking Member, will be back in time to begin the question period.

So with that, Laura Davis from Long Life Farm, in Hopkinton, Massachusetts, who told me earlier today that she was born in the great State of Illinois, correct? Well, thank you, another pleasant surprise from the witness table. So with that, thank you for being here, you are recognized for 5 minutes.

STATEMENT OF LAURA DAVIS, CO-OWNER/CO-OPERATOR, LONG LIFE FARM; PRESIDENT, BOARD OF DIRECTORS, NORTHEAST ORGANIC FARMING ASSOCIATION—MASSACHUSETTS CHAPTER, HOPKINTON, MA

Ms. DAVIS. Thank you, Chairman Davis, and Subcommittee Members.

My name is Laura Davis, and like most farmers who are trying to piece together a living, I wear many hats. Foremost, I own and operate Long Life Farm, along with my husband, Donald Southerland. Our daughters, 12 and 14, are the most important crop we grow. I am the President of the Board of Directors of the Northeast Organic Farming Association—Massachusetts Chapter. On behalf of NOFA—Mass, I earn an hourly wage assisting farmers and food handlers with their organic certification process. In addition, I organize the Hopkinton Farmers' Market in Hopkinton, Mass., and I also work as an independent organic inspector.

The energy that my husband and I have put into building our farm and raising our children, combined with my experience with NOFA—Mass, has provided me with an important and unique perspective on the state of small diversified farms and specialty crop production in Massachusetts and throughout the Northeast.

Long Life Farm is a 2¼ acre certified organic, diversified vegetable farm. We grow 100 varieties of vegetables and annual fruits. We launched our farm in early 2011, and are growing produce for 85 families, a community-supported agriculture program, and we sell our produce at two farmers' markets.

NOFA—Mass has 1,100 members, and it is part of the NOFA Interstate Council of seven Northeast states, with approximately 5,000 members. The NOFAs are proud members of the National Sustainable Agriculture Coalition, as well as the National Organic Coalition.

As everyone in this room knows, farms of all types are struggling throughout country. Rock-bottom commodity prices and tightening international commodity markets have more and more farmers looking to local, regional, and organic markets to diversify their business and ensure their long-term viability.

In such a state of transition, it is critical that the next farm bill, at the very least, maintain, or better yet, increase current invest-

ments in those sectors of the agriculture economy. Now is not the time to cut important programs that serve family farms, that promote rural jobs and economic opportunity.

I would like to mention a number of farm bill programs that are critical to supporting producers in the Northeast. Since I rely on direct market channels for selling my produce, marketing and sales is a critical part of my job. I know from experience and from other farmers how important finding a consumer base is for the success of our farms. The National Organic Certification Cost-Share Program and the Farmers' Market and Local Food Promotion Program have been incredibly important to connecting with customers and supporting both new and expanded markets. NRCS EQIP grants for high tunnel greenhouses have also been a very important investment, allowing farmers like me to extend my season earlier in the spring and later in the fall.

We are promoting SNAP, Supplemental Nutrition Assistance Program, at the Hopkinton Farmers' Market, and hope to gain funding for SNAP nutrition incentives so that we can bring more benefits to our seniors who are on a limited income. This is our main SNAP population in our community.

We would also like to be able to accept SNAP EBT for CSA shares. Like many other Massachusetts farmers, we thought changes to the last farm bill would make that possible, but there are still logistical challenges. I hope the next farm bill can fix some of these logistical challenges.

Food safety is also critical to marketing, and represents both a challenge and an opportunity. While it is not an immediate concern for my farm at is current size, as my farm grows, I will have to become increasingly focused on produce regulation compliance with the Food Safety Modernization Act. Understanding FSMA and becoming third-party certified is weighing heavily on the minds of produce farmers throughout the Northeast. From my perspective, the next farm bill needs to invest more research in outreach, education, technical assistance, and cost-share assistance for farmers to support FSMA compliance.

Last, in terms of long-term future of farming, we need to focus on research that benefits organic and sustainable agriculture. My farm and others throughout the Northeast have benefitted from on-farm research of new practices shared through farmer-to-farmer networks. Continued growth in the local, regional, and organic sectors of agriculture depends upon developing new locally adapted seeds and techniques. It is important that the next farm bill continue to invest in agricultural research and education through programs like the Organic Research and Extension Initiative.

I am grateful for the Subcommittee's interest in learning more about how farm programs and policies affect farmers in the Northeast, and I encourage the Subcommittee Members to give careful consideration into how the next farm bill can support rural communities, small family farmers by supporting local and regional food economies.

Thank you.

[The prepared statement of Ms. Davis follows:]

PREPARED STATEMENT LAURA DAVIS, CO-OWNER/CO-OPERATOR, LONG LIFE FARM; PRESIDENT, BOARD OF DIRECTORS, NORTHEAST ORGANIC FARMING ASSOCIATION—MASSACHUSETTS CHAPTER, HOPKINTON, MA

Introduction

Good afternoon! I appreciate the opportunity to testify before the Subcommittee on a topic area that is important to farmers throughout the Northeast. My name is Laura Davis and like most farmers who are trying to piece together a living, I wear many hats. Foremost, I own and operate Long Life Farm along with my husband Donald Sutherland. Our daughters 12 and 14 are the most important crop we grow. I am the President of the Board of Directors of the Northeast Organic Farming Association—Massachusetts Chapter; this is a volunteer position. On behalf of NOFA—Mass, I earn an hourly wage assisting farmers and food handlers with their organic certification process. In addition, I organize the Hopkinton Farmers Market in my town and I am an Independent Organic Inspector. The sweat and energy that my husband and I have put into building our farm and raising our children, combined with my experience with NOFA—Mass, has provided me with an important and unique perspective on the state of small diversified farms and specialty crop production in Massachusetts but also throughout the rest of the Northeast.

I have walked the path that Beginning Farmers must travel to access land, learn agricultural skills and finance infrastructure. Unlike young farmers starting out, I had a bit of savings that paid my personal expenses and early capital expenses as I launched my agricultural business. In addition, several important Federal programs helped Long Life Farm gain a foothold in our local market.

Long Life Farm is a certified organic diversified vegetable farm growing over 100 varieties of vegetables and fruit on 2¼ acres of leased land. We launched our farm in early 2011, and are growing food and selling direct to 85 families and our community at the Hopkinton Farmers' Market and the Ashland Farmers markets.

As I mentioned previously I am also the President of the Board of Directors of NOFA—Mass. NOFA—Mass has 1,100 members and is part of the NOFA Interstate Council of NOFA organizations from New York, Vermont, New Hampshire, Connecticut, Rhode Island and New Jersey which is made up of about 5,000 members. NOFA—Mass enjoys a diversified revenue mix of Federal, state and private grants, membership, donations and conducts numerous educational workshops and seminars on organic farming and gardening.

We teach farmers, gardeners, consumers, landscapers, educators and policy makers how to take action on their own to return carbon to the soil and produce nutrient dense food that will resist insect/disease pressure as well as resist extreme weather events.

NOFA—Mass Mission statement reads: Through education and advocacy NOFA—Mass promotes organic agriculture to expand the production and availability of nutritious food from living soil for the health of individuals, communities and the planet.

The NOFAs are proud members of the National Sustainable Agriculture Coalition as well as the National Organic Coalition.

I want to turn my attention now to the topic at hand, the next farm bill and specialty crops. As a small-diversified organic specialty crop farm relying on direct market channels for selling my produce, marketing and sales is critical to my job. I know from experience and through other farmers, how important marketing and finding a way to connect with customers is for the success of farms like mine throughout the Northeast.

The National Organic Certification Cost-Share Assistance Program is an important program that helped us connect and communicate with potential customers and access the strong and growing market for certified organic food. There was no hesitation, when I launched Long Life Farm, that I would pursue organic certification. I have relied on the USDA/Organic seal in purchasing food for my family and it felt like a natural progression to certify the food that we were producing on our farm. It was also important to me to have instant credibility with my new customers as a new farmer. The USDA Organic label enabled me to instill confidence with shareholders up front. Farmers can spend years getting to know customers and familiarizing them with their farming practices. In the case of farmers interested in selling to wholesale markets, many institutional buyers, as well as supermarkets and other groceries now carrying organic produce, require certification.

As the Organic Certification Assistance Coordinator for NOFA—Mass, I often hear objections from farmers to certification due to cost of the program. For small farmers, the Organic Cost-Share Program brings the cost in line with affordability. While costs can vary amongst different certifiers, recouping 75% (for a maximum $750) of the organic certification fee paid to certifiers is a huge benefit for small

farms. This means higher margins for farmers who grow commodity crops, when prices are at historic lows. One could argue that more organic farms means more conservation programs too, as organic farmers are doing conservation work through nutrient management, cover cropping, crop rotations and now more so than ever reduced or no-till farming. The Organic Certification Cost Share program is bringing benefits to our farm communities that keep on giving, on multiple fronts.

Another program that I know has been important for developing new marketing opportunities for family farms is the Farmers Market and Local Food Promotion Program. This program also helps farmers tap the existing demand for local produce by developing new markets and increasing consumer demand. One entity who was awarded a FMPP grant in 2016 here in Massachusetts, New Entry Sustainable Farming Project, is launching workshops and training programs to develop a direct marketing plan which will include technical support, branding, websites and marketing strategy for farmers going through their farm business planning course and those farming on their incubator farm.

As everyone here in this room knows, farms of all types are struggling throughout the country. Rock bottom commodity prices and tightening international commodity markets have more and more farmers looking to local, regional and organic markets to diversify their businesses and ensure long-term viability of their farms and the next generation of farmers. In such a state of general uncertainty with more and more producers looking to local, regional and organic markets, it is critical that the next farm bill at the very least maintain or increase current investments in those sectors of the agriculture economy—now is not the time to cut important programs serving agriculture and promoting rural jobs and economic opportunity. In light of the state of the rural economy and local and international marketing opportunities, we should really be discussing increasing farm bill investments in developing local and regional food economies and organic agriculture.

USDA/NRCS EQIP grants have been an extremely valuable program to so many Northeast farmers. I have been able to extend my season with the aid of a high tunnel greenhouse, partially paid for by an NRCS high tunnel grant in 2015. This grant also enabled me to pay for additional greenhouse soil testing to insure maximum nutrient management. Not only have I expanded my farm share offerings to include early spring and fall greens, but early and late crops undercover are safer from severe weather events. This would not have been possible without the EQIP grant. This program should continue to benefit farmers throughout the U.S.

My farm markets most of our produce through a CSA program, though we also sell through farmers[’] markets where we have benefited from being able to accept SNAP EBT and double-value SNAP incentives. Only about 5% of the community that I live in receives SNAP benefits, but they are seniors who live in subsidized housing. They used to have a local grocery they could get to within blocks of their home. Now they must travel some ways to do their grocery shopping. We are promoting SNAP at the Hopkinton Farmers[’] Market and hope to gain funding for SNAP matching so that we can bring more benefits to our seniors on a limited income.

We would like to also be able to accept SNAP EBT for CSA shares. Like many others Massachusetts farmers, we thought changes to the last farm bill would make that possible but unfortunately severe limitations in the implementation phase of the farm bill resulted in inadequate changes. For instance, Many Hands Organic Farm in Barre, MA brings out the EBT machine once per week for one customer, must connect via dial-up to connect, and must be available and present when the customer picks up. They cannot be out in the fields working. All their other shares are picked up by customers without someone there to assist them. Many farms deliver CSA shares to more convenient drop off points for their customers, having to scan the EBT card each week or every other week, instead of once per season, is preventing farmers from accepting SNAP benefits for CSA shares, causing people who need the nutritious food most going without, if they cannot get to the farm. I hope the next farm bill can fix some of these logistical challenges and make it possible to truly receive SNAP benefits for a CSA farm share.

In terms of marketing, one of the biggest challenges I face is from food safety regulations. Food safety is important to our operation first and foremost for our customers’ health and well-being, but food safety is also about marketing and access to markets, and about government regulations.

While it is not a concern for my farm at the current size, like every small business owner I hope my small farm business will continue to grow and that means I will have to become increasingly focused on compliance with the Food Safety Modernization Act (FSMA) produce regulations whether through direct application of those regulations on my farm or the indirect impact of driving increased reliance on third party food safety auditing in the larger local and regional produce markets. Under-

standing FSMA, and becoming third party food safety audited for FSMA compliance and/or market access are weighing on the back of the minds of many farmers throughout the northeast and indeed the whole country.

Food safety is both a major challenge and an opportunity for which the farm bill could really help. Throughout the Northeast many small and medium size farmers are struggling to figure out how and when they have to or don't have to comply with FSMA rules and regulations. This is one area in which the farm bill should really play a stronger role. There needs to be much more robust outreach and education efforts aimed at helping to educate and train small farmers across this country about FSMA and its associated rules, regulations and thresholds for compliance. Providing additional funding for the Food Safety Outreach Program through the farm bill could help to address these issues. In addition, the farm bill should look at cost share programs that would help offset the water testing requirements for surface water for FSMA. While my organic certifier requires me to do water testing annually at a cost of $70, the FSMA required 20 tests ($700) to establish baseline and then five water tests ($175) per year thereafter is not only costly in terms of testing, it is a logistical nightmare. Labs usually require you to use only their sample cups, so if you don't have enough in stock, you must go get them before taking water samples and returning them to the lab. There is also a small window of time when samples can be delivered to the lab, making it difficult for farms that are not within proximity.

A cost-share assistance program focused on food safety would be tremendous, it could mean the difference between survival and failure for many farmers of all types from well-established producers to beginning and veteran farmers. For me and many other farmers it seems only fair. If society through Congress and the FDA has decided that we need to impose certain industrial-type food safety regulations and standards on farmers throughout the country, society should share in that burden rather than place it all on struggling family farmers and rural communities.

Last, I would like to talk about a topic that is less focused on current and short-term challenges and opportunities and on the long-term future. That topic is research. My farm and so many others throughout the Northeast have benefited from on-farm research into new practices and approaches to farming, shared through farmer-to-farmer networks and events. Farming is not an exact science and techniques continue to evolve for small organic farms utilizing no-till or minimal till farming. There are only a handful of universities that focus on research that is relevant to organic farming. This primarily due to limited funding to support such research rather than a lack of interest. Research studies can make a big impact to Northeast farmers. For instance, the results[1] from a single recent study from the University of New Hampshire may have saved ¼ acre of fall brassicas that I lost to aphids last year.

I participated in a Specialty Crop Research Initiative grant through NOFA—Mass over the last year, and while results have not been published yet, I do expect to learn about new practices that will make me a more profitable farmer. I will be sharing my efficiencies in using black weed guard mulch in between rows of cucurbits and tomatoes.

We also need to research how our changing climate is impacting agriculture in the Northeast as it pertains to flooding, drought, severe temperature swings and the direct market farmer.

Continued growth in the local and regional and organic sectors of agriculture depend on developing new regionally and locally adapted seeds and techniques, continued investment in organic research and on-farm research and dissemination of that research to farmers and other researchers. As you know certified organic growers are required to use organic seed, however there are limited varieties available if you compare catalogs of conventional seed. As an Independent Organic Inspector, I visited 20 organically certified farms in 2016 to do their annual inspection. A very small handful uses 95–100% organic seed in their farming operations. This all has to do with the limited availability, or lack of vigor and breeding of organic seed. It is important that the next farm bill continues to invest in agriculture research and education through programs like the Organic Research and Extension Initiative (OREI).

Organic farming continues to be one of the fastest growing sectors of agriculture. However, a major challenge facing organic farmers is the lack of sufficient, appropriate, and relevant research, education programs, and extension resources. A strong investment in research underpins growth in any sector, as all farmers—sustainable, organic, conventional, or otherwise—need cutting-edge research that is easily accessible and relevant to their farming systems. OREI helps fill the void of

[1] *https://extension.unh.edu/resources/files/Resource006332_Rep9072.pdf.*

knowledge by supporting research projects that specifically address the most critical challenges that organic farmers face in their fields every day. And most of the research results from OREI can also inform and be applied by more conventional operators as well. The next farm bill should redouble research investments and activities in OREI.

Thank you. I appreciate the opportunity to speak to you this afternoon about such an important topic. I am grateful for the Subcommittee's interest in learning more about how farm programs and policies are and aren't working for farmers in the Northeast. I encourage the Subcommittee Members to give careful consideration into how the next farm bill can and should support rural communities and small family farmers by supporting local and regional food economies.

The CHAIRMAN. Thank you, Ms. Davis.

I would like to get back to the page I had. The chair would like to remind Members that they will be recognized for questioning in order of seniority for Members who were here at the start of the hearing. After that, Members will be recognized in order of arrival. I appreciate the Members' understanding.

I now recognize myself for 5 minutes to begin the question and answer session.

Mr. Field, I would like to start with you. I have heard from numerous specialty crop groups and they all agree most Title X Programs are working well. How have the programs been working for your operations at Frey Farms?

Mr. FIELD. The programs work great for us. We really don't seem to have many issues. For us, the number one issue, and I reiterate this from my testimony, is the fact that immigration is the one main issue that we need to focus on. Immigration reform for agriculture is the single largest issue facing us today, and if we don't fix it, it can likely put our industry in jeopardy, especially as we come upon the 2018 Farm Bill.

Agriculture needs to be the number one priority for us. And we understand that it isn't through the jurisdiction of this particular Subcommittee, however, we are looking to you to be our champions on that.

The CHAIRMAN. Thank you, Mr. Field. You mentioned immigration reform. Obviously, that is not under the jurisdiction of our Committee. Looking at the farm bill, can you offer up any suggestions on what we can do better to make operations like yours, a multi-state operation, make it more functional so that we can continue to get produce out into the global marketplace?

Mr. FIELD. Absolutely. Research is probably the single biggest initiative that we should be focusing on. For an operation like ours, certainly, and I am speaking here from our personal experience, is that research helps us understand things like mechanization, it helps us understand food safety, it helps us understand citrus greening. And especially when you farm in multiple states like us, under multiple different types of specialty crops, research is critical for us. And, specifically for research, this Subcommittee could take a close look at the funding levels and the structure of how the research is done at the USDA because, for example, right now there are plenty of groups who would like to have funding from the USDA to understand how fruits and vegetables or specialty crops can be allocated the right funding from the USDA, but they find it from a lot of other sources. Right now, for example, in Miami, Florida, where my hometown is, where I am from, there is a group called Fairchild Tropical Gardens, and they are one of the finest

botanical gardens in the world. And they are currently doing a study on fresh fruits and vegetables, funded by NASA. And they are trying to figure out, they have the funding, but they are trying to figure out how they can get fresh fruits and vegetables grown in space. So it is kind of interesting that they are going to NASA to find ways to do research on fresh fruits and vegetables instead of the USDA.

The CHAIRMAN. I share your concern about USDA funding for research. Obviously, NASA is another opportunity. We see opportunities with some of our universities, both land-grant and non-land-grant universities. But let me ask you, do you at Frey Farms use any of those opportunities to partner, or do you use any opportunities to take research that has been partnered with industry, for example? And what are your thoughts on industry sponsoring research also?

Mr. FIELD. Absolutely. We need to have those types of initiatives in place. I think the university programs are phenomenal. In Florida, for example, we have worked closely with IFAS to understand different research programs and initiatives that they have.

The CHAIRMAN. Can we clarify, you said IFAS?

Mr. FIELD. IFAS.

The CHAIRMAN. Okay, thank you.

Mr. FIELD. Yes. In Florida. And then in Illinois it is University of Illinois there. And they have helped us with several different studies, whether it be juice marketing, things that we do with our commodities that are based in that part of the country. So those programs are great. They can be enhanced and probably better equipped for our industry.

The CHAIRMAN. Okay. And any private-sector-funded research opportunities that you guys have taken care of you would like to expand upon?

Mr. FIELD. Not that I can think of at the moment.

The CHAIRMAN. Do you agree that sometimes researchers partnering with the private-sector sometimes get unfairly labeled?

Mr. FIELD. Yes, I absolutely do. I believe that they do. We have seen that in the food industry in general where they get labeled as though they are trying to push them one way or another. And, in fact, there is some great research done in the private-sector. I think that initiative should be firmly pushed forward because they have some skin in the game, and they want to see something better for the industry.

The CHAIRMAN. So public-private partnerships, even in research, are working to expand the playing field to get us the next best research project.

Mr. FIELD. Yes, they are very efficient.

The CHAIRMAN. So with that, Mr. Field, thank you very much for your time.

I now recognize the Ranking Member, Ms. Lujan Grisham, for 5 minutes.

Ms. LUJAN GRISHAM. Thank you, Mr. Chairman. And, of course, I will ask a question, but before I do I ask unanimous consent to enter an article from POLITICO entitled, *The Vegetable Technology Gap,* because the information it provides regarding the importance of investing in specialty crop research, is right on topic.

The CHAIRMAN. Without objection.

[The article referred to is located on p. 459.]

Ms. LUJAN GRISHAM. Thank you.

Mr. Hill, as I mentioned in my opening remarks, one of the greatest challenges that we face in New Mexico, and many rural states face, is the difficulty of getting healthy, fresh, and nutritious foods to rural areas and food deserts, especially Indian Country. New Mexico ranks 49th in the country in children's food insecurity: 120,000 or 24 percent of all children in our state aren't sure about where their next meal might come from. And 17 percent of all New Mexico households are food-insecure. In the article that I just entered into the record, the Director of USDA's National Institute for Food and Agriculture, Sonny Ramaswamy, said if Americans were to actually go ahead and consume the recommended amounts of fruits and vegetables, we would be hard-pressed to, in fact, meet that demand.

This means that even if we didn't have challenges like food deserts and access in rural and urban America, we aren't producing sufficient healthy fruits and vegetables to fulfill the nutritional recommendations and requirements we are advising our citizens to follow.

We know that we need to increase crop yields and get more bang for our buck. Today we get about six times as much corn out of 1 acre of land as we did in the 1920s. However, in specialty crops, such as iceberg lettuce, have only doubled their yields in that same amount of time.

It seems to me then, Mr. Hill, that research, and we talked about this in the Chairman's question, is fundamental to the innovation in the sector. In addition to what we have heard from our panelists, what else can we do in addition to funding to make sure that we are creating environments, like we do at New Mexico State University to engage in investing in innovation, research, and technology that would make a difference in your future?

Mr. HILL. Thank you for that question, Congresswoman. I participate on this panel, surrounded by other producers, I often find a challenge in marketing, and it ties back to feeding children in my home state. We are asked to provide the world, through our exports, with healthy, nutritious, great-tasting food. And people want to purchase that food at, of course, the lowest dollar that they can. As I try to target markets, especially those that are close, I look at what covers overhead: payroll, mortgage payments, and enough to keep new and updated equipment on my farm, and while I do a sustainable job as a producer. Everything I do has to make business sense. I would love to know that when I walk into my operation one of my greenhouses, that a fresh head of lettuce from my operation goes to an elementary school cafeteria. I would love to make that connection. But at this point right now, we need additional research to make sure that it is feasible, from a business perspective, for me as a grower to actually produce that crop and deliver it to that specific marketplace.

Ms. LUJAN GRISHAM. With the time I have left, based on that response, in addition to making sure that investments in the farm bill continue, there needs to be parallel efforts to think about the marketing and the education in connecting buyers, and in that,

provide access to areas that currently don't have that access to fresh healthy food, such as food deserts. And maybe that has to be part of that research, Mr. Chairman.

Thank you very much, Mr. Hill.

Mr. HILL. Thank you.

The CHAIRMAN. The gentlelady yields back.

I would like to recognize Mr. Yoho, for 5 minutes.

Mr. YOHO. Thank you, Mr. Chairman. I appreciate you all being here, enduring Congress, I guess, going through votes.

I want to ask Mr. Field and Mr. Black: Since you have had experience in Florida and you grew up down there, in Miami, Florida is home to roughly 360 specialty crops. When we talk about crop insurance and you look at this farm bill and previous ones, going into the next one, you know how Florida, we are blessed with an abundance of water, great agricultural land, and people can switch crops readily, to have the protection and the safety net. The way I understand it now, if you look at Florida with the orange groves, 50,000 acres have been replanted as either blueberries or corn in a lot of the areas. When you change from one crop to another, and it is a specialty area, you might try it for a year or 2, it seems like you fall out of the risk management programs or the crop insurance because you don't have a track record, even though you may even border a county that has a historical record. What are your thoughts on that, and how can we strengthen it, and is there a need to do that?

Mr. FIELD. There is absolutely a need to do that, to strengthen crop insurance, and those programs as you mentioned them. For example, in Florida, that is one of our newer states where we produce, we do watermelons. And we have grown watermelons there, but we have recently taken——

Mr. YOHO. We are first or second in the country on watermelons.

Mr. FIELD. Yes.

Mr. YOHO. We are proud of those.

Mr. FIELD. Yes, absolutely. And we grow a lot of watermelons down in the LaBelle area and in Parrish, Florida, and through that part of the country, through that part of the state, I should say. But we do need to have crop insurance there because as we are transitioning land from orange grove in some areas where we have a lot of grove land, but we have had to take it out due to citrus greening, which kind of goes back to the research point. But it is very important that we have that crop insurance, and the ability to fall back on what we are doing there, because we are trying to utilize the land that we have there as best as possible. We are trying to do the right thing by agriculture.

Mr. YOHO. All right. I am going to kind of speak out of turn here, feel free, especially you, Mr. Black, since you are from the state, but this goes for everybody up here, and the suggestions that you can give us early so that we can be proactive to look at these things, to vet them, to make sure that this is a program that we can get support bipartisanly, which this is a great Committee for that, but to go ahead and vet it so that it is ready for the next farm bill.

And then I want to switch over to citrus greening real quick. That is something that is dear to all of us in Florida. I have a Va-

lencia tree, and I bring oranges up here and my wife loves them when I come back. She loves those more than me. With the citrus greening we have the problem there, and if we don't get a handle on this real soon, Florida, it would be like Bud without weiser, or Wal without Mart. They just go hand in hand. And so we have to get a fix for this real quickly, and I have talked to Mike Sparks with Florida Citrus Mutual, and we have had in-depth conversations. But what I wanted to ask you, do you know of anybody doing transgenic research on the psyllid that is spreading the disease, kind of like they have done with mosquitoes, against the *Aedes* mosquito? And the other thing is on GMOs, we know that is going to be one of the cures. And tress with natural resistance, on the GMO side, do you feel there is an adequate marketing program out of the USDA to bring the public into the awareness of how safe GMOs are, and the processors too, and on the other side, where are you with natural resistance in trees? That is a lot.

Mr. BLACK. Thank you, Mr. Yoho. Yes, there is significant work. The massive research investment, significant dollars are being funneled both into genetic solutions for the vector, the Asian citrus psyllid, and also the host, the tree. And as a tree crop, the genetic solution is much longer and tedious, compared to an annual crop.

I do believe that genetics will provide solutions long-term, but we do need to maintain our industry and our infrastructure short-term.

As far as the consumer perception, those research solutions are in the 7–10 year horizon, beyond the scope of the next farm bill. But, that it is a very valid point, that we have to make consumers aware that we provide safe food to feed the world. There is the need to increase production in specialty crops, as we have, and more of our commodity crops around the country, and it is a very valid goal.

And also for your crop insurance point, I wanted to encourage increased use of pilot programs. For citrus trees we have a pilot program that has been in place for several years, that gives the opportunity to work on new programs in real time.

Mr. YOHO. I am going to cut you off because I am out of time, but those are the kind of suggestions, feel free to pass them up to us.

And I yield back, and thanks for touting IFAS.

The CHAIRMAN. Thanks for clarifying IFAS too.

I would like to recognize our colleague from California, it looks like the Central Valley crew there with Mr. Panetta, Mr. Jim Costa, for 5 minutes.

Mr. COSTA. Thank you very much, Mr. Chairman, and Members of the Subcommittee for allowing me to be a part of this afternoon's hearing.

Yes, Mr. Panetta and I represent a great deal of California's bountiful cornucopia of products, and we are very proud of that.

This effort on specialty crops, and the focus of the Subcommittee, is important. This is my third farm bill. Two farm bills ago we were able to successfully establish a new specialty crop title. I am very proud of that. Although, perhaps we should readdress the title because specialty crops are not just special, but a part of every day good nutrition on America's dinner table. These are the fruits and

vegetables, the products that our families want to consume for healthy diets. Members of this Subcommittee, and of the Agriculture Committee, must understand that agriculture is a part of America's national security. But not enough of our colleagues, not enough folks around the country understand that less than four percent of America's population is actively engaged in the production of food and fiber. We not only feed the entire nation, but feed a hungry world as well. A timely reauthorization of the farm bill is extremely important.

I have a couple of questions as it relates to our block grant program and research. I will start with Mr. Field, who has been involved in this program over the years. The block grant program has been successful, but we need to look at how we can improve it and expand it in the next reauthorization. Is the specialty crop industry united in support for specialty crop farm bill programs? How might we improve them based upon your experience?

Mr. FIELD. I am sorry, your question was are we united on that?

Mr. COSTA. Yes.

Mr. FIELD. Yes. Yes, we are united in seeing those grants continue, if not improve. There are a lot of great organizations, both private and public, that can benefit from these programs. We, as farmers, don't have the resources to go out and do this research ourselves. There are a lot of organizations who are equipped to do research that need to have adequate funding, so funding through the farm bill is very important.

Mr. COSTA. Isn't it true that these block grants are coupled with not only industry organizations but also land-grant universities, whether it be Purdue or UC Davis or Fresno State, go Dogs. But the fact is that we are able to create value-added by bringing these funding sources together.

Mr. FIELD. There is no question. Yes, sir.

Mr. COSTA. And we can do more of that, and we can do it better.

Mr. FIELD. I believe we can, yes, sir.

Mr. COSTA. Well, I would hope that the specialty crop organizations would come together, and as we are putting the farm bill, that you provide suggestions on how we can improve upon it.

Does anyone else have a comment you would like to make on this?

Mr. BLACK. Yes.

Mr. COSTA. Yes, Mr. Black.

Mr. BLACK. Yes, I would like to encourage increased use of the Specialty Crop Research Initiative and the block grants. The hallmark of that is stakeholder involvement and oversight. When stakeholders can participate in selecting projects, along with the scientific review panel, it is really a government-public-private partnership at its best.

Mr. COSTA. Right. It creates an incentive.

Mr. BLACK. Exactly.

Mr. COSTA. Public-private partnerships, and you combine the educational institutions and you have a trifecta.

Mr. BLACK. Exactly.

Mr. COSTA. All right. It was highlighted here, and my time has gone almost, but I would like comments on improving the H–2A Program, along with comprehensive immigration reform, which is

badly needed with the broken immigration system we have today. I see a lot of head nodding.

Mr. FIELD. Yes, sir. It is, as I have stated, the most critical thing facing agriculture today. It really puts us in jeopardy, especially with the high tensions right now around immigration, and the fact that we do have a nondomestic workforce, the majority of which does not have the proper work authorization, causes major stress.

Mr. COSTA. Right. Mr. Chairman, my time has expired. I want to thank you again. But the point is that, in California, 70 percent of our workforce in agriculture is undocumented. And we can have the best, bountiful crops in the world and good prices, but if we don't have people to participate in that agriculture activity, you are not going to get the products to market or to the dinner table.

The CHAIRMAN. The gentleman's time has expired.

I would like to recognize one of our newest Members from the great State of Florida, Mr. Neal Dunn, for 5 minutes.

Mr. DUNN. Thank you very much, Mr. Chairman. And thank you all for being here today, and especially for being patient with our rather fluid schedule.

Mr. Black, a lot of attention has been paid to addressing immediate threats of disease and pests to specialty crop. For example, the State of Florida has spent tens of millions, of course, to combat citrus greening, HLB and its vector, which are an existential threat to us. In view of that, is the Federal Government also providing adequate resources to protect specialty crops from the next infectious crisis through proactive identification and mitigation of risks that these emerging threats pose?

Mr. BLACK. Thank you for the question. And yes, it is a very difficult task. Tremendous resources are being placed at the borders and the airports, *et cetera,* to stave off the next citrus greening threat to the specialty crops. It is very difficult, as all of us enjoy traveling, we enjoy our contra-season fruits and vegetables that are imported into this country, and it is very difficult to police all of the imports that come through the borders. And so we need to be ready. We need to have the funding mechanisms set up through SCRI, or the block grants, to provide funding for these diseases and threats that are on the horizon. Some examples are citrus leprosis, CLV, *et cetera,* that are around the world, we know they are in our backyard, and we need to be ready with the research. Research is the key.

Mr. DUNN. Let me go on and advance. Specialty crop producers who use, and this is on the crop insurance, specialty crop producers were, for the first time in 2014 bill, subject to conservation compliance rules under that farm bill as a condition of receiving premium subsidies. Can you discuss any challenges you might have encountered bringing your operation, your farms into compliance with those regulations?

Mr. BLACK. For our operations it is just another form that needs to be completed. We are already complying with the soil and weather conservation requirements placed on us by the farm bill. I am a fifth generation farmer, landowner. We care about our land and water and resources, and we are in compliance, as all of agriculture is. We love our land and our resources.

Mr. DUNN. So let me open this question up to the panel, and I will let you decide which one of you or all of you think are best suited to answer this. Have you identified any opportunities where Congress can help you with either complying with regulations or maybe decreasing the number of regulations that you have to comply with? I am sort of asking for your wish list on the regulatory environment. Anybody.

Ms. DAVIS. I would say that definitely the farm bill could help farmers who need to become compliant with the FSMA regulations, the water testing. In Massachusetts, with small farms being the majority of our farms, 5 to 10 acres, it is very difficult even to read through it several times and understand if you are actually supposed to comply. Education, technical assistance in that regard, and most likely cost-sharing for water testing. I mean currently, as a certified organic operation, I have to do water testing every year, but it is not 13 times, it is one time a year. So the cost of water testing is certainly one thing that would be difficult for a small farm.

Mr. DUNN. Anybody else? Mr. Field, I see you reaching for the microphone.

Mr. FIELD. Absolutely, yes. For an organization like us, in our experience, we are not just growers, we are growers, shippers, packers of fresh produce, but we are also processors in the fact that we make juice, we are now getting into whole new different parts of our business in the value chain by doing total crop utilization, using things like our pumpkin seeds and watermelon rind, and crops that are left in the field that we can now utilize for the value chain purposes. And so for us, when you do that you have different food safety requirements, or different FSMA requirements that will be in place for not only the growing side, but the facilities and then, of course, any manufacturing that you do. We need to make sure that those food safety requirements are streamlined throughout the process, and that they are talking to each other, that they work well from a business standpoint.

Mr. DUNN. Our time is running out, so I am going to jump in here and say you should provide for us some guidance on this regulatory environment and how we can make that better for you.

And with that, I yield back my time, Mr. Chairman.

The CHAIRMAN. Thank you, Mr. Dunn.

I would like to now recognize one of the newer Members of our Committee also, this Subcommittee, the gentleman from Florida, Mr. Lawson, for 5 minutes.

Mr. LAWSON. Thank you. I know we have a time constraint here, so I am going to Mr. Black. Mr. Black, welcome to D.C. During my tenure in the Florida Legislature, we spent quite a bit money, and continue to spend money on the problems with citrus, citric canker specifically, and if memory serves me, appropriated maybe $12 million a year for homeowners to cut trees from their yard. We have seen a deterioration of our productivity, as compared to Brazil and other places. I wanted to know how we are recovering? I see a lot of homes being built in those areas that used to be covered with citrus?

Mr. BLACK. Thank you. Yes, we are threatened in Florida by many invasive pests and diseases. Citrus canker was the focus in

the 1980s and 1990s, and millions of dollars were spent at the state level in an attempt to eradicate citrus canker, and unfortunately, we weren't successful. So we have to add production costs every year to deal with that bacterial disease that affects the surface of the plant. So it is a tax that we have to continue to pay through production costs each year. We lost that battle due to the hurricanes of 2004 and 2005 that spread that invasive plant disease from a small area in the Miami-Homestead area, that was brought to our country from Central and South America, and it spread through the hurricanes throughout the citrus-growing belt.

Urban pressures on development is also a threat to our nation's farmland. I believe strongly in private property rights, but we have to protect America's farms so we can continue to provide safe and nutritious food for all of us.

Mr. LAWSON. I yield my time.

The CHAIRMAN. Thank you, Mr. Lawson. The gentleman yields back.

I would like to recognize another one of our newer Members from the great State of Nebraska, Representative Bacon, for 5 minutes.

Mr. BACON. With the name Bacon, this was a natural committee to get on. So by the way, I echo my friend's, Mr. Dunn, comments about being tolerant with our schedule. It is just shifting all over the place today, so I thank you.

And I was going to talk about the Food Safety Modernization Act, and the impact on farmers, I hear about it in Nebraska quite a bit, but I think that question has been asked, so I will move on to my other one.

Mr. Gilbert, you expressed interest in changing the structure of the National Organic Standards Board. Can you outline for us who makes up the Board, how they are chosen, and what sort of change you would like to see on the Board?

Mr. GILBERT. Thank you. Yes, thank you for that question. Yes, it is important to point out that a top priority really should be the protection of the organic program overall. My family has benefitted from the organic program because it has really become a logo that consumers trust, and we want to protect that. However, what we have found recently is a grower from Washington State, from where I am from, was on the Board for a number of years and that was able to relay our thoughts and concerns on that Board, and when he stepped off, nobody from our region was able to replace him. And so I can't point to the specific composition of the Board, but I can say I believe it should reflect the changing representation of organic producers. The organic producers have become bigger. That is a really good thing because it means organic techniques are getting more widespread.

Mr. BACON. This question may be a little outside the boundaries of where you have gone on it, and I feel bad because I came in a little bit late, but I went to University of Nebraska-Lincoln, I toured their innovation lab and the testing they were doing, and they were working on trying to grow crops, corn or sorghum, with less water and see, just try to expand that out. How are we doing with that? Are we, through research, able to produce new seeds and plants that can do better through droughts? Are we making

progress in that area? I will open that up to anybody who has some insight there.

Mr. HILL. So in our operation, we are diversified in the fact that we do grow organically and conventional. We utilize GMO technology and we have seen a huge change in seed technology. You look at just corn alone, even though we are talking about specialty crops this is year 18 in New Mexico of a drought. I grew up waterskiing on a lake that I can almost walk across now.

Mr. BACON. Right.

Mr. HILL. And for us to be able to utilize new technologies that we can actually take a trait, put it into a crop, put it in the ground and grow a crop that will yield with minimal inputs, that still is sustainable, is amazing.

So as far as research is concerned on genetics, it is winning.

Mr. BACON. Is there a way to quantify how much progress we have made there, because it is very fascinating that we have been able to do that, because that is going to feed many more people as we gain billions over the next decades?

Mr. HILL. Well, the big question is what have we lost in trust in the American consumer though. We have put so much into research as far as how can we get the most out of a gene or the most out of a crop, at the same time we haven't done our part as producers to ensure trust in people that when I put a GMO technology seed in the ground, I do this because I know I am sustainable, and my inputs are that much less. So as far as that question is, I think it is 50/50.

Mr. BACON. Well, thank you very much. I yield back.

The CHAIRMAN. The gentleman——

Mr. BACON. Did you have a comment? I am sorry.

Ms. DAVIS. Yes. Thank you. I am from Massachusetts, and we had our first drought this past growing season, which we weren't used to. We normally have quite a lot of rain. But what we did notice is that those farms that had high organic matter were the ones that sustained the drought the best. So the more percentage points of organic matter they had, the better off they are going to be, the more water that soil holds.

And so the more that we can do to keep the ground covered with cover crops, rotate our crops, make sure that we are constantly growing the fertility of our soils, the more water we are going to be able to retain and use.

Mr. BACON. Thank you very much. I yield back.

The CHAIRMAN. All right. The new freshman made the first mistake. He yielded back before we had another witness talk. But let the record show I let him speak a little longer. You owe me now, Bacon.

Next up, another new Member. Great to see you out in specialty crop land a few weeks ago. One of my new friends, Jimmy Panetta, for 5 minutes, is recognized.

Mr. PANETTA. Thank you, Mr. Chairman. I appreciate your leadership, and this opportunity. I too appreciate all of the witnesses who took the time to come here. I know it takes a lot of preparation, a lot of effort on your part, so thank you very much.

Mr. Chairman, if I could have your indulgence for just a little bit. You are right, in the farm bill and in the Agriculture Committee,

we are not talking about immigration, but more people need to realize that specialty crops and immigration go hand-in-hand.

Mr. Hill, I am sorry for your state's drought. And as you probably know, California endured a long drought in the past few years. In fact, I read a report the other day saying that last year at this time, 95 percent of California was under drought conditions. However, this year, thanks to the storms that we have had, only eight percent is now under drought conditions. So that is a very good thing.

But nevertheless, during this period of extreme drought, when I would talk to growers, and I would them what is your number one issue, you would expect it to be the drought and water, but not in my area, not on the central coast of California, not in the salad bowl of the world, as we are aptly called. The number one issue was labor and immigration. I believe that to tie it to the farm bill though, because for too long we have been spoiled because of the labor force that we have had. And that has kind of stunted us when it has come to mechanization research. I believe that we need a Specialty Crop Research Initiative in the farm bill dealing with mechanization.

Mr. Field, is that something you think is applicable, you think we could do, is that something that you would agree with?

Mr. FIELD. I certainly think that is a phenomenal research avenue for us. We can have mechanization in the field, so we become less reliant on manual labor. At this time, we really are searching for a solution, an adequate solution, to the inadequacies that we face in nondomestic, on-farm labor. We have several solutions for that that we think that we can provide or would like to help in those solutions, such as bringing current nondomestic foreign-born farmworkers that are here, that are without the proper documentation, into the H–2A Program. Unfortunately, H–2A does have some slow inefficiencies, but it is a solid foundation, and it is a move in the right direction.

Another solution would be to bring H–2A into the USDA, and move that particular program away from DOL. We would like to see something in that vein, and we believe that some of those solutions, with the work from people like us in the ag business, people right here on this very panel, can help with input on how to do that successfully.

Mr. PANETTA. I completely agree with you, but, a two-pronged approach, is needed. It is two efforts, you have to have two avenues going; one dealing with the visa issue, there is no doubt about that. What you referred to was similar to S. 744, the Border Security, Economic Opportunity, and Immigration Modernization Act from the 113th Congress, that was a 3 year visa that was brought underneath the Department of Agriculture, taken out of the DOL's purview, which is smart. But, while we do need to work on the visa issue and revamping it, at the same time, we need to catch up, and we need to mechanize the harvesting of our crops. Let me give you an example. When I go into the fields, and when I do see machinery there, I always ask them where is that from. Inevitably, what is the answer? Spain, Portugal, other countries in Europe. Why? Because they have had to deal with labor shortages, they have had to deal with the high price of labor in Europe. We haven't had to,

and I believe that it is time that we need to step up our efforts in that regard.

Here's another point, the Salinas Valley, where I am from, is in the shadow of the Silicon Valley, and what you are seeing is a lot of relationships being built in the area of agtech, as it is called. Is there anything in your opinion that we can do to promote private investment in this emerging web of agriculture and high-tech?

Mr. FIELD. You hit it on the head right there with the partnerships between groups in Silicon Valley as an example, and groups in Salinas. They are close. One has the handle on the tech, the other one has the handle on ag, and they can marry the two beautifully to find solutions for mechanization.

We should be the industry leader on figuring our solutions for ag. The USDA should be able to pioneer those types of relationships between these types of companies in the private- and public-sector, and be able to find solutions for mechanization because, obviously, they are out there. You see other countries, as you have pointed out, who are pioneering the engineering on these types of mechanization outlets, and we should be doing that as well here. Absolutely. Couldn't agree with you more.

Mr. PANETTA. Great. Thank you again. Thanks to all the witnesses.

Mr. Chairman, thank you. I yield my time back.

Mr. DENHAM [presiding.] The gentleman yields back.

Okay, further questions? Going through another farm bill again, as a Californian, we have looked a lot at specialty crops. I would just ask each of our panel members, as we are embarking on another farm bill, what would be your number one priority, or something that you feel that we should address in the farm bill this year? Ms. Davis?

Ms. DAVIS. I would definitely continue the Organic Cost-Share Program that helps small farms that want to certify organic, especially beginning farmers who are just starting out. It makes sense for them to start that way. That cost-share helps them take up 75 percent of the cost of certifying organic. I do believe that research in organic is very important. We are seeing no-till in organic really working, and we are doing small studies within Massachusetts in NOFA that have really been quite successful.

We believe that more money needs to be spent on research, for sure. And we also are looking forward to additional support for CSA shares, for community-supported agriculture, for SNAP beneficiaries to be able to pay for their CSA share with SNAP. And we are looking forward to piloting with the State of Massachusetts that new program this year that enables the amount of money to be taken out by month automatically, and so we are looking forward to that as well.

Mr. DENHAM. Thank you. Mr. Hill.

Mr. HILL. An overhaul of FSMA to actually look and see what is applicable to growers all sizes, making sure that we all sit at the same playing table, depending on if you are 2 acres or 30,000 acres, that we are all held accountable to the same standards. Also too I would like to see the research in the mechanization side. With that being said, I do think we need to tread lightly though because as we mechanize, you will change the local social structure, and as

you stop employing people, you will change the way that your whole demographic works. That is all I have to say.

Mr. DENHAM. Thank you. Mr. Gilbert.

Mr. GILBERT. Yes, I would echo the comments from the previous speakers, but in regards to FSMA, I might make the comment that any solutions, any regulations need to be risk-based first, and not just "blanketly" cast across all agriculture. In terms of dollars, the Specialty Crop Research Initiative has been excellent at being able to respond to new threats to our industry, like the brown marmorated stink bug. And then also MAP funding, we are going to be asking that, and I know that is not specifically part of this Subcommittee's purview, but the MAP Program has been incredibly successful, and is really helping us build markets overseas.

Mr. DENHAM. Changes to MAP?

Mr. GILBERT. Increases in MAP funding, please.

Mr. DENHAM. Thank you. Mr. Black.

Mr. BLACK. Echoing the previous comments, increase funding and flexibility to the Specialty Crop Research Initiative, and also the Special Crop Block Grants. I believe that we are all united that research and innovation in agriculture is essential for us to deal with labor issues, as was pointed out, but also to feed the world. The example that was presented earlier, that the multiplier effect of our efficiencies is not as great as some of the commodity crops, and there is a real opportunity there. We have a number of examples of technology that have been put in place in our agriculture growing operation, also our packinghouse that is making us more efficient and more competitive, which is essential.

Mr. DENHAM. Thank you, Mr. Black. Mr. Field.

Mr. FIELD. The Fresh Fruits and Vegetables Program does a phenomenal job, and it can be enhanced. There are opportunities to have more people in the agriculture sector brought in. I think that there are ways to have public funding enhance this program, because right now it serves over four million low-income people and elementary schools, and the majority of these, as I stated earlier, are actually SNAP recipients. When you look at this from a fundamental perspective of we are serving children their fresh fruits and vegetables that they are probably not getting at home, when they are already part of SNAP, it is important that they start these programs early, that they start the consumption of fresh fruits and vegetables early on in their life and build those habits. An independent third-party study did show that students who take part in the Fresh Fruits and Vegetables Program early on end up being long-term adopters of fresh fruit and vegetable consumption, and we find that very important. We also find it important that we continue to support the fact that it is a fresh program, because there has been a lot of tension between the processing, canning, and frozen foods groups who would like to see us move away from the fresh side of that program. And obviously, as you know, when you process certain things, it can reduce the nutritional value from them, and the adoption of fresh fruits and vegetables is so critical to the success of that program that we need to focus on that.

Mr. DENHAM. I would just ask one follow-up, Mr. Field. What about local-grown or American-grown as part of the school nutrition program?

Mr. FIELD. It is important to have American-grown, locally-grown. I think that is very important, especially because the people who are taking part in that program can then see it. It is around them regionally or locally, they can understand where the food comes from. We have a huge deficit in this country, people who don't understand the fact that their food doesn't grow in a grocery store. So that is important to us.

Mr. DENHAM. Thank you.

Well, I would like to thank each of our witnesses today for not only your insight in part of this discussion, but thank you for helping us as we formulate the next farm bill.

There is a misperception out there that the farm bill only focuses on row crop commodity farmers. Today's hearing shows simply that is not the case. This country has made a substantial investment to support the production of specialty crops. In fact, in the last farm bill, specialty crops received an additional $1.5 billion, while others faced significant cuts. It is our intention to ensure that the needs of our specialty crop producers continue to be met.

If there are no further questions this hearing of the Subcommittee on Biotechnology, Horticulture, and Research is adjourned.

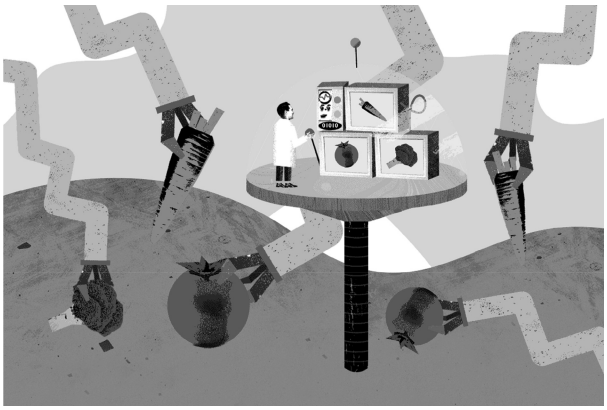
[Whereupon, at 3:48 p.m., the Subcommittee was adjourned.]

[Material submitted for inclusion in the record follows:]

SUBMITTED ARTICLE BY HON. MICHELLE LUJAN GRISHAM, A REPRESENTATIVE IN CONGRESS FROM NEW MEXICO

The Vegetable Technology Gap

Washington spends millions on crop research. Why doesn't more go toward the foods we're actually supposed to eat?



POLITICO
By Helena Bottemiller Evich
03/08/17 07:33 a.m. EST

In the great quest to get Americans eating healthier, spinach is an unusual success story. We're consuming four times as much fresh spinach as we were 4 decades ago, as a vegetable once derided as choke-it-down "good for you" has become a mainstay of home cooking and upscale restaurants. But the spinach boom wasn't driven by changing tastes, or the cartoon exhortations of *Popeye* (*https://www.pinterest.com/loriwytheriddel/popeye/*). It was driven by technology.

Spinach, like many vegetables, is finicky. If you packaged it in the same airtight bags used for potato chips, the leaves would start to break down before they made it from California's Central Valley to a supermarket in Chicago. It wasn't until scientists came up with a special bag—one that controls how much oxygen and carbon dioxide can seep in and out—that pre-washed, ready-to-eat spinach became something that a shopper could grab in the produce section and dump straight into a salad bowl or smoothie. Spinach, and leafy greens in general, have become so convenient that Americans are actually eating more of them—an impressive feat considering just one in ten Americans eats the recommended servings of fruits and vegetables each day.

As the country seeks solutions to the obesity epidemic, there's been plenty of debate about how to get people to eat better. Do we need to improve access to healthy foods? Teach cooking? Tax sugary drinks? But there's one thing that's often left out of the conversation: technology.

It might seem strange to think about vegetables as a technology, but they are. The average supermarket produce aisle represents decades, if not centuries, of agricultural research and development. But in the United States, big-league commodity crops like corn and soy, as well as meat, gobble up most of the agricultural research investment from both the public- and private-sectors. The U.S. Department of Agriculture's dietary guidelines tell us to fill ½ our plate with fruits and vegetables to maintain a healthy diet, but its research priorities are far different. So-called "specialty crops"—the government's name for the category that includes, essentially, all fruits, vegetables and nuts—received just 15 percent of the Federal research budget over much of the past 3 decades.

"There's nothing more important we can do to improve the health of this country than to invest billions and billions into researching the fruits and vegetables that we're encouraging people to eat," said Sam Kass, the former White House chef and food policy guru under the Obama Administration who now works with food tech startups.

Agricultural research is fundamental to improving how we raise, grow, harvest, process and ship everything that we eat. It took millions of dollars of public and private research and years of experimenting with limp leafy greens before breath-

able salad packaging came onto the scene. Consumers no longer have to wash sand and dirt off their greens, remove tough stems and ribs or chop them into bite-sized portions. The same types of technologies have also helped bring us baby carrot packs with dips, sliced apples in McDonald's Happy Meals and ready-to-eat kale salad kits.



Packages of Fresh Express salad wait for customers in a San Francisco grocery store. The technology that keeps spinach and lettuce fresh in breathable packaging was based on government agricultural research conducted in the 1950s. |Getty.

The enormous logistical and technological challenges facing so many of the foods that nutritionists tell us to eat make research especially critical for produce, which as a sector is still relatively inefficient. Apples bruise. Berries don't all ripen at once. Cilantro wilts. Cherries can split and crack if it rains at the wrong time—a problem that can be so expensive, some growers hire helicopters to fly over their crop to dry the delicate fruit. Many of these crops still rely on increasingly expensive (and oftentimes undocumented) labor to pick them by hand. And water. They need lots of water.

Specialty crops remain special—just three percent of cropland is dedicated to growing them—though they make up roughly ¼ of the value of crops grown in the U.S. because they demand higher prices. This lopsided dynamic means that specialty crops have historically received very little Federal research investment compared to their value. It also means the country simply doesn't have a food system that supplies what we're told to eat. In 2007, there were about 8.5 million acres of specialty crops in a sea of more than 300 million acres of everything else.

"If Americans were to actually go ahead and jump into consuming the amount of fruits and vegetables recommended, we'd be hard-pressed to meet that demand," said Sonny Ramaswamy, Director of the USDA's National Institute for Food and Agriculture, which coordinates a large part of the government's agricultural research portfolio. "There's an incredible amount of innovation that we need, all the way from the farm to the table."

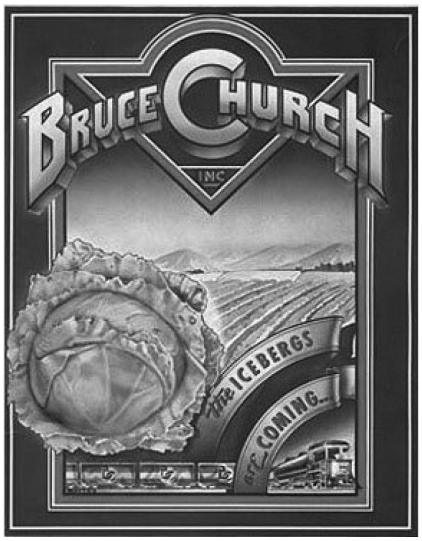
The imbalance is no accident: In a sense, it's built into the mission of the USDA itself, which frustrates both vegetable growers and nutrition advocates. But there are signs it's starting to change—if slowly.

The Road To packaged salad isn't just an example of how research pays off: It shows just how long the process can be, and how much commitment it requires. It began in the late 1920s when a young Berkeley grad named Bruce Church bought a field of head lettuce in Salinas, California, and devised a plan to ship it, packed in ice, by rail across the United States. According to local lore in the Salinas Valley, children as far away as Maine would greet the rail cars excitedly, shouting: "The icebergs are coming! The icebergs are coming!" The name stuck.

After World War II, a handful of USDA scientists stationed in Fresno, California, set out to learn more about how to best handle, store and ship fruits and vegetables. They obsessively measured temperatures, shelf life, spoilage and the rate at which different crops respire—or breathe—which is one way of measuring how fast something will rot.

"They're still alive!" explained Gene Lester, national program leader for the Agricultural Research Service's food science and technology division. "You're eating a lettuce leaf or a kale leaf, or a string bean, or an apple—they're still alive. There's

still CO_2 and oxygen exchanging in those organisms, and that's what's keeps them healthy for us."



A vintage poster for Bruce Church, Inc., the Salinas, California company that helped popularize iceberg lettuce starting in the 1920s. Bruce Church Inc. later morphed into Fresh Express, which pioneered the use of breathable packaging for lettuce and other leafy greens. |Fresh Express.

In 1954, researchers published a roundup of everything they'd learned in a massive book, known as AH–66. That tome served as a base of knowledge that preceded major advances in produce innovation for decades afterward. "That was kind of a bible for us," said Jim Lugg, a longtime agriculture scientist who in many ways is the grandfather of modern salad technology. "The problems weren't really with growing the crops, it was with shipping them and keeping them fresh." Lugg, who's now 83 years old, still consults in the industry (and, for the record, still eats lots of salad).

In 1963, Lugg signed on to lead the research division of Bruce Church Inc., which teamed up with a subsidiary of refrigerator-maker Whirlpool—a partnership based largely on the hope that they might be able to figure out how to get lettuce from Salinas to the East Coast before it turned brown. After a lot of experimentation, they figured out how to manipulate the atmosphere inside the vehicles in which they shipped the lettuce so that it was more hospitable, providing the right balance of CO_2 and oxygen in refrigerated rail cars and containers—a hack that took the shelf life of the lettuce from 3 or 4 days to 14, as long as the lettuce was kept cold.

"We've put it to sleep," Lugg explained. "It's sleeping! It's not breathing at its normal rate."

Bruce Church Inc. eventually morphed into Fresh Express, which in 1989 introduced what is believed to be the first pre-washed, bagged salad in grocery stores nationwide. That first mix, packaged in breathable bags, was chopped iceberg lettuce, with bits of shredded carrots and purple cabbage, a combo that meant home cooks could serve a multi-ingredient salad without chopping a single vegetable. "We saw a way to really improve the customer experience with lettuce," Lugg said.

Lugg recalled serving on a board that helped advise the government on investing in specialty crop research in the 1990s. "I don't think they were spending very much," he says. (USDA couldn't provide an estimate.) "The then-head of [the Agricultural Research Service] was very defensive about all the problems they had getting money and that they had to spend money for things like corn and ethanol and cotton."

He'd sometimes give Ed Knipling, the then-head of ARS, a hard time about the disparity. "He would point out how much they spent on this crop or this crop, and we'd say 'Well, how much did you spend on lettuce?'"

So Why Doesn't the nation spend more on better lettuce? The answer lies partly in the history of the U.S. Department of Agriculture itself. On one hand, the depart-

ment, founded by Abraham Lincoln, is dedicated to promoting and boosting American agriculture as an industry. That means investing in the massive commodity crops that largely fuel American farming, giving us the cheapest, most abundant food supply in the history of the world. But the department is also tasked with encouraging healthy eating—it's the agency that gives Americans nutrition advice—and these two major goals can at times be directly at odds.

Public health advocates have long lamented that the USDA's nutrition advice doesn't align with how the institution actually spends its money, and they often point to crop subsidies as the most glaring example. Between 2008 and 2012, for example, fruits and vegetables and other specialty crops got just under ½ of 1 percent of all the subsidies that were doled out. A full 80 percent of those payments went to supporting grains used in all manner of foods, to feed livestock and to fuel our cars, and oils, like what we use to fry potato chips.

The disparity is something that frustrates Rep. Chellie Pingree, a Democrat from Maine, who also happens to be an organic farmer. When the Congresswoman speaks at food conferences, she often shows a side-by-side graphic comparing *MyPlate* (*https://www.choosemyplate.gov/*), the government's nutrition guide, and a plate representation of crop subsidies.

"Vegetables are called specialty crops! Don't ask me to explain why," Pingree said as she unveiled her graphic at TedxManhattan back in 2014. The room full of foodies gasped and mumbled disapprovingly.

The idea that junk food is cheaper than produce because of farm subsidies is so often repeated by food movement leaders like Michael Pollan that almost everyone assumes that it's true. But the reality is more nuanced.

Subsidies on their own don't explain why processed foods are cheaper than produce, calorie for calorie. Fruits and vegetables, first and foremost, are highly perishable, which makes everything about growing, harvesting, storing and shipping them infinitely more complicated and expensive. Many of these crops also take a ton of labor to maintain and harvest. Economists who've crunched the numbers have found that removing agricultural subsidies would have little effect on consumers' food prices, in part because the cost of commodities like corn and soybeans represent just a tiny share of the cost of the food sold in the grocery store.

The U.S. has simply gotten much better at growing corn than lettuce. Today, we get about six times as much corn out of 1 acre of land as we did in the 1920s, when Bruce Church started his lettuce farm. Iceberg lettuce yields, on the other hand, have only doubled in that time. The USDA didn't start tracking such data for most of the darker leafy greens until the 1990s.

Even if subsidies did make fruits and vegetables dramatically cheaper, it's far from clear that everyone would start eating their broccoli. The price of produce isn't the only cost to eating fruits and vegetables; many consumers also lack the time or the skills to prepare and cook their perishables. And increasing fruit and vegetable consumption is hard to keep up as Americans eat more of their food on the go, away from home and prepare far fewer traditional meals on their own.

Moreover, the produce industry doesn't want to be subsidized like Big Corn or Big Soy. When industry leaders come to Capitol Hill, they have been clear that they didn't want traditional subsidies, like price supports, said Glenda Humiston, Vice President of Agriculture and Natural Resources at the University of California. "They want help with the infrastructure to do their jobs better," she says, including more funding for research labs and data collection that can help industry solve problems on the ground.



Migrant workers pick organic spinach in a field in Colorado. Labor, often from immigrant workers, remains one of the most costly inputs to growing healthy fruits and vegetables. |Getty.

Reducing the need for labor is one of the top priorities for the industry, especially with the Trump Administration's rhetoric and recent crackdown on undocumented workers. Labor alone can account for ½ a farm's costs and labor shortages are already preventing the expansion of acreage of specialty crops in many regions. Farmers can be hesitant to invest in growing, watering and raising a crop if there's uncertainty about having enough workers to harvest it.

"Growers and shippers are going to have to find ways to mechanize, or we're not going to be able to harvest our products, and we're talking about delicate products," said Steve Church, CEO of Church Brothers Farms, a major grower in Salinas.

"The biggest issue we have here is labor," Church added. "No question in my mind."

Today, the government is funding research at Washington State University and other universities to design robots that can gently harvest apples and even see or smell when the fruit is ripe—a potential leap for the kind of mechanization that has so far eluded much of the produce industry.

USDA researchers are also working on a system that drastically cuts down on the need to sort fruit. The prototype is an elaborate, six-armed machine that goes into the field with apple pickers. The apples are fed onto a conveyer belt that uses an infrared system to detect blemishes and even grade the fruit on the spot.

Other research is focusing on improving flavor. In Florida, researchers have cracked the code to make tomatoes taste better, an innovation that could help reverse decades of breeding tomatoes for durability and thick skin that has left the fruit tasteless and watery. The tomatoes, which also have more lycopene, an important nutrient and anti oxidant, have begun being marketed in Florida under the name Tasti-Lee. The company that commercialized the technology says nearly 94 million pounds of the tastier tomato have been sold so far.

"We first of all had to have a stable supply. We had to figure out how to get tomatoes from the West Coast to the East Coast," says a USDA scientist, permitted to speak on background. "But now we can focus on the whole flavor component."

Making tomatoes tastier is only the beginning. "Understanding this pathway, it's not unique to just tomatoes, but you can use this as a model for citrus, or peppers or apples or anything else," the scientist said.

Though Specialty Crops have lagged behind their shelf-stable brethren for much of the past century, the needs of the produce industry haven't gone totally unheard in the halls of Washington. The idea that these smaller crops might deserve more attention began to gain some traction in the early 2000s, when California growers became increasingly angry that their state was the No. one agriculture state based on value, largely due to high-dollar specialty crops, but they were coming up around 16th in terms of USDA research funding coming into the state.

In 2006, there was also a renewed interest in investing in research after a deadly *E. coli* outbreak linked to packaged spinach rocked the entire produce industry—and consumer confidence. Three people died, and 276 people were hospitalized. The disaster fueled an intense food-safety push across Salinas Valley and the rest of the produce industry. It also helped energize a diverse coalition of growers that had started to organize to ask Washington for a greater share of spending in the farm

bill, the law that every 5 years sets the agenda for the Agriculture Department. They demanded that more money be invested in food safety and other types of research. Producers of commodities like dairy and grains were less than pleased to have another group vying for a part of the Federal pie, according to Congressional aides.

"It was a hell of a fight," said Humiston.

But Big Produce's political push has paid off. In 2008, the farm bill for the first time included a section dedicated to specialty crops. There's now a $72 million fund to promote various specialty crop projects, like building hoop houses to extend the growing season. Fruit and vegetable farmers are also starting to get access to the same government-subsidized insurance policies that other commodities have enjoyed for years. But the biggest growth for specialty crops in recent years has been in research spending.

The USDA now dedicates some $400 million to studying specialty crops each year—a big increase, though still a modest fraction of the nearly $3 billion the government invests in agricultural research each year. That pot of money is spread among USDA's in-house research, land grant universities and other public research institutions. The USDA couldn't provide specialty crop research estimates from before 2008.

The Obama Administration and its intense focus on healthy eating was also a boon to the specialty crop sector. The Administration not only backed allocating more money to the crops, but it also promoted more fruits and vegetables in school meal programs that serve 30 million children each day, and in the Women, Infants and Children program, which provides nutritional support for ½ of all babies born in the United States.

While much of the new Federal boost for produce investment is motivated more by the industry's business needs than any push to combat the nation's crippling obesity epidemic, public health advocates with little political clout are thrilled to see the needle moving, however it happens.

"If what we want is for people to eat fruits and vegetables, we have to make it easier, we have to make it taste better," said Marion Nestle, a food studies professor at New York University and author of the popular blog Food Politics.

"It's about time produce got some attention."

SUPPLEMEMNTARY MATERIAL SUBMITTED BY JAMES FIELD, JR., DIRECTOR OF BUSINESS DEVELOPMENT, FREY FARMS, LLC

March 23, 2017

Hon. RODNEY DAVIS,
Chairman
Subcommittee on Biotechnology, Horticulture, and Research
House Committee on Agriculture,
Washington, D.C.;

Hon. MICHELLE LUJAN GRISHAM,
Ranking Minority Member,
Subcommittee on Biotechnology, Horticulture, and Research
House Committee on Agriculture,
Washington, D.C.

Dear Chairman Davis and Ranking Member Grisham:

Thank you Chairman Davis and Ranking Member Lujan Grisham for the opportunity to provide supplemental comments for the record of the March 9 hearing of the Biotechnology, Horticulture, and Research Committee on the topic of specialty crops in the farm bill. It was a privilege to represent my business and the United Fresh Produce Association as a witness at that hearing and I hope these additional comments will be useful to the Subcommittee Members as you craft proposals in the farm bill relevant to specialty crops.

Specifically, I would like to address questions that were posed to me during the hearing. As you know, I am the Director of Business Development at Frey Farms, based in Keenes, Ill. We specialize in growing, packing, and shipping fresh market produce, including cantaloupes and watermelons, but we are best known as the nation's largest fresh pumpkin producer. Our farms and facilities are strategically located in Florida, Georgia, Missouri, Arkansas, Indiana, West Virginia, Wisconsin, and Illinois.

During the hearing, the issue was raised about how Congress might help multi-state operations such as ours be more functional. Within the farm bill, there are two programs in particular that have a strong multi-state component that the specialty crop industry believes need to be maintained and strengthened. In the 2014 Farm Bill, Congress improved the $85 million Specialty Crop Block Grant Program

to include a Multi-State Program. Under this initiative, grants are offered to participating State Departments of Agriculture in any of the 50 states. These grants address regional or national level issues such as food safety, plant pests and disease, research, crop-specific projects addressing common issues and marketing and promotion. In addition, Congress allotted $80 million annually for the Specialty Crop Research Initiative which addresses industry-specific issues such as plant breeding and genetics, pest and disease threats, production efficiency, technological innovation and methods to address food safety hazards. These programs take a broad view toward enhancing the competitiveness of the specialty crop sector through regional and national initiatives that are beneficial to multi-state operations in areas that producers are not able to act on by themselves. The specialty crop industry supports these initiatives and urges Congress to protect and maintain them.

As I mentioned in my testimony and which was mentioned by others who provided testimony, the single most urgent and impactful issue today with respect to specialty crops is labor; more specifically, the challenges that specialty crop providers have in securing and retaining a skilled labor force. There is a broad consensus within our sector that, while there may be varying opinions about how best to do so, there needs to be reforms to the current Federal H–2A program, which is currently the only Federal program that provides agricultural guest workers. There is also broad agreement that our nation's immigration system is not truly functional and is badly in need of improvement. The Agriculture Workforce Coalition (AWC), of which United Fresh is a founding member, is currently in the process of developing a set of recommendations for improvements to H–2A, as well as how to improve our nation's immigration policies that are relevant to agriculture labor. The AWC has pledged to work with policymakers to craft legislative proposals that ensure an effective, efficient and humane program that provides appropriate assurances for workers and allows providers to succeed in business.

A major part of why ag labor is such a pressing issue for our industry, is that unlike other sectors, mechanization is not used often in the harvesting of fruits and vegetables. With the harvesting of our crops being so time-sensitive and their marketability being highly dependent on appearance, the vast majority of fruit and vegetable crops are brought in from the field by workers with the experience and skill to know when the time is right to harvest a commodity. However, because the labor challenges in the specialty crop sector are long-standing and will require time to resolve, there is a need for more research on how to mechanize key parts of the fruit and vegetable production chain. There is agreement within our industry that there needs to be more research on innovations such as mechanization, through programs such as the Specialty Crop Research Initiative.

Improvements to our nation's immigration policies and development of new and innovative technology such as mechanization would help mitigate some of the unique risks that specialty crop providers experience. As this Subcommittee examines other farm bill policies that provide risk mitigation to agricultural producers, such as crop insurance, that may affect specialty crops, our industry asks that Congress restrict the use or development of policies that affect our industry in a market distorting way, ensure the consistent availability of insurance products to all growers of the same commodity and conduct a thorough analysis of the potential market impacts of a new insurance product.

While risk mitigation is one area in which the specialty crop sector often has a unique perspective, another area in which we frequently collaborate with our counterparts in other crop sectors is regulatory reform. United Fresh has joined with agriculture organizations in the grain and livestock sectors to support initiatives such as the withdrawal of the WOTUS rule and ensuring that regulation of crop protection products is based on proven scientific evidence and not on a politically driven precautionary principle. As policymakers consider regulatory policy for agriculture, we urge a consistent consideration of data driven by science and not politics.

Finally, I would like to note that United Fresh has been the leader among specialty crop stakeholders in promoting nutrition policies that help the under-served and also provide opportunities for produce providers. A cornerstone of that nutrition policy has been the Fresh Fruit and Vegetable Program (FFVP) which provides a fresh fruit or vegetable snack to nearly four million schoolchildren across the country, 107,000 alone in Frey Farms' home state of Illinois. Unfortunately, this program has been under attack by efforts to dilute its mission of providing America's children with much-needed exposure to fresh fruits and vegetables. I, and the rest of the fresh produce industry, implore you to resist these efforts and do all you can to defend this program and keep it as it is—fresh.

These, of course, are just a small sample of the plethora of issues that Congress will need to consider when addressing specialty crops. However, even with the diversity within the specialty crop sector, there is a great deal of agreement about the

general regulatory and policy landscape needed to allow specialty crop providers to succeed. United Fresh is the coordinating body of the Specialty Crop Farm Bill Alliance, a national coalition of nearly 120 specialty crop interests who have worked together for over 15 years to review specialty crop farm bill programs and provide policy recommendations to Congress. As Congress and interested stakeholders head into crafting and debating the next farm bill, the Alliance will be conducting its own review of specialty crop farm bill programs and how to make them work even better. The Alliance's review will be thorough, encompassing all relevant programs, with a particular focus on key priorities such as nutrition, trade, pest and disease mitigation, block grants and research. In addition, the Alliance will be determining if there are ways to improve public and private partnerships that can promote specialty crops, how the land-grant university system might be better utilized to assist specialty crop providers and how work done in the private-sector might be useful in enhancing the ability of our producers to ensure Americans have a steady and abundant supply of fresh fruits and vegetables.

As the Alliance presents its recommendations to Congress, we in the fresh produce industry look forward to working with the House and Senate to pass legislation that maximizes the capacity of fruit and vegetable growers to do what they want to do: improve the nutritional well-being of America and have thriving businesses that contribute to the surrounding communities. Thank you again for the opportunity to comment further and I am happy to provide any additional information you may need.

Sincerely,

JAMES FIELD, JR.

SUBMITTED STATEMENT BY CHARLES WINGARD, DIRECTOR OF FIELD OPERATIONS, WALTER P. RAWL & SON, INC.

Thank you, Subcommittee Chair Davis and Ranking Member Grisham, for the opportunity to testify before the Biotechnology, Horticulture, and Research Subcommittee on the specialty crop provisions of the farm bill. My name is Charles Wingard and I am Vice President of Field Operations for Walter P. Rawl & Sons in Pelion, SC. Three generations of our family have farmed in this area since the 1920s, and ten family members oversee our operations today in a hands-on manner. We specialize in southern leafy greens such as collards, kale, mustard & turnip greens, and also produce a variety of summer vegetables in season along with a few other year round vegetable crops.

We have farm operations in several South Carolina counties and Florida and have farming relationships in Wisconsin, Florida, Virginia, Mississippi, and New York. Our produce is marketed and delivered throughout the eastern United States, and about ½ of our leafy greens are washed and packaged in our own facility and sold as fresh-cut chopped greens, with the rest sold in bulk.

While I am here to represent myself as a specialty crop provider, I am also here as a member United Fresh Produce Association. As you know, United Fresh has been in existence since 1904 and is the only fresh produce association based in Washington, D.C. with members in all 50 states, and that represents all aspects of the fresh fruit and vegetable production chain. I serve as Chairman of United Fresh's Government Relations Council which provides public policy guidance to the association. United Fresh is also helps coordinate the Specialty Crop Farm Bill Alliance, a 120 member coalition devoted to advocating for specialty crop programs in the farm bill.

The specialty crop industry is very grateful to you for all that this Committee has done to support and advocate for the needs of the specialty crop sector through the farm bill, which is the single largest Federal investment in the fresh produce industry. You have recognized the immense value our sector brings to America's nutritional, economic and social well-being and we are very appreciative of that support.

It is in that context that I must address an issue of primary importance to our industry and one which our sector will be looking to you with high expectations for support. It will be no surprise to you that I am referring to immigration policy. The farm bill matters tremendously to specialty crop producers; it has done a great deal to advance the goal of ensuring Americans have access to an abundant supply of fresh fruits and vegetables. However, that goal cannot be attained without the seasonal workers needed to get crops from the field to consumers. While it is virtually impossible to know the exact numbers, this workforce is overwhelmingly foreign-born and not properly authorized. We in the produce industry have long advocated for changes to our nation's immigration system to address this. The Federal agriculture guestworker program, known as H–2A, as often as not, does not provide ade-

quate numbers of workers in a timely manner, often leading to crops going unharvested. Federal immigration policy must balance enforcement with a humane and effective program to allow foreign-born workers to come here to do the produce harvesting and processing jobs that Americans simply won't. If that does not happen, then to be blunt, it doesn't matter what you do for us in the farm bill. If America's fruit and vegetable providers cannot retain or attract the skilled, dedicated workforce needed to get crops to the marketplace, then programs like Specialty Crop Block Grants won't help us a bit. Produce providers will be closely watching the progress of the farm bill and action on immigration reform; if immigration reform does not show progress soon, I expect that if you haven't already, you will be hearing specialty crop producers advocate for action on ag labor within the farm bill.

As you know, this Administration has begun to pursue stricter immigration policies. We in the produce industry are well-aware that enforcement of the law is needed and we support ensuring that our nation's borders are secure. However, I can tell you that the change in policies has created a real sense of fear within the immigrant community and that has begun to result in increasing problems for produce providers in being able to retain workers. With workers increasingly reluctant to come to work, the ability of produce providers to stay in business is increasingly threatened. And it is not just simply those foreign-born seasonal workers who will feel the impact of an enforcement-only policy. While the vast majority of workers who hold jobs in the fields and packing sheds are foreign-born, the workers who hold jobs on down the chain, in areas such as transportation and retail, generally are American citizens. If workers at the front of the chain leave and they have no replacements, it is only a matter of time before those American workers down the line will also suffer.

We are aware that under the House of Representatives' rules of jurisdiction, immigration policy is not under this Committee's purview. But it is this Committee's constituency that will be among the hardest and first-hit by policies that lack an effective agriculture labor component. Congress has completely failed to act on agriculture's legitimate needs and all indications are that more enforcement and security-oriented policy changes will be coming. If the current situation continues or gets worse, produce providers are expecting you to ACT on their behalf, jurisdiction or no jurisdiction. Many Members of this Committee have repeatedly conveyed that you are aware of agriculture's needs and that is encouraging and is appreciated. However, there will come a time when saying the right things simply won't be enough—if policymakers continue down an enforcement-only path, the fruit and vegetable industry will expect you to take the actions necessary to step in and ensure that further policy changes do not become finalized without an effective agriculture labor component included.

Without the dedicated and skilled workers to harvest the fruit and vegetable crops grown here in this country, logic dictates that we as a nation will then have to source those commodities from other countries, and for the first time in our history, make us unnecessarily dependent on other nations for something as fundamental as food. But this would be an economic and national security disaster that can be averted; as a nation, we do not have to choose between food security and border security—it is possible to have both. But only if Congress will actually take actions to craft a set of reforms to our nation's immigration policies that strengthen security at the border and internally, and *simultaneously* provide a way for agriculture workers who are here currently to stay here legally, as well as policies that provide for a future legal workforce. As I mentioned, the fresh produce industry supports making America's borders as secure as possible and upholding our nation's immigration laws. But we also believe that by making much-needed improvements to America's immigration system, Congress will significantly strengthen the policy foundations laid through the farm bill that enable America's specialty crop producers to be among the world's most productive.

Regarding the farm bill, as I mentioned before, United Fresh is the coordinating body of the Specialty Crop Farm Bill Alliance. For each successive farm bill, the Alliance has provided a set of recommendations about how those programs could maximize the ability of specialty crop producers to be successful. The Alliance is grateful that in the 2014 Farm Bill this Committee acted on our recommendations, which our industry believes are sound policies that will enhance our ability to meet America's nutritional needs.

Briefly, a few highlights of the 2014 Farm Bill that enhance the work of specialty crop providers include:

- $80 million a year for the Specialty Crop Research Initiative for industry-specific research; this program addresses the critical needs of the specialty crop in-

dustry by developing and disseminating science-based tools to address needs of specific crops and their regions;

- $75 million a year for the Plant Pest and Disease Program to eradicate harmful pests and diseases. These projects aim to prevent the introduction or spread of plant pests and diseases that threaten U.S. agriculture and the environment, as well as ensure the availability of a healthy supply of clean plant stock;
- $85 million per year for the Specialty Crop Block Grant program, including a multi-state program;
- Technical Assistance for Specialty Crops (TASC)—Authorized under the 2002 Farm Bill, TASC has been used to address barriers prohibiting or threatening the exports of U.S. Specialty Crops. The program has had constant funding of $9 million since the 2002 Farm Bill[; and]
- Market Access Program (MAP)—To improve access to overseas markets for America's agriculture producers. The program is funded at $200 million per year.

Furthermore, I want to highlight what has been done through your collaboration with United Fresh to promote Federal feeding programs in the Farm Bill Nutrition Programs

The role of investment in Federal nutrition programs cannot be overstated, this investment in nutrition programs increases consumption of fruits and vegetables which benefits the specialty crop industry.

For example, the Fresh Fruit and Vegetable Program which will reach more than four million low-income elementary school children nation-wide this coming school year. This highly effective program provides young students with a fresh fruit or vegetable snack every day at school and increases their overall consumption of a wide variety of fresh fruits and vegetables. My State of South Carolina received $3.27 M this school year to implement the Fresh Fruit and Vegetable Program; this allows 153 elementary schools to participate and 60,000 students to benefit. How does this program translate to my business which is growing collard greens and other vegetables? Walter P. Rawls & Son has been a leader in the Fresh Fruit and Vegetable Program since 2008. We have worked with South Carolina's Child Nutrition Director to ensure successful implementation, we have traveled to school districts all over our state to promote the program and help local schools effectively implement it, and we have developed fresh-cut vegetables and fruits in kid-friendly packs designed specifically for schools to use in the Fresh Fruit and Vegetable Program and in school lunch. We are South Carolina's champions for the Fresh Fruit and Vegetable Program! This program is a **Win-Win-Win** for agriculture and the produce industry, our kids and public health.

I'd also like to highlight the impact of FINI (Food Insecurity Nutrition Incentives) on helping SNAP families purchase more fresh fruits and vegetables. Providing produce incentives to SNAP families is an effective strategy to increase their fruit and vegetable consumption and improve the quality of their diet especially when the produce incentives can be used at grocery stores and supermarkets where these families shop and have access to a wide variety of fresh fruits and vegetables are available year round. Increasing fruit and vegetable consumption for 40 million SNAP recipients is another big WIN for specialty crops and public health.

In many instances farm bill specialty crop programs provide services and resources that growers are not always able to get on their own. For example, since 2008, the Clean Plant Network has provided nearly $30,000,000 in support of 35 initiatives in the critical mission of providing clean planting stock which is essential to preventing highly dangerous pests and pathogens from destroying crops. Another example is the language in the 2014 Farm Bill providing for a multi-state program in the Specialty Crop Block Grant program that allows for the kind of regional response to threats such as plant disease that farmers cannot do individually.

While the lack of needed immigration policy reform is the greatest overarching current threat to America's specialty crop sector, the programs I just mentioned are also critical to addressing other important needs for fruit and vegetable production. This Committee has done tremendous work to address our needs regarding market competitiveness, research, pest and disease management, opening foreign markets and nutrition programs that promote consumption. As a result, the produce industry is much better equipped to address these issues, and we believe that these tools are vital to helping providers do what they can to keep their operations viable and successful. Knowing that Congress is working to address significant budget constraints, we in the industry pledge to work with you to do all we can to keep these programs at their current funding levels. Our industry looks forward to working with you to

promote American production of specialty crops. Thank you for the opportunity to speak to you today and I will be happy to answer any questions.

THE NEXT FARM BILL
(AGRICULTURAL RESEARCH)

THURSDAY, MARCH 16, 2017

HOUSE OF REPRESENTATIVES,
SUBCOMMITTEE ON BIOTECHNOLOGY, HORTICULTURE, AND RESEARCH,
COMMITTEE ON AGRICULTURE,
Washington, D.C.

The Subcommittee met, pursuant to call, at 10:03 a.m., in Room 1300 of the Longworth House Office Building, Hon. Rodney Davis [Chairman of the Subcommittee] presiding.

Members present: Representatives Davis, Gibbs, Yoho, Bacon, Dunn, Lujan Grisham, Lawson, Panetta, McGovern, Blunt Rochester, and Peterson (*ex officio*).

Staff present: Bart Fischer, Caleb Crosswhite, Callie McAdams, Haley Graves, Stephanie Addison, Keith Jones, Kellie Adesina, Troy Phillips, and Carly Reedholm.

OPENING STATEMENT OF HON. RODNEY DAVIS, A REPRESENTATIVE IN CONGRESS FROM ILLINOIS

The CHAIRMAN. This hearing of the Subcommittee on Biotechnology, Horticulture, and Research, entitled, *The Next Farm Bill: Agricultural Research*, will come to order.

Good morning and welcome to today's Biotechnology, Horticulture, and Research Subcommittee hearing. I would like to welcome our three witnesses and all of the guests today. This hearing continues our series where each of the six Subcommittees is looking at all aspects of the current and the next farm bill.

The focus of today's hearing is on agricultural research. As we kick off the discussion, try to imagine where the United States, as a whole, and American agriculture in particular, would be without the massive productivity gains that have resulted from more than a century of investment in ag research. We enjoy the safest, most affordable, and most abundant food supply in the world in large part due to sustained public investment in agricultural research. In fact, USDA describes the rise in agricultural productivity as the single most important source of economic growth in the entire U.S. farm sector.

USDA's Research, Education, and Economics mission area includes four agencies that serve as the Federal lead for our research, education, and extension activities. USDA's Agricultural Research Service conducts research and develops solutions for ag problems of high national priority. The Economic Research Service,

through science-based economic research and analysis, informs public policy and other decisions about agriculture, food, rural development, and environmental challenges. The National Agricultural Statistics Service conducts hundreds of surveys every year and prepares reports covering virtually every aspect of U.S. agriculture. And, the National Institute of Food and Agriculture supports research, education, and extension programs in the land-grant university system and other partner organizations. Together with state-level and private-sector funding, the U.S. ag research system is the envy of the world.

And while private-sector research investment is substantial and growing, public funding for ag research in the United States has been on the decline for the past decade. Agricultural research increasingly occupies a smaller share of the United States' public research portfolio. And at the same time, other countries like China are rapidly outpacing U.S. public investment. Given that public research is often the foundation upon which private research is built, public investment is essential to maintaining our competitiveness in our U.S. ag economy.

We have a tremendous legacy of supporting public agricultural research in this country. While we have a lot of difficult decisions to make, ag research will be a vital part of ensuring the success of America's agricultural sector over the next century.

I look forward to the testimony of our witnesses today in exploring the importance of ag research, in addressing ag research priorities, and in examining the effectiveness of public-private research partnerships. To that end, I welcome their thoughts on the next farm bill as well.

[The prepared statement of Mr. Davis follows:]

PREPARED STATEMENT OF HON. RODNEY DAVIS, A REPRESENTATIVE IN CONGRESS FROM ILLINOIS

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While private-sector research investment is substantial and growing, public funding for agricultural research in the United States has been on the decline for the past decade. Agricultural research increasingly occupies a smaller share of the United States' public research portfolio. At the same time, other countries like

China are rapidly outpacing U.S. public investment. Given that public research is often the foundation upon which private research is built, public investment is essential to maintaining the competitiveness of U.S. agriculture.

We have a tremendous legacy of supporting public agricultural research in this country. While we have a lot of difficult decisions to make, agricultural research will be a vital part of ensuring the success of American agriculture over the next century.

I look forward to the testimony of our witnesses today in exploring the importance of agricultural research, in addressing agricultural research priorities, and in examining the effectiveness of public-private research partnerships. To that end, I welcome their thoughts on the next farm bill as well.

With that, I turn to Ms. Lujan Grisham for any opening comments she'd like to make.

The CHAIRMAN. With that, I turn to my friend and my colleague, the Ranking Member, Ms. Lujan Grisham, for any opening statements she would like to make.

OPENING STATEMENT OF HON. MICHELLE LUJAN GRISHAM, A REPRESENTATIVE IN CONGRESS FROM NEW MEXICO

Ms. LUJAN GRISHAM. Thank you, Mr. Chairman, and good morning to everybody at the hearing. And thank you very much again to the panel witnesses this morning.

There is no question, and thank you, Mr. Chairman, you made an incredibly valid point which is the public money that we are investing in research gives us the best public-private partnering, so that we are getting resources into private research firms, we are getting those resources into universities, and we are creating an environment where we have a huge return in the ag industry, and then, of course, into the U.S. economy as a whole.

It is imperative that we continue to talk about ways to reverse, or at least slow, the decline in research funding. I am hoping that we will discuss strategies to increase funding, establish priorities, and to dedicate ourselves to identifying the places where additional research would be useful.

Let me give you an example. A Dr. Ian Ray, who is a plant breeder at New Mexico State University, has developed a drought-resistant, or an arid climate resistant variety of alfalfa, named Billy Melton. It is commercially available for the first time this season. Let me put that release in perspective, Mr. Chairman. New Mexico is in the middle of a 100 year drought, and we need every kind of water sipping crop that we can obtain. Alfalfa is one of New Mexico's mainstay crops.

Economists conclude that if we were to be able to get the Billy Melton variety established as a predominate variety, we could save $2 million in water costs in the state. Mr. Chairman, we are being outspent by China, who is continuing to increase and bolster its research investments, and Brazil and India are catching up in their research investments. That means that the demand for agricultural scientists is increasing, and many of America's best and brightest are being poached by foreign research firms and universities.

After reading your testimonies, it is certainly clear to me that we have to do more. However, after getting a glimpse of the President's current budget, it looks to me that the current Administration is cutting agricultural discretionary spending by about $4.7 billion, and that absolutely will impact our research priorities.

Mr. LAWSON. Percent——

Ms. LUJAN GRISHAM. Yes. I am concerned about that, and would love for the witnesses to try to address that in today's hearing.

Such cuts can impact our ability to recruit and train our own ag scientists, and to get young people into the ag industry. And while we are doing better at promoting women and minorities into ag research and ag work, these cuts would further diminish our efforts.

Mr. Chairman, it is critical that we continue to discuss these areas. Thank you very much for your support for research.

And with that, Mr. Chairman, I yield back.

The CHAIRMAN. Thank you, Ranking Member Lujan Grisham.

The chair would request that other Members submit their opening statements for the record so the witnesses may begin their testimony, and to ensure that there is ample time for questions.

I am going to go ahead and introduce all three of our witnesses, and then allow each of you to make opening statements.

I would first like to welcome Dr. Jay Akridge, the Glenn W. Sample Dean of Agriculture at Purdue University, one of the secondary land-grant universities, to the University of Illinois, of course. And Purdue, as you know, is in West Lafayette, Indiana. Good luck in the NCAA tournament. We are playing in the NIT, so I know you will wish us luck there. I know Dr. Akridge is here on behalf of the Association of Public and Land-grant Universities. Thank you for being here. Mr. Richard Wilkins, the Chairman of the American Soybean Association, from Greenwood, Delaware, on behalf of the National Coalition for Food and Ag Research. And my friend, Dr. James Carrington, the President of the Danforth Research Center in St. Louis, Missouri, that I and our colleague on this Committee, Congressman Mike Bost, had the chance to tour together just a few short months ago. So welcome to all three of you.

I would remind the witnesses that there will be a clock in front of you. We would appreciate it if you would keep it to 5 minutes. We will try to do the same up here. And if you hear a little tap, that means that you haven't looked at the clock, and need to speed up a little bit. We will make sure you do.

So with that, Dr. Akridge, please begin when you are ready.

STATEMENT OF JAY T. AKRIDGE, PH.D., GLENN W. SAMPLE DEAN OF AGRICULTURE, PURDUE UNIVERSITY; CHAIRMAN, POLICY BOARD OF DIRECTORS, BOARD OF AGRICULTURE ASSEMBLY, ASSOCIATION OF PUBLIC AND LAND-GRANT UNIVERSITIES, WEST LAFAYETTE, IN

Dr. AKRIDGE. Well, thanks, Chairman Davis. The University of Illinois is a great competitor, but also a great collaborator in our academic enterprise.

The CHAIRMAN. And we have cooler colors of ties, right?

Dr. AKRIDGE. Chairman Davis, Ranking Member Lujan Grisham, and Members of the Subcommittee, again, my name is Jay Akridge, I am Dean of the College of Agriculture at Purdue, and I appreciate the opportunity to testify today.

I am here representing the Board on Ag Assembly of the Association of Public and Land-grant Universities. The BAA represents a national system that knits together more than 107 land-grants, and 60 non-land-grant universities.

While public support for agricultural research and education comes from a variety of sources, my comments today will focus on the extramural funds; capacity and competitive funds provided by USDA through the National Institute of Food and Agriculture, and authorized in the farm bill.

In my written testimony, I outline the case for public investments and agriculture research and extension is fundamental for global competitiveness of our U.S. agriculture, and provide a brief overview of the key points here, but I would be pleased to elaborate on these or provide Purdue examples during the discussion.

As has been mentioned, the productivity story of U.S. agriculture is extraordinary, and that productivity was fueled by research and education. As just one small example, corn yields in the 1930s were 30 bushels per acre, increasing to about 100 bushels per acre while I was growing up on my family's retail farm supply business in western Kentucky. Last year, U.S. corn average yields was 175 bushels per acre.

However, there is no resting on our laurels as the world's population is increasing. Forecasts hit 9+ billion in 2050, which requires 25 to 100 percent more food. The Global Harvest Initiative reports that Total Factor Productivity must grow by 1.75 percent per year for the world to double agricultural production by 2050.

But how to drive that level of productivity has become much more complex in the new century, and this has been alluded to in the opening comments. More variable weather has brought new challenges to the world's farmer. Access to new arable land is limited. Availability and competition for water is increasingly an issue. The environmental implications of farming practices are being questioned globally. Some consumers have demonstrated much deeper interest in how and where food is produced, and societal acceptance of new technology cannot be taken for granted.

Given these issues, what set of technologies and investments and human talent will drive the type of agriculture needed, and who will provide them? The science of the 21st century agriculture will be built on data, collected in ways and volumes unprecedented in our history. The word *convergence* will characterize agricultural technology as biology, data analytics, and automation, combined to provide the productivity increases we need. Universities can play a unique role in bringing these disciplines together and realizing this future.

At the same time, the next century will not be ours alone, as other nations are investing heavily in public agriculture research, and U.S. agricultural competitiveness will be a key issue. As of 2011, for every dollar the United States invested in public agriculture R&D, China, Brazil, and India combined invested $2.15. In addition, U.S. agricultural competitiveness will require both private and public investment. In 1950, public spending on ag research was about 65 percent of the total investment, and by 2010 that figure had declined to 35 percent. But public research is needed to address the questions that the private-sector will not, and public-private partnerships will be increasingly important.

While technology is important, technology in the hands of farmers who know how to use it is even more important. Cooperative extension plays a key role in disseminating research to stake-

holders. And as our stakeholders have evolved, so has extension, with the traditional county-based extension educator or agent, complemented by direct access to campus-based extension specialists and a wide variety of e-learning tools.

Competitiveness is built on human talent, and our colleges of agriculture are focused on providing the talent needed for the next century, with more than 175,000 students enrolled across degree levels. 4–H, a youth development program of cooperative extension, is a talent pipeline and reaches nearly six million youth annually. New STEM, science technology engineering and math programming, has taken the proven 4–H volunteer-led model into exciting new areas.

What are some of the challenges looking ahead? Federal funding for ag research has been stagnant over the past decade in real terms. From 2005 to 2012, USDA funding for ag research declined by 16 percent, falling from $2.9 to $2.4 billion. Our system needs investments in capacity and competitive funds. Federal capacity funds provide land-grant universities with the human talent required to address local research and extension needs, provide timely response in emergency situations such as disease or pest outbreaks, and ultimately the capacity to pursue competitively funded research.

Another significant challenge is the state of our university infrastructure, and we face a current deficit of about $8.4 billion there.

In closing, the most recent QS World University Rankings show that ten of the top 15 ag and forestry universities globally are located within the U.S. With a proven record of impact and with appropriate levels of Federal funding, our land-grant agricultural colleges are ready to address the challenge of helping to ensure the agricultural competitiveness of our U.S. agriculture.

I want to thank you for this opportunity today, and to thank you for your past support of ag research and extension.

[The prepared statement of Dr. Akridge follows:]

PREPARED STATEMENT OF JAY T. AKRIDGE, PH.D., GLENN W. SAMPLE DEAN OF AGRICULTURE, PURDUE UNIVERSITY; CHAIRMAN, POLICY BOARD OF DIRECTORS, BOARD OF AGRICULTURE ASSEMBLY, ASSOCIATION OF PUBLIC AND LAND-GRANT UNIVERSITIES, WEST LAFAYETTE, IN

2018 Farm Bill—Research, Education, and Extension

Introduction

Chairman Davis, Ranking Member Lujan Grisham, and Members of the Subcommittee, I am Jay Akridge, Dean of the College of Agriculture at Purdue University in Indiana, and I appreciate the opportunity to testify as you begin discussions for the next farm bill. I am here today to represent the Board on Agriculture Assembly (BAA) of the Association of Public and Land-grant Universities (APLU) and serve as Chair of the Policy Board of Directors of the BAA.

APLU is a research, policy, and advocacy organization that is dedicated to strengthening and advancing the work of public universities across the nation. Annually, APLU's 238 member institutions enroll 4.8 million undergraduate students and 1.3 million graduate students, while employing over 1.2 million faculty and staff. Each year, 1.2 million degrees are awarded, and institutions conduct $43.5 billion in university-based research.

The purpose of the BAA is promotion and support of agriculture in all of its phases (agriculture, food/nutrition, natural resources, environment, veterinary medicine, forestry, international) and all three missions (research, education, and extension) in the land-grant and agricultural colleges in all 50 states, the District of Columbia, the Commonwealth of Puerto Rico, the territories of the Pacific, and the U.S. Virgin Islands. The APLU BAA includes the deans of agriculture, and the lead-

ership of academic programs, Cooperative extension, experiment stations, and international agriculture in land-grant and non-land-grant colleges of agriculture.[1]

The BAA has held several meetings on the farm bill beginning in mid-2016 to discuss proposals submitted by BAA members and to identify system priorities. This process is on-going. As a result of this inclusive process, the Agriculture Committees can trust that the APLU BAA priorities for the next farm bill will reflect a comprehensive cross-section of agricultural research, education, and extension stakeholders.

While public support for agricultural research and education comes from a variety of sources, my comments today will focus primarily on the extramural funds provided by USDA through the National Institute of Food and Agriculture (NIFA) and authorized in the farm bill. These extramural funds take two general forms: capacity funds (primarily Hatch, Smith-Lever, McIntire Stennis, Evans-Allen, and 1890s extension) and competitive funds (Agriculture and Food Research Initiative—AFRI).

Agricultural Research: Driving Competitiveness in a Global Economy

A Changing Agriculture

The agriculture of the 21st century will be as different from the 20th century as 20th century agriculture was different from the 19th century. Over the 20th century, advances in genetics, machine power, and chemical fertilizers and pesticides promoted staggering increases in agricultural productivity. As an example, U.S. corn yields of 30 bushels per acre in the 1930s, were nearly 140 bushels per acre by 2000. The population of the world soared from 1.5 billion in 1900 to six billion in 2000. While forecasts of mass starvation did not materialize, more than 826 million were food insecure in 2000, despite the profound increases in agricultural productivity.[2]

Looking forward, agriculture still faces a fundamental question—how to feed a growing world? But, that question has become much more complex in the new century. More variable weather has brought new challenges to the world's farmers. Access to new, arable land is limited. Availability of and competition for water is increasingly an issue. The environmental implications of farming practices are being questioned globally. Farmers are finding new opportunities to produce for non-food markets. Some consumers have demonstrated much deeper interest in how and where food is produced, and societal acceptance of new technology cannot be taken for granted. Obesity is a global public health issue and not just in the high income countries. The average age of the U.S. farmer is nearing 60 years old and questions are being raised about where the next generation of farmers will come from.

What set of technologies and investments in human talent will drive the type of agriculture needed to address our 21st century challenges?[3] The science of the 21st century agriculture will be about precision: precise editing of genes to drive plant improvement, precise use of inputs to give plants and animals exactly what they need, precise management of resources to mitigate environmental impacts. This precision will be built on data collected in ways and volumes unprecedented in our history. The word 'convergence' will characterize agricultural technology as biology, data analytics, and automation combine to provide the productivity increases we need to address the challenges defined above. Technology will also help enable an even more consumer-responsive agriculture. Note this 21st century technology revolution is not just about large scale agriculture, producers of all sizes will ultimately have access to many of these technologies in some form as they build their farm businesses around the markets they serve. At the same time, the next century will not be ours alone as other nations are investing heavily in agricultural research and U.S. agricultural competi[ti]veness will be a key issue.

Land-grant universities and colleges of agriculture have answered the call for the research and education needed by our industry in the past, and can in the future. We are prepared to play our role in conducting the research required and the education needed to drive U.S. agricultural competitiveness. Continued public investment in agricultural research and extension is fundamental to addressing the challenges outlined above, and ultimately supports the global competitiveness of the

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[1] A land-grant college or university is an institution that has been designated by its state legislature or Congress to receive the benefits of the Morrill Acts of 1862, 1890, and 1994. Non-land-grant colleges of agriculture (about 60) are public colleges and universities that offer baccalaureate or higher degrees in agriculture, food, and renewable resource education.

[2] "The State of Food Insecurity in the World". FAO, *http://www.fao.org/docrep/x8200e/x8200e00.htm*.

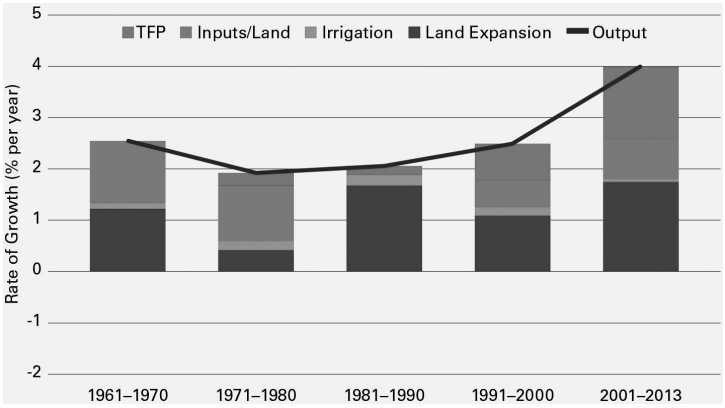
[3] See Woodson, R. "The Role of U.S. Research Universities in Meeting the Global Food Security Challenge." 2016 AAAS Charles Valentine Memorial Lecture, for an overview of some of these emerging technologies.

U.S. agricultural sector. We have certainly appreciated your support in the past, and look forward to your support in the future.

Feeding a Growing World

According to the U.S. Census Bureau, the United States gains one new person every 16 seconds; the world gains a new person about every ½ second.[4] At present rates, the global population will reach 9.6 billion by 2050, and experts believe that agricultural productivity must increase 25–100% from current levels to feed a global population of that magnitude.[5] The challenge here is more than producing calories, it is about providing proper nutrition for a growing population.[6] And, this challenge is more than a food security issue, it is a national security issue as food insecurity and political instability are tightly linked.[7] This task is also made more challenging by a variety of factors: limited land and water resources, increasingly variable weather, natural response to modern farming practices (pests and weeds resistant to insecticides and herbicides, for example), societal attitudes toward science and technology, and barriers to adoption of improved farming practices globally.[8–9]

Figure 4: Sources of Growth in Ag Output Low-Income Countries, 1961–2013



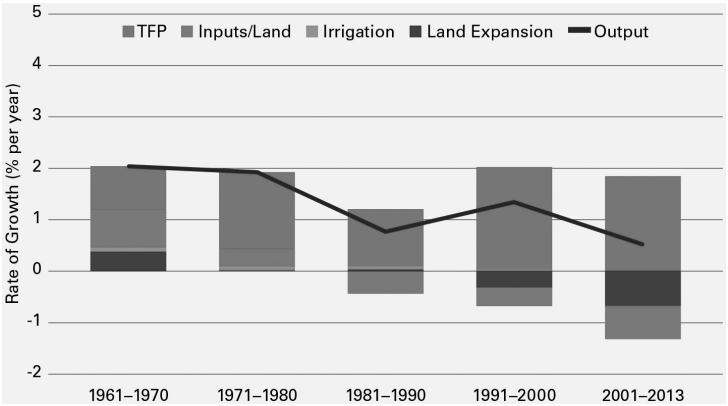
Source: USDA Economic Research Service (2016).
http://www.globalharvestinitiative.org/wp-content/uploads/2016/09/p13_figure-4_Sources-of-Growth-in-Ag-Output_LowIncome-300x226.jpg.
2016 GAP Report® Infographics.

The Global Harvest Initiative (GHI) has worked to quantify the challenge of feeding a growing world and measuring the current status of our ability to meet that challenge. The charts above and below are from the GHI's *2016 Global Agricultural Productivity Report* and demonstrate the profound difference that Total Factor Productivity (TFP) has made in the developed world over the past 50 years. TFP is the ratio of agricultural outputs (gross crop and livestock output) to inputs (land, labor, fertilizer, machinery and livestock). When TFP rises, more output can be produced from a fixed amount of inputs. TFP growth can result from increased effectiveness of inputs, more precise use of inputs, or adoption of improved production practices.[10]

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[4] *https://www.census.gov/popclock/*.
[5] Hunter, M.C., R.G. Smith, M.E. Schipanski, L.W. Atwood, D.A. Mortensen. "Agriculture in 2050: Recalibrating Targets for Sustainable Intensification." *BioScience,* February 22, 2017.
[6] Jones, A.D. and G. Ejeta. "A New Global Agenda for Nutrition and Health: The Importance of Agriculture and Food Systems". *Bulletin of the World Health Organization.* 2015–94: 228–229.
[7] Ejeta, G. "Revitalizing Agricultural Research for Global Food Security". *Food Security,* Volume 1, No. 4 (2009).
[8] Glickman, D. "A Food and Agricultural Research Agenda to Deal with the Asteroids of the Future". 2014 Charles Valentine Riley Memorial Lecture, June 4, 2014.
[9] Baldos, U.L.C. and T.W. Hertel. "Global Food Security in 2050: The Role of Agricultural Productivity and Climate Change." *Agricultural and Resource Economics.* 58: 2014.
[10] 2016 GAP Report: *http://www.globalharvestinitiative.org/GAP/2016_GAP_Report.pdf*.

Figure 5: Sources of Growth in Agricultural Output High-Income Countries, 1961–2013



Source: USDA Economic Research Service (2016).
http://www.globalharvestinitiative.org/wp-content/uploads/2016/09/p13_figure-5_Sources-of-Growth-in-Ag-Output_HighIncome-300x226.jpg.
2016 GAP Report® Infographics.

GHI reports that TFP must grow by 1.75% annually for the world to double agricultural output through productivity gains by 2050.Investment in agricultural research will be a fundamental determinant of whether or not this level of productivity growth is achieved.

According to the GHI's 2016 *Global Agricultural Productivity Report,* "Agriculture research and development (R&D) and extension programs are essential public goods and the principal drivers of TFP. Along with private-sector and collaborative research, public R&D in agriculture plays an essential role in fostering agricultural innovation systems." The report goes on to state that publicly funded agricultural research generates technologies and innovation that enhance farmer productivity and competitiveness, reduce waste in the food value chain, and ultimately benefit consumers through lower prices and improved access to safe and nutritious food.

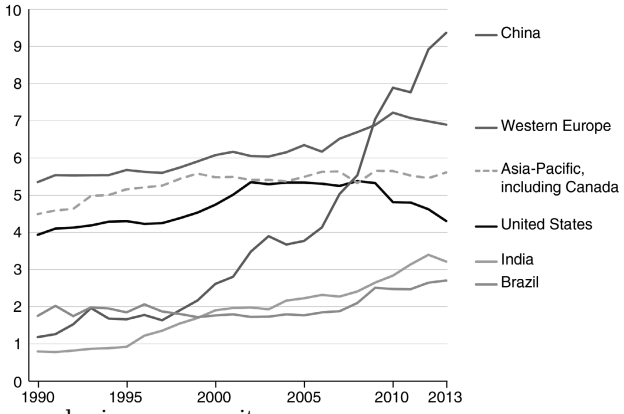
Investment Strategies of U.S. Competitors

Who will produce the food needed for a growing world and who will bring the next generation of agricultural technologies to the market are important questions. The U.S. is being quickly outpaced by other countries in public agricultural research and development spending. The chart below from USDA's Economic Research Service shows that China has dramatically increased its investment in agricultural research at the same time that U.S. public investment in agricultural research stagnated. Between 1990 and 2013, the U.S. share of spending among nations with major public agricultural research and development investments fell from 22.5 percent to 13.4 percent, largely driven by a decline in U.S. investment and rising spending from developing countries such as China and India.[11]

[11] *https://www.ers.usda.gov/amber-waves/2016/november/us-agricultural-rd-in-an-era-of-falling-public-funding/*.

U.S. Public Sector Funding for Agricultural R&D Falls as Spending by China and India Rises

Constant 2011 PPP$, Billions



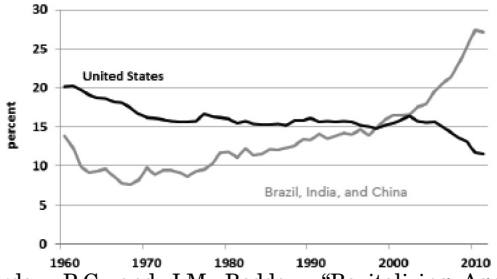
PPP = purchasing power parity.

Source: USDA, Economic Research Service and Agricultural Science and Technology Indicators (ASTI), Organisation for Economic Co-operation and Development.

[*https://www.ers.usda.gov/webdocs/charts/november16—feature_clancy_fig03png/november16_feature_clancy_fig03.png?v=42676*.]

The chart below shows the shares of global public agricultural research and development spending for the U.S. and Brazil, India, and China. Pardey and Beddow note that "key middle-income countries with agricultural sectors (specifically Brazil, India, and China) collectively overtook the United States in 1998. As of 2011, for every dollar the United States invested in public agricultural R&D, those countries invested $2.15."

Shifting Global Public Share of Food and Agricultural R&D, 1960–2011



Source: Pardey, P.G. and J.M. Beddow, "Revitalizing Agricultural Research and Development to Sustain U.S. Competitiveness." Farm Journal Foundation, InSTePP R&D accounts version 3.8.

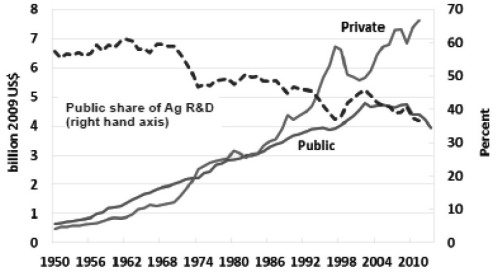
This shift in research and development spending has occurred despite the consistent evidence of the large and pervasive societal return on investment from U.S. public investment in agricultural research. Pardey and Alston summarize much of this work and report that "surveys of hundreds of studies quantifying the returns from agricultural research suggest that rates of return in the range of 40–60 percent per year. The most recent, comprehensive work by Alston, *et al.,* reconfirms that U.S. public investment in agricultural research has paid off handsomely, with benefit-cost ratios of 20:1 or higher." [12–13]

[12] Pardey, P.G. and J.M. Alston. "For Want of a Nail: The Case for Increased Agricultural R&D Spending". American Enterprise Institute.

[13] Alston, J.M., M.A. Anderson, J.S. James, P.G. Pardey. *Persistence Pays: U.S. Agricultural Productivity Growth and the Benefits from Public R&D Spending.* SPRINGER, 2010.

Public- and Private-Sector Research: A Needed Partnership

Addressing the global challenges outlined above will require both increased levels of public investment as well as more private investment in agricultural research. Over the past 50 years, there has been a pronounced shift toward private funding of agricultural research in the U.S. In 1950, public spending on agricultural research was about 65% of the total investment, by 2010 that figure had declined to about 35%.



Source: Pardey, P.G. and J.M. Beddow. "Revitalizing Agricultural Research and Development to Sustain U.S. Competitiveness". Farm Journal Foundation, February 2017.

Despite increased levels of investment by private firms in agricultural R&D, public investment is still much needed. Private-sector investment will rightly follow opportunities for short-term return on the research investment. Public-sector investment is needed to pursue questions/areas where the pay-off will ultimately happen, just over a longer period of time than private investors would be satisfied with. Examples include work on understanding the ways that plants respond to environmental stress such as drought or heat at the most fundamental level. Such work is typically deemed too exploratory and hence too risky to be the focus of private-sector research. But, unless such basic research questions are answered, it is impossible to breed better plants. In addition, some critical questions are more applied and/or have immediate societal payoffs, even if short-run returns to an individual or a private firm are modest. Examples here would include research on farming practices that enhance water quality. Such research may well have no immediate commercial value, but the value of clean water to a community, a state, or our nation is obvious.

Importantly, public and private investment in agricultural research is not an 'either/or' situation, and private investment in university agricultural research now accounts for about 23–24% of the total funding.[14–15] Such public-private partnerships will in all likelihood be even more important in the future.

Cooperative Extension: Providing Research-Based Insights

Cooperative extension is the unique pillar of the three that make up the land-grant system (research, education, extension). Reaching the more than 3,000 counties in the U.S. with research-based insights, the stakeholder connections provided by extension help insure relevancy of the land-grant system's applied research and education activities. In rural counties, extension provides a lifeline to unbiased insights on agricultural, health, and community development questions. In urban areas, increasing interest in urban agriculture as well as health and wellness issues are addressed through extension. As stakeholders have evolved, so has extension with the traditional county-based extension educator or agent, complemented by direct access to campus-based extension specialists and a wide variety of e-learning tools. More on the impact of extension can be found here: *https://extension.org/*.

Recent research has quantified the societal returns to investments in agricultural extension and finds the payback is both large (returns on investment of over 100%) and quick (in many cases a year or less given the fact that extension influences current decision making).[16]

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[14] Monke, J. "Agricultural Research: Background and Issues." Congressional Research Service, October 6, 2016.

[15] Clancy, M. K.O. Fuglie, P.W. Heisey. "U.S. Agricultural R&D in an Era of Falling Public Funding." *Amber Waves,* ERS–USDA, Vol. 14, Issue 10, November 2016.

[16] Huffman, W.E. "New Insights on the Impacts of Public Agricultural Research and Extension". *Choices,* 1st Quarter 2016 (31): 1.

Building Human Talent

The land-grant system and our non-land-grant colleges of agriculture have a fundamental role in training the next generation of talent for the food and agricultural industry. The most recent data (2013) show more than 175,000 students (BS, MS, Ph.D.) enrolled at land-grant and non-land-grant colleges of agriculture, and demand for that talent remains strong. A recent study by Purdue and NIFA reported an annual demand for 57,900 BS and higher degree graduates per year through 2020 in the areas of food, agriculture, renewable natural resources, or the environment.[17] While enrollments at colleges of agriculture have been growing, the total supply of agriculture graduates is expected to be 35,400 annually—leaving a gap (39%) to be filled by graduates with other degrees. Beyond the supply and demand situation, the fact that these students enrolled in colleges of agriculture are being trained by individuals who have research or extension appointments (or both) brings state of the art science and/or stakeholder relevance to students in a unique way, enhancing their educational experience.

Extension also has a fundamental role in developing human talent and the 4–H program provides an important example. 4–H is the largest youth development program in the U.S., reaching nearly six million youth annually, who are supported by 500,000 volunteers, and 3,500 4–H professionals. 4–H has a well-documented impact building life-skills in youth.[18–19] Importantly, 4–H members pursue higher education at a higher rate than do high school students in general.[20] While traditional 4–H projects remain a fundamental part of 4–H, new Science, Technology, Engineering, and Math (STEM) programming is taking the proven 4–H volunteer-led, research-based model into an exciting new areas. In Indiana, the fastest growing 4–H clubs are in urban centers such as Gary and Indianapolis. We now have more than 70 counties with robotics 4–H clubs in Indiana.

The Land-Grant System: Leveraging Resources

It is essential to understand the leverage that Federal funding for research and Cooperative extension enjoys as a result of the network of land-grant and non-land-grant Colleges of Agriculture that exists. We are part of a national system that knits together more than 107 land-grant colleges and universities and 60 non-land-grant universities. This network allows us to share best practices, collaborate on research and extension initiatives, avoid duplication in our efforts, and at the same time drill down to address local needs. In fact, 25% of our Federal capacity fund investments in agricultural research programs must be spent on projects that span multiple states. In addition, competitive funds drive multi-institution collaboration as researchers build the most competitive teams they can to put the best possible case forward for limited available funding.

The total public investment in agricultural research and extension is a partnership between Federal, state, and county sources—with a mandatory match of the Federal funds dollar for dollar with state funds required (for most states, the match is much higher).[21] Without Federal support, this partnership collapses, and stressed state budgets will simply not be able to support even current levels of investment, much less what is needed.

As pointed out earlier, public investment in agricultural research is also leveraged with private-sector investment—in 2013, for every dollar the Federal Government invested in university research, the private-sector invested 49¢.[22] Again, without Federal investment in capacity and competitive funds, these private-sector investments in agricultural research at universities do not happen at this level.

An Indiana Example

I will provide an Indiana example of the importance of Federal funding for agricultural research that demonstrates the critical role of partnerships and the leverage of available Federal funding. Purdue University made a $20 million commit-

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[17] "Employment Opportunities for College Graduates in Food, Agriculture, Renewable Natural Resources, and the Environment, United States, 2015–2020." USDA and Purdue University, 2015.

[18] Mulroy, M., Kraimer-Rickaby, L. "The Impact and Sustainability of 4–H Youth Development Programs: A Synthesis Report" University of Connecticut Center for Applied Research, 2006.

[19] 4–H Study of Positive Youth Development: *http://3t61of1t6u3x3af7ir2y91ib.wpengine.netdna-cdn.com/wp-content/uploads/2016/02/4-H-Study-of-Positive-Youth-Development-Full-Report.pdf*.

[20] Ratkos, J. "4–H Makes a Difference in Post-secondary Education Enrollment." *http://msue.anr.msu.edu/news/4_h_makes_a_difference_in_post_secondary_education_enrollment*, Posted December 19, 2014.

[21] Clancy, M., K.O. Fuglie, P.W. Heisey.

[22] Clancy, M., K.O. Fuglie, P.W. Heisey.

ment to a new Plant Sciences Institute based in our College of Agriculture, one of only two research investments made as part of a set of ten university level strategic initiatives called Purdue Moves. The focus of this Institute is improved plants—plants that yield more, plants that are more tolerant of drought, plants that use nutrients more effectively, and plants that have improved nutritional profiles. This investment was made because our President and Trustees recognized the importance of plant agriculture as we look to the future, for all of the reasons highlighted above. However, beyond the importance of the problem, the University also invested because our College had deep strength in plant agriculture research and extension, which was built on and supported by Federal capacity funding.

This University investment included new faculty positions, some new facilities and equipment, a focus on bringing discoveries to the marketplace, and new student training initiatives. The $20 million was intended to be platform investment, to help attract others to invest—and, that is happening. Our Indiana corn and soybean farmers through their check-off funds have supported the construction of a new field scale plant phenotyping facility to help us both drive plant improvement and take the idea of precision agriculture to an entirely new level through sensor development and new data analytics. Other industry partners, including firms far outside of agriculture such as Verizon and IBM, have joined us as well. Multiple start-up companies have been launched since the University made the commitment in 2014. In addition, we have launched a pre-college educational experience in the summer to help attract young men and women to plant agriculture, as well as an undergraduate research fellows program for students on campus.

None of this would have happened without the Federal capacity funding that supported the salaries and research of our plant scientists. Bringing this full circle, one of our soybean breeders recently received a large AFRI grant to put the new phenotyping facility to work in improving soybean genetics. Looking forward, it will take enhanced levels of Federal capacity and competitive funds, leveraged with farmer, industry, foundation, and state funds, to drive the kind of research and education program we need to feed a growing world.

Looking Forward: Opportunities and Issues

Funding Levels

Advances in food, agricultural, and environmental sciences depend upon research through the USDA NIFA. However, current USDA funding for food and agricultural research at $2.4 billion per *annum,* is not sufficient to address the challenges outlined earlier. In fact, Federal funding for agricultural research has been stagnant over the past decade, and has declined in real terms.[23] From 2005 to 2012, USDA funding for agricultural research declined by 16% in real terms, falling from $2.9 billion to $2.4 billion in constant 2014 dollars.

Like agriculture, modern advances in health care depend upon research advances from the public sector, supported with investments of more than $32 billion per annum directed through the National Institutes of Health. Much of this research takes place at public universities, and depends upon state of the art facilities for conducting research, and is enhanced by funding from private-sector interests. Over the 1990–2012 period, funding for NIH increased 135% while USDA funding increased 21% over that same period.[24] There is no doubt that medical research addressing health issues in our country is a national priority, but one can question the relative investment in research addressing the security of our food supply.

Another instructive trend is the split of Federal and state support for agricultural research and development. Since 1950, the share of publicly funded research and development carried out by state-based land-grant universities and other agencies has increased from 61 percent in 1950 to 73 percent in 2013—leading to more dependence on state-funding and facilities, an increasingly tenuous position given the status of state budgets.

Capacity and Competitive Funding Are Equally Important

Federal support for both capacity (Hatch, Smith-Lever, McIntire Stennis, Evans-Allen, and 1890s extension) and competitive funding (Agriculture and Food Research Initiative—AFRI) is essential. Federal capacity funds provide land-grant universities with the human talent and support needed to address local research and extension needs, provide timely response in emergency situations such as a disease or pest outbreak or weather event, and ultimately the capacity to pursue research supported by other funding sources including competitive Federal funds, foundation

[23] *Pursuing a Unifying Message: Elevating Food, Agricultural, and Natural Resources Research as a National Priority.* Charles Valentine Riley Memorial Foundation, November 2014.
[24] Charles Valentine Riley Memorial Foundation.

funding, and private funding. AFRI is NIFA's flagship competitive funding program, but has never been funded at its authorized level of $700 million. As a result, many research proposals, deemed both important and deserving of funding, are not funded. In fiscal 2015, more than 2,600 proposals were submitted for AFRI funding, requesting almost $1.8 billion. Through a rigorous peer-review process, over 1,400 were recommended for funding, but only 569 could be supported with the funds available.

Infrastructure Challenges

Another significant challenge faced by our land-grant universities is the state of our research and education infrastructure. In 2015, the APLU BAA commissioned a study into deferred maintenance[25] which estimates that the land-grant system faces a deferred maintenance backlog of $8.4 billion. The study delivered three key findings:

1. The level of deferred maintenance identified is significant and conditions exist for it to grow.
2. There are three main areas identified that are contributing to the growth of deferred maintenance:
   a. The majority of space was constructed during a period of rapid, poor quality construction.
   b. Most buildings have received insufficient capital investments as they have aged.
   c. 80% of campuses are investing at such a low level that deferred maintenance will grow annually.
3. These conditions are consistent across the country.

A major driver of deferred maintenance at land-grant institutions is the age profile of buildings. Of the 15,596 buildings included in the study, containing 87′2 million gross of space, 53% were built between 1951 and 1990, the period when buildings were built "quickly and with lower quality standards and materials." Facilities built in this time period account for 68% of the total $8.4 billion in deferred maintenance costs across the system. The replacement cost of all research and education space in the system is estimated at $29 billion.

The study also found that the capital investment needed to renovate these buildings is also falling well short. "Over 80% of the schools of agriculture were spending at levels that meant they are deferring projects on an annual basis" the study said. The average capital spending per year at schools of agriculture was $1.82 per gross 1′2, compared to $4.40 per gross 1′2 for the broad database of U.S. colleges and institutions—significantly lower.

As just one example of this issue at Purdue University, we recently completed a study of infrastructure needs at our eight research farms strategically located around Indiana. The 2014 study showed that more than $25 million is needed by 2020 to address the backlog of deferred maintenance and to equip the farms to do the contemporary applied research needed by farmers in our state.

Efforts to Unify under a Common Message for Research

Purdue and other land-grant universities, along with partners at non-land-grant schools, research societies, agricultural organizations and many others, have actively been engaged in national discussions on how we take a different approach to ensure a sustainable future in food, agricultural and natural resources. Led by the Charles Valentine Riley Memorial Foundation, this effort envisions the opportunity for a convergence of efforts that result in development of a unified message—one that calls for making public investment in food, agricultural and natural resources research a higher national priority. A common thread of these dialogues has been exploring the formation of a broad coalition committed to develop the compelling case for enhanced investment in research. The times call for an inspiring vision, bold action and a heightened sense of purpose. We believe these continuing discussions underscore the need to think differently about how agriculture speaks out on the need to fund research at the priority it deserves—by speaking together on the benefits made possible for the public good and our common future.

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[25] *http://www.aplu.org/news-and-media/News/2015/10/15/sightlinesaplu-study-finds-84-billion-in-deferred-maintenance-at-schools-of-agriculture-in-us*.

Challenge of Change Commission

To advance the goal of feeding the world, the APLU has established the Challenge of Change Commission,[26] which aims to examine challenges to food security and make recommendations on the actions required by public research universities to meet global food needs by 2050. The commission's charge is three-fold:

1. Identify and prioritize the key challenges that our public universities can successfully address that will advance food security in North America and the world.
2. Recommend how our public universities can align their resources to address the challenges identified by the Commission.
3. Determine the resources required for our public universities to address the challenges identified by the Commission.

There is an obvious synergy among the land-grant system's research, education, and extension mandate and the agriculture industry's charge to feed the growing population. APLU is ready to lead the discussion and address the challenge with the direction and support of Congress.

Closing Comments

Up for the Challenge . . .

Despite these challenges, the nation's land-grant universities and agricultural colleges remain the world's premier source of research, education, and extension programs benefiting the agricultural industry from producer to consumer. The recent QS World University Rankings provide evidence of this fact with ten of the top 15 agricultural and forestry universities globally located in the U.S.[27] With a proven record of impact, and with appropriate levels of Federal investment, APLU members stand ready to address the challenges of feeding a growing world.

Thank you for this opportunity to share the nature of the food security challenge in front of us, the reasons public investments in agricultural research and extension are important, and some of our system's successes and challenges. Thank you for your past support of agricultural research and extension. The Association of Public and Land-grant Universities is available to assist the Agriculture Committee, and the broader industry, in any way possible, and we look forward to the culmination of the next farm bill.

The CHAIRMAN. Thank you, Dr. Akridge.

Mr. Wilkins, you are recognized for 5 minutes.

STATEMENT OF RICHARD WILKINS, CHAIRMAN, AMERICAN SOYBEAN ASSOCIATION; VICE PRESIDENT, NATIONAL COALITION FOR FOOD AND AGRICULTURAL RESEARCH, GREENWOOD, DE

Mr. WILKINS. Good morning, Mr. Chairman, and Members of the Subcommittee.

My name is Richard Wilkins, and I am a farmer from Greenwood, Delaware; the state that continuously ranks first in the nation in gross farm revenue per acre of farmland.

I am pleased to testify today in my capacity as Vice President of the National Coalition for Food and Agricultural Research. My written testimony is provided for the record, and I will use my time today to offer a few highlights.

NCFAR is a customer-led coalition that advocates sustaining and increasing public investment, and food and agricultural science. Our support encompasses the entire USDA Research, Extension, and Education mission area, including extramural and intramural programs. By customer, I mean not only my farm business, but all the other stakeholders who need and benefit from the scientific out-

[26] *http://www.aplu.org/projects-and-initiatives/international-programs/challenge-of-change/ChallengeofChangeCharge.pdf*.

[27] *https://www.topuniversities.com/university-rankings/university-subject-rankings/2017/agriculture-forestry*.

comes that are produced by our nation's publicly funded agricultural research. I would suggest that all of us are customers, including the Members of this Subcommittee.

While I am not a researcher, I do appreciate the vital role that researchers play. Modern agriculture is a science-based business. I know that I can do what I do better because of advancements made possible by Federal investments in agricultural research.

The research title of the farm bill represents the nation's signature Federal investment in the future of the food and agricultural sector. The success of every other title in the farm bill is connected to scientific outcomes made possible through the research title.

I respectfully submit that we as a nation are not investing enough in publicly funded research to regain and then maintain our nation's place as the leader in agricultural research. That is a major reason I invest a significant amount of my time in NCFAR, the American Soybean Association, and other groups, to help make the case for public investment in food and agricultural research.

Investment in food and agricultural science is not only good business, it is good for business. One recent report estimates a return on investment of ag research dollars of about 67 percent. Yet, Federal funding for agricultural research has been essentially flat for over 20 years, despite much greater demonstrated needs, and has reportedly declined by about 25 percent in real terms since 2003. Our nation's competitiveness in global markets is at risk, as investments in agricultural research by our global competitors have been growing rapidly.

NCFAR has several activities underway with the objective of better informing our leadership and others in laying the groundwork for a strong research title and the necessary funding. One new initiative I am pleased to announce is that NCFAR is involved in planning for a *Summit on Integrated Research, Education, and Extension Priorities To Advance American Agriculture.* The aim of the summit is to engage stakeholders in developing a vision for what the agricultural research enterprise should look like to best serve the needs of the food and agricultural system in the 21st century. The summit will focus on four critical areas: fueling growth in the agricultural economy through rapid adoption of innovations; harnessing the power of big ag data in research and extension; advancing the health of U.S. consumers and environmental quality; and assuring the security of United States agriculture and food systems. Additional information will be made available in the near future.

We appreciate the longstanding leadership of this Subcommittee in authorizing and overseeing implementation of a strong research title, and we look forward to working with you.

I appreciate the opportunity to share our views, and would be pleased to respond to any questions.

[The prepared statement of Mr. Wilkins follows:]

PREPARED STATEMENT OF RICHARD WILKINS, CHAIRMAN, AMERICAN SOYBEAN ASSOCIATION; VICE PRESIDENT, NATIONAL COALITION FOR FOOD AND AGRICULTURAL RESEARCH, GREENWOOD, DE

Mr. Chairman and Members of the Subcommittee,

My name is Richard Wilkins. I am a farmer from Greenwood, Delaware. I farm 400 acres of soybeans and 400 acres of corn annually and produce 250 acres of wheat, 100 acres of barley, 300 acres of vegetables, and 400 acres of hay. I also raise 120 head of beef cattle.

I am pleased to testify today in my capacity as Vice President of the National Coalition for Food and Agricultural Research (NCFAR), a nonprofit, nonpartisan, consensus-based and *customer-led* coalition that brings food, agriculture, nutrition, conservation, and natural resource stakeholders together with the food and agriculture research and extension community. NCFAR serves as a forum and a unified voice in support of sustaining and increasing public investment at the national level in food and agricultural science as a top national priority. A membership list is attached. More information about NCFAR is available at *http://www.ncfar.org*.

NCFAR's support encompasses the entire U.S. Department of Agriculture (USDA) Research, Extension, and Education (REE) mission area, including extramural programs in the National Institute of Food and Agriculture (NIFA)—such as the Agriculture and Food Research Initiative (AFRI), and capacity funds to support Experiment Stations and Cooperative extension—and intramural programs in the Agricultural Research Service (ARS), Economic Research Service (ERS), and National Agricultural Statistics Service (NASS), as well as the U.S. Forest Service research program. NCFAR urges a balanced portfolio, as the various programs serve important and complementary roles. NCFAR supports mandatory programs in the farm bill that provide funding for research. It is important to include investments in both fundamental and applied research, as well as translational education. In addition, publicly funded research serves critically important objectives that private-sector research cannot fulfill in a number of areas. For example, the results of publicly funded research are available to the public, including policy makers. Companies are often unable to fund fundamental research that lays the foundation for much of our nation's applied research.

With the farm bill reauthorization process in its early stages, NCFAR has several activities underway with the objective of better informing our leadership, other stakeholders, the Congress, and the Administration in laying the groundwork for a strong research title and supporting funding.

One longstanding initiative is our signature 'Lunch~N~Learn' seminar series in which our team works to inform hill staff and other stakeholders by featuring the publicly funded work of leading-edge scientists on a diverse array of disciplines and timely topics. Over the past decade, we have convened 125 seminars with nearly 8,000 attendees. A document providing highlights of the seminar series is attached. More detail is available at *http://www.ncfar.org/Hill_Seminar_Series.asp*.

Mr. Chairman, we greatly appreciate the support of your staff as well as staff from other Committee Member offices in helping to arrange the Agriculture Committee hearing rooms for these seminars. Thank you.

NCFAR is taking additional action on several fronts to inform the current farm bill reauthorization process and be a more effective voice for a strong research title.

First, NCFAR's Research Outreach Committee has convened a farm bill task force, which is in the early stages of developing recommendations on the reauthorization of the farm bill research title for our Board to consider. We are also collaboratively engaging allied groups with the objective of providing timely recommendations to this Subcommittee and the Congress.

Second, I am pleased to announce that NCFAR is involved in planning for a *Summit on Integrated Research, Education, and Extension Priorities to Advance American Agriculture.* The aim of the Summit is to engage stakeholders in developing a vision for what the food and agricultural research, extension and education enterprise should look like to best serve the needs of the food and agricultural system in the 21st century and capitalize on the robust potential of the agricultural, food, and resource sectors to fuel further growth in the United States economy. The summit will focus on four critical areas; fueling growth in the agricultural economy through rapid adoption of innovations; harnessing the power of big Ag data in research and extension; advancing the health of U.S. consumers and environmental quality; and assuring the security of U.S. agriculture and food systems. We will provide additional information in the near future.

Third, NCFAR is actively involved in other collaborative efforts intended to inform and support the reauthorization of a strong farm bill research title, including (1) the unified messaging effort led by the Riley Memorial Foundation, and (2) launch of the *Breakthroughs 2030* study, being managed by the SoAR Foundation in conjunction with the National Academies of Science (NAS), to produce a 10 year agenda for food and agricultural research.

I mentioned earlier that NCFAR is "customer-led." By "*customer*" I mean my farm business and all other the stakeholders who need and benefit from the scientific out-

comes that are produced by our nation's publicly funded research, extension and education system in our own work.

Research is an important means to critical ends—providing science-based information and tools that help us in the food and agricultural system do our jobs for the ultimate benefit of consumers, the nation's economy, and the world.

The same holds true for a myriad of other "customers"—such as my fellow farmers and ranchers across the nation; the agricultural input industry; food processors; professionals in the fields of nutrition and health; natural resources and environment; rural communities; and ultimately all consumers of food and natural fiber around the world.

Furthermore, this Subcommittee and other Members of Congress and policy makers at all levels of government are important "customers" of research, extension and education made possible through the research title.

This is indeed an exciting time for me and our family farming operation. The challenges our farm family is experiencing—and indeed across our nation's food and agricultural system—have brought into fresh focus the need for a robust public investment in research, extension and education.

I am not a researcher, though I do some experimenting in my farming operations. However, I do appreciate the vital role that researchers and extension specialists play in our society. Modern agriculture is a science-based business. I need what research and extension can provide in my operations. I know that I can do what I do better because of advancements made possible by Federal investments in food and agricultural research.

The research title of the farm bill represents the nation's *signature Federal investment in the future of the food and agricultural sector*. In fact, the success of every other title in the farm bill and those who are charged with carrying out their respective missions is arguably dependent in significant part on scientific outcomes and tools generated by programs authorized through the research title, and then funded by Congress.

Research is not an end in itself—rather it is a vital means to help achieve many national priorities. The research title is critical in providing advancements in food and agricultural research, extension and education that help provide the tools needed to sustain and strengthen America's food and agricultural sector, rural communities, and the national economy. Public investment in food and agricultural research, extension and education today and in the future must simultaneously satisfy a range of needs, including food quality and quantity, resource conservation, producer profitability, and food safety and security, and helping to improve health.

At the risk of oversimplification, Federal funding is the fuel for USDA's REE engine and determines how effectively the important goals of the research title are realized. I respectfully submit that we as a nation are not investing enough in publicly funded research to permit discovery necessary to regain and then maintain our nation's place as the leader in agricultural research. That is a major reason I invest a significant amount of my time in NCFAR, the American Soybean Association and other groups to provide input as a stakeholder and leadership in urging increased public investment in food and agricultural research, extension and education.

Investment in food and agricultural science is not only good business, it's good for business. By any measure, publicly funded food and agricultural science represents an outstanding investment. Public and private investments in U.S. agricultural research and practical application of results have paid huge dividends to the United States and the world, especially in the latter part of the 20th century. The CARD report entitled "Measuring Public Agricultural Research and Extension and Estimating their Impacts on Agricultural Productivity: New Insights from U.S. Evidence" (Jin & Huffman, 2016) presents a summary of the most recent returns on investment of agricultural research dollars to have a rate of return of approximately 67 percent.

However, the unparalleled success story in the food and agricultural system is in large part the product of *past* investments in food and agricultural research and extension. Federal funding for food and agricultural research, extension and education has been essentially *flat for over 20 years* despite much greater demonstrated needs, and has reportedly declined by about 25 percent in real terms since 2003. At the same time support for other Federal research has increased substantially. Our nation's competitiveness in global markets is at risk, as investments in food and agricultural science by our global competitors have been growing rapidly.

The 2008 and 2014 Farm Bills recommitted to an authorized level of $700 million annually for AFRI. Yet 8 years later, for FY16, appropriations were about $350 million. NCFAR is on record in support of funding AFRI at the fully authorized level as soon as practicable. Increases in AFRI should represent an addition to funding for REE programs and not come at the expense of other REE programs. NCFAR

is expressing support for $375 million in FY17, the same level reported out by both the House and Senate Appropriations Committees. We urge the Congress to include that amount in any final budget reconciliation. Our position on FY18 funding for the REE mission, including AFRI, is currently under development.

Increased Federal investments in the USDA, REE mission area will lead to advances and breakthroughs in agricultural productivity, improved animal, plant and soil health, and nutrition and lead to healthier citizens, a healthier agricultural economy, and a stronger and more globally competitive America.

Tools provided through publicly funded research, extension and education are needed to help achieve safer, more nutritious, convenient and affordable foods delivered to sustain a well-nourished, healthy population; more efficient and environmentally friendly food, fiber and forest production; improved water quality, land conservation, wildlife and other environmental conditions; less dependence on nonrenewable sources of energy; expanded global markets and improved balance of trade; and more jobs and sustainable rural economic development.

Societal demands and expectations placed upon the food and agricultural system are ever-changing and growing. Examples of current and future needs include addressing bio-security; food-linked health costs; development of vaccines and diagnostics, antibiotics, de-wormers, antifungals and parasiticides, antimicrobial use strategies, control and therapy for diseases and infections, transboundary disease and foreign animal disease; environment and conservation; water quality; farm income and rural revitalization; biofuels and climate change; the increasing world demand for food and fiber and improved diets; and needed advances in biotechnology and genetic resources research. A United Nations report projects that we will need to double food production to feed nine billion people by 2050, and that 70 percent of the increase must come through research developing new technologies and increased productivity.

We appreciate the longstanding support this Subcommittee, the full Committee and its Members have demonstrated over the years to authorize and oversee implementation of a strong research title that can compete more effectively in the funding process, both within the Administration and in the Congress.

NCFAR looks forward to working as a customer-led coalition with this Subcommittee, the full Committee, Congress, the Administration and other stakeholders to help ensure that the USDA REE mission moves forward as envisioned and receives the resources and funding needed to achieve scientific outcomes that are necessary for the food and agricultural sector to address multiple demands, challenges and expectations.

I appreciate the opportunity to share our views.

Attachments

- Witness Disclosure Form.*
- Wilkins Biography.*

ATTACHMENT 3

National Coalition for Food and Agricultural Research Members List

Member Organizations

Academy of Nutrition and Dietetics
American Pulse Association and USA Dry Pea and Lentil Foundation
Agricultural Retailers Association (ARA)
American Seed Trade Association (ASTA)
American Society for Horticultural Science (ASHS)
American Society for Nutrition (ASN)
American Society of Agricultural and Biological Engineers ASABE)
International Food Information Council (IFIC)
Iowa State University—CALS
Kansas State University
Michigan State University
Mississippi State University
Monsanto
National Association of State Departments of Agriculture (NASDA)
National Association of Wheat Growers (NAWG)

*The documents referred to are retained in Committee file.

American Society of Agronomy (ASA)
American Society of Animal Science (ASAS)
American Society of Plant Biologists (ASPB)
American Soybean Association (ASA)
American Veterinary Medical Association (AVMA)
Animal Agriculture Alliance Animal Health Institute (AHI)
Association of American Veterinary Medical Colleges (AAVMC)
Biotechnology Innovation Organization (BIO)
Cargill
CoBank
Corn Refiners Association
Council for Agricultural Science & Technology (CAST)
Council for Biotechnology Information (CBI)
Council on Food, Agricultural, and Resource Economics (C–FARE)
CropLife America
Crop Science Society of America (CSSA)
Experiment Station Committee on Organization & Policy (ESCOP)
Extension Committee on Organization & Policy (ECOP)
Farm Foundation
Federation of American Societies for Experimental Biology (FASEB)
FASS, Inc.
Illinois Farm Bureau
Institute of Food Technologists (IFT)
National Corn Growers Association (NCGA)
National Council of Farmer Cooperatives (NCFC)
National Grain and Feed Association (NGFA)
National Oilseed Processors Association
National Pork Producers Council
National Potato Council
Noble Research Institute, LLC
North American Millers' Association (NAMA)
North Central Regional Association of State Agricultural Experiment Station Directors (NCRA)
Northeastern Association of State Agricultural Experiment Station Directors (NERA)
SoAR Foundation
Soil Science Society of America (SSSA)
Southern Association of Agricultural Experiment Station Directors (SAAESD)
Sustainable Agriculture Coalition (SAC)
Syngenta
The Cotton Foundation
The Fertilizer Institute
The IR–4 Project
University of Arkansas
University of Idaho
University of Kentucky
University of Nebraska
University of Tennessee
Weed Science Society of America (WSSA)
Western Association of Agricultural Experiment Station Directors (WAAESD)

Individual Members

Dr. Jerry Baker
Dr. Gale Buchanan
Dr. Nancy M. Cox
Dr. William Danforth
Kellye Eversole
Dr. Barbara Glenn
Dr. John Patrick (Pat) Jordan
Dr. Martin A. Massengale
Kristina Owens
Michael Newman, D.V.M.
Dr. Fred Stormshak

Sponsors

Academy of Nutrition and Dietetics
Agronomy, Crop and Soil Science Societies
American Bakers Association
American Phytopathological Society
American Seed Trade Association
American Society of Plant Biologists
Bayer CropScience
Biotechnology Innovation Organization (BIO)
Corn Refiners Association
Council for Agricultural Science and Technology (CAST)
Council for Biotechnology Information (CBI)
Experiment Station Committee on Organization & Policy (ESCOP)
Extension Committee on Organization & Policy (ECOP)
Institute of Food Technologists
Michael Newman, D.V.M.
National Council of Farmer Cooperatives (NCFC)
National Farmers Union
National Milk Producers Federation
National Oilseed Processors Association
North American Millers' Association (NAMA)
Riley Memorial Foundation
Syngenta

Council on Food, Agricultural, and Resource Economics (C–FARE)
CropLife America
Dr. William Danforth
Eversole Associates
United Soybean Board
University of Wyoming
Weed Science Society of America
Western Skies Strategies

7/10/2017.

ATTACHMENT 4

'Lunch~N~Learn' Hill Seminar Series Highlights

http://www.ncfar.org/Hill_Seminar_Series.asp

Goal: Inform Hill Staff & other policy stakeholders about the value of public investment in food & ag research through hill seminars featuring leading edge researchers on topics of high interest. Helps staff make more informed recommendations about federal funding for Food and Ag RE&E.

- **478 attendees** at 6 seminars in 2017. Over **8,300** attendees over past 12+ years through **130 seminars.**
- Leading presenters from over 60 *institutions* (*http://ncfar.org/HSS_Past_Speakers_Institutions.pdf*) across the nation-wide range of disciplines and topics.



(*http://www.ncfar.org/Hill_Seminar_Series_2017.asp*)

2017 Titles

Farm Economy Update—Pressures on Repayment & Spending * Plant Breeding and Genetics Accelerating the Path To Improving Public Health Through Food Based Solutions Robotic Weed Wars * Digital Agriculture * Why Does Honey Bee Health Matter?

2017 Lineup ❀ (*http://www.ncfar.org/Hill_Seminar_Series_2017.asp*)

Why Does Honey Bee Health Matter? (*http://www.ncfar.org/HSS_20170619_Presentation.pdf*)*—The Science Surrounding Honey Bee Health Concerns and What We Can Do About It,* Dr. Marla Spivak, **U. of Minnesota** (June 19–146).

❀**Editor's note:** the hyperlinked presentations have been retained in Committee file.

Digital Agriculture (*http://www.ncfar.org/HSS_20170612_Presentation.pdf*)—*Technology Innovation in Complex Production Environments,* Dr. Harold van Es, **Cornell** (June 12–62).

Robotic Weed Wars (*http://www.ncfar.org/HSS_20170522_Presentation.pdf*)—*A New Game, New Players, New Rules,* Dr. Steven Fennimore, **UC-Davis** (May 22–43).

Accelerating the Path to Improving Public Health Thr[o]ugh Food Based Solutions (*http://www.ncfar.org/HSS_20170512_Presentation.pdf*)—*Leveraging Collaborations between Government and Academia to Create a More Convenient and Healthful Food Supply,* Dr. Mario Ferruzzi, **North Carolina State;** and Dr. Janet Novotny, **USDA, ARS** (May 12–45).

Plant Breeding and Genetics (*http://www.ncfar.org/HSS_20170322_Program.pdf*)—*The Need for Ag Innovation to Sustainably Feed the World,* Dr. Stephen Baenziger, **U. of Nebraska-Lincoln;** and Dr. Rita Mumm, **U. of Illinois** (Mar 22–62).

Farm Economy Update—Pressures on Repayment & Spending (*http://www.ncfar.org/Hill_Seminar_Series_2017.asp*)❁—*Cooperative Extension Translates Scientific Research to Help Farmers and Ranchers Manage Financial Risk,* Dr. Jason Henderson, **Purdue;** Dr. Allen Featherstone, **Kansas State;** and Dr. Jeff Hopkins, **USDA, ERS** (Feb 13–120).

2016 Lineup (*http://www.ncfar.org/Hill_Seminar_Series_2016.asp*)

Implications of Trade Disruptions (*http://www.ncfar.org/HSS_20161208_Presentation.pdf*)—*The Impact of Asynchronous Trade Approvals for Biotech Crops on Agricultural Sustainability, Trade and Innovation,* Dr. Nicholas Kalaitzandonakes, **U. of Missouri** (44).

The Latest Innovation in Plant Breeding (*http://www.ncfar.org/HSS_20160919_Presentation.pdf*)—*Genome Editing,* Dr. Anne Blechl, **USDA, ARS** (65).

Give Me a Break! (*http://www.ncfar.org/HSS_20160722_Presentation.pdf*)—*Using Forest Windbreaks to Reduce Crop Gene Flow,* Dr. Carol Auer, **U. of Connecticut** (70).

The Economics of Drought—*Realities and Policy Choices,*❁ Dr. Rob Johannson, **USDA;** Dr. Ariel Dinar, **UC-Riverside;** & Dr. Steve Wallander, **USDA, ERS** (100).

Climate Smart Precision Agriculture (*http://www.ncfar.org/HSS_20160627_Presentation.pdf*)—Dr. Raj Khosla, **Colorado State** (91).

Food From Thought (*http://www.ncfar.org/HSS_20160620_Presentation.pdf*)—*ARS Mission, Programs and Challenges,* Dr. Chavonda Jacobs-Young, **USDA, ARS** (101).

Losing Track! (*http://www.ncfar.org/HSS_20160610_Presentation.pdf*)—*Do You Really Know from Where Your Lunch has Come?,* Tejas Bhatt, **Institute of Food Technologists** (75).

Including the U.S. Economy By Adding Fiber (*http://www.ncfar.org/HSS_20160429_Presentation.pdf*)—*Challenges of Adding Industrial Hemp Production,* Dr. Ron Turco, **Purdue** & Dr. Janna Beckermann, **Purdue** (51).

U.S.-Cuba Agricultural Trade (*http://www.ncfar.org/HSS_20160321_Presentation1.pdf*)—*Economic Policy Implications of a Changing Trade Environment,* Bryce Cook, **USDA, ERS** & Dr. William Messina, **U. of Florida** & Dr. Luis Ribera, **Texas A&M** (84).

More Crop for the Drop! (*http://www.ncfar.org/HSS_20160208_Presentation.pdf*)—*Technology Implementation in Agriculture for Enhancing Crop Water Productivity,* Dr. Suat Irmak, **U. of Nebraska-Lincoln** (71).

Preventing the Next Kudzu (*http://www.ncfar.org/HSS_20160222_Presentation.pdf*)—*A Life-Cycle Approach to Low-Invasion Potential Bioenergy Production,* Dr. Jacob Barney, **Virginia Tech** (62).

❁**Editor's note:** the *Farm Economy Update—Pressures on Repayment & Spending* subject is broken up into three presentations: Henderson (*http://www.ncfar.org/HSS_20170213_Presentation_Henderson.pdf*); Featherstone (*http://www.ncfar.org/HSS_20170213_Presentation_Featherstone.pdf*); Hopkins (*http://www.ncfar.org/HSS_20170213_Presentation_Hopkins.pdf*).

❁**Editor's note:** the *Realities and Policy Choices* presentation is not posted on the NCFAR website; however, the program has been retained in Committee file and is available at: (*http://www.ncfar.org/HSS_20160711_Program.pdf*).

2015 Lineup (*http://www.ncfar.org/Hill_Seminar_Series_2015.asp*)✻

Battling the Wicked Problem of Herbicide Resistance (*http://ncfar.org/HSS_20151204_Presentation.pdf*)*—The Human Dimensions of Herbicide Resistance Evolution,* Dr. David Shaw, **Mississippi State** (55).

Partners for Life (*http://ncfar.org/HSS_20151113_Presentation.pdf*)*—The Untapped Potential of Plant Microbiomes in Agriculture,* Dr. Jan Leach, **Colorado State** (53).

Choices (*http://ncfar.org/HSS_20151105_Presentation.pdf*)*—Improving Nutrition Among Low-Income and Food-Insecure Individuals,* Dr. David Just, **Cornell** (85).

Role of U.S. Agriculture in Chinese Markets (*http://ncfar.org/HSS_20151026_Presentation.pdf*)*—Factors Affecting Chinese Food and Agricultural Markets,*⁕ Dr. Holly Wang, **Purdue** (106).

Warning: This Food Label May Cause Confusion (*http://ncfar.org/HSS_20151005_Presentation_Messer.pdf*)*—Process Labeling of Food: Consumer Behavior, the Ag Sector and Policy Recommendations,* CAST Issue Paper, Dr. Kent Messer, **U. of Delaware** (100).

Biotechnology: Great Potential Stifled By Good Intentions (*http://ncfar.org/HSS_20151005_Program_Folta.pdf*)*—Arresting Application of Genetic Engineering Solutions,*❁ Dr. Kevin Folta, **U. of Florida** (100).

The Future of Food: Optimal Or Orwellian? (*http://ncfar.org/HSS_20150921_Presentation.pdf*)*—How Plant Breeding Decisions Made Today Will Determine the Future of Food,* Dr. William F. Tracy, **U. of Wisconsin** (66).

What Are Children Eating at School Lunch? (*http://ncfar.org/HSS_20150911_Presentation.pdf*)*—5 Years After the Healthy, Hunger-Free Kids Act,* Dr. Bethany Yon, **U. of Vermont** (68).

Climate Change: So What's Up With Dinner? (*http://ncfar.org/HSS_20150720_Presentation.pdf*)*—Climate Changes and Its Impact on our Diverse and Abundant Food Supply,* Dr. Michael Hoffmann, **Cornell University** (39).

Bees on Their Knees? (*http://ncfar.org/HSS_20150615_Presentation_Pettis.pdf*)*—Factors Affecting Honey Bees and Other Pollinators,*⁕ Dr. Kevin Hackett and Dr. Jeff Pettis, **USDA, ARS** (120).

A Case For Soil Health (*http://ncfar.org/HSS_20150518_Presentation.pdf*)*—Opportunities to Change the Face of Agriculture and How We Feed Our Nation,* Bianca Moebius-Clune, **USDA, NRCS** (63).

Waste to Wisdom (*http://ncfar.org/HSS_20150420_Presentation.pdf*)*—Using Agriculture and Forestry Residues to Create Bioenergy and Biochar,* Dr. Deborah Page-Dumroese, **USDA, USFS** (45).

Trends in Farms, Food and Markets (*http://ncfar.org/HSS_20150303_Presentation.pdf?v2*)❉*—USDA's Economic Research Service Findings,* Dr. Mary Bohman, Administrator, **USDA, ERS** (71)

The Wisdom of Crowds (*http://ncfar.org/Hill_Seminar_Series_2015.asp*)✻*—Can the Public Guide Research and Extension Programs?,* Dr. Robert Kallenbach, **U of Missouri** (26).

2014 Lineup (*http://www.ncfar.org/Hill_Seminar_Series_2014.asp*)

You Can't Eat What Doesn't Grow (*http://ncfar.org/HSS_20141117_Presentation.pdf*)*—The Contributions of Pesticides to Pest Management in Meeting the Global Need for Food Production by 2050,* Dr. Stephen Weller, **Purdue** (66).

NIFA Vision (*http://ncfar.org/HSS_20140923_Presentation.pdf*)*—User Inspired Science Transforming Lives,* Dr. Sonny Ramaswamy, **USDA, NIFA** (62).

✻**Editor's note:** the ***Can Staple Food Crops Reduce the Incidence of Chronic Diseases in Humans?*** subject, not listed in this document (but listed on the NCFAR website) presentation entitled, *Dry Edible Beans Can Reduce Chronic Diseases in Humans and Improve Human Nutrition,* Mark Brick, **Colorado State University;** has been retained in Committee file and is available at: *http://www.ncfar.org/HSS_20151016_Presentation.pdf*.

⁕**Editor's note:** the Glauber presentation, not listed in this document (but listed on the NCFAR website) *Trends in China Grains, Oilseeds and Fibers S&D,* has been retained in Committee file and is available at: *http://www.ncfar.org/HSS_20151026_Presentation_Glauber.pdf*.

❁**Editor's note:** the hyperlink is not to the *Arresting Application of Genetic Engineering Solutions* presentation; the title of the linked presentation is *Reframing Agricultural Biotechnology Communication.*

⁕**Editor's note:** the subject *Bees on Their Knees?* has two presentations; the Pettis presentation, hyperlink above, and the Hackett presentation which has been retained in Committee file and is available at: *http://www.ncfar.org/HSS_20150615_Presentation_Hackett.pdf*.

❉**Editor's note:** the hyperlink for the *Trends in Farms, Food and Markets* subject is incorrect it is (*http://www.ncfar.org/HSS_20150323_Presentation.pdf*).

✻**Editor's note:** the hyperlink for the *The Wisdom of Crowds* subject is incorrect it is (*http://www.ncfar.org/HSS_20150303_Presentation.pdf?v2*).

Cornucopia in the Cities (*http://ncfar.org/HSS_20140728_Presentation.pdf*)—*Growing Urban Agriculture with Trees,* Gary Bentrup, MLA, **U.S. Forest Service, National Agroforestry Center** (72).

From Farm to Cell (*http://ncfar.org/HSS_20140718_Presentation.pdf*)—*Integrating Agriculture, Food and Nutrition Sciences to Develop Improved Food Products Delivering Nutritional Quality,* Dr. Mario Ferruzzi, **Purdue** (48).

Carving the Path for the Nation's Future for Natural Resources (*http://ncfar.org/HSS_20140616_Presentation.pdf*)—*A Science, Education and Outreach Roadmap,* Dr. John Hayes, Colorado State (64)

Farm Animal Research in Crisis (*http://ncfar.org/HSS_20140606_Presentation.pdf*)—*A Neglected Research Resource for Advancing Human Health and Animal Agriculture,* Dr. James Ireland, **Michigan State** (74).

Shifting Winds in International Agricultural Development (*http://ncfar.org/HSS_20140519_Presentation.pdf*)—*What's Behind Africa's Turnaround?,* Dr. William Masters, **Tufts University** (18).

Detours on Road to Sustainable Feedstock Production for Cellulosic Biofuel (*http://ncfar.org/HSS_20140508_Presentation.pdf*)—*Assessing Multidimensional Policy Approaches,* Dr. Madhu Khanna, *U. of Illinois* (23).

To Label Or Not To Label (*http://ncfar.org/HSS_20140428_Presentation.pdf*)—*The Potential Impacts of Mandatory Labeling for Genetically Engineered Food,* CAST Report, Dr. Alison Van Eenannaam, **UC-Davis** (67).

Cooperative Extension (*http://ncfar.org/HSS_20140408_Presentation.pdf*)—*Innovation for the Next Century,* Dr. Jimmy Henning, **U. of Kentucky** (32).

Easy As ABC, 123! (*http://ncfar.org/HSS_20140331_Presentation.pdf*)—*Integrating Nutrition and Activity in Early Childhood Learning to Build Lifelong Healthy Habits,* Laura Bellows, Ph.D., **Colorado State** (40).

More Crop for the Drop (*http://ncfar.org/HSS_20140324_Presentation.pdf*)—*A Global Search Through the National Plant Germplasm System for Drought Tolerant Soybeans,* Tommy Carter, Ph.D., **USDA, ARS** (45).

2013 Lineup (*http://www.ncfar.org/Hill_Seminar_Series_2013.asp*)

From Childhood Obesity to SNAP (*http://ncfar.org/HSS_20131204_Presentation.pdf*)—*Opportunities and Challenges in Nutrition Research,* Robert M. Russell, M.D. Former Special Advisor to NIH

Did a Cow Just Eat My Dinner? (*http://ncfar.org/HSS_20130923_Presentation.pdf*)—*Animal Feed* ***vs.*** *Human Food: Challenges in Sustaining Animal Ag Toward 2050,* Dr. Jude Capper, **Montana State**.

Got Trees? (*http://ncfar.org/HSS_20130909_Presentation.pdf*)—*Building Climate-Ready Agriculture,* Dr. Michele Schoeneberger, **USFS.**

Safely Crossing the Food Chain (*http://ncfar.org/HSS_20130801_Presentation.pdf*)—*The Economics of Reducing Food Risk,* Dr. Julie Caswell, **U. of Massachusetts Amherst.**

Ag Sustainability, Field to Market (*http://ncfar.org/HSS_20130715_Presentation.pdf*)—*Role of Sustainable Agriculture in Global Economic Competitiveness,* Dr. Marty Matlock, **U. of Arkansas.**

Goldilocks and Risk Management (*http://ncfar.org/HSS_20130624_Presentation.pdf*)—*Impact of the Precautionary Principle on Feeding Current and Future Generations,* Dr. Gary Marchant, **Arizona State U.**

Applied Bee-Nomics (*http://ncfar.org/HSS_20130617_Presentation.pdf*)—*How the Honey Bee Project is Revolutionizing Pollinator Research,* Dr. May Berenbaum, **University of Illinois**.

Market Forces Or Regulation? (*http://ncfar.org/HSS_20130513_Presentation.pdf*)—*Organization of Ag & Natural Resource Markets,* Dr. Rachael Goodhue, **UC-Davis.**

Watershed View of Ag Conservation (*http://ncfar.org/HSS_20130426_Presentation.pdf*)—*Effectiveness of Ag Conservation Practices at the Watershed Scale,* Dr. Deanna Osmond, **North Carolina State.**

Safe Food (*http://ncfar.org/HSS_20130408_Presentation.pdf*)—*Research to Practice,* Dr. Elizabeth Andress, **North Carolina State** (57).

Balancing Nutrients: A Growing Need (*http://ncfar.org/HSS_20130318_Presentation.pdf*)—*Food, Fuel & Plant Nutrient Use in the Future,* Dr. David Zilberman, **UC-Berkeley** & Dr. Bruce Dale, **Michigan State** (47).

Invasive Weeds and Bioenergy Crops (*http://ncfar.org/HSS_20130307_Presentation.pdf*)—*Economic Boon or Environmental Disaster?,* Dr, Jacob Barney, **Virginia Tech.**

2012 Lineup (*http://www.ncfar.org/Hill_Seminar_Series_2012.asp*)

The Next 40 Years (*http://ncfar.org/HSS_20120928_Presentation.pdf*)*—The Challenge of Feeding 9.6 Billion,* Dr. Robert Thompson, **Johns Hopkins U.** (80).

Out of the Trash and Onto Trays (*http://ncfar.org/HSS_20120914_Presentation.pdf*)*—Increasing Fruit & Vegetable Consumption in the School Lunch Program,* Dr. David R. Just, **Cornell** (75).

Location, Location, Location! (*http://ncfar.org/HSS_20120730_Locating_Buffers.pdf*)*—Putting Forested Buffers in Their Place,* Dr. Michael Dosskey, **U.S. Forest Service** (87).

What Would Lincoln Do? (*http://ncfar.org/What_Would_Lincoln_Do_7_12_12.pdf*)*—The Critical Value of Extension in Translating Agricultural Research,* Dr. Douglas Steele, **Montana State** (104).

Safeguarding the Seeds of Our Food Security (*http://ncfar.org/Germplasm_Presentation_062512.pdf*)*—The U.S. National Plant Germplasm System,* Dr. Peter Bretting, **USDA, ARS** (109).

Healthy Animals, Confident Consumers (*http://www.ncfar.org/Animal_Health_Food_Safety_Hurd_FINAL.pdf*)*—The Direct Relationship Between Animal Health and Food Safety Outcomes,* Dr. H. Scott Hurd, **Iowa State** (79).

American Agriculture Cooperates (*http://www.ncfar.org/Economics_Research_and_Structure_of_Farmer_Owned.pdf*)*—Economics, Research and Structure of Farmer Owned Cooperatives,* Dr. Phil Kenkel, **Oklahoma State** (63).

Hands-On Science in the Wild (*http://www.ncfar.org/Lila041612.pdf*)*—Discovery of the Innate Plant-Protective Properties of Plants, and Delivery to the U.S. Marketplace and Beyond,* Dr. Mary Ann Lila, **North Carolina State** (57).

A Diagnosis of Troubled Waters (*http://www.ncfar.org/SWQ_Huggins_Presentation.pdf*)*—Impacts of Ag Land Management Change on Water Quality,* Dr. Donald Huggins, Kansas Biological Survey, **U. of Kansas** (81)

Can Processed Foods Be Healthy? (*http://www.ncfar.org/food_processing_presentation.pdf*)*—How Do Processed Foods Fit into a Healthy Lifestyle,* Dr. Eric Decker, **U. of Massachusetts, Amherst** (96).

Invasion Persuasion (*http://www.ncfar.org/Leafy_Spurge_022712.pdf*)*—A Review of a Successful USDA Program For Defeating a Wide-Spread Invader: TEAM Leafy Spurge,* Dr. Rodney Lym, **North Dakota State** (48).

Putting Energy In To Get Energy Out (*http://www.ncfar.org/Corn-Soybean_Energy_CAST_012312.pdf*)*—Energy Issues Affecting Corn/Soybean Systems: Challenges for Sustainable Production,* Dr. Doug Karlen, **USDA, ARS** (82).

2011 Lineup (*http://www.ncfar.org/Hill_Seminar_Series_2011.asp*)

Clearing the Air on Greenhouse Gases—Can Ag Help? (*http://www.ncfar.org/Climate_Change_103111.pdf*)*—Carbon Sequestration and Greenhouse Gas Fluxes in Ag: Challenges and Opportunities,* Dr. Jack Morgan, **USDA, ARS**.

Agriculture—Science for All Americans (*http://www.ncfar.org/Soybean_Tiffany10_24_11.pdf*)*—Promoting Ag Science Through the Food and Ag Research Experience for Teachers (RET) Program,* Drs. Jon Peterson & Tiffany Heng-Moss, **U. of Nebraska.**

Providing for Tomorrow's Food Days*—The Critical Role of Food and Agricultural Research,*✧ Dr. Lowell Catlett, **New Mexico State.**

The Air We Breathe (*http://www.ncfar.org/MITLOEHNER_091911.pdf*)*—Air Issues Associated with Animal Agriculture,* Dr. Frank Mitloehner, **UC-Davis.**

Mapping for the Future of Our Food (*http://www.ncfar.org/NC-FAR_Seminar_Program_072511.pdf*)*—Harvesting Opportunities from Lessons Learned in the Maize (Corn) Genome Project,*✦ Dr. Patrick Schnable, **Iowa State**.

i-Trees (*http://www.ncfar.org/2011_7_11_iTree_CFAR.pdf*)*—Maintaining Healthy Cities,* Dr. David J. Nowak, **USDA Forest Service.**

Guess What's Coming to Dinner? (*http://www.ncfar.org/Science_and_Regulation_of_Food_from_GE_Animals_No_Intro.pdf*)*—The Science and Regulation of Food from Genetically Engineered Animals,* Dr. Eric Hallerman, **Virginia Tech.**

✧**Editor's note:** the *The Critical Role of Food and Agricultural Research* presentation is not posted on the NCFAR website; however, the program has been retained in Committee file and is available at: (*http://www.ncfar.org/NC-FAR_Program_093011.pdf*).

✦**Editor's note:** the *Harvesting Opportunities from Lessons Learned in the Maize (Corn) Genome Project* presentation is not hyperlinked in the document; however, the program has been retained in Committee file and is available at: (*http://www.ncfar.org/Schnable-C-FAR.pdf*).

Public Research Agenda for Agriculture (*http://www.ncfar.org/NCFAR_Media_Advisory_REE_Action_Plan_0606.pdf*)—*USDA's Action Plan for Research, Education & Extension,*❋ Under Sec. Cathie Woteki, **USDA.**

Food Fraud (*http://www.ncfar.org/MSU_acapp_Spink_NCFAR_2011.pdf*)—*Do You Know What You Are Eating?,* Dr. John Spink, **Michigan State.**

Eating Out and Overeating (*http://www.ncfar.org/Lusk_presentation_050211.pdf*)—*Effects of 'Fat Tax' and Calorie Information on Restaurant Food Choices,* Dr. Jayson Lusk, **Oklahoma State.**

We Reap What We Sow (*http://www.ncfar.org/AgResearch_FINAL.pdf*)—*Better Future Through Public Ag Research,* Dr. George Norton, **Virginia Tech.**

Waging War On Invasive Grasses (*http://www.ncfar.org/Wa_DC_talk_Feb_%2711_FINAL.pdf*)—*Preventing—Not Just Controlling—Rangeland Fires in the West,* Dr. Richard Mack, **Washington State U.**

2010 Lineup (*http://www.ncfar.org/Hill_Seminar_Series_2010.asp*) ❋

Turning Today's Crops Into Tomorrow's Fuel (*http://www.ncfar.org/NCFAR_Presentation_091310.pdf*)—*Infrastructure Requirements for Harvest, Transportation and Storage,* Dr. Jerry Fruin, **U. of Minnesota.**

Dynamic Duo! (*http://www.ncfar.org/AgroforestryNCFARSeminar_FINAL.pdf*)—*Agroforestry, Sustainable Agriculture Through the Blending of Trees and Agriculture,* Andy Mason, **USDA AgroForestry Research Center.**

Solving Africa's Weed Problem (*http://www.ncfar.org/NCFAR_Africa.pdf*)—*Key to Improving Women's Lives and Increasing Food Production,* Leonard Gianessi, CropLife Foundation

Local Foods Across the Country and Close to Home—*The Implications of Local Foods Supply Chains,* Dr. Robert King, **U. of Minnesota.**

Animal Rights and Wrongs (*http://www.ncfar.org/IP46Thompson.pdf*)—*Ethical Implications of Animal Biotechnology: Considerations for Animal Welfare Decision Making,* Dr. Paul Thompson, **Michigan State.**

From Specialized Farming To Your Fork (*http://www.ncfar.org/HillAgriculture_Structure.pdf*)—*Implications for Competition and the Changing Structure of Agriculture,* Dr. Brian Buhr, **U. of Minnesota.**

The Road To 2012—*Budgeting to Provide Sound Science to Meet Future Challenges,* Under Secretary Molly Jahn, **USDA.**

One Fish, Two Fish, Food Fish, Feed Fish (*http://www.ncfar.org/Mar22_NCFAR_Briefing_032210.pdf*)—Meeting Nutritional Challenges in Aquaculture & Aquatic Resources Management, Dr. Jesse Trushenski, **Southern Illinois U.**

Feeding Our Future—*Role of Research in Updating Child Nutrition Programs,* Dr. Suzanne Murphy, **U. of Hawaii.**

Agriculture's Perfect Storm—*Agricultural Productivity Strategies for the Future,* Dr. Gale Buchanan, **U. of Georgia.**

World Security At Risk? (*http://www.ncfar.org/US_vulnerability_to_Ug99-Jan_2010.pdf*)—*The Race Against Ug99 Stem Rust in Wheat,* Dr. Jim Peterson, **Oregon State.**

2009 Lineup (*http://www.ncfar.org/Hill_Seminar_Series_2009.asp*)

The Green Connection (*http://www.ncfar.org/200_%2003-Hill_seminar-Moon_b.pdf*)—*Nanotechnology and Wood,* Dr. Robert Moon, **USDA, FS, U.S. Forest Products Lab,** Madison, WI & **Purdue.**

One Health? (*http://www.ncfar.org/April_17_Seminar_Presentation.pdf*)—*Ag Research Protecting Human, Animal, and Enviro. Health,* Dr. Marguerite Pappaioanou, AAVMC

Porcine Nirvana?—*Scientific Assessment of the Welfare of Dry Sows Kept in Individual Accommodations,* Dr. John McGlone, **Texas Tech.**

Are Local Food Consumers Civic Minded Or Seeking Assurances? (*http://www.ncfar.org/DC-presentation.pdf*)—*Policy Implications & Research Agenda,* Dr. Dawn Thilmany McFadden, **Colorado State.**

Soybean Fields Forever—*Sustainability of U.S. Soybean Production: Conventional, Transgenic and Organic Production Systems,* Dr. Bryan Young, **Southern Illinois University.**

When Good Food Goes Bad—*Food Safety and Fresh Produce: An Update,* Dr. William McGlynn, **Oklahoma State.**

❋**Editor's note:** the *USDA's Action Plan for Research, Education & Extension* presentation is not hyperlinked in the document; however, the program has been retained in Committee file and is available at: (*http://www.ncfar.org/6-6-11_NC-FAR_-_Woteki.pdf*).

❋**Editor's note:** the presentations for the 2005–2010 Lineups were not included in the submitted document; however, the presentations are linked on the NCFAR website and were available they will be included in this publication and retained in Committee file.

Food Traceability*—Finding Our Way (And Our Food),* Dr. Chris Thompson, **U. of Kentucky.**

Animal Productivity And Genetic Diversity*—Cloned and Transgenic Animals,* Dr. Robert Wall, **USDA–ARS** and **University of Maryland.**

The Endangered Species Act*—Interfacing With Agricultural and Natural Ecosystems,* Bernalyn McGauhey, **Compliance Services International.**

Water, People and the Future*—Water Availability for Agriculture in the U.S.,* Dr. Sharon Megdal, **University of Arizona.**

2008 Lineup (*http://www.ncfar.org/Hill_Seminar_Series_2008.asp*)

Blowin' In The Wind*—Implications of Gene Flow in Commercial Use of Biotech-derived Crops* (CAST Issue Paper), Dr. David Gealy, **USDA, ARS,** Dale Bumpers, **Natl. Rice Resource Center.**

Choices—Climate Change & Agriculture (*http://www.ncfar.org/Presentation_1591McCarl_Sohngen-3-31.pdf*)*—Outlook & Investigation on Climate Change, Ag & Natural Resources,* Dr. Bruce McCarl, **Texas A&M** & Dr. Brent Sohngen, **Ohio State.**

Shots Are for the Birds*—Avian Influenza Vaccines Using DNA Tech* (CAST Reports) Dr. Karen Burns Grogan, **Chicken Scratch, LLC** & Dr. Robert Silva, **USDA, ARS.**

Water, Water Everywhere & Not a Drop To Spare (*http://www.ncfar.org/June_9_Presentation.pdf*)*—Issues for Turfgrasses in Urban Landscapes,* (CAST Report), Dr. Michael Kenna, Director, Green Section Research, **USGA.**

You Humans Think You're Thirsty? Try Life As A Plant! (*http://www.ncfar.org/Specht_July_14_Presentation.pdf*)*-The Quest to Improve Crop Plant Use & Drought Tolerance,* Dr. James Specht, **U. of Nebraska-Lincoln.**

Food Nanoscience??? (*http://www.ncfar.org/Nanotech&Food_Presentation090808.pdf*)*—How Tiny Particles Have a Big Impact,* Dr. Bernadene Magnuson, **University of Toronto & Cantox Health Services.**

$Valuing Your Diet*—Effects of Rising Food Prices on Food Insecurity & Diet Quality,* Dr. Parke Wilde, **Tufts University** & Deborah Rhoades, R.D., **University of Maryland** Extension.

From Stump to Pump*—Cellulosic Biofuels from America's Forests Ready to Make the Leap Forward,* Dr. Theodore Wegner, **USDA Forest Service, Forest Products Laboratory.**

Living Off the Fat of the Land*—Convergence of Energy & Agriculture: III. Considerations in Biodiesel Production,* Dr. Jon Van Gerpen, **University of Idaho.**

2007 Lineup (*http://www.ncfar.org/Hill_Seminar_Series_2007.asp*)

Biofuel Feedstocks (*http://www.ncfar.org/Presentation_DiTomaso_11_09_07.pdf*)*—The Risk of Future Invasions,* CAST Report, Dr. Joseph DiTomaso, **UC-Davis** & ***Convergence of Ag & Energy*** (*http://www.ncfar.org/Presentation_Fales_11_09_07.pdf*)*—Cellulosic Biomass for Biofuels,* CAST Report, Dr. Steven L. Fales, **Iowa State University.**

What You Don't Know Won't Hurt You!*—CAST Report on Probiotics & Human Health,* Dr. Mary Ellen Sanders, **Dairy & Food Technologies,** Centennial, CO.

Wild Pigs and Spinach*—Food Safety Microbiological Concerns of Fresh Produce and Microbiological Issues, Imported Foods,* Dr. Michael Doyle, **University of Georgia.**

Our Vulnerablility To Animal Diseases (*http://www.ncfar.org/July_16_2007_Presentation.pdf*)*—Zoonotic Diseases and Their Potential for Infecting Humans,* Dr. James Roth, **Iowa State University.**

If Pollinators Are In Trouble, So Are We!*—Insect & Other Animal Pollinators and Their Vital Role in Ag & Healthy Ecosystems,* Dr. May Berenbaum, **University of Illinois.**

Health May Be a Different Animal*—CAST Report on the Role of Transgenic Livestock in the Treatment of Human Disease,* Dr. Carol L. Keefer, **University of Maryland.**

Create-Ing a Better Future for Agriculture*—CREATE–21,* Dr. Robert Steele, **Penn State University** & Dr. L. Washington Lyons, **Association of Extension Administrators.**

Why a National Institute for Food and Agriculture*—Fundamental Research Benefiting Food, Fiber, Fuels and the Environment,* Dr. William Danforth, **Washington U.-St. Louis West.**

Cultivating Our Competitive Edge*—Research, Extension and the Future of Agriculture,* Dr. Philip Pardey, **University of Minnesota** & Dr. Julian Alston, **UC-Davis.**

2006 Lineup (*http://www.ncfar.org/Hill_Seminar_Series_2006.asp*)

Agriculture Trade Policy*—Responding to a Moving Target,* Dr. David Blandford, **Penn State University,** Dept. of Agricultural Economics and Rural Sociology.

Genomics? Bioinformatics? Translation Please!*—Realizing the Promises of Bioinformatics,* Dr. William Beavis, Chief Scient. Ofcr., **Natl. Ctr. for Genome Research,** Santa Fe, NM.

Purple Carrots*—A Kaleidoscope of Carrots for Nutritional Needs and Market Niches,* Dr. Philipp Simon, **USDA, ARS** & Professor, Dept of Horticulture, **University of Wisconsin.**

Eden **Works!** (*http://www.ncfar.org/EDEN_Cong_Pres.pdf*)*—A National Network In Disaster Readiness,* Dr. Edwin Jones, EDEN Chair, **North Carolina State University.**

Turning Green Into Yellow*—Improving Plants for Use as Home-Grown Biofuels,* Dr. Kenneth Keegstra, Director, Plant Research Laboratory, **Michigan State U.**, Dept of Energy.

Drink the Best and Drive The Rest*—Optimizing Biomass as a Renewable Resource,* Dr. Sharon Shoemaker, California Institute of Food and Agricultural Research, **UC-Davis.**

Rebuilding the Food Chain for Nemo*—An Integrated Approach to Sustainability in Aquaculture,* Dr. Wendy Sealey, Hagerman Fish Culture Experiment Station, **University of Idaho.**

2005 Lineup (*http://www.ncfar.org/Hill_Seminar_Series_2005.asp*)

Mad Cows and Bt Potatoes: Global Public Goods In The Food System (*http://www.ncfar.org/Mad_Cows_and_Bt_Potatoes.ppt*)—Dr. Laurian Unnevehr, Department of Agricultural and Consumer Economics, **University of Illinois.**

Powering An Enhanced Green Revolution With Protein-Packed Corn, Dr. Daniel Gallie, Department of Biochemistry, **University of California-Riverside.**

Down To Earth Science From Outer Space (*http://www.ncfar.org/May13Earth.ppt*)*—Applying NASA Technologies to Advance Agricultural Science and Natural Resource Management,* Dr. David Shaw, **Mississippi State University.**

Energy—Our 'Growing' Need (*http://www.ncfar.org/Apr11Bioenergy.ppt*)*—Expanding the Use of Biomass to Produce Renewable Fuels and Biodegradable Plastics,* Dr. Lonnie Ingram, **University of Florida.**

Diet By Design*—Nutrigenomics to Revolutionize Wellness and Disease Management,* Dr. John Milner, **National Cancer Institute** & Dr. Leena Hilakivi-Clarke, **Georgetown University.**

The CHAIRMAN. Thank you, Mr. Wilkins.

Dr. Carrington, you are recognized for 5 minutes.

STATEMENT OF JAMES C. CARRINGTON, PH.D., PRESIDENT, DONALD DANFORTH PLANT SCIENCE CENTER, ST. LOUIS, MO

Dr. CARRINGTON. All right, thank you. And good morning, Chairman Davis, Ranking Member Lujan Grisham, and Members of the Subcommittee.

My name is Jim Carrington, and I am the President of the Donald Danforth Plant Science Center in St. Louis, Missouri. We are a research-intensive organization of about 240 scientists and staff, working every day to improve the human condition through plant science. Thank you for the invitation to discuss the vital role of research as you prepare for the next farm bill.

First, let me state very clearly, providing food security for a growing, changing world, while at the same time preserving our natural resources, like water and soil, and maintaining a healthy environment for this and future generations, is among the grandest of grand challenges for the 21st century.

My colleagues and I believe we can meet this challenge, by attracting the best minds to the problem, by continuing to grow and

support Federal investments in research, and by delivering innovations to the marketplace through the private-sector.

The role of public investment by the USDA in research to meet this challenge cannot be overstated. Past research in agronomy, genetics, genomics, computer science, data science, and many other fields, means that now we have technologies to breed improved crops and livestock much more quickly and effectively, to preserve more soil and water resources, to reduce the cost of production, to maintain quality and affordability for the consumer. These all start with investments in fundamental science.

Publicly funded agricultural research, as has been pointed out, has extensive economic payback, and as has been well documented by USDA. And we can see a glimpse of future returns just by looking in the neighborhood around the Danforth Plant Science Center in St. Louis, where Federal research, private capital, entrepreneurs, and community support have attracted and grown nearly 40 high-tech, ag-tech companies just within the past few years.

As you consider the next farm bill, I strongly encourage recommitting to and strengthening research within USDA. And I will restrict the remainder of my comments specifically about competitive research funded through and supported by the Agriculture and Food Research Initiative, or AFRI program, within NIFA.

As the flagship USDA Competitive Grants Program, AFRI should have a budget that reflects the program's broad scope and responsibilities, and its mission that affects every U.S. citizen. We stand with many other organizations in supporting continued growth of competitive research funding, through mechanisms that Congress determines to be most appropriate and stable. Currently funding levels are modest, to put it plainly, and not on par with other agencies like NIH that fund research supporting other national priorities. To illustrate, I will give you an example from the Danforth Center, consider that over the past 2 calendar years, from January 2015 to present, we have been awarded about $21.7 million in new competitive Federal grants from three agencies; NSF, Department of Energy, and the USDA through AFRI. Of that $21.7 million, only $1.1 million, or five percent, of those new awards came from the AFRI program. This was not due to the funded topical areas, which align extremely well with our center's mission and capabilities, but rather to the modest size of the AFRI budget.

I have a few comments that we can talk about in more detail later. They have to do with structural and managerial aspects of AFRI. I would refer the Subcommittee to a 2015 National Research Council report that I was honored to coauthor called *Spurring Innovation in Food and Agriculture: A Review of the USDA Agriculture and Food Research Initiative Program.** We pointed out many strengths of the program, and why it exists and why it should remain, but we also made several recommendations such as developing a dedicated leadership team with sole responsibility for AFRI, and putting in place stronger mechanisms to align the scientific community with national priorities. We also recommended that AFRI reconsider its indirect cost recovery policies, which are

*This report is retained in Committee file and available at: *https://download.nap.edu/cart/download.cgi?record_id=18652*.

capped at 30 percent of overall awards. This funds only part of the real costs to support AFRI-funded research. For example, for every dollar that we receive in direct funding, the Center needs to contribute 22¢ from other sources to fully fund the project. That is non-sustainable for us and for other AFRI-recipient organizations.

Finally, I will make the case that competition for AFRI funds should be on a level playing field, and that provisions in the 2014 Farm Bill, which authorizes a dollar-for-dollar matching requirement only for non-land-grant university institutions, like the Danforth Center or Washington University. We recommend that that be reconsidered in future legislation and not be included.

So with that, I will thank you for listening, for inviting me here this morning, and for inviting these remarks. Thank you.

[The prepared statement of Dr. Carrington follows:]

PREPARED STATEMENT OF JAMES C. CARRINGTON, PH.D., PRESIDENT, DONALD DANFORTH PLANT SCIENCE CENTER, ST. LOUIS, MO

Good morning, Chairman Davis, Ranking Member Lujan Grisham, and Members of the Subcommittee. My name is Jim Carrington and I am the President of the not-for-profit Donald Danforth Plant Science Center in St. Louis, Missouri. We are a research-intensive organization with over 240 scientists and staff working to improve the human condition through plant science. I am also a scientist working to understand how plants work, and to apply that knowledge in ways that help people and communities. Thank you for the invitation to discuss the importance of agricultural research and innovation as you prepare the next farm bill.

First, let me state this clearly: Among the most important Grand Challenges of the 21st century is to provide food security to a growing, changing world while, at the same time, preserving our vital natural resources and maintaining a healthy environment for this and future generations. I and my colleagues at the Danforth Center and across the nation strongly believe we can meet this challenge by attracting the best minds to the problem, by continuing and growing Federal investments in research, and by delivering innovations to the marketplace through the private-sector.

The role of public investment in research by the USDA—through intramural, cooperative state, and competitive funding—in fueling agricultural advances cannot be overstated. Just over my lifetime, that is since 1960, U.S. agricultural productivity (Total Factor Productivity) has more than doubled, meaning that we are producing over twice as much with the same total inputs. This was due almost entirely to technological advances and innovations, based on *science!*

Let's examine this in a different way. What would happen if we eliminated all of those technological advances and brought back the U.S. farm of 1960 to serve our needs today?

- We would need over twice as much farm and pasture land compared to what we use today, or roughly 900 million new acres, for a total of approximately *1.8 billion* agricultural acres. That would be almost the area of the entire continental United States;
- We would need nearly twice as much irrigation water from lakes, rivers and groundwater sources;
- We would suffer annual instability in most row and specialty crops due to lack of disease-resistant, drought-tolerant and climate-resilient varieties.

Past research in agronomy, biochemistry, genetics, genomics, quantitative and computer sciences, and many other scientific fields that bear on agriculture means that we *now* have technologies to breed improved crops and livestock more quickly, lower the use of fresh water, reduce emissions, preserve soil and water quality, reduce costs of production and maintain quality for the consumer. These all start with investments in fundamental science, which is as critical now as it was in the past. I also stress the importance of USDA competitive research funding that encourages and supports creative science by a broad spectrum of institutions and scientists.

Federal investments in science underlying agriculture have extensive economic payback, as has been well documented by the USDA and others organizations. They are also paving the way for future returns, as is now clearly evident in the neighborhood around the Danforth Center in St. Louis. Research investments at the Center,

combined with private capital, entrepreneurs, and corporate and community investments have fueled a vibrant innovation ecosystem focused on agricultural technology in our region. Just within a ¼ mile radius around the Danforth Center, there are now nearly 40 high-tech companies delivering products to improve crop productivity with fewer inputs, like water and fertilizer; facilitate better decision-making on the farm; and produce high-value natural products for food and industrial uses.

Therefore, I strongly encourage strengthening and growing competitive research through the Agriculture and Food Research Initiative (AFRI) program in the next farm bill, with recommendations in three areas.

1. Quality, Quantity and Impact of AFRI-Funded Research

As the flagship USDA competitive research program, AFRI should have a budget that reflects the vital importance of food and agriculture for every U.S. citizen, and the fact that science provides the foundation to assure food safety, improve food quality, grow agricultural productivity, and preserve soil, water and air quality as impacted by agriculture. We stand with many other organizations in supporting continued growth of competitive research funding through the mechanisms that Congress determines to be most appropriate and stable. AFRI should be on par with programs in agencies, like NIH, that fund fundamental, competitive research in support of other national priorities. By comparison, current authorized and appropriated AFRI funding levels are modest.

To illustrate the comparatively modest levels of available AFRI funding, consider competitive research grants awarded to my organization, the Danforth Plant Science Center, from Federal agencies over the past 2 years. During this period, we were awarded new grants totaling $21.7 million from the NSF, DOE and USDA (AFRI) to understand plant responses to changing environments, improve sustainability of food and bioenergy crops, and develop next generations of technology to measure crop performance in the field. AFRI grants comprised only $1.1 million, or 5%, of new Federal grant awards to the Center. This was due to the modest size of the AFRI budget for plant science research funding, not to the mandated or funded topical areas, which align extremely well with our expertise and capabilities.

2. Structural and Managerial Aspects of AFRI

In 2015, I co-authored the National Research Council report "Spurring Innovation in Food and Agriculture: A Review of the USDA Agriculture and Food Research Initiative Program."* I refer the Subcommittee to our analysis of strengths of AFRI, as well as to the recommendations to improve structure and management of AFRI. For example, we recommended that AFRI have dedicated leadership and staff with sole responsibility for competitive research, and that better mechanisms be put in place to align the scientific community with national priorities.

I strongly recommend that AFRI indirect cost recovery rates be brought in line with most programs at other agencies, like NIH, NSF and DOE, that fund research at public and not-for-profit institutions. Current AFRI indirect cost rates capped at 30% fund only part of our actual indirect costs (determined using our federally negotiated rate). For every dollar of AFRI direct research funding received, the Danforth Center needs to contribute $0.22 to fully fund the project. That is a non-sustainable funding model for us and most other AFRI grant recipient institutions.

3. Access to Grants

I strongly argue that the public, which includes both consumers and agricultural producers, benefit when scientific research funding is awarded through open competition played on a level field. The scientific community is most effective when talented people with the best ideas are encouraged to participate and compete. The 2014 Farm Bill authorizes a dollar-for-dollar matching requirement *only* on AFRI funds awarded to non-land grant university institutions, like the Danforth Plant Science Center and universities like Washington University. It is recommended that discriminatory matching requirements *not* be included in future legislation affecting the AFRI program.

Thank you for inviting these comments, and for supporting science that helps assure food, environmental and economic security in the U.S.

The CHAIRMAN. Thank you, Dr. Carrington. And thank you to all the witnesses.

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*This report is retained in Committee file and available at: *https://download.nap.edu/cart/download.cgi?record_id=18652*.

The chair would like to remind Members that they will be recognized for questioning in order of seniority for Members who were here at the start of the hearing. After that, Members will be recognized in order of arrival. And I appreciate the Members' understanding.

And I am going to forego asking the first round of questions because my colleague to my left, your right, Mr. Gibbs, has another hearing to go to, so I recognize him for 5 minutes.

Mr. GIBBS. Okay. Thank you, Mr. Chairman. Thanks for your indulgence.

Mr. Wilkins, I love your perspective on the per acre thing. I mean the glass is half full, right?

Dr. Akridge, you really hit it on the nose about the changes when you talked about the yield and that. It just kind of symbolizes or illustrates all the change we have seen in agriculture in our lifetimes. And I have always used that example. I have always said 1950, the national corn crop average was 50 bushels. When I started farming in 1975 my goal was to have an 100 bushel corn crop, and I have reached 195 in some years. And I don't have that Illinois soil.

My question, and I think everybody on this Committee is going to do what they can to make sure that R&D research is funded for our agriculture as what we think it should be. The question, as you know, the money is tight, resources are tight, and so we have to do the best we can. Dr. Akridge, we have seen the changes in agriculture, and we have seen farms get bigger. Farms that didn't get bigger, they either found a niche or got out of business, or they supplement their income. I am curious, because you brought up the issue about extension. On the bigger operations, can you explain the interaction of disseminating that material to the larger operations, are they working closely with the land-grants, or are they going more to the private-sector, or what is the interaction there?

Dr. AKRIDGE. I would be pleased to. Certainly, looking back in time, every farmer knew their county extension agent and they provided advice and insight, as counties were populated primarily by farmers. And certainly, as you described, that has changed dramatically with the size and scale and sophistication of the operations. There are two or three ways that the extension is really critical to that group now. One is, many of those operations will connect directly with our extension specialist on our campus. Those are people funded by Smith-Lever funds that are available to them, many times doing applied research, and that producer wants to ask a question directly of that extension specialist who actually did the work. We see that in the agronomic side, we see it on the business management side where those producers want to engage with economists who, again, are very focused on where the farm economy is going.

The other thing that is really important to understand is we also partner with the private-sector on extension. So many of the CCA's certified agronomists that are in the countryside are trained ultimately by their land-grant university and/or use materials that were developed by the land-grant. Sometimes we are in train the trainer mode as we engage with that producer.

And then there are still other questions where they may go to their local person about a soil issue, a conservation issue, a practice. Extension remains relevant, although the way we connect with them—and then the last thing I need to mention, e-delivery has become a very important way of connecting with those larger producers. They may not have time to come to campus, but they will watch a webinar with their farm team, talk about what that meant for their business, and go back to work.

Mr. GIBBS. Yes.

Dr. AKRIDGE. And so that has been another way we have reached that kind of producer as well.

Mr. GIBBS. That is a great response. I wanted to get that out so people in the public understand that.

You mentioned in your testimony how Federal dollars have decreased. I suspect some of that has been offset because there is a better partnership now with the private-sector, our private-sector companies and their research departments working with the land-grants and leveraging money. Can you expound a little bit on how, in your case, Purdue has leveraged money through the private-sector to build that private-public partnership you talked about?

Dr. AKRIDGE. Sure. So again, in many cases our faculty, working on agricultural issues, paid for by capacity funds provided by the Federal Government, they then engage with the private-sector partners working on research projects that we jointly identify as important. There are things the private-sector is going to do that we shouldn't be involved in, because it is unique and proprietary to them, but there is a big space where we can work together on moving things forward. It provides great training opportunities for graduate students to work on those industry partnerships. And we are definitely turning this into a partnership. These are not so much projects anymore as long-term relationships, where we have goals and metrics and regular meetings to try to make sure we are advancing their agenda, our agenda, and ultimately the public sees the value of the work.

So it has been a very important part of what we are——

Mr. GIBBS. Another benefit, Mr. Chairman, on that is that relationship, that partnership, then you are really focusing on really what the needs are. I used to work in that sector in my early days, on the public side, and sometimes you would see if one of the professors kind of goes off on a tangent and it is good to file a report or a study, but maybe we have to prioritize the dollars with the best part, that partnership is great.

So thank you, Mr. Chairman. I yield back.

The CHAIRMAN. Thank you, Mr. Gibbs.

The chair would like to recognize the Ranking Member of the entire Agriculture Committee, Mr. Peterson, for 5 minutes.

OPENING STATEMENT OF HON. COLLIN C. PETERSON, A REPRESENTATIVE IN CONGRESS FROM MINNESOTA

Mr. PETERSON. Well, thank you, Mr. Chairman. And thanks to the witnesses for being here.

I have had a chance to be in both Purdue and in St. Louis. You guys do great work, and as you said in your testimony, we have made tremendous progress in production agriculture with the re-

search we have done. To some extent, that is driven by the commodity groups and the folks that have had money to put in with you guys, right?

The question I have is this, it doesn't seem to me that we have done as much research and tried to use science to address the conservation issues. Our friends in the environmental community seem only to want to regulate us and stop us from doing many good things. I don't see much coming from them on using technology in conservation, like we have used technology in crop production. Let me give you and example. We have people in southern Minnesota that are upset because we are putting too many nitrates into the water. Is there a way to capture that nitrogen and put it back into the cropping system, rather than letting it go to the river? Has anything been done to look at that? By using tiling, we are able to deal with some of the runoff issues. But nitrates don't really fall into that. Our friends in the environmental community are also against tiling, which is probably the best conservation thing we can do in terms of cleaning up the water, but that is another story.

So my question is this, are people coming to you at the universities to do research, to use your resources to try to improve conservation and use technology in that area?

Dr. AKRIDGE. And the answer is absolutely yes. Pick your area. But use of cover crops as a conservation tool, and using those in a sophisticated way. Breeding crops that are more, again, efficient with nutrient utilization, using——

Mr. PETERSON. Well, I understand that, but is that getting us any place with these groups?

Dr. AKRIDGE. Right. Well, and including——

Mr. PETERSON. They seem to only want to regulate us.

Dr. AKRIDGE. Well, in my mind, there is option for much, much more work, but there is at least some foundation there to build on. Trying to model a water shed to figure out which practices are going to help us deal with this issue.

So there is some work going on. There is a need for much more. But we are definitely engaged in that issue and it is definitely front and center for Indiana farmers right now, and they want more answers.

Mr. PETERSON. Dr. Carrington.

Dr. CARRINGTON. Yes, let me say a few words about this. I am going to give a shout out to at least one environmental organization, The Nature Conservancy, because they are actually attacking this problem with research and with science. I don't know how much interaction you have had with The Nature Conservancy. In Minnesota, I believe they are quite active as a state chapter. They certainly are in Missouri. But as the largest environmental organization, I would encourage you to interact with them because they have shifted their focus from conservation for conservation's sake, land preservation, for example, wildland preservation, and shifted their focus, their entire organization, to serve human needs and to accommodate human needs.

Mr. PETERSON. Well, I am familiar with them, and largely what they have done in my area is buy land. With the state——

Dr. CARRINGTON. That is the old Nature Conservancy.

Mr. PETERSON. They put rules against the DNR and other people buying land, and then they turned around and sold it to the DNR. And they went in and pushed all of this CRP land into what is called the Beach Ridge in my area, and so we lost a lot of the CRP land. Maybe I haven't seen the change.

Dr. CARRINGTON. Yes.

Mr. PETERSON. Maybe I am behind the times, I don't know.

Dr. CARRINGTON. Yes. Look, I don't want to defend Nature Conservancy too much here, but the other thing I do want to say is that there are huge opportunities for research from universities, research institutions, and the private-sector, to improve the use of things like nitrogen and phosphorus, to be more precise, this whole field of precision agriculture, which we are very familiar with, is geared exactly at addressing the types of problems. Can we use levels of fertilizer and water that are most appropriate, as opposed to putting enough on a field to ensure—let's put enough of what you need, but in a way that assures the farmer they are going to get the most yield that they can. This is an area we are very active in, looking at it from the genetics side, but huge investments in the private-sector in technologies to do this with equipment, instrumentation, sensors, and so forth.

The CHAIRMAN. The gentleman's time has expired.

Mr. PETERSON. Thank you, Mr. Chairman.

The CHAIRMAN. The chair would like to recognize Mr. Dunn from Florida, who has another hearing to get to also, for 5 minutes.

Mr. DUNN. Thank you very much, Mr. Chairman, and obviously, gentlemen, for sharing your time with us today in this hearing.

Dr. Carrington, can you discuss some areas of research where Federal funding has the potential for the greatest near-term return for the challenges that our farmers face today? The greatest area.

Dr. CARRINGTON. Well, there are a lot of things, and I would very much look forward to hearing Mr. Wilkins talk about this as a producer. But the farmer today, very broadly speaking, is in a challenging business. Margins are slim, production costs are not going down, commodity prices are challenging in many cases. The intersection with natural resources is more challenging, and by every measure and every indicator it is going to get more challenging. Regulations——

Mr. DUNN. I guess I was thinking more of bench-type science rather than research into the economics.

Dr. CARRINGTON. Yes. We are very interested in research that will lead in the relative short-term to more efficient use of resources and lowered input costs.

Mr. DUNN. Excellent.

Dr. CARRINGTON. This is to benefit the farmer. Precision agriculture is one area. If we can lower the cost of fertilizer, one of the major inputs for many crops, or lower the use of water, not only a costly but a restrictive resource, that will have immediate benefits for the farmer. We can do this, because we have done it in the past. Water use efficiency on the farm, broadly across agriculture in the U.S., is twice as good as what it was the year I was born, 1960.

Mr. DUNN. That is good. Because the time is pressing, let me turn the question to Mr. Wilkins.

When the USDA conducts its research, the research becomes part of the public domain. Is that the situation around the world, other governments when they fund research, do we get the benefit of that?

Mr. WILKINS. That is a very good question. I am not sure how other countries handle their public research dollars. I would imagine that that differs between how free a market a particular country is.

I can say that I have visited China on a few occasions, and have actually visited one of their biotechnology research institutes. Certainly, in that nation, anything that is derived from public research is public property, but then everything within their system is public property.

Mr. DUNN. Do the other members of the panel also have the sense that there is a free flow of information, about the research, around the world?

Dr. AKRIDGE. It does vary country to country, but in general, it finds its way into the public literature, with some exceptions when there is really tight relationships with industry through like contract research organizations where they are really doing private work. And in those cases, it would be held close.

Mr. DUNN. All right.

Dr. Carrington, I am a science junkie, can you give us an example of some real cutting-edge research or discoveries made at your center that would surprise me, my constituents, and how that was relevant to us as consumers?

Dr. CARRINGTON. Sure. We focus more on the fundamental end of science, and so we are looking for ways to rapidly translate that fundamental knowledge into stuff that is useful for all of us.

To give you a few examples: we have a significant effort at the center, looking to figure out a mechanism called gene silencing. That might be something, as a science junkie you might have heard about this. RNA interference. Fascinating mechanism. Nobel Prizes were awarded about 10 years ago. It is an area I have been very active in.

Why do we care? We care because it is the main antiviral defense mechanisms of plants. It is the plant immune system when they are infected by viruses. Turns out this has been used to save the papaya industry in Hawaii. We wouldn't have papayas grown domestically in Hawaii if it weren't for technology that was based directly on gene silencing. We would not have——

Mr. DUNN. My time is about to expire, but I want to say that you have satisfied the science junkie in me, so thank you very much.

I yield back, Mr. Chairman.

The CHAIRMAN. The gentleman yields back.

The chair would like to recognize our colleague from Florida, Mr. Lawson, for 5 minutes.

Mr. LAWSON. Thank you very much, Mr. Chairman. First, I would like to congratulate Purdue for making the big dance. I will be sure to watch Florida State tonight too.

I would like to say my colleague, Congressman Dunn, and I know Congressman Yoho, he and I both share land-grant institutions in Florida. Congressman Dunn is about a block away from the land-

grant institution in Tallahassee, so we both represent them, even though they say it is in my district.

But what I would like to ask, and my question is similar, and anybody can respond, in the President's request today, there was about a 21 percent reduction in the budget for agriculture. How does that really affect research at the institutional level? I know you all have a lot of experience in that. But that is quite a bit of reduction going to land-grant universities. I will start with you, Dr. Akridge.

Dr. AKRIDGE. Sure. A reduction of that magnitude hits us really in two ways. On capacity funds or those funds that come to our campus via formula, and we pay salaries, so those are salaries of our researchers, their staffs, *et cetera,* and ultimately, that is the capacity we have to respond to local needs, to respond to emergencies that hit our farmers with weather or crops or pests, or to compete for Federal money. So that kind of a hit means a headcount, ultimately, and reduced capacity.

The other place, obviously, it would hit us is in the competitive funding, and a reduction of something like that. And we already know that we have already talked about the AFRI, our competitive program funding, there is tremendous competition for those dollars currently. Roughly 2,700 proposals last year, about 600 funded, and about 800 were deemed worthy of funding and we weren't able to fund them at the current levels. We already have intense competition for the available monies, and further cuts just simply put us in a place where we have less ability to fund worthy research.

Mr. LAWSON. Mr. Wilkins? Dr. Carrington, do you care to respond to that?

Dr. CARRINGTON. I will give you a very quick financial overview of the Danforth Center. Fifty percent of our overall budget, which is about $28 million per year, comes from competitive grants. Top three funding foundations; Bill and Melinda Gates Foundation, Department of Energy, and National Science Foundation. If there is a decrease in funding available or that we can compete for, that affects that 50 percent of our budget every year.

The other half of our budget, by the way, comes directly or indirectly through philanthropy; annual gifts or gifts that have gone into our endowment that help us support us being an institution. Projects funded by research, competitive research funding, institutions supported by the endowment and philanthropy.

Every cut affects our ability to deliver on our mission.

Mr. LAWSON. Okay, and I see I have a little time. Since I represent Florida A&M University, I have the important focus of the National Institute of Food and Agriculture. Can you discuss the importance of a strong capacity building and grant program?

Dr. AKRIDGE. So those capacity funds, again, ultimately help us fund salaries of our faculty and staff that, again, provide the capacity to do the work we do. Whether that is answering farmer problems in the field, conducting applied research, working with the 4–H through the youth development organizations, those salaries provide that kind of capacity. And then they also provide the capacity for us to compete for competitive dollars. Without that capacity that establishes a baseline of, again, people who do the work, we

can't go after competitive funds. So they are incredibly important to us to serve our farmers, the people of our state.

Mr. LAWSON. Okay. And, Mr. Chairman, because of the time restraint here, I yield back, but if you get a chance, I had one other question that I did not get to, it dealt with Lunch~N~Learn, and maybe somebody else can discuss it, but I yield back.

Mr. YOHO [presiding.] The gentleman from Florida yields back.

Thank you guys for being here. I am Ted Yoho, I represent Florida's Third Congressional District. No offense, but I feel it is the best part of Florida. We have the University of Florida there and IFAS, which is world-renowned. The work that the land-grants do is phenomenal. And if you look at the ag population, which is less than one percent of the population of our country, but yet they feed so many, they are so productive that we have to be a strong voice to protect, not just the family farms, but all the agriculture in the United States. And ag is focused so hard on BMPs, those days of indiscriminate use of fertilizers, water, insecticides, herbicides, is gone because, number one, the cost, and it just makes better sense to use less.

And if you look at what we are producing as far as beef, we are producing the same amount of beef, with ⅓ of head and ⅓ amount of land being used. And this comes from best management practices, genetics, things like that.

One of the big things in our state is citrus greening. As you know, Florida was a leader in citrus, still is in oranges and grapefruit. And 100 percent of our crop has been affected, and it is going to happen throughout the country, any place that has citrus. And I know that there is a lot of research being done on that.

With the research that you are doing at the universities, I know there is transgenic work being done on the psyllid, there is work being done on the trees, there are antibacterials being used for the trees, and different methods, we have to continue that. And one of the big things that has come up is the pollinators. One of the effects of pollinators, there are a lot of controversies are insecticides bad? Yes, they can be. We met with one of the top researchers from the University of Florida, Dr. Jamie Ellis, and we sat down to find out exactly where the problem is with the honey bees and what is leading to the colony collapse. And out of the top ten reasons of colony collapse, insecticides are number six.

What I found interesting, and I would like to hear your opinion on this, is the genetics of the bees. I work cattle, I am a large animal veterinarian, and I know if you don't change the genetics with your bulls in your herd, it gets diluted, your gene pool. But we haven't been able to import honey bees into this country, which I find just kind of baffling, to get the new genetics because of the threat of germs and bacteria.

What are your thoughts about the best way to move forward to where we can ease restrictions, in your experience? I would like to hear from each of you on that. Go ahead, Dr. Akridge.

Dr. AKRIDGE. The restrictions are obviously a bigger issue, maybe with respect to regulation and the legal side of it, but I did want to comment on this genetics point because it is critically important.

Mr. YOHO. Absolutely.

Dr. AKRIDGE. We have an individual working on honey bee genetics at Purdue. His focus has been the *Varroa* mite, which as you know is probably the single most important parasite that is affecting colony collapse disorder. What he has identified is bees that have a grooming behavior where they basically kill the mites on other bees. He has looked at the genetics of this, he has identified the genes that are responsible for it, and he is breeding better bees in this country, and it has doubled the survival rate in the hives they have tested in Indiana.

So the point is you can put sophisticated biology to work on something like this issue, create a better bee, and that may then also provide evidence that we need to be looking at bringing bees in from other countries to give us maybe broader genes to work with, with respect to accomplishing it in this way.

Mr. YOHO. I agree.

Mr. Wilkins?

Mr. WILKINS. Thank you. Although I don't grow cribit crops myself, I have many neighbors and colleagues in my state that do farm cribit-type crops, a class of crops that are very dependent upon pollinators. We, as farmers, we understand this issue probably better than anybody else. The banning of particular types of classes of chemistries, crop protectant materials, and as you just stated, insecticides are the number six cause for colony collapse disorder.

That would be a knee-jerk reaction. There are best management practices that we all follow as far as to the time of day that we apply these crop protectant materials. We know that we are dependent upon pollinators for successful harvests of different types of crops, so it is in our best interest to protect our pollinators, and that is what we do.

Mr. YOHO. Dr. Carrington, do you want to weigh-in, or have they already said what you need to?

Dr. CARRINGTON. Yes, I don't have too much to add. Research is going to help. And to the extent that everyone can contribute, add a little bit of native landscaping, provide a little more native habitat for bees.

Mr. YOHO. Thank you. And I know you guys are very cognizant of this, the work you are doing on GMOs, you guys are the forefront of getting that word out. And we know that over 100 Nobel laureates are on our side. The science is on our side. We need your help getting the information of what a GMO is or isn't. Our goal up here is to get to USDA to have a marketing program on that.

I want to just comment like a *Schoolhouse Rocks* on how a bill becomes a law so that everybody is educated of the benefits of GMOs.

And with that, we are going to go to our great Member, Mr. Jimmy Panetta from the State of California.

Mr. PANETTA. Thank you. I haven't been introduced as great before, so thank you. I appreciate that. Thank you, Congressman Yoho. Gentlemen, thank you very much for being here. I appreciate your time, your efforts. I know it takes a lot of preparation to come here, and so thank you very much. I apologize for being late.

I am Jimmy Panetta. I represent the Central Coast of California. We have a large agricultural industry in California, as all three of

you, I am sure, know. We have some of the most fertile valleys in the world, San Juan, Pajaro, and, of course, the Salinas Valley, otherwise known as the salad bowl of the world.

We are fortunate enough to have our own Agricultural Research Service station in Salinas, and its focus is on specialty crops. I have talked to many of the growers in that area, and they realize how lucky they are to have their own research station that focuses on their crops.

But also, Salinas Valley is in the shadow of Silicon Valley, and we are currently trying to develop bridges between the two, when it comes to R&D and the advances in technology for agriculture. In fact, we have an annual ag-tech conference. I know they are working on mechanization, but I was wondering if you are familiar with any other efforts between Silicon Valley and the agricultural industry, in particular Salinas Valley, of course, but in other areas as well? Further research, be it in mechanization or be it in producing better, healthier crops.

Dr. CARRINGTON. As a native Californian, I will be first. I am from the Los Angeles area, but I love your part of the state.

Mr. PANETTA. Thank you.

Dr. CARRINGTON. This is very much on the radar of Silicon Valley. It is particularly on the radar of the investment community centered in Silicon Valley. All of the major venture firms and private capital firms that you would know are looking at ag-tech, and they are looking at it for the simple reason that it is a great challenge to solve through technology.

Where we are seeing, and where we cross paths frequently are with the investment community. Looking to fund startups, looking to put investments in, and companies that are developing technologies to lower animal meat consumption, for example, artificial meat based on plants. They are looking at companies in the precision ag space, like we have talked about, they are looking at companies that get us to a point where natural resources are far less of a constraint in agriculture.

They are also very much, and this has been a bit of a shift compared to the early days of ag-tech, they are looking at things that have a much more direct impact on the consumer. A lot of the early ag-tech very much benefitted the farm and the farmers, and possibly in the grand scheme of things, this didn't help public perception. Silicon Valley is very aware of this, and we are looking to put investments in technology related to ag that interfaces directly with the consumer.

Dr. AKRIDGE. I wish we had more time to talk about it because this is one of the most exciting and dynamic areas in agriculture today. Purdue has put a major investment in this space, we are able to measure things about growing plants in ways we have never been able to do that before, created incredible sets of data. And that is what so many of the tech companies are able to work with us on, manipulating and using that data in a predictive way to better manage a crop. Our Indiana farmers have made a major investment in that area. We are partnering with IBM, Verizon, HP Enterprises, I mean these companies are bringing what they know about managing big data and the analytic tools in to helping us do a better job of running farms, and it is a pretty exciting space.

Mr. PANETTA. Great. I just have a few seconds left. I was fortunate enough to graduate from UC Davis, one of the land-grant schools, and am glad to say that for the first time, they have made the NCAA tournament as well. They drew Kansas, I don't know if they can compete with Kansas on the basketball court, but, I am sure they can compete with them when it comes to agricultural research.

Thank you, gentlemen. I yield back my time, Mr. Chairman.

The CHAIRMAN [presiding.] And anybody who yields back 7 seconds is a great Member of this Subcommittee.

Mr. Panetta, I wish you luck, and I remind you that one year I picked Arizona to win the bracket, and they lost in the first round to Santa Clara. So it could happen today, you just never know.

I would like to recognize our colleague from Nebraska, Mr. Bacon, for 5 minutes.

Mr. BACON. Thank you very much. And I appreciate all of you being here today and sharing your expertise.

I will tell you, what an exciting stance to go from 30 bushels 90, 80 years ago, to now 175, and some places near 200. That is incredible. There is no farmer more efficient than the American farmer. While not necessarily in the purview of this particular Subcommittee, but it is a reminder how hard we have to work on trade policy out of the Agriculture Committee, because we can produce, but we have to make sure the demand is there, and the American farmer can do that.

I wanted to ask a little bit about AFRI. And I appreciate some of the comments mentioned earlier that we need to invest more there. My understanding is that an AFRI grant, to be approved under NIFA, must clear a lot of different processes, a lot of layers of approval there. Approval from the leadership of the relevant NIFA institute, the NIFA senior executives, the NIFA policy office, then the Office of the Chief Scientist. Are there too many layers in this for approval, can we do better there, and how does this compare to other Federal agencies when it comes to research? Thank you. And I just open it up to any of the three that would care to answer.

Dr. CARRINGTON. There are a lot of layers. Honestly, before preparing for this, I didn't realize how many layers there actually were. Now, my brief comment would be if they are simply check-off layers, that is one thing. If they are layers of impediment, that would be a different problem. If they are stifling innovation and the most creative science, that would be a problem. I actually don't know if that is the case.

I will make one broader comment, because you are touching on the organization of NIFA and the competitive grants program within the context of the broader agency. There is a lot of room, a lot of study, and some very interesting proposals that have been made to consider restructuring how research, broadly within USDA, is structured and managed. Can we elevate competitive research and scientific research in the agency, and appropriately structure the management such that it is more efficient, there is tighter link between the Secretary and research, and there are some very interesting proposals to do that. I would be in strong support of that. And the best model in my opinion for looking at this would be NIH.

Mr. WILKINS. I worry that, certainly, that there is the need for levels of review in order to advance a potential project for funding, is in part due to the competitiveness, there are only so many dollars appropriated.

One of my worries is whether it is a graduate student, whether it is an untenured research professor, that it is only about a 25 percent success rate of getting funding for an innovative idea, that they lose their creativeness, that they lose their desire to innovate and think about new ways to solve challenges. Therein lies another reason why National CFAR is constantly asking to fully appropriate the AFRI funding at the amount that is authorized.

Dr. AKRIDGE. And I can't compare NIFA to other agencies on this, but clearly, anything we can do to make processes more streamlined, is important, and to lower the barriers for folks to apply.

I know NIFA has made investments in trying to upgrade some of their information technology, simply to make that better, but down the road, it would certainly be an area to continue to focus on.

Mr. BACON. One brief question I will focus a little more towards Dr. Carrington. The farm bill currently requires grants to be matched by non-land-grant institutions. It is often waived. Are you a proponent for removing that out of the next bill? Could you expound on that? Thank you.

Dr. CARRINGTON. Well, through appropriations there is agreement with the notion, since it is being waived, so I would question or suggest that if it is being waived against what is in the authorizing language, why put it in. It is a discriminatory element in the authorizing language that I struggle to find a purpose for. It puts organizations like us, and private universities and non-land-grant universities at a competitive disadvantage. It also creates a problem with faculty and scientists even applying, if their organizations are saying, "Well, you have to raise a dollar-for-dollar match," it impedes and inhibits the creative applications that come from a broad diverse range of institutions.

Mr. BACON. Okay, thank you.

And I yield back my minus 20 seconds there to you, Mr. Chairman.

The CHAIRMAN. You would have been a great Member if you wouldn't have gone over time. No, a great new Member from Nebraska. Thank you for your comments.

I would like to recognize our colleague from Delaware, Ms. Blunt Rochester, for 5 minutes.

Ms. BLUNT ROCHESTER. Thank you, Mr. Chairman. And thanks to the panel. Excuse me for being late. I have three hearings going on at the same time. I really wanted to get here so that I could recognize a Delaware farmer. I am from the State of Delaware, and we are so very proud of our farming industry. We also have two land-grant institutions, and focusing on research is really important to our ag sector.

I just want to ask a question of Mr. Wilkins. We are aware of the significance of research in agriculture as a field, but can you talk about specifically the impact that research has had on you in terms of supporting and expanding your actual operation?

Mr. WILKINS. Thank you. As a young farmer just starting out in the 1970s, I relied very much upon the cooperative extension system, the land-grant universities, as a disinterested third party, so that when a salesman, a manufacturer of farm inputs was giving me data to support the reason why I should use their product, I could look to the public research system for whether they had actually tested, tried, and proven, whether that was an input that I should employ in my operation.

Ms. BLUNT ROCHESTER. Yes.

Mr. WILKINS. Even today, I rely very strongly upon my county extension agent for advice. The industry has evolved and changed, we are much larger farming operations than we were 30 or 40 years ago, and we do a lot of our own on-farm practical studies and research.

Ms. BLUNT ROCHESTER. Yes.

Mr. WILKINS. But most of the time, we reach out to our extension agents to involve them so that we can actually aid and assist in the public research field with our own practical on-farm studies.

Some of the things that more recent, evolutions, the studies to determine the optimum rates of input nutrients to apply to my crops, and not just the optimum rates but the timing of those rates. We have employed a lot more irrigation on our farm. That is removing that as a barrier to reaching economic yield capacity.

Ms. BLUNT ROCHESTER. Yes.

Mr. WILKINS. That way enables us to be able to determine what is the proper stage, how much nutrients does the crop need at each stage of growth, and then we can deploy those nutrients through the irrigation water. And then we proof that using tissue analysis.

Now, I would not have known about all of these tools and analytical things that were available to me had it not been for the research that had been done at public land-grants.

Ms. BLUNT ROCHESTER. Yes. Great, thank you.

I am not sure if Mr. Lawson was going to ask this question, he started to mention the Lunch~N~Learn Series.

Mr. LAWSON. Yes, he did, go ahead.

Ms. BLUNT ROCHESTER. Great. Can you talk to us a little bit about the Lunch~N~Learn Series and some specifics on that as well?

Mr. WILKINS. I would be happy to, yes. For a number of years, National CFAR has sponsored these Lunch~N~Learn Series here, and we appreciate very much the House Committee on Agriculture making their facilities available to us for that.

As you know all so well, the youth and spirit that works here on the Hill, and their desire to absorb as much knowledge as they possibly can. These Lunch~N~Learn Series that we conduct are an opportunity for us to bring researchers, scientists, experts, just the vestibules with a wealth of knowledge and information, into these chambers and to be able to share that information about what we are doing in the field of agricultural and food research to your legislative correspondents, legislative assistants, and many times Members of Congress themselves attend.

Ms. BLUNT ROCHESTER. Okay, thank you.

I yield back the balance of 40 seconds.

The CHAIRMAN. The great Member from Delaware yields back 39 seconds. So, no, thank you.

The great part about being in the chair is I get to stay here the whole time and now you get to answer my questions. And it is great to have you here.

Look, today's hearing is another example of where we can find bipartisanship here in Washington that many in this country don't think exists, but it does exist right here on this Committee, and especially within this Subcommittee. The questions that have been asked have been about the subject at hand, and that is what we are here for. We are here to talk about the successes of our last farm bill, which I believe everybody around this horseshoe, and that serves on this Committee, can find something in that bill that is working extremely well. And I would like to remind everyone here that the Congressional Budget Office estimated that taxpayers would have only saved $23 billion in mandatory spending with the passage of that bill, and in reality in 3 years, the CBO now says we have saved $104 billion in taxpayer dollars. When we change words on pieces of paper here in Washington, D.C., it actually has an impact on taxpayers in this country. And what we have heard from each of you and from my fellow colleagues is a back-and-forth on how we make those words on pieces of paper better within the research community. Thank you all for being here today to do that.

And now, Dr. Carrington, since we asked you to be here, I would want to make sure that I start with you. I am very impressed by your facility. I meant that in my introduction of you earlier today. I saw some of the cutting-edge research that has been done there. I know my colleague, Mr. Dunn, asked a similar question about framing the importance of ag research. I think it was you, Dr. Carrington, forgive me if I was wrong, brought up the discrepancies and lack of parity between ag research and public investment in ag research *versus* public investment in other research priorities of this Congress. I would like to see more invested in NIH too, don't get me wrong, but they have had steep increases. I would like to see more invested in energy research, but they have had steep increases. Whereas, where we have seen ag research remain somewhat steady, and some cases go down.

You mentioned an example of cutting-edge research with the papaya, I believe, to Mr. Dunn's question. Are there any other examples that you would like this Committee to understand that have come through the Danforth Center? And then I would open it up to the other two witnesses too to talk about any cutting-edge research that you are a part of.

Dr. CARRINGTON. Sure, I will keep it on the RNA gene silencing theme, and just keep giving you more examples that should relate to consumers. Consumers should care about these.

If you care about your diet and the types of oils and lipids you are eating, you care about having a high oleic acid diet, gene silencing turns out to be a terrific way to rebalance in certain crops the levels of good oils *versus* bad oils. And through research in this area, we learned that nature already figured out how to do that. And breeding stocks and soybeans, for example, use this gene silencing mechanism and we now have improved crops with a better oil profile.

To give you one other example, and this one is a global example. If you care about our friends overseas, in particular those individuals in less-developed countries, gene silencing is being used in research at our institution with partners in East Africa to address a problem affecting 30 to 50 million small-holder farmers that depend on cassava as a staple crop. Cassava is highly susceptible to viruses, however, and it is the biggest threat to food security for people in Tanzania, in Uganda, and Kenya.

Now, it is not in our immediate backyard, but I will make the case that if we can use research that we are doing here to improve food security around the world, we are doing something that is going to have direct benefits to the United States and United States citizens.

The CHAIRMAN. And just one quick follow up before I go to the other two witnesses, what percentage of ideas do you think, because of a lack of funding, end up on the cutting room floor?

Dr. CARRINGTON. The majority of ideas do not make it to funding. I will give you just a few stats. You have the funding rates, AFRI, depending on the stats, it is somewhere between ten and 20 percent of the applications get funded. NSF it is 23 percent, NIH 17 to 18 percent. But if you look at the success rate at a funding agency like NSF, and I assume it is comparable through AFRI and other competitive grant programs, at NSF the success rate for an individual investigator applying for grants over a 3 year period, that is applying for grants every year, is only 35 percent. What that is saying is that the majority of investigators, most of them have pretty good ideas, some have great ideas, but ⅔ of these scientists are not being funded when their ideas are pitched to the competitive grants programs.

And I can tell you, having served on panels, having served as President of a research institution where I sign off on every proposal that gets submitted, there are a heck of lot of great ideas that are never funded, and it is very unfortunate. It is a reflection of capacity that we have in this country that is, I will say largely untapped, because the resources aren't available to fund most of those ideas.

The CHAIRMAN. Thank you.

Dr. Akridge?

Dr. AKRIDGE. Yes, just a couple of quick examples. I mentioned this whole issue of what we can measure now and use in management decisions. We have some researchers working on using cameras of a very particular type that can detect insect damage maybe a week or 10 days before the human eye can ever see it. And now we start to determine or identify problems before we would ever normally catch them in the field, which gives us a chance to pursue solutions maybe with different forms of pesticides or lower levels, or maybe even avoiding pesticides, because of the fact we can, again, detect this damage early. So that would be one example.

Another international example, and you will appreciate this, we have a corn breeder working on orange corn. Very, very bright orange corn.

The CHAIRMAN. The Illini orange corn?

Dr. AKRIDGE. Yes, it would definitely be something an Illini would appreciate. And what is going on there is they, again,

through sophisticated biology, elevated the vitamin A content in that corn. That is a major issue in developing countries, low vitamin A leads to blindness in children. And this particular corn then can be served, it is biofortified, it is another important area of research, again, helping us address child blindness in the developing world because of, again, some work done here.

The CHAIRMAN. Curing child blindness with orange corn.

Dr. AKRIDGE. You bet.

The CHAIRMAN. Very interesting.

Mr. Wilkins, did you have anything you wanted to add to this particular question too?

Mr. WILKINS. Yes. Although, as I said, I am not a researcher, but through my capacity with the American Soybean Association and National CFAR, I have met great researchers. One of the shameful things that has occurred in our society the last few years has been the inability to commercialize innovative ideas because of the cost to bring a new, whether it is a GMO or something that is from gene silencing and gene editing to the marketplace.

The CHAIRMAN. What is the single most cost-prohibitive element of the research process in moving that product to market that you would like to see us address?

Mr. WILKINS. Time. The amount of time that it takes for the innovation to make it through the regulatory process. That ultimately is what is causing the most amount of expense.

The CHAIRMAN. Is it too many agencies have their fingers on the research to have to sign off on, or is it just the overall compliance and regulatory environment that is in place already?

Mr. WILKINS. I think there are several factors. One of those is the desire at the government agencies to be sure that when they are sued by another NGO, that what they have done, the work that they have done, every "i" has been dotted, every "t" has been crossed, and they don't have to be embarrassed by something that they may have forgotten.

We need some protections on the science and technology that will allow good regulators, good government officials to have some safeguards that they are going to be able to do their job and not be weighed down by insignificant review processes of their decisions.

The CHAIRMAN. Insignificant review processes, and you brought up legal challenges and legal issues.

Mr. WILKINS. Yes.

The CHAIRMAN. Is this more of an issue with NGOs or certain organizations having problems with industry-based research partnerships?

Mr. WILKINS. Once we can get past this point of time in our society of not trusting science and technology and food, everybody wants the latest, greatest science technology on their smart phone, the latest technology in their pharmaceutical, but they are apprehensive when we try to use science and technology in food production.

It has been proven that Omega-3 and Omega-6 fatty acids leads to greater heart health. These are solutions to human health conditions that we can provide through healthier oils, healthier vegetable oils. But that innovation is sitting on a shelf because the marketability of that idea, that the potential return on the investment

has been determined to be less than what it will cost to go through the process to be able to commercialize it.

Citrus greening: there are solutions to citrus greening using biotechnology, but because citrus fruit is something that is directly consumed by humans, there is a fear that the millions of dollars spent trying to bring this to market will be wasted because of lack of public acceptance of the technology.

The CHAIRMAN. Well, thank you. And I would remind the witnesses, what you and everybody in the room are saying too, is even with public investment in research, you have to have an ROI.

Mr. WILKINS. Yes.

The CHAIRMAN. All right, thank you.

I know I took a lot of time, but that is the Chairman's prerogative.

I will now turn it over for a second round of questions to my colleague from Florida, Mr. Lawson, for 5 minutes.

Mr. LAWSON. Thank you very much.

My questions deal with the STEM fields. Here is my question. Models have been changing for the universities over the last century. Curricula offerings have grown more diverse to reflect a very different society than it was in the 1800s. Is agriculture becoming lost in the mix? What road do you see the colleges in agriculture and STEM education reaching non-traditional agricultural student, especially minority men or opportunities for women as an example? This is a very, very important issue for the next century, in my opinion.

Dr. AKRIDGE. Yes, and I can't agree more that it is a critical issue in this century because everything we have talked about to this point depends on human talent, and having the people in place to do the research that we need to address the challenge.

We have been working hard as APLU and as local institutions, to help position ag as front and center for science, technology, engineering, and math. Our President will talk about STEAM periodically. He puts an *A* in the middle of that for agriculture. And that is happening with respect to the curriculum, and it is very science-focused in general now in terms of preparation.

You put your finger on the challenge though is how do you help young men and women see their passion for science addressing food and agricultural issues. 4–H is one way that that is playing out across the country. Six million youth, they have taken on STEM and STEM projects as an important part of their overall curriculum. Just to give you Indiana examples, it is taking us into downtown Indy, into Gary, Indiana, where maybe traditional 4–H kinds of things just didn't fit, but when you start talking about fluid power, biotechnology, or renewable energy, young men and women get really excited about the science happening there, and the 4–H volunteer model, with the science underneath it, has been working very effectively. We have a lot of work to do there, but I would say nationally it is a priority for us to help young men and women find their passion for science and agriculture, and vehicles like 4–H can help us do that.

Dr. CARRINGTON. Yes, two quick points. First of all, we see a big issue attracting people into agriculture and agriculture-related scientific fields. We have taken on, even though we are not a univer-

sity, we are not a degree-granting institution, we have taken on our part of that challenge and asked what can we do to motivate and stimulate young minds to consider plant science and agriculture as a career. We believe, as do many others, that one of the most important things to do is to get people experiencing what plant science and agriculture is. Bring them to the center, get their hands dirty, and very importantly get materials, talent, STEM-compatible educational supplements into the schools.

We have wonderful schools in St. Louis. We also have some schools that, for historical reasons, have been under-served. And we have identified those as big opportunities. We, for example, have outreach and education programs in schools in the City of St. Louis, 16 schools. These are programs that in some cases are very simple, in other cases are a little more sophisticated. We have a program called Green Means Grow, and it provides students with the experience of planting a seed, watching it grow, and learning where their food comes from. This is not an inner-city problem, it is not a problem unique to anywhere, it is a problem that Americans have because so few of us grew up on a farm. We don't know where our food came from in most cases, and it is a huge problem that affects the problem that Mr. Wilkins referred to as well.

So this is a big issue, getting people experiencing STEM education, agriculture through STEM experiences is a very important part of the solution.

Mr. LAWSON. Mr. Wilkins, would you like to comment?

Mr. WILKINS. I would love to, yes. STEM education, it is very dear to me, to my heart, that as a layman scientist myself that decided to be a producer rather than going into scientific research. My colleagues and I, we work very closely with our high school, our public school systems, to try to provide opportunities for students to be able to visit our farms, to be able to be initiated to what it means to produce food. Many times we support in our rural areas, both financially and through advocacy, for small school farms or small school gardens to be able to assist the educators there in introducing our future consumers to way that modern food production is done.

I do stress modern food production. Oftentimes, what happens in many of these situations is someone with another agenda tries to impress that upon these impressionable minds at an early stage. I think that we as administrators of social programs need to be cognizant that we need to head that off and not allow that to happen, because science, technology, engineering, and math, we are deficient in that field here as a nation, and we need to develop that in order for us to continue to be an economic superpower in the world.

The CHAIRMAN. Thank you, Mr. Lawson. And thank you again to our panel.

I have just a couple more questions, if you three could bear with me.

Dr. Akridge, some of our biggest competitors in the global commodity markets are the same countries that are investing billions in their domestic agricultural research, to say nothing of the billions in trade distorting subsidies to their growers. This includes, as you mentioned and others, countries like China, India, and

Brazil. What are the short-term and long-term implications of their growing investment compared to our U.S. investment in ag research?

Dr. AKRIDGE. Yes, it comes back to many of the points that we have been making to this point in the hearing. Ultimately, research drives productivity, it drives competitiveness. There are always lags in research, from the time that dollar is spent until we ultimately see it in Mr. Wilkins's farm or benefitting the consumer in some way. Sometimes we don't see those things in the short-run because we are living on investments that we have seen in the past, but the kind of investments that China, India, and Brazil are making right now are definitely going to pay off long-term for their sectors, making them more competitive, again, helping feed a growing world. The question for us then becomes will we make the commitment today, obviously, to benefit the future as we think about the lags that these research investments are going to take.

Additionally, as we think about research, it is also about human talent, and the dollars we invest, again, today are helping train the next generation of scientists that ultimately find their way into the companies that are going to do much of that work.

So again, if we don't have that talent coming into the pipeline today because they don't see a future, these frustrations for funding rates, *et cetera,* drive them into other places, we undermine the human talent, the human capital that is in this industry. And again, that has really important long-term impacts.

The CHAIRMAN. Dr. Carrington?

Dr. CARRINGTON. One quick comment on this. Everyone appreciates what China, in particular, is doing to build its scientific infrastructure and its scientific talent base. They are putting huge investments in.

Two effects that are acute right now. First, it is increasing the competition globally for talent. This cannot be overstated. Second thing it is doing even closer to home, I know that the dean, no doubt, deals with this issue, because funds are being invested in China, talent is being drawn away part-time from the United States, and it is being done in a couple of ways. Here is a common way. You are a talented professor at Purdue University or Washington University, perhaps you are of Chinese origin, perhaps not. You are being hired on a part-time basis perhaps for 2 months out of the year to work at a Chinese university. Now, if you think about the implications of that, on the surface, what is the problem? We are sharing, we are an international scientific community, but the reality is that we are also losing time, we are losing intellectual capacity. There are teams that are being built around these individuals who are getting these part-time appointments, and those are teams that are being built in China, not in the United States.

I want to make sure that my comments are not misconstrued as objectionable to investments that the Chinese are making, hats off to them, but there are impacts on our institutions, our scientists, and our scientific capacity here in the United States.

The CHAIRMAN. And would you agree that there are going to be impacts on our producers, impacts on their ability to sell in the global marketplace too if products are available that are cutting-

edge, that are developed in other countries, that give them a competitive advantage over all producers?

Dr. CARRINGTON. That is exactly right. And whether or not we see that this year, next year, or the following year *versus* 5, 10 years out, I can't give you a timeframe but the dean is, I believe, quite accurate in his assessment on the long-term impact.

The CHAIRMAN. Mr. Wilkins, since you are part of what I call one of my special crops; soybeans, in Illinois, rather than specialty crops, are you concerned, in your capacity with the American Soybean Association, as a leader of producers, that America's economic edge that we talked about, I know I talked about in my opening statement, when it comes to ag and the ag sector, that we are going to be losing that competitiveness in the global marketplace because other countries are investing more public dollars into their own research?

Mr. WILKINS. Well, I would argue that we have just recently celebrated over 100 years of our cooperative extension system. As I have participated in international trade missions and helped to host trade teams from other countries that have come to the United States, they often look at our model of how we conducted agricultural research, food research, and how we disseminate that information to producers, that 100 year model that has been part of what has led to the success of our agricultural industry in this nation. I think that that behooves us to recognize that we have been falling short in maintaining that strength within our agricultural sector.

Am I worried about losing market potential? I think that the statisticians tell us that the global population is growing, and we in this country alone are not going to be able to fulfill that growing need for not just calories, but proper and good nutrition.

It may be a double-edged sword. If other nations are investing dollars in public research, and if a component of that research is modern biotechnology and other production-enhancing tools, and if that leads to greater consumer acceptance, then in the long-run that may help us to be able to bring our creative innovation ideas to the marketplace even more quickly and with less economic expense.

We are a great nation, the United States. We are very good at innovation. There is a reason why other countries try to steal our intellectual property, because we have such great ideas. In order to solve some of these problems of global needs for food and nutrition, I think that there are opportunities for us to cooperate, but at the same time making sure that trade is very near and dear to me, but we need to make sure that when we are involved in international trade, that it is not only free and open access, but that it is fair, fair for all of us.

The CHAIRMAN. Well, thank you.

One last question for those of you who have participated in the AFRI application process. This Subcommittee is, I believe, part of our Congressional organization that has to get into the weeds on certain issues that really impact the ability of public dollars to be able to go further, and in this case, go further with research. I am concerned that there might be some processes in place with our public research dollars and the institutions that govern them, that

slow down your ability to actually get new ideas into the testing stage and out into the marketplace. Are there any suggestion, Dr. Akridge or Dr. Carrington, any suggestion you would give us as policymakers, as we move into this next farm bill, to make the process go more smoothly, because I heard earlier that time, time was the biggest hindrance to getting products through the research process. How do we make your time better spent, and how do we do that with something as simple as the application process and the grant administration process? Whoever wants to start.

Dr. AKRIDGE. Well, maybe just two suggestions and thoughts. First, preproposals can be a way to short-circuit this process and help screen ideas. Where the process is, let's get the essence of the idea in front of somebody, let's get a quick read whether or not it is useful or not, and then we let that person elevate and put more effort in it if it has merit, as opposed to spending tons and tons of time writing full proposals that, in the end, the success rate is really low.

The second one, and we have seen this some in Europe where the response by the government to industry investments in ag research is very quick. If industry is willing to put some money on the table, the Federal Government in those cases will match that money very quickly. There is not an elaborate process. And it allows you to move at the speed of industry in some cases where, again, our normal processes wouldn't do that.

So more effective ways of thinking—more creative ways of thinking about how we handle the industry match might be another possibility.

The CHAIRMAN. Thank you, Dr. Akridge.

Dr. Carrington?

Dr. CARRINGTON. Yes, I would echo those comments. I don't know if you have actually held in your hand an AFRI application before.

The CHAIRMAN. Is it like the Tax Code?

Dr. CARRINGTON. It is in some ways worse than the Tax Code. It takes an average investigator putting together a $500,000 proposal, it takes roughly a month of their time working seriously on it. It takes institution's time. It is a pretty onerous process. The preproposal notion is a very good one, and it is used very effectively in many different agencies, including some within NIFA.

How we handle budgets at the preproposal stage. It used to be that all grants to all agencies had full vetting of the budgets internally, and had to be developed at the proposal stage. NIH had the great idea to just do budgets modularly, just give us a guess on how much it will cost. And if the proposal was meritorious and recommended for funding, then we will figure out the budget pieces, but we only devote the time to figuring out a budget after the fact.

The CHAIRMAN. Have you seen that reduce that compliance time and the length it takes?

Dr. CARRINGTON. For agencies and programs that have a low budget preparation requirement at the submission stage, let's put it this way, it is a big morale boost in the finance department.

The CHAIRMAN. Well, I am not here to look for morale boosters in the finance departments at the institutions, I want to know though, Dr. Carrington, what would you estimate the time savings is, and is there an increase in the amount of time once that so-

called pre-application is put in, because I have known some other government agencies that will have a simplified introductory process, but then the second-tier process doubles what the previous process would have taken if you would have provided more specifics on the front-end?

Dr. CARRINGTON. Yes, that——

The CHAIRMAN. How do we make that better on all ends?

Dr. CARRINGTON. Yes, doubling the work by saving work up-front and doubling it at the end, that doesn't sound very good either.

The CHAIRMAN. No.

Dr. CARRINGTON. The reality is that when these proposals are put together, it takes a large institutional investment, all the way from certifications to budgets to just making commitments, and the biggest investment on the part of the investigator who is pitching the idea. A standard 15 page proposal or a ten page proposal isn't really a ten or 15 page proposal, that is just the research plan part. A typical proposal is 60, 70, 80, 100 pages, with other stuff in it. It is a big burden so we could really get in the serious weeds if we wanted to here. I don't think you really want to, but I will offer to provide suggestions at a future time if you do reconsider this.

The CHAIRMAN. Thank you. Well, I would like to get into the weeds, but I don't think anybody else in the room would, so we will take your suggestions to make the processes better. Please feel free to submit those. We would love to work with you on those.

I know I said that was my last question, but I have thought of another one, Mr. Wilkins. Obviously, our Subcommittee has jurisdiction over NASS. We have had NASS Administrators in, in our oversight responsibilities, talking about some of the surveys, the Census documents that they require our producers to fill out. You are a producer too, right?

Mr. WILKINS. Yes, sir.

The CHAIRMAN. Give me an estimate, how many hours a year do you spend filling out NASS documents, besides the one Census survey, how many would you guess that you would fill out a year on average?

Mr. WILKINS. Chairman Davis, I must confess that the amount of time that I spend on filling out the reporting and documents that I know are required of me and that are going to keep me in compliance with programs, including crop insurance, what I am referring to is risk management administration production reports.

The CHAIRMAN. Yes.

Mr. WILKINS. I spend a lot more time on those documents because I know that they are subject to an audit and review, and I want to make sure that the information that I provide on those reports is accurate to 1/10 of a bushel. I confess that when NASS reaches out to me with a survey, because of the number of irons that I have in my fire, and the amount of time that I must commit to my business and my family, maybe not always giving the specific and most accurate information that I can. Oftentimes I may not have the time to do the written report, so then NASS follows that up with a telephone call. And if I am in the pick-up truck on my way to a field or on my way to a cow that is giving birth, I am going to try to make that call as short as possible. I am not always

referring back to my records and relaying completely accurate information.

That being said, I am grateful for the number of producers in our country that do take the time and do have the time to be able to provide accurate information to NASS, because when I look at NASS data in its aggregate for the country as a whole, it usually is spot-on, it is usually pretty accurate at predicting what the planted acres may be, predicting what production may be, or proving what production actually is. However, when you drill down to the individual survey area, whether that be a state or a county, it is oftentimes simply dependent upon the accuracy and the number of respondents to that survey that they get the information from.

The CHAIRMAN. Well, thank you. Obviously, as we move forward, we want to make NASS more accountable and get the data that is going to allow better ag research possibilities in the future too. Thank you for answering that question that I probably bet you never thought you would get here today. But I appreciate your honesty, I truly do, Mr. Wilkins, in responding to that, because that does make a difference for policymakers like us to talk to the agencies in charge to make those surveys more friendly and drill down on what is important. In our oversight hearing, the first question I asked the representative from NASS was, on a scale of 1 to 10, do you consider yourself a risk-taker. The gentleman responded he thought he was a 5, but his wife would say more closer to a 10. He couldn't answer the question, it was question 17, on their Census of Agriculture. At what point does the psychological condition of the producer at that point in time matter to the overall dataset? To me it doesn't, and if we can work together to reduce those issues then you are going to better provide more accurate information to NASS, and then the researchers can use that information in a much more consistent and better way. As we move forward, we may ask for your assistance.

I see we have no more Members ready to ask questions. My closing remarks are thank you to each and every one of you. This is truly essential information that we are going to be able to take back to our colleagues and also the folks that work in our Agriculture Committee to write a better farm bill. If there is anything that we have not asked you that you would like to provide to us, please feel free to follow up with us.

I know that some of my colleagues today wanted to mention the President's budget. While we haven't seen a lot of specifics on the President's budget and how it is going to impact ag overall, one specific line that has been put forth is the research title. And it looks to me, luckily, like the research title is going to remain stable. That is good news for what we are discussing here today, and I am just as interested as the rest of my colleagues to find out what the funding levels are for the rest of the ag title.

So with that, I want to say thank you again to our witnesses. Mr. Lawson, thanks for sticking around with me and sticking it out today.

And under the Rules of the Committee, the record of today's hearing will remain open for 10 calendar days to receive additional material and supplementary written responses from the witnesses

to any question posed by a Member, or any other information you would like to offer us.

This hearing of the Subcommittee on Biotechnology, Horticulture, and Research is adjourned.

[Whereupon, at 11:51 a.m., the Subcommittee was adjourned.]

[Material submitted for inclusion in the record follows:]

SUBMITTED LETTER BY ROGER JOHNSON, PRESIDENT, NATIONAL FARMERS UNION

March 16, 2017

Hon. K. MICHAEL CONAWAY,
Chairman,
House Committee on Agriculture,
Washington, D.C.;
Hon. RODN,EY DAVIS
Chairman,
Subcommittee on Biotechnology, Horticulture, and Research,
House Committee on Agriculture,
Washington, D.C.;
Hon. COLLIN C. PETERSON,
Ranking Minority Member,
House Committee on Agriculture,
Washington, D.C.;
Hon. MICHELLE LUJAN GRISHAM,
Ranking Minority Member,
Subcommittee on Biotechnology, Horticulture, and Research,
House Committee on Agriculture,
Washington, D.C.

Dear Representatives Conaway, Peterson, Davis, and Grisham:

Thank you for holding today's hearing entitled, *The Next Farm Bill: Agricultural Research.* As you are well aware, research plays a vital role in advancing the agricultural sector. The United States has long maintained the world's premier agricultural research and development (R&D) system. However, since 2009, public agricultural R&D investments have declined. National Farmers Union (NFU), as directed by its member driven policy, advocates for maintaining and increasing public investments in agricultural R&D.

Public agricultural R&D promotes advancements in the sustainability and productivity of United States agriculture. NFU believes the Agricultural Research Service, the National Institute of Food and Agriculture, the land-grant universities and the cooperative extension system each play a significant role in the success of modern-day agriculture.

The R&D investments made from 1948 to 2013 contributed to a 169 percent increase in U.S. agricultural output despite decreases in agricultural land and labor.[1] With world population expected to grow to nearly 10 billion by 2050,[2] agricultural productivity must increase to unprecedented levels. As America's farmers and ranchers carry a heavy burden in closing an estimated 70 percent food gap by 2050,[3] they require significant public investments in research that promotes further productivity, improves resistance to pests and climate, and increases overall sustainability.

Some may argue that the decline in public agricultural R&D spending is offset by the subsequent increase in the private-sector. However, private companies have little incentive to invest in new technologies that do not lead to financial gain. There is little motivation for a corporation to invest in research in products that cannot be profitably commercialized. Furthermore, private industry cannot be relied on to share the knowledge they gain with the general public. Because of these factors, private R&D is fundamentally different than its public counterpart.

NFU believes family farms most benefit from the findings and by-products of publicly funded research that remain in the public domain. Since Congress passed the Hatch Act in 1887, land-grant universities have served as the driver of American agricultural innovation. The research conducted at these universities has directly contributed to improved success of family farmers and has promoted greater stability in the food supply chain.

No-till farming is one of the many examples of how the land-grant system and the Cooperative Extension Service (CES) drive innovation in American agriculture. The world's first research on no-till farming was conducted at the Ohio State University, a land-grant institution, in 1962.[4] Once the benefits of no-till farming were understood, the Cooperative Extension Service (CES) disseminated information encouraging farmers' adoption of the practice. Today, no-till farming is widely prac-

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[1] Matthew Clancy, Keith Fuglie, and Paul Heisey, *U.S. Agricultural R&D in an Era of Falling Public Funding.* November 10, 2016. *https://www.ers.usda.gov/amber-waves/2016/november/us-agricultural-rd-in-an-era-of-falling-public-funding/*.

[2] United Nations, Department of Economic and Social Affairs, Population Division. 2015. *World Population Prospects: the 2015 Revision, Key Findings and Advance Tables.* July 29. *https://esa.un.org/unpd/wpp/Publications /Files/Key_Findings_WPP_2015.pdf*.

[3] Janet Ranganathan, *et. al.* 2016. "Shifting Diets for a Sustainable Food Future." Creating a Sustainable Food Future. World Resources Institute. *http://www.wri.org/publication/shifting-diets*.

[4] Rafiq Islam and Randall Reeder, "No-till and conservation agriculture in the United States: An example from the David Brandt farm, Carroll, Ohio," *International Soil and Water Conservation Research,* 2.1 (2014): 97–107.

ticed by farmers across the country. Research by the Agricultural Research Service shows no-till farming provides significant carbon storage and soil stability and productivity benefits.[5]

The agricultural sector is rapidly evolving, and the challenges facing the industry are growing. Public research and development is vital to effectively and efficiently responding to new challenges. The United States should strive to regain our position as the world leader in agricultural R&D investment. We must correct the trend of declining investments and make R&D a priority in the next farm bill.

Thank you again for the opportunity to testify. NFU stands ready to provide any additional support that may be helpful to this committee in supporting the future success of America's farmers and ranchers.

Sincerely,

ROGER JOHNSON,
President, National Farmers Union.

SUBMITTED STATEMENT BY AMERICAN VETERINARY MEDICAL ASSOCIATION

Chairman Davis, Ranking Member Lujan Grisham, and Members of the Subcommittee,

The American Veterinary Medical Association (AVMA) submits this written statement for the record for the March 16 hearing before the Committee on Agriculture, Subcommittee on Biotechnology, Horticulture, and Research entitled, "The Next Farm Bill: Agricultural Research."

The AVMA is one of the oldest and largest veterinary medical organizations, with more than 89,000 member veterinarians worldwide, engaged in a wide variety of professional activities and dedicated to the art and science of veterinary medicine. The mission of the AVMA is to lead the profession by advocating for its members and advancing the science and practice of veterinary medicine to improve animal health and welfare and human health.

As the Subcommittee turns its attention to reauthorizing the farm bill, the AVMA urges Congress to redouble our nation's commitment to the entirety of USDA's Research, Education, and Economics (REE) mission area. Increased Federal investments in REE will lead to advances and breakthroughs in agricultural productivity, improved animal health and welfare, better nutrition, and increased food safety and a strong agriculture economy. A renewed commitment to sound scientific research and technology transfer—the foundation upon which we succeed nationally and globally—is necessary as China has surpassed the U.S. in research funding and is nipping at our heals as it seeks to become the global leader in agriculture. The AVMA encourages the Committee to require consideration of the health and welfare of the animals explicitly in all research proposals, including not only the well-being of animals used in research but the advancement of welfare standards beyond existing minimums and norms.

USDA REE Programs in Veterinary Medicine and Animal Health

USDA's extramural programs in the National Institute of Food and Agriculture (NIFA) are of paramount importance to veterinary medicine. Several of these programs are exceedingly small but powerfully important. The *Food Animal Residue Avoidance Databank* (FARAD) is a tiny food safety and animal health program that helps to keep milk, meat and eggs free of drug and pesticide residue. This program receives just $1.25 million—½ its authorized level—but increases are needed to bolster FARAD's ability to provide expert advice in situations involving accidental or intentional contamination of food producing animals; validate higher-level mathematical approaches for determining safe withdrawal periods, validates withdrawal estimates and expand into contaminant exposure; broaden the Department of Homeland Security data elements and analyses to help mitigate the impact of intentional acts of bioterrorism on the nation's food supply; and strengthen the Global Veterinary Drug Database to ensure that imported foods are safe to eat and expands the U.S. domestic exports.

This Subcommittee need not be reminded how important it is to educate and train veterinarians for careers in research as well as to provide medical care that keeps all different kinds of animals healthy, including livestock and poultry in rural America. Two programs administered by NIFA prepare and/or incent veterinarians to

[5] Humberto Blanco-Canqui, *et al.* "Regional study of no-till impacts on near-surface aggregate properties that influence soil erodibility," *Soil Science Society of America Journal,* 73.4 (2008): 1361–1368.

practice what is needed most and where services are in short supply. The *Veterinary Medicine Loan Repayment Program* (VMLRP) incents veterinarians to practice food animal medicine in rural American or public practice in areas of need like diagnostic laboratories and State Departments of Agriculture. Since 2010, USDA has issued 388 VMLRP awards to veterinarians. AVMA urges the Committee to include a provision in the next farm bill that would exempt VMLRP awards from withholding taxes. Had awards been exempted since 2010, roughly 130 more veterinarians would have been placed into service in rural America. The other key program is the *Veterinary Services Grant Program* (authorized in the 2014 Farm Bill) which helps educate and prepare veterinarians for rural practice and sustains private practice veterinarians serving in rural America.

USDA's Research Enterprise

When Congress and the USDA strengthen investment and devote more attention to the animal diseases the result will be improved animal health and welfare. Advancements in detection, treatment, eradication and recovery for the animal diseases outlined below will also save billions of dollars for the U.S. agricultural economy.

Competitive research administered by NIFA's the *Agriculture and Food Research Initiative* (AFRI), and the *Animal Health and Disease Research* (which is only competitively awarded when funded above $5 million), as well as intramural research at the *Agricultural Research Service* is essential to the advancement of animal health and welfare.

It is imperative that USDA devote increased resources to the development of biological agents (vaccines) and diagnostics, antibiotics, anthelmintics (de-wormers), antifungals and parasiticides; antimicrobial use strategies, control and therapy for diseases and infections; transboundary disease and foreign animal disease; water quality; animal welfare, including animal handling and management; biosecurity for agro-tourism and prevention, surveillance and response to agro-terrorism; food security; improving genetics; management and transport of food producing animals; microbiome; and organics.

Development of a vaccine bank/stockpile for Foot-and-Mouth Disease, African Swine Fever, and Avian Influenza, and research on novel technologies to detect, manage and eliminate foreign livestock pests and other devastating animal diseases. The U.S. faces constant threats from animal disease that could cripple American animal agriculture. This threat demands increased attention to the proactive study of contagious animal diseases and vaccine development and stockpile and improvement of diagnostic capabilities. Although novel technologies (*e.g.,* gene modification for disease resistance) will play a role in managing animal disease, no technology is completely effective. Therefore, the AVMA strongly urges the USDA to also focus attention on vaccine development and stockpiles. In addition, because many infectious animal diseases have the potential to cross into the human population and impact human health, USDA is urged to collaborate with biomedical researchers to support assessments of human impacts. Disease outbreaks lead to millions of sick animals, many of which must be culled and cost the U.S. billions in production losses and response costs.

- *Highly Pathogenic Avian Influenza (HPAI):* During a 7 month span beginning in Dec. 2014 in the Pacific Northwest, a highly pathogenic avian influenza (HPAI) outbreak spread across 21 states, affected 211 commercial and 21 backyard poultry flocks and resulted in the depopulation of 7.5 million turkeys and 42.1 million egg-layer and broiler chickens. The outbreak cost over $1 billion, not including downtime losses faced by producers. There are currently four commercially available vaccines for AI licensed in the U.S. but there are several problems associated with their use. They are primarily in injectable form which makes their utilization in the face of a major disease outbreak labor and cost intensive. Additionally, their use must be approved by the USDA and state veterinarian because vaccination can have negative trade implications. Vaccinated animals cannot be differentiated from naturally infected animals. Importing countries view the presence of antibody as evidence of prior or active infection. Additional funding to further develop both the DIVA vaccination strategy for AI as well as continued research into the development of an effective vaccine against avian influenza that can be administered via aerosol or water would greatly benefit the United States and its poultry industry.
- *Foot-and-Mouth Disease (FMD):* It is estimated that an uncontrolled outbreak of Foot-and-Mouth Disease (FMD) would have a $200 billion impact over 10 years. FMD is a highly contagious viral disease causing fever, blisters on the feet and mouth, loss of appetite, drooling, and lameness impacts in cows, pigs,

sheep, goats, deer and all other domestic and wild animals with cloven hooves. FMD is considered one of the most economically devastating diseases in the world. Most affected herds are culled, as was the case in 2001 in Great Britain when over ten million animals were destroyed. While the U.S. has been FMD-free since 1929 there is no guarantee the disease won't return—an outbreak would devastate the livestock industry. USDA is urged to redouble investment in the development of a universal vaccine for FMD as well as biotherapeutic countermeasures that will provide immunity. There are seven different types of FMD viruses and more than 60 subtypes, so vaccines must be highly specific, matched to the type and subtype present in an outbreak, to protect animals against developing clinical signs of disease. Resources need to be devoted to investigating ways to differentiate between vaccinated and infected animals. Current diagnostic testing methods are only validated for single sample/single animal testing. To have any hope of responding to an outbreak, pooled sample/multi-animal diagnostic tests must be developed and validated.

- *African Swine Fever (ASF):* African Swine Fever (ASF) is a highly contagious hemorrhagic disease of pigs that produces a wide range of clinical signs and lesions that closely resemble those of classical swine fever. There is no treatment for ASF, and all attempts to develop a vaccine have so far been unsuccessful. Prevention depends on ensuring that neither infected live pigs nor pig meat products are introduced into areas free of ASF. All successful eradication programs have involved the rapid diagnosis, slaughter, and disposal of all animals on infected premises. Introduction of this disease into the United States would have a devastating effect on the American swine industry. USDA has developed surveillance programs for the early detection of FMD and ASF. These programs are awaiting validation in order to be approved for deployment to the veterinary diagnostic laboratories. In addition, the current sample types (oral swabs for FMD and whole blood for ASF) are not routinely included in most swine diagnostic samples submitted to the veterinary diagnostic laboratories. Additional sample types (such as oral fluids or tonsil) need to be developed and validated. The funding necessary to support surveillance enhancement, validation and implementation need to be prioritized.
- *Cattle Fever Tick (CFT) and Bovine Babesiosis: Babesia* are emerging health threats to both animals and humans in the U.S. Accelerated research at USDA is needed to prevent catastrophic economic losses due to cattle fever tick (CFT) and bovine babesiosis. Additionally there are impacts from human babesiosis due to cattle-associated *Babesia divergens* and *Babesia divergens*-like organisms which has led to an increase in the number of cases of human babesiosis over the past 25 years. Research on novel technologies to manage and eliminate foreign livestock pests and tick-borne diseases from south Texas is needed to protect the U.S. cattle industry from suffering losses similar to those faced by Brazil ($3 billion) and Mexico ($573 million). Movement of CFT infested wildlife (*i.e.,* white-tailed deer and nilgai across the Mexican border) exacerbates our need to protect the U.S. cattle industry and human health. At present, Texas is issuing temporary preventive quarantines on multiple premises in the CFT-free zone of the U.S.; however, that is not a permanent solution. We need methods for integrated eradication to control and eliminate CFT outbreaks involving wildlife, expedited area-wide tests of innovative technologies to control CFT infestation, and to adapt protocols for research in wildlife. Technology innovation involves anti-tick vaccines; longer-acting acaricide formulations; safer acaricides; alternative acaricide delivery systems; tick growth regulators; acaropathogenic fungi and nematodes; remote surveillance and delivery systems; and algorithms to assess return on investment for the implementation of adaptive area-wide integrated CFT eradication protocols. Resistance to acaricides commonly used to prevent/treat CFT infestation renders those treatments ineffective, and drugs to prevent bovine babesiosis are not approved for use in the U.S. Funding is needed to research new methods to prevent further spread of CFT and to mitigate the risk for the re-emergence of bovine babesiosis.

Amplifying USDA's attention to these animal diseases will improve animal health and welfare, help protect the U.S. food animal-producing industries from economic harm, and protect U.S. consumers from contamination of the domestic food supply.

Additionally, the AVMA urges Congress to ensure the USDA has leadership and oversight for activities associated with control of *all animal diseases.* It is imperative for the Agency to assure the availability of sufficient numbers of Federal veterinarians who are trained to recognize and diagnose exotic and en-

demic animal diseases. Currently, the U.S. Department of the Interior's Fish and Wildlife Service sets disease standards for imported animals and interstate movement of those animals. As the world's population continues to grow and the demand for animal protein increases, animals that are not currently considered to be part of animal agriculture will play a bigger role in meeting those demands. It is imperative that the USDA take a leadership role in developing resources to support related activities.

USDA & Animal Welfare

The welfare of animals used in or impacted by agricultural practices is an underemphasized subject area. Much of the research that does exist is fragmented or industry-funded which reduces its influence in the public sphere. There are multiple areas which require concerted and transparent research efforts including: validation of welfare assessment methods and certification schemes; stress reduction during transportation of animals; the role of genetics on welfare; outcomes for neonatal animals such as male chicks and dairy calves; welfare-friendly and practical animal housing; reduction of the use of painful procedures; and development rapid depopulation methods that are humane and acceptable to society. In order to protect the sustainability and reputation of the agricultural sector the AVMA encourages the Committee to support and fund USDA research opportunities in the aforementioned areas.

National Animal Health Laboratory Network (NAHLN)

Infrastructure investments in the U.S. network of animal health laboratories are critical. Laboratories must be expanded and strengthened to ensure sufficient capability and capacity for both routine and emergency diagnostic needs. Improvements across-the-board are needed to ensure robust connections among all component laboratories (Federal, state, university, and commercial labs) contributing to the diagnosis of animal and zoonotic diseases. All parties involved—Federal and state governments, and universities—must prioritize investment in labs participating in the NAHLN.

The 2014 Farm Bill recognized the importance of the NAHLN, the 62 member laboratory network serves as the nation's surveillance and emergency response system during animal disease outbreaks and recovery phase, by establishing a $15 million discretionary budget line specifically for the Network. A fully functional NAHLN needs Federal investment of more than $40 million annually to expand surveillance and surge capacity. This funding would bolster the number and level of participating state labs; to spur development of infrastructure for electronic transmission of data between sample collectors, labs and state and Federal databases; and increase efficiency and effectiveness of lab personnel training and employment both regionally and nationwide. In addition, states should double their support for the NAHLN.

The USDA needs to invest more in the development of technologies that will improve and increase the efficiency, effectiveness and accuracy of the NAHLN and other animal diagnostic laboratories, and allow them to communicate rapidly and efficiently regarding food animal outbreaks and antibiotic resistance. USDA as well as states ought to encourage and support rapid assay development, standardization, validation, and adoption of new technologies for the prevention, detection, and diagnosis of animal diseases and zoonoses.

Additionally, Congress should encourage the USDA, all 50 states and U.S. territories, as well as private industry to explore how they may assist unaccredited laboratories in preparing to achieve the standards for accreditation and determine how such laboratories can be prepared to complement Federal efforts and the NAHLN in the face of food animal outbreaks.

Conclusion

Thank you for the opportunity to provide this information to the Committee on Agriculture, Subcommittee on Biotechnology, Horticulture, and Research. The AVMA stands ready to be of assistance in any way possible. For more information please contact Ms. Gina Luke, Assistant Director, Governmental Relations Division, at [**Redacted**] or via e-mail to [**Redacted**].

THE NEXT FARM BILL
(FORESTRY INITIATIVES)

THURSDAY, MARCH 16, 2017

HOUSE OF REPRESENTATIVES,
SUBCOMMITTEE ON CONSERVATION AND FORESTRY,
COMMITTEE ON AGRICULTURE,
Washington, D.C.

The Subcommittee met, pursuant to call, at 2:23 p.m., in Room 1300 of the Longworth House Office Building, Hon. Frank D. Lucas [Chairman of the Subcommittee] presiding.

Members present: Representatives Lucas, Thompson, LaMalfa, Allen, Abraham, Kelly, Walz, Kuster, Nolan, O'Halleran, and Panetta.

Staff present: John Weber, Josh Maxwell, Patricia Straughn, Stephanie Addison, Evan Jurkovich, Liz Friedlander, Troy Phillips, Faisal Siddiqui, and Nicole Scott.

OPENING STATEMENT OF HON. FRANK D. LUCAS, A REPRESENTATIVE IN CONGRESS FROM OKLAHOMA

The CHAIRMAN. This hearing of the Committee on Agriculture entitled, *The Next Farm Bill: Forestry Initiatives,* will come to order.

Good afternoon. I want to welcome everyone to today's Conservation and Forestry Subcommittee hearing. Today, we will continue our farm bill Subcommittee hearings by discussing another important issue, our nation's forests. Our nation's forests are a great natural resource, and today we will examine farm bill provisions that work to ensure our National and private forests remain healthy and productive.

While I may not have as many trees in my backyard as some of my colleagues, or maybe for that matter, my whole district, we are all concerned about the benefit from healthy forests, timber, clean air, clean water, habitat, recreation, and a variety of forest products and much more.

Since its creation by President Teddy Roosevelt, the Forest Service has grown significantly and now manages 193 million acres across 154 National Forests and 20 National Grasslands, in 43 states and Puerto Rico.

Our forestlands, whether Federal, state, or private, are huge economic drivers in many communities. The forest products industry is estimated to employ 900,000 people and is among the top ten manufacturing sectors in 47 states. Unfortunately, we have seen a decline in timber harvested over the years. As timber harvest has

decreased, so too have jobs and local businesses connected to this natural resource. I believe the U.S. Forest Service, housed at the Department of Agriculture, should return to its original purpose of conserving natural resources through sustainable use. In short, a working, productive forest.

In the 2014 Farm Bill, we made some meaningful reforms, from Good Neighbor Authority to addressing insect and disease concerns. These reforms were intended to help further the better management that our forests so desperately needed at the time. However, there is more work needed to improve forest management in every region of the country. As the recent rangeland wildfires in Oklahoma, Texas, Kansas and Colorado remind us, wildfires can wreak incredible havoc, destroying livelihoods all along the way.

As a Committee, we need to do everything in our power to give the Forest Service the flexibility to act to reduce fuel loads. Not only is the productivity of our forest and rangelands at risk, also the lives of those who live and work on these lands.

As we begin these farm bill discussions, we cannot forget the importance of the private forestlands in all aspects of the farm bill. We should continue to support the voluntary conservation efforts that our forest owners make on their lands, and we should continue to support innovation through advanced forest products and fuels.

I look forward to hearing from our panel on how we can better address our resource concerns, protect our private forestlands and get our National Forests working again.

[The prepared statement of Mr. Lucas follows:]

PREPARED STATEMENT OF HON. FRANK D. LUCAS, A REPRESENTATIVE IN CONGRESS FROM OKLAHOMA

Good afternoon. I want to welcome everyone to today's Conservation and Forestry Subcommittee hearing.

Today, we will continue our farm bill Subcommittee hearings by discussing another important issue—Our Nation's Forests.

Our nation's forests are a great natural resource, and today we will examine farm bill provisions that work to ensure our National and private forests remain healthy and productive.

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I look forward to hearing from our panel on how we can better address our resource concerns, protect our private forestlands and get our National Forests working again.

I now recognize Mr. Walz, for his opening statement.

The CHAIRMAN. And with that, I would now like to recognize Mr. Walz, the acting Ranking Member today, for his opening statement.

OPENING STATEMENT OF HON. TIMOTHY J. WALZ, A REPRESENTATIVE IN CONGRESS FROM MINNESOTA

Mr. WALZ. Well thank you, Chairman Lucas. It is a pleasure to be back with you, having gone through the last farm bill cycle with you, and this is a place that the Chairman is truly bigger than life in this room.

The CHAIRMAN. Isn't it inspiring?

Mr. WALZ. Always keeps me honest looking over my shoulder here.

Ms. Fudge was unable to be here today. Our current Ranking Member is doing a fabulous job on this. But thank you, Mr. Chairman, for holding today's hearing.

Forestry issues are an important piece of the farm bill. They play a critical role in our conservation efforts, habitat development, for industries that support rural communities across the country. In Minnesota, forestry plays a vital role, and my colleague from Minnesota, Mr. Nolan, has created many, many good paying jobs through his work in forestry over the years, and he is going to share, I am sure, about his personal experience on why it is critical.

Our private forestlands and National Forests provide clean water, clean air, and greatly contribute to our states' economy. This is all despite the decline in the timber industry we are seeing, and we must work to reverse this. Today's hearing is an important opportunity to look at how the forestry programs and authorities in the farm bill are working on the ground and areas that we can improve on from our experts' testimony.

Today, we are also going to take a look at how conservation programs, which include forestry practices, are working for the private landowners, as the Chairman mentioned.

It is clear our forests need a lot of work. The farm bill can help provide the tools for that work to be accomplished by the Forest Service and other private forest owners. We can't talk about how tools are working and what tools might be needed to address our forest health until the Forest Service has the resources and personnel to fully utilize the tools they already have. This means Congress and the Committee must address wildfire funding issues that plague the Forest Service. I will have to say, in a first look at the President's budget, it is called a skinny budget because it is skinny

on the USDA. It cuts it by 21 percent, so every part of the Forest Service is already hurting because of runaway fire budgets and fire borrowing. Roads and trails that provide recreation access to sportsmen, community and urban forestry initiatives, and the ability of the Forest Service to be able to carry out timber contracts, tree marking and the necessary environmental reviews. Every aspect is not performing as it could or should because of budget levels that are going to get exponentially worse. We need to fix the fire funding issue so the Forest Service can do the work we expect of it, and then we should have the discussions on additional management tools and strategies that make sense to get our forests healthy again.

As we discuss forestry and the farm bill, it is incredibly important to keep the budget challenges at the forefront and top of our mind. This Committee solves big and challenging problems, and there is no reason wildfire funding and the health of our Forest Service can't be addressed also.

I look forward to working with Members of this Committee, and having a robust discussion about how our farm bill forestry programs are working, and what we can do to give tools to folks to make it even better.

Again, I thank the Chairman. He has proven a person who can make these things happen, and I look forward to the testimony today. I yield back.

The CHAIRMAN. I thank the acting Ranking Member, and I note for everyone's benefit, you can tell the Ranking Member and the Chairman want to get to your information, your insight, so we are prepared to go.

The chair, in that spirit, would request that other Members submit their opening statements for the record so the witnesses may begin their testimony, and to ensure that there is ample time for questions.

With that, I would like to welcome our witnesses to the table. Mr. George Geissler, Oklahoma State Forester, Vice President of the National Association of State Foresters, Oklahoma City, Oklahoma; Ms. Susan Benedict, Managing Partner, Beartown Family Limited Partnership, State College, Pennsylvania; Mr. Jim D. Neiman, President and CEO, Neiman Enterprises, Incorporated, Hulett, Wyoming; Ms. Becky Humphries, Chief Conservation and Operations Officer, National Wild Turkey Federation, Edgefield, South Carolina; and Mr. Tom Harbour, retired National Director, Fire and Aviation Management, U.S. Forestry Service, Falls Church, Virginia.

And with that, Mr. Geissler, you may begin. You are recognized for 5 minutes.

STATEMENT OF GEORGE L. GEISSLER, C.F., FORESTER AND DIRECTOR, FORESTRY SERVICES DIVISION, STATE OF OKLAHOMA; VICE PRESIDENT, NATIONAL ASSOCIATION OF STATE FORESTERS, OKLAHOMA CITY, OK

Mr. GEISSLER. Thank you, Chairman Lucas, acting Ranking Member Walz, and Members of the Subcommittee for the opportunity to appear in front of you today on behalf of the National Association of State Foresters. You have a copy of our written testi-

mony, and I would like to provide you some background and share with you some key points.

NASF represents our nation's state and territorial forestry organizations, and about ⅓ of the United States is forested. Of those forested acres, approximately 60 percent are state and private forests, which are the purview of our nation's State Foresters, who provide landowner technical assistance, forest management, and wildland fire suppression. state and private forests provide 90 percent of the nation's wood supply, in addition to critical ecological and quality of life benefits. Through farm bill authorized programs, State Foresters work with landowners to achieve sizable economic and environmental benefits.

Last year in 2016, 82 percent of the nation's wildfires occurred on state and private lands, which accounted for about ½ of the forested acres burned nationally. State Foresters and local fire departments, many of which are volunteers, are responsible for suppressing those fires.

While private forestlands are steadily being converted to other uses, State Foresters work to find landowners access to markets and assistance to manage their forest in order to keep forests as forests for the benefits of America.

There are 136 million acres of urban and community forests in the United States. These reduce energy costs, increase property values, mitigate storm water, enhance air quality, and support jobs, among many other things. Through the Urban and Community Forestry Program, State Foresters support this vital green infrastructure. All of us at NASF believe that the farm bill is a unique opportunity to support rural America's economic backbone and improve the quality of life for all Americans through enhancing support for America's trees and forests.

In generating ideas for your consideration in the 2018 Farm Bill, NASF is honored to lead the Forests in the Farm Bill Coalition, along with the partners that are here with us today. Your State Foresters are recommending that in the farm bill, we address six points, and these points are in no particular order.

Priority item one, provide support to the State Foresters to update our state forest action plans. These collectively serve as a powerful strategic plan for the nation's forests. This should include Federal agency direction, making these all-lands plans a foundation and priority for driving decisions and resource allocations. Forest action plans highlight and define critical issues, prioritize available funding and resources, and encourage coordination between organizations and individuals.

Priority two, provide Federal and state forest managers with tools that increase the pace of active forest management, including cross boundary work and rapid and effective response to insects, disease, and wildfires, expanding the use of Good Neighbor Authority, the insect and disease designation areas, and categorical exclusions will go a long way. In Oklahoma alone, four insect and disease designation areas have contributed to both forest and economic health by thinning high density forests and expediting timber sales, which sent wood cut by local loggers to local mills.

Priority three, support biomass energy, America's original renewable energy source, as well as legislation which encourages tall timber buildings and increased use of wood in construction.

Priority four, support the initiative to reforest America, to address not only forest lost from commercial and residential development, but also from the impacts of wildfire, insects, and disease.

Priority five, support the conservation title programs that provide assistance to private landowners, including funding of the Regional Conservation Partnership Program.

Priority six, to the extent that the farm bill can contribute to this, as many have said, we need to provide a comprehensive wildland fire funding fix.

The nation's State Foresters look forward to working with the House Agriculture Committee, our partners with us here today, our Federal partners, including the USDA Forest Service, and the Natural Resources Conservation Service in developing the 2018 Farm Bill. I thank you for the opportunity to testify here today, and for this Committee's work on this bill.

[The prepared statement of Mr. Geissler follows:]

PREPARED STATEMENT OF GEORGE L. GEISSLER, C.F., FORESTER AND DIRECTOR, FORESTRY SERVICES DIVISION, STATE OF OKLAHOMA; VICE PRESIDENT, NATIONAL ASSOCIATION OF STATE FORESTERS, OKLAHOMA CITY, OK

Thank you Chairman Lucas, Ranking Member Fudge, and Members of the Subcommittee for the opportunity to appear before you today on behalf of the National Association of State Foresters (NASF). NASF represents our nation's state and territorial forestry organizations. There are some 750 million acres of forested land in the United States or about ⅓ of the continental U.S. Of those forested acres, approximately 40 percent are Federal forests and the other 60 percent are state and private forests, the purview of our nation's State Foresters.

Here are some facts about state and private forests:

- State and private forests provide 90 percent of the nation's wood supply and critical benefits such as clean water and air, wildlife and fish habitat, recreation opportunities and more.
- Forest-based industry is consistently in the top ten manufacturing sectors in 45 of the 50 states and, in terms of total economic compensation, larger nationally than the motor vehicles and parts manufacturing industry.
- In 2016, 82 percent of the nation's wildfires occurred on state and private lands which accounted for about half of the forested acres burned.
- Unlike public lands, private forest lands are steadily being converted to other uses, fragmented, and developed—these landowners need access to markets and technical and financial assistance to manage and maintain their forests for the public good.
- There are 136 million acres of urban and community forests in the U.S. that reduce energy costs, increase property values, mitigate storm water, enhance air quality, support jobs and more. The tree-trimming industry alone has revenue of $17 billion annually. These forests are vital infrastructure that provide social, economic and environmental benefits to families and communities.

Call To Action: **State Foresters believe that the farm bill is a unique opportunity to support rural America's economic backbone and improve the quality of life for all Americans by enhancing support for America's trees and forests.** State Foresters recommend that the 2018 Farm Bill address these six priorities (please note that these are not listed in order of importance to State Foresters):

(1) Provide support to State Foresters for updating state Forest Action Plans that collectively serve as a powerful strategic plan for the nation's forests. This should include Federal agency direction making these all-lands plans a foundation and priority for driving public lands decision-making and resource allocation.

(2) Provide Federal and state forest managers with tools that increase the pace and on-the-ground results of active forest management, cross boundary work, and rapid and effective response to insects, disease and wildland fire. This includes but is not limited to expanded use of Good Neighbor Authority, the Insect and Disease Area Designations and categorical exclusions.

(3) Support the development of new and expanded markets for forest products to provide all landowners, public and private, with more forest management options.

(4) Strengthen forestry outreach, education, research and inventory programs that enhance the ability of State Foresters to assist private landowners and deliver Federal and state programs serving all lands across the rural to urban spectrum. This is fundamental in supporting trees and forests as America's green infrastructure. State Foresters support an initiative to reforest America to begin to address the emerging threat of forest loss from commercial and residential development as well as from the impacts of wildfire, insects and disease.

(5) Include strong provisions for forests in conservation title programs that provide technical and financial assistance to private landowners, including reauthorization of the Regional Conservation Partnership Program.

(6) Provide for a comprehensive wildland fire funding fix. This is critically needed to address the increasing cost of wildfire suppression and the challenges this poses to the USDA Forest Service and the Department of the Interior capabilities. To the extent that the farm bill process can help facilitate a Congressional solution to this issue, NASF would support those efforts.

Strong partnerships between state forestry agencies and the Federal agencies are critical to helping landowners manage their forests and to keeping the forests on the landscape that benefit all Americans. The following are farm bill programs of particular importance to State Foresters which have had significant positive impacts for America's forests.

Positive Impacts of Previous Farm Bills on America's Forests

Farm bill authorizations have been instrumental in protecting and enhancing the ecological health of America's trees and forests and the economic health of rural America. State Foresters applaud the Committee for current and past efforts. The Forest Stewardship Program, which was first enacted in the 1990 Farm Bill, supports the states' field foresters who deliver technical assistance and stewardship plans to the nation's private forest owners. A forest owner with a forest stewardship plan is almost three times more likely to actively managing his or her land than a forest owner without a plan. This program produces significant quantifiable results in terms of actively managed forests and all of the ecological and economic benefits that ensue for rural America.

The Urban and Community Forestry program, also authorized in the 1990 Farm Bill, provides funding to care for the trees and forests closest to our nation's communities. Studies show direct linkages between trees and human health benefits, significant storm water treatment savings, absorption of pollutants, reduced crime rates, increased residential and commercial energy savings (heating and air conditioning), increased business activity and more. Investments in America's infrastructure needs to include support for the accompanying green infrastructure and encourage utilization of products from America's forests. Rebuilding America's green infrastructure starts with support for this program.

Recent farm bills have also been instrumental in elevating the role of forestry in conservation title programs. The financial and technical assistance provided through programs such as the Environmental Quality Incentives Program (EQIP) and the Conservation Stewardship Program (CSP) is invaluable in supporting small private landowners in their forest management objectives. State forestry agencies are proactively involved in working with the Federal agencies in successfully implementing these programs. NASF appreciates the ongoing program support and attention in the farm bill that is responsible for significant on-the-ground results due to these partnerships.

Helping Lead the Forests in the Farm Bill Coalition

In generating ideas for your consideration in the 2018 Farm Bill, NASF is honored to be helping to lead the Forests in the Farm Bill (FIFB) coalition along with the American Forest Foundation, the National Wild Turkey Federation and The Nature Conservancy. The FIFB coalition includes almost 100 participating organizations who are working together to provide input on key provisions to help our nation's trees and forests and the American people who depend upon them.

Recent Farm Bill Provisions—Impacts and Possibilities

(1) Broader Application of State Forest Action Plans

NASF thanks the Committee for including in the 2008 Farm Bill the direction for State Foresters to develop Statewide Forest Resource Assessments and Strategies, now known as **state Forest Action Plans.** Together these publicly vetted plans *covering all ownership categories* provide foundational guidance for managing America's forests. They have helped our state agencies focus limited resources on areas of greatest concern; *e.g.,* an area where there is particularly high fire danger or threat of an insect outbreak. NASF would like to see these Forest Action Plans used as foundational documents in land management planning at all levels of government so that State Foresters can work with our Federal and local partners to focus our limited resources on areas with the most critical challenges. State Foresters will be updating these plans, as required by Federal law, and as such request the Committee authorize Federal funding in order to assist State Foresters in this important process.

(2) Encouraging Improved Federal Forest Management To Support Forest Health and Resilience Across All-Lands

Without well-managed Federal forests, active management of state and private forests will be difficult in parts of the nation, especially the West. Insects and disease know no boundaries, and neither do wildfires. Actively managed forest land can reduce deleterious impacts on both sides of a property line. Several farm bill authorities have significantly helped address the management challenges mounting on Federal lands, and additional changes to these authorities would yield significant positive results.

a. ***Expanding Use of Good Neighbor Authority (GNA)*** that was permanently authorized in the 2014 Farm Bill, allowing states to act as "good neighbors" to the USDA Forest Service (Forest Service) and the Bureau of Land Management (BLM) to accomplish cross-boundary work. Today there are Good Neighbor agreements in 24 different states. A challenge that has emerged in the implementation of this authority is that the 2014 Farm Bill specifically excluded GNA projects with "construction, reconstruction, repair, or restoration of paved or permanent roads." This significantly limits the use of this authority since most forest management projects require road repair such as culvert replacement. It should be remembered that any project which would be eligible for a GNA agreement with the State Forester, would have been approved in a Federal, publicly vetted National Environmental Policy Act (NEPA) process. If states have marking crews and project administrators in place, it makes little sense to have the Federal Government expend funds to hire, train and transport additional field staff. Including an exception for road work limits the use of this authority in places where GNA could make significant improvements to the health and resilience of Federal forests. This is simply good government.

b. ***Addressing Insect and Disease Infestations on Federal forests*** is another important accomplishment of the 2014 Farm Bill. To date 36 governors have identified over 400 "treatment areas" in their states totaling over 55 million acres. In the Forest Service report to Congress for 2016 on implementation of this program, the agency identified 74 projects that had been completed using the streamlined planning authorities as provided. State Foresters are encouraged by this work and urge broader use made of this authority.

   As an example, in Arkansas, the State Forestry Commission worked in partnership with the Ouachita National Forest to prepare the reasoning for the treatment areas based on National Insect and Disease Risk Maps (NIDRM), aerial reconnaissance and site visits by staff from both agencies, informing the Governor on his designation requests. Subsequently, through Categorical Exclusion (CE) authorities granted by the farm bill, the Ouachita National Forest in Arkansas has been able to treat almost 1,000 acres of priority insect-infested acres through eight individual projects, with another 2,000 acres planned in 2017. With strong partnerships and good communication, the Commission was successful with the authorities provided in the farm bill.

c. ***State Foresters would also like the Committee to consider a similar authority where there is significant wild fire threat.*** NASF proposes that Governors would identify and map forested areas at the highest risk to wild fire, and that Federal agencies be provided with similar streamlined planning authorities; *e.g.,* categorical exclusions of up to 3,000 acres, to accomplish work in those areas identified on wildfire risk maps.

(3) Expanding Markets

Without markets for wood products, the nation's forests will not be actively managed and the wildlife, watersheds, and rural Americans which depend on those forests will suffer. State Foresters are looking for opportunities to expand the use of biomass as a most basic source of renewable energy. State Foresters also support the Timber Innovation Act of 2016, which encourages additional use of wood products in building as well as research into additional market opportunities.

(4) Reforesting America

As we look at the challenges facing the millions of private forest owners in this country, primary among these is the impending conversion of forest land, especially in the South, to residential and commercial development. The conversion and fragmentation of forestland associated with land development is a well-documented issue that defies one simple or programmatic solution. We do know that timely and targeted reforestation can be a helpful mitigating measure. In addition, assisting and encouraging local planning authorities to incorporate forest resource information in land use planning decisions could promote more favorable outcomes for forestland. Reforestation is also essential on landscapes and communities across the nation which have been impacted by fire and/or insects and disease, as well as in urban areas where trees provide critical green infrastructure and benefits. We need to look at programs to encourage the replanting of America's communities and forests and target those investments wisely as identified in state Forest Action Plans.

(5) Reauthorize funding for the Regional Conservation Partnership Program

Thanks to the work of this Committee, the 2014 Farm Bill created the Regional Conservation Partnership Program (RCPP). This program has been used across the country to leverage state and local resources to support the needs of local forest landowners. In Virginia, an RCPP grant of $1.3 million leveraged with matching funding from Virginia's Reforestation of Timberlands Program, has supported over 200 forest owners holding a total of 20,000 acres in improving the health, condition and habitat of their forested lands through dedicated Environmental Quality Incentives Program (EQIP) funding. The RCPP program enabled the Virginia Department of Forestry to look at the needs of the landowner base, and develop a program of work in partnership with NRCS that was tailored to successfully reaching the maximum number of landowners with Federal assistance.

(6) Pass a Wildfire Funding Fix

It will be challenging to address the management needs across America's private and public forests with a shrinking pool of available Federal funding. In 1995 wildfire firefighting costs constituted 16 percent of the Forest Service budget. Today over 50 percent of the budget is consumed by fighting wildfires and the pool of funds available to support vital agency programs which can prevent some of the devastation and help America's forests is thus impacted. To the extent that the farm bill process can help facilitate a Congressional solution to this issue, **we ask Congress to please find a comprehensive wildfire funding solution quickly** for the USDA Forest Service and the Department of [the] Interior. A comprehensive solution would address both late-season wildfire funding transfers and the erosion of agency budgets over time due to increasing wildfire suppression costs.

Conclusion

As we look to the challenges facing the millions of private forest owners in this country, we see many opportunities for this farm bill to assist in the stewardship of these lands. State and private forests provide many societal benefits including jobs and economic development, clean air and water, wildlife habitat for both game and non-game species and so much more.

In summary, State Foresters believe the farm bill is an opportunity to support rural America's economic backbone and improve the quality of life for all Americans by enhancing support for America's trees and forests. State Foresters are asking the Committee to focus on these five key areas:

(1) Support State Foresters in updating state Forest Action Plans that collectively serve as a powerful strategic plan for the all of nation's trees and forests, including Federal lands.

(2) Increase the pace and on-the-ground results of active Federal forest management, cross boundary work, and rapid and effective response to insects, disease and wildland fire.

(3) Support the development of new and expanded markets for forest products.

(4) Strengthen the ability of State Foresters to assist private landowners and deliver Federal and state programs serving all lands across the rural to urban spectrum. Support a "Reforest America" initiative to begin to address forest conversion to development as well as the impacts of wild fire and insects and disease.

(5) Include strong provisions for forests in conservation title programs that provide technical and financial assistance to private landowners, including reauthorization of funding for the Regional Conservation Partnership Program.

(6) To the extent that the farm bill process is able, facilitate a Congressional comprehensive wildfire funding solution

We look forward to working with the House Agriculture Committee, our partners with us here today and our Federal partners, including the USDA Forest Service. Our common goal is the same: to support the health of America's trees and forests and the rural and urban communities which rely on them. Thank you for this opportunity to provide testimony. We look forward to working with you to provide the collective insights of the nation's State Foresters in developing the 2018 Farm Bill.

The CHAIRMAN. Thank you very much.

The chair now recognizes Ms. Benedict for 5 minutes. You may proceed when you are ready.

STATEMENT OF SUSAN S. BENEDICT, MANAGING PARTNER, BEARTOWN FAMILY LP; MEMBER, TAX POLICY SUBCOMMITTEE, NATIONAL PUBLIC AFFAIRS COMMITTEE, AMERICAN FOREST FOUNDATION, STATE COLLEGE, PA

Ms. BENEDICT. Thank you for the opportunity to testify today. I am a tree farmer from central Pennsylvania, where my family owns 2,087 acres of forestland. I am also here on behalf of the American Forest Foundation, which helps the nation's 22 million family forest owners care for our land. AFF has helped me better manage my land, and I feel so strongly about their forestland owners support that I have been an active volunteer for over 6 years.

AFF co-chairs the Forests in the Farm Bill Coalition with the National Association of State Foresters, the National Wild Turkey Federation, and The Nature Conservancy. This Coalition has identified five key issues for the next farm bill in a letter signed by over 40 organizations. I would like to ask that this letter be inserted into the hearing record.

The CHAIRMAN. Without objection, the letter is made part of the official record.

[The letter referred to is located on p. 547.]

Ms. BENEDICT. Thank you.

Taking care of our woods requires money. Even though we regularly harvest timber, this income is often not enough to pay the taxes, let alone pay for forest management. Our timber markets aren't what they used to be. Currently, we are selling wood for the same actual dollars as we received in the 1980s.

On top of these challenges, landowners have significant risks we can't plan for. Our land was hit from 2006 to 2008 by a gypsy moth outbreak, which ultimately destroyed over $1.2 million worth of timber on our land. This is why farm bill conservation programs are so important for woodland owners like me. We enrolled our family land in the Conservation Stewardship Program in 2005. It helped us continue management during a very tough economic time for us. We also have used the Environmental Quality Incentives Program. With the EQIP funds, leveraging our own, we were able to afford what is called a crop tree release, which allows competing

trees to be removed and desirable trees to flourish. This benefits both wildlife and our oak regeneration. We are so grateful for this Committee's work to include forest owners in these conservation programs.

My story is not unique. I am one of 22 million people across rural America who, like my family, own and care for woodlands. Recently, AFF assessed the biggest issues facing family woodland owners. In the West, we found that wildfire is the biggest challenge. In the Northeast and South, we found that wildlife, in particular, the growing number of species that are either already listed or could be listed in the near future was one of the biggest issues.

I would like to ask your help in five key areas today to help us tackle these issues. First, we ask you to maintain funding and support for woodland owners in forestry and conservation programs. We know that budgets are tight. We ask that you prioritize funding for the Environmental Quality Incentives Program, the Conservation Stewardship Program, and Conservation Reserve Program, which provide support for woodland owners. Additionally, we strongly support the Regional Conservation Partnership Program, and authorities that encourage targeted application of conservation program funding to priority landscapes to achieve measurable outcomes. We ask that you support cross-boundary landscape scale efforts to tackle forestry issues, especially wildfire.

Because forests are often a patchwork of small parcels and different public and private ownerships, it won't be enough if just one or two landowners in a landscape are managing. New tools for USDA agencies are needed so they can more efficiently work across ownership boundaries and targeted landscapes, and with willing landowners to address these issues. We ask you to provide support and regulatory assurance for landowners managing for at-risk wildlife. And last, the farm bill can help support a strong, diverse forest products industry. Markets are essential for landowners, good management, and growing rural jobs and rural economies. One way you can do this is support for the Timber Innovations Act, which many of you are sponsors of. Although largely outside the jurisdiction of the Agriculture Committee, we respectfully ask that you continue to work with the relevant committees and enact a wildfire funding fix.

Thank you for considering these ideas, and I look forward to questions.

[The prepared statement of Ms. Benedict follows:]

PREPARED STATEMENT OF SUSAN S. BENEDICT, MANAGING PARTNER, BEARTOWN FAMILY LP; MEMBER, TAX POLICY SUBCOMMITTEE, NATIONAL PUBLIC AFFAIRS COMMITTEE, AMERICAN FOREST FOUNDATION, STATE COLLEGE, PA

Mr. Chairman, Ranking Member Fudge, Mr. Vice Chairman, Members of the Subcommittee, thank you for the opportunity to testify before you today regarding the upcoming reauthorization of the farm bill.

I'm a Tree Farmer from central Pennsylvania, where my family and I own 2087 acres of forestland in the headwaters of the Chesapeake Bay.

I'm also here on behalf of the American Forest Foundation (AFF), a nonprofit forest conservation organization helping the nation's 22 million family forest owners care for our land and continue to provide the clean air and water, wildlife habitat, and wood products that all Americans benefit from. AFF also operates the American Tree Farm System®, which my family is a part of, you have probably seen the green

and white sign on the side of the road. ATFS is the nation's oldest and largest sustainable family woodland system in the world with some 74,000 landowners who own 20.5 million acres participating in the program. It provides woodland owners with the assurance that we're practicing good forestry and provides people that buy our timber the assurance that our forests are managed to the highest of standards.

AFF co-chairs the Forests in the Farm Bill Coalition, alongside the National Association of State Foresters, the National Wild Turkey Federation, and The Nature Conservancy. This Coalition, with a diversity of landowner, industry, forestry, and conservation interests, is currently developing detailed farm bill recommendations for your consideration. The Coalition has identified five key issues for the next farm bill in a letter to the Subcommittee. Most of the Coalition's issues are consistent with my testimony. I'd like to ask that this letter be inserted into the hearing record.*

My Story

Our land has been in our family for three generations and I'm hopeful we can make it five when we pass it to my children and grandchildren. Keeping our land in forest and ensuring it is well managed is important to me and my family but it's also important to my community and the millions of people that rely on the Chesapeake Bay watershed for their clean water.

Our woods are also home to a number of at-risk or declining wildlife including the golden winged and cerulean warblers and the timber rattler.

Our woods also support our local rural economy. To help us manage our woods, we directly employ a consulting forester and four loggers. We harvest timber annually. We also have both a wind farm and a natural gas lease on our property, which of course supports the local economy and provides our family with income.

Taking care of our woods requires money. Even though we regularly harvest timber and lease the land for energy, this income is often not enough to pay the taxes let alone pay for management. We regularly must put money into maintaining our 8 miles of roads and into management practices necessary to keep the deer herd in check, so our trees survive. Additionally, the conservation practices, like managing for the at-risk wildlife noted above, also cost money.

Our timber markets aren't what they used to be. We used to have five mills that bought our wood, now we only have three. The remaining mills are a good distance from our woods, so hauling costs cut into our margins. These remaining mills, which now take the wood of the closed mills too, often have gluts of wood that suppress our prices further. Because of the loss of mills, finding loggers to do the work is very difficult because many can't afford the equipment.

On top of these challenges, landowners have significant risks that we can't plan for. Our land was hit in 2006 and again in 2008 by gypsy moth, which then trigge[re]d root rot and destroyed over $1.2 million worth of timber. We are now dealing with the Emerald Ash Borer. Timber insurance is just too expensive, so these are uninsured losses we will never recoup. We also can't take a loss for tax purposes because it's naturally regenerated timber with no tax basis. Essentially we lost a generation's retirement and have no way to recover it.

This is why farm bill conservation programs are so important for woodland owners like me. We enrolled our family land in the Conservation Stewardship Program (CSP) in 2005. Because we were struggling financially to cover the costs to manage our land well on top of covering "life's costs" like health insurance, we decided CSP was the right program for us. It rewarded us for the good stewardship we were already doing, helped defray some of our management costs, and encouraged us to do more. I recognize we can't provide this support to every landowner all the time, but it helped us get through some hard times when we weren't sure if we were going to be able to keep all the land that had been in our family for so long.

Additionally, the Environmental Quality Incentives Program (EQIP) has helped my family out. With EQIP funds, leveraging our own, we were able to afford what's called a "crop tree release" which removes competing trees, allowing desirable trees to flourish. This benefits both wildlife and our oak regeneration.

In my day job, I'm an accountant and my husband is recently retired. We care passionately about keeping this land and managing it well for all the benefits for our family and our community. However, sometimes, we can't afford managing it without some help.

My story is not unique. I'm one of the 22 million people across rural America who like my family, own and care for woodlands. Families own more than ⅓ of the forests in the U.S., more forests than what's owned by the Federal Government or by private companies. And our families work hard every day to pay the taxes, stay on

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* **Editor's note:** the letter referred to follows this prepared statement as *Attachment.*

the land, and continue to provide all the many benefits we and our rural communities thrive on-the-jobs, wood products, clean water and air, wildlife habitat, and places to hike, hunt, and fish.

What Challenges do Family Woodland Owners Face Today?

Recently, AFF conducted assessments in the West, South, and Northeast to determine the biggest issues facing family woodland owners and threatening the water, air, wildlife and wood that comes from our land that every American, thousands of businesses, and millions of rural jobs rely on.

While every piece of land is unique, AFF found some recurring themes.

In the West, we found that wildfire is the biggest challenge. Often, when we think of wildfire in the West, we think of public lands. AFF's analysis found that more than ⅓ of the western lands with the highest wildfire risk-covering an area the size of the state of Kansas—are owned by families and individuals. While wildfire threatens homes, lives, wildlife, and much more, AFF found that wildfire risk on family and individual lands threatens the water supplies of nearly 22 million Americans in the West. Given the pattern and frequency of drought across the West, this poses grave risk to major cities, rural communities, agriculture, and many other businesses.

Why aren't more landowners doing something about this wildfire risk? We found landowners are motivated to act, they know the risks, but there are two major barriers standing in their way: the cost of treating their land can be in the thousands per acre and the worry that even if they act, if their neighbors, including their public land neighbors, don't act, then their work is for nothing.

The farm bill can help address these issues—and is already. NRCS and the USFS, through state forestry agency partners, can provide technical and financial assistance to help leverage the money that landowners put in, to treat their land.

But there will never be enough government funding to fully solve this problem, so we need other solutions too, including markets for the wood coming from these lands. Because many of the mills have disappeared across the West, landowners have little outlet to sell their trees and cover at least some of their treatment costs. The farm bill can help support markets.

In the Northeast and South, we found a different story. We found that one of the biggest issues facing family woodland owners was wildlife—in particular the growing number of species that are either already listed or could be listed in the near future.

In the South, for example, we could see more than doubling of the number of forest-dependent wildlife listed under the Endangered Species Act. These wildlife are not at risk because of forestry, but because they rely on forests for their habitat, family woodland owners could face additional regulatory burdens if these wildlife are listed.

We found that some 35 million acres of important wood supply on family lands in the South also happens to be habitat for these at-risk wildlife. The South's wood supplies could also be impacted by addition species regulations. Since families supply more than 50% of the wood harvested in the south to feed mills, this could have serious implications on the South's rural, forest-based economies.

When we talked to landowners, we found that in fact, we can manage for wood and wildlife. We found that landowners that harvest timber are doing more for wildlife than landowners that aren't.

In the Northeast, the story is slightly different. There are about 36 wildlife species that rely on forests that are at-risk and could face listing, impacting significant amounts of family lands in the northeast. But in the Northeast, our forests are facing a "midlife crisis." For a variety of reasons including historic land management and lack of markets, we are lacking younger forests and older forests in the region but have a prevalence of "middle aged" forests. Again, not a consequence of today's land management, but something that today's landowners, many of whom own their land for wildlife benefits, are faced with.

Because my family has been fortunate to work with foresters and do the management mentioned above, our land doesn't face this problem—we have diverse wildlife habitat. But we are unique—only 20% of woodland owners are working with a forester or professional, meaning most don't know the value of active management.

Landowners, across the board, want to manage for wildlife. In fact 85% site wildlife as the top reason for owning woodlands in the first place. The same is true for my family—we value our woods for the income as well as the opportunity to hunt, hike, and fish on the land. We want to be part of the solution, but need voluntary tools, to help us do so.

Similar to the situation with wildfire, markets for timber, that help defray the cost of management and encourage harvesting that helps create younger forests, will mean better habitat for wildlife in the Northeast.

So again, the farm bill can help with this. Providing technical and financial assistance and programs and policy that support markets, will help landowners tackle these challenges and have the added benefit of supporting the rural economy. In partnership with the U.S. Fish and Wildlife Service, these programs should also provide landowners with regulatory assurances that protect them from future regulation if the species they are managing for is listed under the Endangered Species Act.

While families like mine want to do our part to supply the nation with the wood we all consume, the air we breathe, the water we drink, and the wildlife we all hunt and fish, we need some help. We want to support our rural communities and make them both economically viable and enjoyable places to live, but we can't do it alone.

2018 Farm Bill Priorities

While the issues in the regions are somewhat different, the solutions are similar. I'd like to ask you're your help in five key areas today. I know others on the panel will talk about other forest priorities, so I'll focus on topics that uniquely help family woodland owners and the challenges we face. Also, we have not yet finished gathering feedback from our landowners, so this may not reflect a complete list of priorities for family woodland owners.

Maintain Funding and Support for Woodland Owners in Forestry and Conservation Programs

We know that budgets are tight. For those programs that need reauthorization in the next farm bill, we ask that you prioritize funding for the Environmental Quality Incentives Program, the Conservation Stewardship Program, and the Conservation Reserve Program, which provide support for woodland owners. In the last several farm bills this Committee made changes to these programs to allow forest owners to participate. We greatly appreciate these changes and hope you'll maintain these improvements while also further expanding the use of these programs for forestry.

We also ask that you consider funding the Healthy Forest Reserve Program, or other strategies to help address the growing at-risk wildlife concerns.

Additionally, we strongly support the Regional Conservation Partnership Program and authorities that encourage targeted application of conservation program funding to priority landscapes to achieve measurable outcomes. While individual landowners taking action is important, if many landowners in a landscape take action, our individual actions are amplified. For example, if I implement a wildlife habitat practice and my neighbors do the same, our combined action can reduce the need to list species because we're providing sufficient habitat. This helps all of us.

Improve Technical Assistance and Program Implementation for Woodland Owners

The Agencies should be applauded for having made significant progress including forest owners in these programs. However, we still have challenges with forestry technical assistance and program implementation as they apply to woodland owners. Tackling these challenges will result in more efficient delivery of program resources in ways that increase the benefits produced on issues like those mentioned above: wildfire, water quality and quantity, and at-risk wildlife habitat.

Forestry technical assistance and program implementation issues include:

- *Education and technical assistance, not tied to specific EQIP or CSP contract, is limited.* Woodland owners often need significant help up front, before they can be ready to talk about EQIP or CSP practices. Most landowners don't even know they need to be managing their woods, let alone how to get a plan or implement a practice. Conservation Technical Assistance funding is a key precursor to efficient and effective implementation of Financial Assistance such as EQIP or CSP. NRCS staff is challenged to fill this roll, suggesting that additional resources be allocated to provide the necessary capacity, whether within NRCS or through a partner.
- *NRCS forestry expertise is limited, forestry partnerships needed.* Some states have NRCS forestry experts on staff, others do not. As a result, not all forestry practices are informed by forestry experts. Stronger partnerships with state forestry agencies could help fill this gap. In some states, NRCS has contracted with the state forestry agency to deliver forestry assistance, a collaboration that should be encouraged.
- *Technical Service Providers are limited and focus on already managing landowners.* While TSPs can be a great solution to getting more forestry assistance delivered, the incentive for TSPs to engage new landowners and to target land-

owners with the most need is limited. Often, TSPs are private consultants who rightly need to make a living. There is little incentive for them to work with landowners who aren't already engaged and paying clients. There is also little incentive for TSPs to focus their effort on the highest priority lands. Consideration should be given to streamlining the TSP program itself and focusing resources on partnerships with state forestry agencies and other partners for the initial work to engage landowners.

- *Most NRCS staff are tied up in getting contracts out, with little time to focus on outcomes.* Because NRCS staff are pressed to get their funding out each year and have limited time to do so, there is little time for NRCS to focus on helping landowners who own lands that will accomplish the most significant outcomes. They often must focus on those contracts that come in the door rather than those contracts that have the most impact.
- *Forest Management Planning recognition still a challenge.* The U.S. Forest Service and NRCS, along with State Foresters and conservation districts have worked together to develop a shared template for forest management planning, so landowners don't need multiple plans to participate in various Federal and state programs. While about half of the states have adopted mutual plan recognition, there is still more work to be done to streamline forest planning.
- *Paperwork and process are difficult.* Most forest owners aren't used to working with NRCS or FSA and even those landowners that are very astute have difficulty working through all the steps necessary to participate in a program. Often landowners must turn to the Agencies to fill out their paperwork, an inefficient use of agency resources. We must find ways to streamline this process.

To solve some of these challenges, AFF has been working alongside NRCS and many partners including state foresters and the National Wild Turkey Federation, in targeted landscapes, to reach woodland owners, educate them on the need for active forest management and get them access to technical assistance and planning assistance. The idea is to get many landowners engaged, interested in management, and if and when they are ready to implement practices, NRCS can then work with them to develop a contract. This work is highly targeted, focused on lands with the best opportunity to deliver on water, wildlife, or other goals. But this is the exception, not the rule, and funding for this work is limited. Aligning resources with this important up-front work with landowners will enhance the important conservation outcomes achieved through financial assistance.

While we don't have all the answers, we ask the Committee to work with us to solve these issues.

Support Cross-Boundary, Landscape Scale Efforts To Tackle Forestry Issues, Especially Wildfire

As mentioned above, all landowners will be better off if we aren't the only ones in our landscape that are tackling these issues. Whether we're trying to reduce wildfire risk or protect at-risk wildlife populations and avoid listings, because forests are often a patchwork of small parcels and different public and private ownerships, it won't be enough if just one or two landowners in a landscape are managing. New tools for USDA agencies are needed, so they can more efficiently work across ownerships boundaries, in targeted landscapes and with willing landowners, to address these issues. We ask that the following new tools be included in the next farm bill:

- *Landscape-Scale Restoration Program:* currently the U.S. Forest Service, using a patchwork of Congressional authority, is implementing a Landscape-scale Restoration Program in partnership with state forestry agencies. This program is targeting landscapes identified in state forest action plans and wildlife action plans, helping improve management on both public and private land, in a way that measurably addresses key outcomes. Rather than just working on one parcel here or there, this is allowing the agencies to scale the work needed to the scale of the problem. We ask that you clarify and create permanent direction and authority for U.S. Forest Service and state forestry agencies to continue this work and to carry it out in partnership with NRCS and FSA, including with the Regional Conservation Partnerships Program.
- *Cross-Boundary authority in USFS Hazardous Fuels Program:* currently, the U.S. Forest Service has limited authority to work with nearby landowners, when doing wildfire mitigation work. With the patchwork of public and private lands in the West for example, to fully protect communities, water supplies, and homes and lives, work is needed on all these lands, not just the Federal lands. Expanding the U.S. Forest Service ability to work with adjacent landowners will better enable the scaled wildfire mitigation that's needed. Our intention is

not to reduce funding for work on Federal land but as funding increases for hazardous fuels, to proportionately more funds to be used on private lands.

Provide Support and Regulatory Assurance for At-Risk Wildlife

In addition to the above mentioned program improvements, there are two important policy improvements that we believe will significantly increase landowners ability to manage for wildlife, especially at-risk wildlife, to avoid the need for listing.

- *Increase tools for prescribed burning.* Often, to maintain habitat for wildlife, especially in forests in the south like longleaf and shortleaf pine ecosystems that are home to significant at-risk wildlife populations, prescribed burning is necessary. Unfortunately, even as we're seeing increased interest in restoring these habitats, landowners are not conducting the burning that's needed to maintain and improve the habitat long-term. While liability insurance is certainly an issue, the biggest barrier is lack of burning professionals that can do the work. We ask that you consider new approaches to help tackle this barrier.
- *Provide landowners with regulatory assurance.* As noted above, landowners want to manage for wildlife, we want to do the right thing, but often lack the tools and assurance that we won't face future regulations. NRCS has been working with the U.S. Fish and Wildlife Service to provide landowners in some instances with such regulatory assurances if they are participating in NRCS programs. We see significant opportunities for expansion of this work to provide landowners who undertake conservation actions, with protection from further regulatory burdens for both listed and at-risk wildlife. The Healthy Forests Reserve Program offers safe harbor protections and could be expanded and other programs could adopt similar protections.

Support a Strong, Diverse Forest Products Industry

As noted above, markets are essential for landowners, good management, and growing rural jobs and rural economies. Landowners need a diversity of markets to sell their wood into: markets for high quality trees on their land and markets for low-grade pulp wood and residual tops and limbs.

Markets can be one of the biggest tools for tackling the wildfire and wildlife challenges noted above. For example, in the West, if landowners had more opportunities to sell low quality wood, more landowners would be able to reduce their wildfire risks. In the Northeast, as pulp-wood markets have disappeared, landowners aren't thinning their forests and creating younger forest habitat needed for certain wildlife.

While not all of these issues can be addressed in a farm bill, but we offer three suggestions for your consideration:

- *Support the Timber Innovation Act.* Many of you have already agreed to cosponsor the Timber Innovation Act, thank you. This legislation clarifies authority and directs the U.S. Forest Service to conduct research and development into new and improved forest products, such as products for building tall buildings out of wood. New and improved forest products mean more landowners can sell their wood and afford good stewardship.
- *Support forest-based facilities in Energy titles, especially in areas where we've lost forest markets.* The Energy titles grants, loans, loan guarantees can be aimed at facilities that will use forest materials in areas where there are little or no markets left.
- *Encourage Rural Development that uses forest materials.* USDA's rural development programs that fund building construction could be encouraged to use agriculture-based materials, including wood products. While this may not be a significant market by itself, it will encourage architects and engineers to learn how to use wood, which will then impact private markets.

Wildfire Funding Fix

In addition to enacting the above recommendations in the upcoming farm bill, there is one other policy issue that we ask for your support on, although largely outside the jurisdiction of the Agriculture Committee. If not addressed, this issue could impact the success of improvements you enact in the farm bill.

As you all know, wildfire fighting is literally consuming the U.S. Forest Service budget. While it may seem tangential to today's hearing discussion, it is far from it. As more and more of the Forest Service budget is used for wildfire fighting, less funding is available for the technical assistance and research that the U.S. Forest Service, in conjunction with state forestry agencies, delivers. This support is fundamental to successfully implementing the farm bill programs. We respectfully ask that you continue to work with the relevant committees and enact a wildfire funding

fix that stops the erosion of the Agency's budget and stops the persistent "borrowing" the Forest Service must do when they run out of funds for firefighting.

Thank you again for the opportunity to testify and I'm happy to answer any questions you may have.

[ATTACHMENT]

March 16, 2017

Dear Chairman Lucas and Ranking Member Fudge:

On behalf of the millions of forest owners, conservationists, hunters, anglers, forest industry, and natural resource professionals represented in the Forests in the Farm Bill Coalition, we ask for your continued support of forest priorities in the upcoming farm bill reauthorization.

The Forests in the Farm Bill Coalition is a diverse group of interests that has worked together for over 15 years to build consensus forest sector platforms for the last three farm bills. We are greatly appreciative of the Committee's increasing support for forests over these last three farm bills. You have made significant policy improvements that are making a real difference on the ground.

Unfortunately, our work is not yet done, as we aim to ensure that the nation's forests continue to support rural economies and almost one million direct jobs while also providing much of the clean air and water, wildlife habitat, and recreational opportunities that every American enjoys. With over ½ of the forestland (475 million) in the United States in private ownership, including individuals, families, corporations and Tribal forest landowners, it is especially important that the farm bill continue to support these owners, many of whom provide these public benefits at little or no cost to consumers.

There are challenges that the farm bill can help address, which limit opportunities for forests to provide economic and other public benefits including:

- As much as 34 million acres of forestland are projected to be converted to development by 2060.
- While not attributed to forestry activities, there is the potential, particularly in the South, to nearly double the number of listed species subject to the Endangered Species Act; such listings could, however, significantly limit forest management opportunities.
- Wildfire occurrence (average acres burned) has increased by 160 percent from 1985 to 2015 and burns about 7 million acres of forestland each year.
- In the West, more than ⅓ of the high wildfire risk acres are family-owned lands, largely because these families lack resources and markets to reduce firerisk.
- Approximately 81 million acres of forests are subject to increased mortality from insects, disease and invasive plant infestation.
- About 80 percent of the 22 million family-owned forest landowners in the U.S. have not utilized assistance from professional foresters in making decisions about forest management and marketing opportunities.

Addressing these issues requires a combination of strong markets, effective technical and financial assistance, informed forest landowners, land managers, and communities, and continued research and education.

The Forests in the Farm bill Coalition asks that you include policy, programs, and funding support in the 2018 Farm Bill that will:

- *Increase the long-term protection and conservation of forest resources from threats such as wildfire, insects and diseases including the use of fire as an important forest management tool,*
- *Conserve and enhance wildlife habitat through voluntary conservation activities, particularly habitat for at-risk species, to prevent the need to list species under the Endangered Species Act,*
- *Encourage the retention and perpetuation of forestland and associated values, goods, and services,*
- *Increase employment, manufacturing, rural jobs, and sustainable forest management through a strong forest products industry, and*
- *Improve forest conservation program effectiveness and availability to private landowners and land managers to address many of the above issues.*

As in the past, we understand that the Agriculture Committees will be challenged with limited budgets and options. Given the work that your Committee has already

done to reduce farm bill spending, we urge you to resist additional cuts to farm bill programs that will limit opportunities to craft responsive forest policy.

We also recognize that for many of the above noted issues to be fully addressed, the wildfire funding issues currently plaguing the U.S. Forest Service must be dealt with. As you know, as wildfires have grown, the increased costs of fighting these wildfires has consumed an increasing portion of the Forest Service budget. Today, wildfire fighting costs consume over 50% of the budget, whereas in 1985, these costs were only 15% of the Agency's budget. With more funds going to fight wildfires, less funds are available for Forest Service programs and activities that support the nation's private forest owners and forest industry. While much of the solution to this funding challenge lies in other Committee's jurisdiction, we ask that you continue to serve as an advocate to fix this issue, so improvements your Committee cho[o]ses to make in the upcoming farm bill can be fully utilized.

While each of our organizations has priorities within and in addition to these recommendations, we agree that a focus on these key priorities will help ensure that forests and the people that live in and work in them, can continue to contribute to the nation's economy and environment. The Forests in the Farm Bill Coalition looks forward to providing more detailed recommendations to address the above priorities as work on the farm bill continues.

Thank you for your consideration. We look forward to working with you as you develop the 2018 Farm Bill.Sincerely,

Alliance of Landowner Associations
American Bird Conservancy
American Chestnut Foundation
American Forest Foundation
American Forests
American Wood Council
Association of Fish and Wildlife Agencies
Boone and Crockett Club
CarbonVerde
Environmental and Energy Study Institute
Environmental Defense Fund
Forest Resources Association
Forest Stewards Guild
Forestry Association of South Carolina
Green Diamond Resource Company
Hardwood Federation
Land Trust Alliance
Lyme Timber Company
National Alliance of Forest Owners
National Association of Conservation Districts
National Association of Forest Service Retirees
National Association of State Foresters
National Association of University Forests Resources Programs
National Bobwhite Conservation Initiative
National Wild Turkey Federation
National Wildlife Federation
National Woodland Owners Association
Northern Forest Center
Resource Management Service
Ruffed Grouse Society
SCJ General Services
Society of American Foresters
Southeastern Lumber Manufacturers Association
Sustainable Forestry Initiative
Sustainable Northwest
The Center for Heirs' Property
The Conservation Fund
The Nature Conservancy
Trust for Public Land
Theodore Roosevelt Conservation Partnership
Western Pennsylvania Conservancy
Weyerhaeuser Company
Wildlife Mississippi

CC:

House Agriculture Committee, Conservation and Forestry Subcommittee Members.

The CHAIRMAN. Thank you.

Mr. Neiman, you are recognized for 5 minutes.

STATEMENT OF JIM D. NEIMAN, PRESIDENT AND CHIEF EXECUTIVE OFFICER, NEIMAN ENTERPRISES, INC.; PRESIDENT, FEDERAL FOREST RESOURCE COALITION, HULETT, WY

Mr. NEIMAN. Chairman Lucas and acting Ranking Member Walz, if I am recognizing the right person here, thank you for the opportunity to speak here today on behalf of all my fellow purchasers of National Forest timber, and to discuss the next farm bill. I am extremely honored.

I am Jim Neiman, President—and I am a third generation. This is our 80th year, going on 81 in business. It is a family-run business that employs nearly 500 people in four small communities in Wyoming, South Dakota, and Colorado. We are almost entirely dependent on timber off the National Forests, and in our states, the Forest Service manages almost all of the timber in those states because of the high elevation. I am also President of the Federal Forest Resource Coalition. Our members operate in 32 states, employ nearly 400,000 employees, and provide over $19 billion in payroll. And all of us rely on a dependable, predictable supply of timber off our National Forests. It is very critical.

Unfortunately, the health of many of our National Forests is declining. Millions of acres have been devastated by catastrophic insect epidemics and wildfires. The Forest Service estimates that an-

other 82 million acres, 82, are at an elevated risk of fire and insect outbreaks. In the Black Hills, we have already lost over 100,000 to outbreaks of bugs and 100,000 to fire. In Colorado, we have lost hundreds of thousands of acres to the spruce beetle.

Across the National Forest system, foresters are selling less timber and managing fewer acres than called for in the forest plans. When the Forest Service backed away from active forest management in the 1990s, harvests declined rapidly, mills closed, and communities suffered. Meanwhile, the trees kept growing, which led to overstocking, drought, insects, and catastrophic fires. This Committee recognized the magnitude of the crisis, and in the 2014 Farm Bill adopted the most significant forestry reform since the Healthy Forest Restoration Act in 2003. Unfortunately, these authorities, while a much appreciated first step, have yet to be implemented at a rate that will meaningfully improve the situation of our National Forests.

For instance, the Insect and Disease Treatment Areas Authority identified over 56 million acres in 37 states as needing treatment. Yet at the current pace of treatment, it will take over 440 years to treat all 56 million acres designated in 2014. This is treatment for one time. It does not include growth.

Our written testimony provides a number of specific recommendations for the next farm bill. The enormity of the job facing the Forest Service, which is horrendous, and the current slow pace of action indicate the much broader adoption and streamlined approaches are needed if we are to restore the health of our forests. We urge the Committee to adopt greatly expanded categorical exclusions and to treat insects and disease outbreaks, reduce fire danger, create early seral habitat, and increase the pace and scale of management. The Forest Service should be given broad new authorities to use streamlined NEPA approaches on all acres that are not set aside in wilderness or other protected categories. Unintended obstacles to the use of the Good Neighbor Authority should be removed, such as the requirement that work be done on acres adjacent to state and private lands, and the restrictions on modest road repair and reconstruction should be removed.

Our members are extremely grateful for the work that this Committee did in the 2014 Farm Bill. We continue to encourage the Forest Service to more fully utilize the authorities provided in this landmark bill. The above recommendations would allow the Forest Service to do more across the landscape, do more work better and faster, which will result in lower costs, more community support, more jobs, healthier forests, and potentially higher returns to the Treasury. A failure to act means that the alarming trends in declining forest health, loss of forest industry jobs, continued catastrophic fires are a virtual certainty. We urge you to take the opportunity offered by the next farm bill to help move the trend towards more, better, and faster management.

Thank you, Mr. Chairman, and all the Committee Members.

[The prepared statement of Mr. Neiman follows:]

PREPARED STATEMENT OF JIM D. NEIMAN, PRESIDENT AND CHIEF EXECUTIVE OFFICER, NEIMAN ENTERPRISES, INC.; PRESIDENT, FEDERAL FOREST RESOURCE COALITION, HULETT, WY

Building on the Success of the 2014 Farm Bill for Federal Forests

Thank you, Chairman Lucas and Ranking Member Fudge. My name is Jim Neiman, and I am President and CEO of Neiman Enterprises. We have four sawmills, one each in Hill City and Spearfish, SD, one in Hulett, WY, and one in Montrose, Colorado. These mills create 475 direct jobs, and help support 250 contractors.

I am also President of the Federal Forest Resource Coalition, representing purchasers of Forest Service timber from 32 states. Collectively, our members employ over 390,000 people, and provide over $19 billion in payroll. Our members purchase, harvest, transport, and process National Forest and BLM timber into renewable wood, paper, and biomass energy products.

The 2014 Farm Bill was the most significant Forest Service reform legislation at least since the passage of the Healthy Forest Restoration Act in 2003. Among other provisions, the 2014 Bill included:

- Permanent reauthorization for Stewardship Contracting, including reforms that protected contractors from unlimited fire liability;
- Expanded Good Neighbor Authority from a two-state pilot to a nation-wide program;
- Authority to use Designation by Prescription and Designation by Description, streamlining timber sale preparation and reducing costs; and
- Creation of new Categorical Exclusions and streamlined Environmental Analyses to implement forest insect and disease treatments on certain National Forest acres.

These provisions, while much appreciated, have yet to yield significant progress in reversing alarming trends in forest health on our National Forests. The relatively low level of use suggests that greater flexibility is required in order to move the National Forests closer to forest plan objectives, including healthier forests, reduced fire danger, and increased timber outputs.

As you well know, millions of acres of National Forests have been affected by insect epidemics and catastrophic fires, and the Forest Service estimates that over 82 million acres of National Forests are at elevated risk of catastrophic wildfires, insect, or disease outbreaks. Last month, the Colorado State Forest Service estimated there are 834 million dead trees in the state, mostly from devastating insect epidemics. California is dealing with a large and rapidly growing mortality event, with as much as 10 billion board feet dead on just two of their overcrowded National Forests. Large scale wildfires cost billions annually to suppress, and cities such as Denver have been forced to spend tens of millions of dollars restoring damaged watersheds.

In other National Forests, such as those in the Lake States and New England, passive management has allowed forests to develop into closed canopy stands where little sunlight reaches the forest floor. These forests have limited value as wildlife habitat and are susceptible to fire and insects, while populations of species that require early successional habitat, such as the ruffed grouse and Kirtland's Warbler, continue to decline.

The extent of the problem is not in doubt. The Government Accountability Office recognized the urgency of the need to reduce hazardous fuels in 1991. The Forest Service acknowledges that over 73 million acres of their lands are a high priority for management and that "one time treatment of all high fire risk areas would not fully address the fuels problem, as landscapes continue to change over time and fuels would build up on many lands currently in historic condition, without periodic maintenance treatments." The Western Governors' Association has adopted numerous resolutions acknowledging the extent and severity of the problem, and urging rapid action to address it.

These problems are often the most severe in states which have lost most of their wood using industries due to constrained supplies from Forest Service lands. We've learned through painful experience that efforts to rebuild the industry infrastructure in such places is a slow, laborious process. Efforts to increase the pace and scale of management are often stymied by this problem—a classic chicken-or-egg problem. The Forest Service must demonstrate it will reliably offer viable projects to attract investment, and it's difficult for the Forest Service to offer these projects under current authorities.

Current Forest Plans allow for roughly twice the current level of harvest from our National Forests. Increasing the pace and scale of management to meet the roughly 6 Billion Board Feet called for in current plans will not only create American jobs in frequently hard pressed rural areas; it will reduce fire hazards and improve wildlife habitat coast to coast.

Current authorities do not allow the Forest Service to plan and implement needed management projects in a timely fashion. Badly needed projects to thin hazardous fuels can take years to plan, at which point groups opposed to management file lawsuits that cause further delays. Many National Forests are woefully behind on meeting forest plan objectives, particularly those associated with young forests. At best, it takes the Forest Service at least a year to plan and begin implementing salvage projects. Worse yet, the Forest Service has, in our view, been slow to implement streamlined authorities provided in the 2014 Farm Bill.

The Insect & Disease Treatment Areas authority created by the 2014 Bill is a case in point. The authority allowed states to petition the Secretary of Agriculture to designate certain NFS lands as "Insect & Disease Treatment Areas," where the Forest Service would then be allowed to use expedited NEPA tools—including Categorical Exclusions of up to 3,000 acres—to reduce fuel loads and increase stand health. 37 states petitioned for the inclusion of over 56 Million acres of National Forest lands. Since the petition process ended in May of 2014;

- 41 Categorical Exclusions have been decided in 12 states, covering a grand total of about 78,000 acres of treatments, including 26,000 acres of timber harvest.
- An additional 28 projects—using Categorical Exclusions and focused Environmental Assessments & Environmental Impact Statements—covering an additional 127,000 acres—are in the works.

This May, it will be 3 years since the close of the designation period. At this rate, the Forest Service is treating just over 26,000 acres per year. If we assume that the additional 127,000 acres will be decided entirely in this fiscal year, that would represent a significant ramp up. However, even at that higher rate, **it will take over 440 years to treat all 56 million acres designated in 2014.**

We are flummoxed at the low rate of use of these new authorities in regions that have had significant forest mortality events. Region 2, where my businesses are, has only used the new authorities on 1,600 acres for mechanical treatments, despite the fact that we've had millions of acres of damage from Mountain Pine beetles and Spruce Beetle epidemics. Oregon, for another example, had over 6.5 million acres designated as treatment areas, yet has completed only had two projects covering a few thousand acres, with only 5,100 acre in progress.

Likewise, we are concerned that Good Neighbor Authority Master Agreements are only in place in 18 states (Alabama, Alaska, Arizona, California, Colorado, Florida, Idaho, Indiana, Louisiana, Michigan, Minnesota, Montana, New Hampshire, Ohio, Oregon, South Dakota, Tennessee, Texas, Vermont, Wisconsin and Wyoming). The Forest Service should have Master Agreements with every state that includes NFS lands.

Moreover, we are concerned that implementation of the current Good Neighbor Authorities has exposed limitations which are hampering program effectiveness. Overlapping and conflicting authorities present this Committee with the opportunity to fix problems we didn't foresee in 2014.

Recommendations for the Next Farm Bill

We learned from experience that the farm bill is a viable vehicle for meaningful reforms of our National Forest System. We urge this Subcommittee to continue this commitment to ensuring better management of the 191 million acres of National Forests, working closely with your counterparts on the Natural Resources Committee and, of course, your colleagues in the other chamber.

In order to address the continuing forest health crises these Federal lands are experiencing, we urge you to take the following steps in the next farm bill:

Create Additional Categorical Exclusions: Additional CE authority through new categories or expansion of existing categories would mean fewer projects would require detailed NEPA analysis. In adopting new CE's, Congress should specify that the Forest Service has the discretion to determine when and how to apply "extraordinary circumstances" reviews to the projects, and clarify that projects conducted pursuant to new and existing CE's do not require documentation of cumulative impacts. We recommend the following new or expanded CE's:

- Early Seral Habitat Creation on up to 10,000 acres'.
- Expansion of Insect & Disease Treatment Area CE's to 10,000.
- Improve wildlife habitat on up to 10,000 acres.

Allow the FS to conduct projects consistent with the Insect & Disease CE: The existing Insect & Disease CE's could be improved by (1) allowing the Forest Service to move forward with projects on lands that it determines meet the criteria for designation; (2) expand its application to all acres outside of designated wilderness, roadless, or on which removal of vegetation is prohibited by law; and (3) making the authorities permanent; and (4) authorizing projects in lands in Fire Regime IV.

Clarify NEPA Responsibilities at the Forest Service: GAO has found that the Forest Service does more NEPA compliance, produces more EIS's, and takes longer to do so than most other Federal agencies whose projects have inherently more lasting impacts on the landscape, for instance through creation of permanent infrastructure. Congress should clarify that at the Forest Service:

- Application of NEPA should be restricted to truly "major" actions, not routine land management: Thinning of forests in general forest or "suited for timber production" acres under existing forest plans should presumptively not be considered a major action. Taking steps to rapidly address hazard trees after wildfires, ice storms, or wind throw events should not presumptively be considered "major."
- Clarify that (1) environmental impact statements only require an agency to analyze the proposed action and a no action alternative, and that consideration of additional alternatives is solely at the discretion of the Forest Service; and (2) environmental assessments done by the Forest Service do not require analysis of a no action alternative.

Clarify Problems Restricting Use of Good Neighbor Authority: Due to a rapidly unfolding series of events, Congress enacted two different Good Neighbor Authorities during 2014. Unfortunately, both of these authorities contain language that, as explained in Forest Service guidance, limits the ability of the Forest Service to use these authorities. In our view, an effective, single National Good Neighbor Authority is needed to strengthen the Forest Service relationships with the states, create program efficiencies, and maximize program effectiveness. A single new Good Neighbor Authority should:

- Allow the Forest Service to use GNA for projects anywhere on the National Forest System, not just those that meet abstract and poorly defined adjacency requirements; and
- Remove restrictions on road repair and rehabilitation. Current practice defines road reconstruction so broadly that even limited road work triggers concern when the Forest Service uses GNA. This leads to poorly designed timber sales and precludes some projects altogether.

Clarify Congressional Intent on Stewardship Contracting: Stewardship Contracting is one tool for achieving land management goals; in many cases, the same land management results can be—and are currently being—achieved with traditional timber sale contracts. Congress recognized this when they made the authority permanent in the 2014 Farm Bill, saying that Stewardship Contracting authorities is not intended to replace or supplant other contracting tools. The Forest Service and BLM can achieve greater program efficiency and transparency in the use of Stewardship Contracts, while ensuring local support for the projects performed using this important tool. These reforms will also help attract a broader variety of potential partners who want to support and participate in Stewardship Contracting projects. The next farm bill should:

- Make retention of existing wood products infrastructure a co-equal objective with other goals of Stewardship contracts and agreements.
- Provide clearer criteria to help the Forest Service determine when to use Stewardship Contracts, Stewardship Agreements, or other contracting mechanisms. In general, if a project is located in the suitable timber base and can be a viable, commercial timber sale, it should be offered as such.
- Clarify the Forest Service and BLM ability to use "best value" or "lowest cost, technically acceptable" criteria when making contract awards.
- Where Stewardship contracts or agreements result in payments to the Forest Service, 25% of those gross payments should be directed to the County where the project is being performed.
- Congress must remind the Forest Service that funds collected under the Knutson-Vandenberg Act may be used beyond the sale area boundary, and direct the Forest Service to reduce overhead costs charged against K–V collections.

Provide Greater Certainty for Project Level Decisions: The House Agriculture Committee played a key role in providing some of the judicial review relief for certain Forest Service decisions in the Healthy Forest Restoration Act of 2003. In addition to creating a streamlined "objection" process (expanded to all Forest Service projects in 2011), HFRA encouraged courts to provide deference to the Forest Service for a narrowly defined set of projects, required participation in the administrative objection process in order to be eligible to file suit, required courts to consider the "balance of harms" from a proposed project *versus* the harms that could be caused if a project wasn't done, and provided that injunctions be limited to 60 days. In the next farm bill, the Congress should:

- Expand HFRA judicial review provisions to all Forest Service vegetation management projects, except on acres where timber management is prohibited by law or the Forest Plan[.]
- Provide for alternative dispute resolution mechanisms, including "baseball" style arbitration, for some projects on a pilot basis.
- Restrict EAJA payments to reasonable limits for hourly reimbursement, and provide stricter controls to ensure that payments do not go to losing plaintiffs or organizations which have substantial financial resources.

Conclusion: The Federal Forest Resource Coalition is extremely grateful for the work this Committee did in the 2014 Farm Bill. We continue to encourage the Forest Service to more fully utilize the authorities provided in that landmark bill. However, we've also become aware of some key missing elements and unforeseen challenges as the Forest Service has worked to implement these authorities. The above recommendations would allow the Forest Service to more rapidly propose, analyze, and implement needed forest management projects across the landscape. Doing more work, better, and faster will result in lower costs, more community support, and potentially higher returns to the Treasury.

If we fail to act, however, the alarming trends in declining forest health, loss of forest industry jobs, continued catastrophic fires, destroyed watersheds and degraded wildlife habitat are a virtual certainty. While the Congress has consistently provided streamlined authorities since 2003, we've seen that they have yet to succeed in moving the Forest Service far enough, fast enough to address its many and serious problems.

We urge you to take the opportunity offered by the next farm bill to help move the trend towards more, better, and faster management.

The CHAIRMAN. Thank you, and the chair now recognizes Ms. Humphries for 5 minutes.

STATEMENT OF REBECCA A. HUMPHRIES, CHIEF CONSERVATION AND OPERATIONS OFFICER, NATIONAL WILD TURKEY FEDERATION, EDGEFIELD, SC

Ms. HUMPHRIES. Thank you, Chairman Lucas. I am Becky Humphries. I am the Chief Conservation and Operations Officer for the National Wild Turkey Federation, and previously I was the Director of the Michigan Department of Natural Resources that managed 4½ million acres of state forests and wildlife lands.

The National Wild Turkey Federation is a national nonprofit conservation organization. We have 230,000 members located across the country, and we have chapters in every state of this country. We have a team of wildlife biologists and foresters that focus on doing actual on the ground conservation work, putting conservation on the ground, as we say. We have had a formal partnership with the U.S. Forest Service since 1986, and with NRCS for more than a decade. We are a leader in stewardship contracting, having the first stewardship contract and 93 successful contracts since, and we are in the top 20 purchasers of Federal timber by volume each and every year, ranking as high as fifth. In conjunction with NRCS, we provide technical assistance to over 900 landowners, and as was

mentioned, we are co-chair of the Forests in the Farm Bill Coalition.

Wildlife biologists know that forest diversity at the landscape level is key to diversity, and it takes active management of our forests. It creates younger forests. It reduces the risk of wildfire, insects, disease, and improves our water quality across the country. And it creates jobs and economic vitality for many of our rural communities. The pace of creating young forest habitat needs to be greatly increased. It is one of the must vulnerable landscapes we have right now. The farm bill is a really important legislative priority for conservation work and forestry and conservation titles authorize critical programs and funding for both the U.S. Forest Service and the NRCS to implement active management.

There were a lot of good things in the 2014 Farm Bill, and we appreciate the authorities and tools that have been granted. The end result is increasing the scale and pace of good conservation work.

Looking forward to the next farm bill, we are recommending the following. First, to focus on landscape level opportunities and program delivery, to enhance collaboration, particularly between state wildlife agencies and Federal agencies to ensure management helps achieve fish and wildlife population objectives. To continue to incentive, mid-contract management of forestry practices to maximize long-term wildlife habitat value, and to increase adjusted gross income limits for participation in farm bill conservation programs, and increase payment limits for conservation activities to better reflect the larger family farm budgets. This will increase participation on large blocks of land and landscapes.

Program-specific recommendations that we are advocating for include Environmental Quality Incentive Program, or EQIP as we all call it, to increase the minimum amount of EQIP funds for wildlife-related practices from five to ten percent. Eligible land should include lands capable of production, in addition to those that are in production. This was allowed in WHIP, but not included when the programs were combined.

The Regional Conservation Partnership Program, or RCPP, as we call it, we have participated in a number of these projects and we see tremendous potential with this new program. We support reauthorization and maintaining funding levels. We have seen and had concerns with implementation of the program that limits our ability to fully participate. Funding to offset a portion of the recipient's administrative costs should be allowed. There is a true cost to partners to deliver these practices on the ground.

The forestry title, we support expansion of stewardship end result contracting to all Federal agencies, not just the current U.S. Forest Service and BLM.

We appreciate this Committee and the House's work in the last Congress to address how fire funding and wildfire was addressed, but a fix is still needed because borrowing takes away from active management. The House Committee on Agriculture has a long history of addressing large multi-committee issues and developing the farm bill, and we are fully supportive of using the farm bill as a vehicle for true forest management and wildfire funding reform.

In conclusion, our recommendations will improve current programs, and we think benefit wildlife species, help improve forest health and water quality, reduce wildfire. We thank you for your time and your attention to addressing these critical issues. Thank you.

[The prepared statement of Ms. Humphries follows:]

PREPARED STATEMENT OF REBECCA A. HUMPHRIES, CHIEF CONSERVATION AND OPERATIONS OFFICER, NATIONAL WILD TURKEY FEDERATION, EDGEFIELD, SC

Introduction

Mr. Chairman, Members of the Subcommittee, I am Becky Humphries, Chief Conservation and Operations Officer of the National Wild Turkey Federation (NWTF), and I appreciate the opportunity to testify as you begin discussions for the next farm bill. Founded in 1973, the National Wild Turkey Federation is a national nonprofit wildlife conservation organization dedicated to the conservation of the wild turkey and preservation of our hunting heritage. The National Wild Turkey Federation is 230,000 members strong and maintains local chapters in every state. With the successful restoration of the wild turkey complete, the National Wild Turkey Federation has focused its efforts on our "Save the Habitat. Save the Hunt." initiative, which connects both parts of our mission by recognizing the importance of quality habitat for wildlife conservation and its' significance to our hunting tradition. Through this initiative, our "Save the Habitat" efforts are largely focused on creating and maintaining healthy forests through active management.

NWTF is unusual among conservation organizations. We do not simply advocate for what we want, we actually do serious forestry work and put conservation directly on the ground on private and Federal public lands. The NWTF has over fifty professional conservation staff located across the nation, including nine professional foresters. These staff work daily with state agencies, Federal agencies, and private landowners to implement forest management and other wildlife habitat projects on the ground. The NWTF has a long-standing formal partnership with the United States Forest Service (USFS) dating to 1986 and with the Natural Resources Conservation Service (NRCS) for over a decade. We have worked together to deliver thousands of projects benefiting wildlife and wildlife based recreation. The NWTF has been a leader in stewardship contracting, implementing one of the first projects by a nonprofit organization a decade ago. Since, we have partnered with the USFS on 93 successful stewardship contracts and agreements. These projects demonstrate the benefits of partnership and have resulted in thousands of acres of sustainable forest management and enhanced wildlife habitat. As a result of these agreements, over the last decade the NWTF has consistently been one of the top 20 purchasers of Federal timber on a volume basis, ranking as high as fifth. We understand firsthand the power of collaboration and partnerships, the value of categorical exclusions to getting work done in an efficient manner, and the challenges faced by the Federal agencies and private landowners in getting active management implemented on the ground.

Professionally trained wildlife biologists know that forest diversity at the landscape level is the key to proper management to achieve robust species diversity. There are four fundamental criteria each forest species needs for survival: food, water, shelter, and space. Depending on how a forest is managed, various amounts of these criteria become available to the animals living there. Wildlife managers consider **active management** the best solution to meet the habitat requirements of the largest variety of species. Active management creates young forest habitat, which provides adequate food sources, nesting habitat, and hiding places for forest dependent wildlife. Throughout the U.S. we are losing this diversity on a landscape-level scale, in many cases because our forests are becoming more homogenized and over-mature. The U.S. Forest Service and the Natural Resources Conservation Service have recognized the need for young forest habitat, and thanks to this Committee's work, those agencies provide funding and guidance to provide habitat for imperiled species such as the golden-winged warbler, New England cottontail, gopher tortoise, and red-cockaded woodpecker. These benefits extend to numerous other species of wildlife, and result in a greater diversity of plants and animals.

2014 Farm Bill—What Was Good

The National Wild Turkey Federation recognizes and appreciates the authorities and tools that have been granted in recent years by the Agriculture Committees to expand the ability of private landowners to manage their lands and Federal agen-

cies to manage Federal forestlands. We believe that the 2014 Farm Bill provides important tools aimed at streamlining processes, increasing multi-party collaboration, directing closer cooperation with state fish and wildlife agencies in order to achieve fish and wildlife population objectives, transitioning towards landscape-level ("all lands") management while respecting private landowners property, building capacity, improving watersheds, addressing forest health risks (*e.g.,* fire risk and insect/disease infestations), and generally enhancing the pace and scale of management for healthy forests. The permanent authorizations of Stewardship End-Result Contracting and Good Neighbor Authority, along with the establishment of Insect and Disease Area designations in the 2014 Farm Bill are very helpful additions. The specific focus of each tool varies, but all strive to increase the pace and scale of restoration on forest lands by addressing contracting and process inefficiencies; dealing with specific ecosystem/forest health concerns within designated geographical units on public lands; allowing for coordination of management activities on Federal lands and adjacent private lands within a watershed; and enabling non-governmental organizations and state agency partners to provide additional resources through cooperative agreements for the mutual benefit of all parties. If utilized to their fullest extent, such programs and authorities will lead to healthier forests, which in turn will provide quality wildlife habitat, much needed economic benefits, clean water, and public recreational opportunities.

2018 Farm Bill Priorities

As in previous farm bills, NWTF is a steering-committee member of the Forest in the Farm Bill Coalition. We are working cooperatively with conservation and forestry stakeholders toward common goals that help producers and landowners better manage their lands for forestry and wildlife. While the Forests in the Farm Bill Coalition is still developing its specific recommendations, I can say now that NWTF's general "asks" of this Subcommittee will be to:

Continue landscape scale wildlife and habitat management consistent with NWTF goals of large regional focal areas.

Enhance cooperation between Federal forest management agencies and state fish and wildlife agencies to meet land/habitat management objectives consistent with fish and wildlife population objectives.

Continue longleaf pine enrollment in CRP and ensure that proper active management is applied to ensure maximum wildlife benefit.

Continue to improve mid-contract management on forestry practices to require proper thinning, prescribed fire, and other management on enrolled acres.

Continue to streamline the Technical Service Provider (TSP) rules to reduce paperwork and make it easier to get conservation on the ground and offer flexibility to landowners who want to manage for forestry, wildlife, water quality, or other purposes.

Explore and implement further incentives for forest plan design by collaboratives, including enhanced use of categorical exclusions as contemplated by NEPA and administered under CEQ rule and policy. Also, consider allowing road maintenance—not road building—for the purposes of public safety or to enable hunter access be included in Stewardship End Result Contracting authorities.

Consider increasing the Adjusted Gross Income (AGI) limits for participation as well as updating payment limits on forestry and conservation programs so larger landscape scale tracts could be enrolled in programs that meet priority conservation objectives. If you expand current payment caps to better reflect today's larger family farm budgets, you will remove disincentives for larger conservation-minded landowners to participate and enable landscape scale restoration of habitat.

Management & Wildfire

This Committee has a history of addressing large multi-committee issues as it develops long-term farm bills. Accordingly, this Committee should develop a fix to the forest management and wildfire funding issues faced by the U.S. Forest Service. We are agnostic on the budget process that Congress chooses to accomplish this, but we need to resolve the "borrowing" of appropriated funds designated for wildlife, forest management, fire prevention, recreation, *etc.* to cover catastrophic fire suppression costs. There also needs to be a cap on the 10 year average of fire suppression costs used to calculate this line item in the budget, otherwise as the costs of fire suppression continue to escalate, budget items for wildlife, recreation, forest management and fire prevention will continue to decline. The House—with the support of this Committee—passed legislation (Westerman Bill) in the 114th Congress to address both but that legislation failed to pass the Senate.

NWTF fully supports using the farm bill vehicle for true forest management and wildfire funding reform that would yield success. As we have observed earlier, our

current funding model for fighting catastrophic wildfires remains a severe problem. Over the last 30 years, the length of the fire season has increased by more than 2 months. In addition, the intensity of many fires has increased largely due to an increased fuel load that is a result of decreased timber harvest and reduced active forest management. During the same time period, the cost of wildfire suppression has increased an average of more than 22% annually and now accounts for over ½ of the U.S. Forest Service's annual budget. Hundreds of millions of dollars are spent annually to fight forest fires. Unfortunately, these fires often result in scorched earth that all agree is not good for wildlife, water quality, recreation, or local economies and jobs. Active forest management to prevent wildfires costs less than suppression and is proven to be extremely effective at preventing wildfires, as well as helping reduce fire containment and suppression efforts. By reducing the obstacles to sustainable forest management on our Federal lands, not only can we reduce the likelihood of wildfires and the costs of fighting them, but we can also realize additional benefits of improved public safety, the protection of private and public property, quality wildlife habitat, improved water quality, fewer invasive species, enhanced recreational opportunities, and more robust local economies.

Environmental Quality Incentives Program (EQIP)

The EQIP program has been a bedrock conservation program that has worked well. This Committee has worked to incorporate forest management into the program and now around 5% of the program is used to improve forested lands adjacent to farmland. That's where the wildlife lives and is usually what helps control soil erosion and thus improve water quality. We suggest that over the life of the farm bill, the Committee increase the minimum amount of EQIP funds for forestry and wildlife conservation practices to at least ten percent annually. We also support incorporating state input to target EQIP wildlife funds towards priority fish and wildlife species, as identified in State Wildlife Action Plans. Further, we support increasing the availability of and emphasis on long-term incentive payments and contracts (such as those up to 10 years) to private forest landowners to encourage sustained management for wildlife. We also believe that eligible land should include lands capable of production in addition to those lands currently in production. These lands were previously eligible for the Wildlife Habitat Incentives Program (WHIP), but eligibility was not carried over into the wildlife portion of EQIP in the 2014 Farm Bill. We also support allowing forest landowners the option of managing their forest land specifically for wildlife habitat, timber production, or both, depending on their priorities.

Finally, we support including guidance reiterating the need for USDA to convene State Technical Committee meetings on at least an annual basis for the purpose of soliciting input from members on the implementation of EQIP within the state. The timing of such meetings should allow for meaningful input prior to final decisions being made on program and practice implementation for the upcoming year.

Forestry

The direct forestry tools in the farm bill have ebbed and flowed over time. Because of their critical nature in preserving wildlife habitat, controlling soil erosion, and improving water quality, we hope the Committee will continue to invest in forestry programs. We support the continued authorization of the Healthy Forests Reserve Program (HFRP) with mandatory annual funding at $12 million. An even more important goal for the forestry title is to fully support utilizing prescribed burning as an effective management tool and increasing the financial and technical capacity for prescribed burning on private lands to improve forest health and enhance wildlife habitat. The Committee should also consider expanding Stewardship End Result Contracting authorities to all Federal agencies.

Conservation Stewardship Program (CSP)

Unlike EQIP, the CSP program has not yet developed into a program that fully supports wildlife and forestry. Recent changes to the program may improve that, but it is too early to tell. The Committee should insure that CSP rankings and payments reward enhancements and practices with higher conservation benefits, regardless of whether they are generated from new or ongoing conservation work. The program should be focused on sustained conservation outcomes, not on the timing of when a conservation activity was initially adopted. Like in EQIP, the Committee should include guidance language reiterating the need for USDA to convene State Technical Committee meetings on at least an annual basis for the purpose of soliciting input from members on the implementation of CSP within the state. The timing of such meetings should allow for meaningful input prior to final decisions being made on program implementation for the upcoming year. Further, lands expiring

from CRP with low-quality wildlife cover, such as monoculture or low-diversity introduced grass cover, should not be given priority to be re-enrolled into CSP.

Regional Conservation Partnership Program (RCPP)

NWTF has participated in a limited number of RCPP projects with partners and we are seeing a tremendous benefit to private landowners and to conservation through its use. We, however, have some concerns with this program that are reducing our ability to participate fully. We support reauthorization and maintaining funding levels for RCPP. We believe that the Committee should allow a limited portion of partners' administrative costs to be funded through RCPP and that USDA should be provided with the necessary technical assistance and administrative funds to implement the program. This amount should be a fixed percentage of RCPP funding and not be negotiated after grants are awarded to partners, as is the case now.

Conclusion

As shown through our continued partnership with conservation programs within the USFS and the NRCS and our conservation efforts through our "Save the Habitat. Save the Hunt." Initiative, the National Wild Turkey Federation is a strong proponent of active, sustainable forest management and the conservation programs that support these efforts. The benefits to numerous wildlife species, their habitats, and forest health are matched with economic benefits that contribute to vibrant local economies. Our recommendations above will improve current programs that in turn will help farmers and private landowners meet both production and wildlife goals. Members of this Committee have much of which to be proud. You have helped conservation and forestry with past legislation and the suggested updates will improve that effort. Thank you for your time and consideration and for your desire to address these critical issues. I would be happy to answer any questions.

The CHAIRMAN. Thank you.

Mr. Harbour, you are recognized for 5 minutes.

STATEMENT OF TOM HARBOUR, NATIONAL DIRECTOR (RET.), FIRE AND AVIATION MANAGEMENT, U.S. FOREST SERVICE, USDA; FOUNDER, HARBOUR FIRE CONSULTING, FALLS CHURCH, VA

Mr. HARBOUR. Thank you, Mr. Chairman. Thank you for this opportunity. I am Tom Harbour. I come here today as a citizen. I retired from the Forest Service about 15 months ago. I am here today to ask you to utilize the forestry title of the farm bill to help build a better future with wildfire management in these United States.

My written testimony in these 5 minutes all concern wildfire. Your work on the 2014 Farm Bill provided some key improvements in building a better future with fire, and I am proposing you be even bolder with this farm bill.

I speak given a lifetime of experience, 47 years, inside, atop, and beside the Wildland Fire Program. I am here today to express the seriousness of the current wildfire situation. Without improvements, fires are going to get much worse.

In the last 11 years of active duty, I was honored to present our nation's flag to 163 families whose loved one had fallen in the line of duty. As I presented the flag, saluted, and then stepped back, I saw the tears and yearned for a solution. I still do. Death represents the most compelling need for action.

Today, wildfire is no longer an issue to be ignored, organizationally or regionally. It is a national issue of significance. There are over a billion burnable acres in the United States. Wildfire damage is on the increase. There are over 70,000 communities at risk. Wildlands are being converted to places for homes at 3 acres per minute. Total estimated wildfire damage exceeds $100 billion and direct suppression costs exceed $5 billion. Agencies like the U.S.

Forest Service are being slowly transformed by fire to mutations of their original intent. Most important to me, the stress of modern wildfire is causing depression, suicide, and death in the women and men who deal with wildfire.

We have the best fire suppression system in the world. We need the best fire management system in the world. Fire management is much more than fire suppression. It is thinking about what we do before, during, and after any fire, acting for both protection and long-term benefit.

In the context of this farm bill forestry title, there are opportunities to invest $1 ahead of the fire instead of the comparable $10–$100 after it. For example, utilizing incentives to help promote practices which reduce risks on private lands would benefit neighboring public lands. We need more incentives and markets to remove small woody biomass from our forests. We need more responsible active forest management on private and public lands. We need to improve our understanding and practice of risk management to help us determine where and when we take effective action. We need to find ways to encourage and reward local government for adopting land use policies and building practices which reduce wildfire risk. We need to find ways to facilitate local and state-based solutions to the problems of wildfire within a national context. We need to adapt programs which save firefighter lives, like the Everyone Goes Home Program from the National Fallen Firefighter Foundation.

Wildfire problems in the U.S. are significant, but we can solve them. We need improvements to do so. I have seen the future of fire, and without change, it is bleak. In 1973 in northern Arizona, I was on a really big fire, about 150 acres, in the timber. In 2011, I went back to that same place to see a fire burn 550,000 acres. Burned acres are a problem. Homes lost are a problem. Expense and organizational transformation are a problem. Lives lost are forever.

I urge you to use the farm bill forestry title to improve our wildfire situation in America. I know you can do it, and we need your help. Thank you. I will be happy to answer any questions.

[The prepared statement of Mr. Harbour follows:]

PREPARED STATEMENT OF TOM HARBOUR, NATIONAL DIRECTOR (RET.), FIRE AND AVIATION MANAGEMENT, U.S. FOREST SERVICE, USDA; FOUNDER, HARBOUR FIRE CONSULTING, FALLS CHURCH, VA

Fire and the Farm Bill—Lives and Landscapes

I'm Tom Harbour and I'm pleased to be asked to testify to Congress. Wildland fire has been the focus of my professional life since 1970 when I picked up a shovel for the United States Forest Service (USFS) in central California for my first wildfire. I spent 46 years with the United States Forest Service (USFS). I had an opportunity to deal with forest and rangeland fires in every region of these United States. I represented our nation in international wildfire situations. I retired in January 2016 after 11 years as the National Director of Fire and Aviation Management (basically, the National Fire Chief) for the USFS, the longest serving Fire Director in the Agency history. I worked my way up from the bottom and over the course of my career had the opportunity to serve in many capacities including duties at every organizational level of the USFS and every component of the fire program. I was an Incident Commander at the highest level, Area Commander, Regional Director, and National Deputy Director. In 2014, I was honored to have the State Foresters present me with the Earl Peterson Current Achievement Award for Fire Protection. I believe this was the first time a USFS Fire Director was honored with this award.

Now I am a concerned citizen with continuing interest in fire. Today I have the notable privilege to interact with you.

We have the best fire *suppression* system in the world, the best people, the best scientists, but we need the best fire *management* system in the world. The fire management we need to do is more than we as a nation are doing now. It is thinking about what we do before, during, and after any fire, acting for the long-term, based on accumulated wisdom. In too many ways we are bound to traditions and past practices. The laws, rules, regulations and practices of the past need to be evaluated and updated to deal with the future. Fire management is more than fire suppression. We can be leaders in fire suppression, as well as fire management, natural resource management, forestry, and conservation, but only if we learn from what is happening now.

We know fire played an important role in establishing the forests and grasslands of our nation. Fire needs to play an important role in sustaining and promoting healthy forests and rangelands. We've known for years that a singular focus on fire suppression is not sustainable. For example, forests in the southeastern part of our United States have adopted aggressive prescribed burning programs, especially in pine forests. Forests in the northeastern part of our United States have their own interesting fire management concerns. Large blocks of Federal lands out West are the "poster child" for unwanted wildfire. Essentially, the USFS was "born of fire", but as early as the 1970s, Federal agencies clearly understood fundamental principles of fire management. By 1978, for example, the USFS changed the title of its Fire Control division to Fire Management. General ideas about fire management became more well known through the 80's and 90's. In 2001 an update of a review done of Federal wildland fire policy resulted in important guiding principles and endorsement of a key doctrinal statement. That statement is:

> "Fire, as a critical natural process, will be integrated into land and resource management plans and activities on a landscape scale, and across agency boundaries. Response to wildland fire is based on ecological, social, and legal consequences of fire. The circumstances under which a fire occurs, and the likely consequences on firefighter and public safety and welfare, natural and cultural resources, and values to be protected dictate the appropriate management response to fire."

That statement encompasses the basics of wildland fire management. Fire management includes wise suppression practices while encouraging long term conservation principles. Fire management can be equally applicable to private and public lands. Said collectively about our United States, our conceptual understanding of fire management has preceded and progressed faster than our practices. That is why the forthcoming forestry title of the farm bill is an opportunity. We need to help encourage policies and practices which move us more aggressively to fire management. Without change, our nation faces a future where wildfires increasingly darken our skies, degrade our lands, destroy our homes, and empty our coffers. If that bleak future happens, and it will without change, vibrant young women and men will die more frequently as they put themselves between the flames and the people they serve.

Wildfire has been a significant national concern since the firestorms of 1910 in northern Idaho killed 87 people, burned several communities, and consumed timber on 3 million forested acres. Building on the concern of a nation that had 2,000 people die in a single wildfire (Peshtigo) in northern Wisconsin in 1871, those 1910 fires spawned a debate about how we deal with wildfire. That debate continues today, but we have the benefit of over a century of learning, perspective, and science to help us form better public policy and improved practices about fire in our United States. As you know, we simply can not put out every fire every time, nor is it wise to do so.

Fire has long been a concern of Congress. I know a better future with fire is a concern of this Committee. After Congressional action, a large group of partners affected by wildfire, led by Governors, County Commissioners, Mayors, and the Secretaries of Agriculture, the Interior, and Homeland Security have agreed upon broad goals to guide future actions. This agreement is known as the National Cohesive Wildfire Strategy (the Cohesive Strategy). The Cohesive Strategy has three goals:

1. Resilient Landscapes.
2. Fire Adapted Communities.
3. Safe and Effective Wildfire Response.

The farm bill forestry title should be used, and added to, as one of the pieces of good public policy, to promote positive action on all these worthy goals. It has done

so before and should in the future. In the 2014 Farm Bill, key pieces of the forestry title, specifically Stewardship Contracting, Good Neighbor Authority, State based Statewide assessments, and Reimbursement of Funds to assist states were all good enduring public policy and good practices with wide application.

Fire touches every state. Fire of the future, without change, will be a significant detrimental impact in every Region of the United States. As highlighted by the tragedy which befell Gatlinburg, Tennessee in December, and by the prairie fires of last week, wildfire is a continuing year round problem in our United States. Wildfire threatens lives of civilians and firefighters, it threatens landscapes which supply our water, our timber, and wild places. Fire can threaten entire communities. It threatens agencies like the USFS who increasingly see the bulk of their work directed towards fire suppression. The kind of wildfire we are seeing today and which will occur without a change in our approach, threatens not only firefighters and the public, but our National Forestry conservation ethic and nearly every other forestry initiative. Specifically:

- Currently, around 75,000 wildfires per year burn between 5 to 10 million acres per year in the U.S. Without change, these figures will rise in the future. Most of the fires occur on private, local, and state lands. Most of the acres burn on Federal lands.
- Up to $100 billion damage to infrastructure, public health, and natural resources may be occurring each year from wildfire.
- An estimated 120 million people in over 46 million homes are at risk due to wildfire.
- About 3,000 homes per year are being lost. With more than 86% of undeveloped private lands proximate to public land, future increased fire severity, and increased development, even more homes will burn. In 2015, about 5,000 structures were lost.
- $5 billion per year (or more) in direct fire suppression costs are being spent by local, state, and Federal agencies. Future costs are likely to increase dramatically without a change in approach.
- The impact of high intensity fire on private lands can be devastating to the property owner and of significant negative impact to those "downstream".
- The integrity of the forest and rangeland conservation mission in some agencies, for example, the USFS, is threatened by fire because of the extraordinary expense of fire suppression. By the year 2025, ⅔ of the USFS budget could be devoted solely to fire. The need to deal with wildfire is dramatically changing the USFS. Other agencies face similar challenges.
- Wildland firefighters die at a rate five to ten times higher than their sisters and brothers who battle fires in buildings and homes (structure firefighters)
- Intense fire activity, extended time away from home, "near misses", tragic deaths, and the nature of our personal connections with other firefighters, have caused depression, and suicide, in an increasing number of wildland firefighters.
- Despite all our efforts, between 15 to 20 wildland firefighters, vibrant young women and men, continue to die each year in the line of duty.

Through a series of well intended decisions made over the last several decades, wildfire has slowly become an increasingly significant problem. Wildfire occurs too frequently at the wrong time in the wrong places. More and more of the values we treasure, our lives, our homes, and our landscapes, are being threatened by fire. The threat of fire is increasing as many important and critical values increase on private lands, not within the public domain, but very near.

Conundrums abound with our current approach. The "wildfire paradox" (coined by Dr. Dave Calkin, *et al.*) is that "current fire suppression practices invariably lead to wildfires which can not be suppressed".

Increasingly volatile fire behavior in increasingly frequent and difficult tactical situations endangers not only people, communities, community improvements, and natural resource values, but the most talented fire responders in the world. Increasing values on private lands proximate to public lands are the focus of much of the threat of wildfire and increasingly the place where our firefighters are deployed. As an example in 2015, my last year of active duty, the largest fire in terms of direct property loss (monetary property damage) in the United States was the "Valley Fire" in California with a loss of $1.5 billion. In 9 of the 10 years before 2015, a wildfire (not a warehouse fire, not a building fire, not a depot fire, *etc.*) was the largest single direct property loss fire of the year. The Mayor of Gatlinburg, Tennessee estimated $500 million of damage to his town from the recent "Chimney Tops 2 Fire". Unless we change, our future may have been previewed in Canada when on

May 1, 2016 a wildfire broke out in the Alberta city of Fort McMurray. The fire became the costliest ever Canadian natural disaster for insurers, with 1,600 buildings destroyed. Two fatalities were attributed to the fire and the entire population of about 90,000 were evacuated.

We have the best fire *suppression* system in the world, the best people, the best scientists, but we need the best fire *management* system in the world. Let's keep what we have for that amazing fire suppression system, while we enhance fire management.

The forestry title of the farm bill can help shape a better future.

In the vernacular of fire, when a fire is running uncontrolled, we decide where we can begin our work. We call it an "anchor". An "anchor point" in our world is somewhere where we can start, stay, and endure safely. It is a place where we are sure things will "hold". Working as a team, we "anchor", then go from that point to begin the long arduous process of dealing with the fire. As you debate the new farm bill there are several "anchor points" to start from as we focus on better fire management.

We need to invest $1 ahead of the wildfire instead of the comparable $10 or $100 after. Utilizing farm bill forestry title incentives to help promote practices which reduce risk on private lands would benefit neighboring public lands. For example, we should encourage prescribed burning on private lands by encouraging adoption of statutes which promote burning. We need more incentives and markets to remove small woody biomass from our forests, public and private, large and small. Wood-based nanotechnology as a biomass use, by creating high-value, high-volume markets, would create cost-effective ways to enable enough hazardous fuels to be removed from America's forests so wildfires remain smaller and begin again to be a tool for improved forest health as opposed to destructive behemoths that destroy lives, communities and landscapes. The future of nanotechnology may revolutionize small woody biomass, but for now we need to remove it since the "small stuff" is what causes the "big stuff" to burn. We need more responsible, active, forest management on private and public lands. We need to learn from the exciting insights of the best fire scientists in the world to improve our understanding and practice of risk management in the context of fire and natural resource management. Those risk management practices could help us determine where and when we take effective action. Since fire knows no boundaries, we need to be even better in reaching seamlessly across jurisdictions ahead of wildfire with treatments, planning, and coordination. We need better ways, tools, and incentives for citizens to engage in understanding and mitigating the risks to their homes and forest property. We need to find ways to encourage and reward local government for adopting land use policies and building practices which reduce wildfire risk. We need to find ways to facilitate local and state based solutions to the problems of wildfire. State and local voices will be important to shaping a different future. We need a greater focus on improving efficiency. We need to determine how we maintain a focus on natural resource management while we strive for greater excellence in fire management. We need to learn from programs which save firefighter lives, for example, adapting the "Everyone Goes Home" program from the National Fallen Firefighter Foundation for wildland fire.

We do need to light the candle at both ends! Doing "nothing", or continuing to do what we have done, is a choice, one which brings tragedy. There are local needs which can be incentivized and encouraged, things like better planning, zoning, application of existing codes, prescribed burning, improved forest management for small landowners, training, coordination, and equipment. There are state needs and there are national needs, like improving Federal/state/local/private coordination, setting priorities, ensuring cross boundary coordination, reducing the liability risk of burning, maintaining the excellence of our firefighters and their assets, all while we implement the goals of the Cohesive Strategy. The farm bill could play a role in these important conservation activities.

I suppose in some sense, you could say my time to be of significant influence in this debate about conservation, forestry, and wildfire has passed. I retired from active duty with the USFS. However, I look into the faces of my dear little granddaughters and I know what I want for them. I want them to enjoy the fruits of our efforts in wildland fire management and natural resource conservation. I want them to have the benefit of water and timber and scenery and wildlife which comes from the private and publics lands which comprise our nation's forests and grasslands. If they are so inclined, I want them to be able to follow in the footsteps of their Grandpa, their Smokejumper Dad/Uncle, and be a professional in wildland fire. But I'm here today because if we don't make some important changes, if we think today is "good enough", and if we don't take this opportunity with the farm bill, our forests will be forever changed and wildfire will be even more dangerous.

The CHAIRMAN. Thank you very much. The chair would like to remind Members that they will be recognized for questioning in the order of seniority for Members who were here at the start of the hearing, and after that, Members will be recognized in order of arrival. I appreciate Members' understanding.

And with that, I recognize myself for 5 minutes.

Before we touch on fire, Mr. Geissler, let's touch for a moment on the 2014 Farm Bill that took steps to address insect and disease issues by having the Governors identify treatment areas. What has the effect of that been?

Mr. GEISSLER. Well, it is a program that could do some fairly amazing things. A lot of states did participate in this. The Forest Service is working through it. Like the example that I gave you earlier, within our own state we took the time to do this and the result by having these designated areas, it allowed for just a quicker process to get the work accomplished.

All across the U.S., we have insect and diseases issues. We have wildfire issues, and using this type of a process allows us to address them much quicker with less red tape.

The CHAIRMAN. Along that line, the additional categorical exclusions, has that been effective in helping to address these issues also?

Mr. GEISSLER. Yes, sir.

The CHAIRMAN. Okay. Let's turn for a moment just to the fire issues, because you were very kind to leave the field in northwest Oklahoma to come here for today, and I see you are going back this evening.

Mr. GEISSLER. Yes, sir.

The CHAIRMAN. Between what has occurred in the 3rd Congressional District and in Mr. Marshall's district in western Kansas, and Congressman Thornberry's district in the Northern Plains, we have had, what, approximately 1 million acres of rangeland go up in the last week. Could you discuss with the Committee just for a moment, when you have a fire of that magnitude what the response is, state, Federal, local, how we address these issues, just for a few minutes?

Mr. GEISSLER. Yes, sir. About 1.4 million acres. The bottom line for us is that in this part of the state, there are no Federal lands, as is most of the State of Oklahoma. We are a private land state. The response to this is you have the initial attack done by local fire departments. These are the fire departments that the first one there was Slapout. Slapout——

The CHAIRMAN. Volunteer department, for the record.

Mr. GEISSLER. Which is a volunteer fire department. A lot of these departments receive volunteer fire assistance through Federal programs.

Once it was recognized that this fire was going to be as big as it was, the request comes in and then states get involved. We brought in aircraft, we brought in our own personnel, which you have there appearing on scene. These are all programs that are part of state fire assistance, but it is also part of the state's commitment to doing the suppression.

In addition to what we had there just between local and state, we also have cooperative agreements with all of our Federal part-

ners. Additional aircraft were brought in that were U.S. Forest Service aircraft, being single-engine air tankers, as well as type one helicopters. And then we have since called in type one incident management team, which is a Federal asset, to manage that fire.

Basically what you take from this is it all starts initially with the locals, but it is a system that goes across the United States, and it involves all of these organizations working together through cooperative agreements to get it done.

The CHAIRMAN. I would just note from my perspective, while we have not had any injuries amongst the responders, volunteers, the professional firemen, the various county agency involved, six good citizens in the three states lost their lives, and that is just tragedy.

Mr. GEISSLER. Yes, sir.

The CHAIRMAN. But the coordination and the training and skill of the folks in the field, the actual firefighters, considering the magnitude of this fire, it is just amazing. One of the issues that I would bring up, reliving in the community, not in the fire zone itself, the incredible fuel load that we were addressing: 11 to 14 were in this drought from the Southwest United States. Dramatic drop in not only the number of cattle grazing, but also reduction in wildlife. The drought starved them out. Then we had rebound weather last year, unusually good rains, fewer animals to utilize the grasslands, so we have had this tremendous dry over-winter grass growth and plant growth, reminiscent in some ways of the forestry issues where if you are not able to manage your assets efficiently, it would appear to me, when you do have a fire, there is just nothing to hold it back. While grazing patterns will get back to normal at home, nonetheless, I can personally see some of the similarities in some of the issues in the forestry areas. If you don't manage that fuel load, once you have that lightning strike or that accident that is just unintentional, then as we have had in the three state area in the Southwest, a heck of a mess, right, George?

Mr. GEISSLER. Yes, we have.

The CHAIRMAN. Heck of a mess.

With that, my time has expired and I will turn to the next acting Ranking Member for her 5 minutes.

Ms. KUSTER. Thank you very much, Mr. Chairman, and I want to thank you for holding this hearing. I associate myself with those remarks. Last year, I mentioned a few times during the similar hearings that I have a brother who lives out in Washington State in the Cascade Mountains in a town called Twisp, and he not only lived in the town with some of the worst fires and several deaths, but he lived on the road where those deaths occurred. These were neighbors of his, friends in the community, and the fire literally circled his house, but due to the incredible courage of the crew that came out and was able to soak the land around, he was able to keep his house. But I have been out there to visit a few times this year, and there is still a lot of trauma that has lasted.

I want to thank you for your testimony today, and I am sure we will get into this at another time, but I would be remiss if I didn't mention that the President has just submitted his budget with a dramatic 21 percent decrease for 2017 annualized continuing resolution for the Department of Agriculture, and more specifically, reducing funding for lower priority activities in the National Forest

System, such as Federal land acquisition and the budget focusing on maintaining existing forests and grassland, and then it goes on eliminating the duplicative water loan and grant programs. There are a number of things that have to do with conservation with our forests and the health of our forests, and ultimately can lead to fire, and I am concerned about that.

I want to talk about this issue about the money that comes out of the budget to deal with fire, and then is not available for other purposes. My state, New Hampshire, is the second most densely forested state in the country, and last year we had a town, Milan, New Hampshire, small town just over 1,000 people. We received a grant for planning a community forest project, $400,000. But it was then put on hold because the funding in the Forest Service was redirected to fire suppression activities.

Can any of you comment on the impact and what you would recommend our Committee consider working with Appropriations on how to better manage these funds?

Mr. GEISSLER. Basically you are discussing fire borrowing that occurs, and you are right. The amount that is pulled aside during these periods of high fire expenses can have a dramatic impact. Basically by doing a fire funding fix, what you are doing is freeing up money within the Forest Service that goes within the Forest Service as well as goes to programs like the state agencies and our partners that are actually doing the mitigation work ahead of time to try to keep the amount of fire that we have on the ground and the damaging effects of fire to a minimum, or at least reduce the risk.

It is kind of a chicken and the egg theory. You have big fires so you have to spend more money, so you take away funding from the programs that help eliminate the big fires. Going in and trying to fix that funding, that is why we discussed this as being so important to the overall picture.

Ms. KUSTER. Well I thank you for that.

One last question. Mr. Geissler, in your testimony you touch on how important NRCS conservation programs are to forestry, and can you tell me how State Foresters engage with NRCS, what the relationship is like, and is there anything different that NRCS could be doing in regard to helping forestland owners?

Mr. GEISSLER. Yes, ma'am. Right now, State Foresters are typically engaging with NRCS through a lot of different mechanisms. In our own state, we deal just on a state level actually having discussions individually with our State Conservationists, making arrangements so that forestry can be included as part of EQIP and forestry practices are included in EQIP.

In many cases, where the difficulties lie is this paperwork between the different programs and making sure that we don't have duplicative efforts. In some states, we do have issues related to that. I am very lucky in my own state in that we have been able to come to one plan which goes across both NRCS programs, as well as U.S. Forest Service and state programs. But there are some things that were within the farm bill which would allow that to occur, just with a little bit of tweaks.

Ms. KUSTER. My time is up, but I am sure the Committee would appreciate your advice, going forward, with the farm bill if there

is anything that we should be doing to adopt that model that you are suggesting. Thank you.

Mr. GEISSLER. And through the State Foresters, we will be glad to submit some of that information.

Ms. KUSTER. Thank you. I yield back.

The CHAIRMAN. The gentlelady's time has expired. The chair now recognizes the gentleman from Pennsylvania, for 5 minutes.

Mr. THOMPSON. Thank you, Mr. Chairman. Thanks for all the witnesses for your leadership, your expertise related to healthy forests, and healthy rural economies when we do that and do that right. It is very much appreciated.

I just wanted to share some good news to start with before I ask my first question. We have heard some reflections on the President's budget. The President's budget fully funds wildfire preparedness and suppression activities at $2.4 billion. That is 100 percent of the 10 year average for suppression operations to ensure the resources necessary to protect life, property, and hopefully prevent that large sucking sound coming out of the rest of our National Forests in order to respond to those terrible fires that we see in different parts of the country, and specifically in the western part of the United States. Mr. Chairman, I just wanted to share a little good news to begin with, relative to the President's proposed budget already submitted.

I want to start with Ms. Benedict. Thank you so much, Susan. It is good to see you and your husband, and thank you for being great tree farmers. It is always a privilege and an honor to walk the mountains at your tree farm.

You had mentioned in your testimony that timber markets aren't what they used to be, and I too am concerned about the loss of mills, that infrastructure across the country. That is one of the many reasons why I was happy to support and be one of the sponsors to introduce the Timber Innovation Act, along with a number of my colleagues from both sides of the aisle. As you know, this bill aims to codify activities the Forest Service is already doing in an effort to promote timber research and development, as well as new markets specifically. I have always said there are three aspects that we need for timber. One is take the barriers away from proper management. We need to do what we can to increase the value of timber, and increase markets. And this, I hope, will serve that.

Susan, how might such research and development and new markets help landowners like yourself and your family?

Ms. BENEDICT. Currently, it is very difficult to access some markets. With the tall buildings research that is going on, that would be a great market for timber, and particularly, the type of timber that we grow. However, there is no cross laminate factories anywhere near our area. I worked for a real estate development company and they are looking at a large project in State College, and they asked me about using wood in it, but we don't have access to those cross laminate timbers that would be needed. Unfortunately, that project is probably going to be built with steel.

So research and development support for those new factories, anything we can do to get them up and running and getting those kinds of things out where they can be utilized would be very beneficial.

Mr. THOMPSON. Thank you. In the 2014 Farm Bill, and this is for anyone who would want to respond, there are a number of categorical exclusions that we provided to the Forest Service to encourage flexibility and better management. And so my question is very straightforward. Do you support these categorical exclusions, and in your view, does the application of such CEs undermine environmental stewardship in any way?

Mr. NEIMAN. I can sure step in on that, if I could.

Mr. THOMPSON. Go ahead, Mr. Neiman.

Mr. NEIMAN. From my perspective as a company, it does not, and if there is some limited concern, I would love to sit down with any of the communities and address those.

When you look at the issues in the Black Hills and in Colorado and look at the landscapes, you have hundreds of thousands of acres of dead pine from beetle or spruce and lodge pole, and you have complete valleys dead and you are limited to 3,000 acres. Look at the efficiencies you could create and how you could go in and do a landscape treatment. There are some discussions of a 10,000 acre CE or broader landscapes have been suggested. There is just way more benefits there, and I hope we could sit down with any of the environmental community and work our way through that to make sure there are no environmental concerns. If you look at the long-term health, it is of benefit.

Mr. THOMPSON. Thank you. Ms. Humphries?

Ms. HUMPHRIES. Yes, I would like to add *categorical exclusions* by their very definition are routine, reoccurring actions with very little impact, and we have seen the Forest Service over the years erode their ability and use of categorical exclusions as intended under the National Environmental Policy Act.

It was a good first step in the last farm bill to try and define those and get more use of categorical exclusions. We need to spend more time and effort on actually carrying out the plans we spend so much time developing with the Forest Service, so that we get good management on the ground. I think it was a good first step, but more needs to be done.

Mr. THOMPSON. Thank you. Thank you, Mr. Chairman.

The CHAIRMAN. The gentleman's time has expired. I now recognize my next acting Ranking Member, the gentleman from Arizona, for 5 minutes.

Mr. O'HALLERAN. Thank you, Mr. Chairman.

I have a couple of questions for Mr. Harbour, and I want to start, though, by saying that from my front window, I have seen four fires in the last few years. I live in the Sedona, Arizona area. We almost lost the entire Oak Creek Canyon watershed the other year. I have worked at and with many groups in the state to come together to deal with stewardship projects on the forests. The underlying issue has always been that we don't have enough funding to work on these issues, and I would just like to know what programs specifically if we were able to change the way we fund firefighting, what specific programs are available, do you think, that would help us prevent fires?

Mr. HARBOUR. I would say one of the big things that has to happen there is making sure that the State Forester, in your case, Mr. Jeff Whitney and the local folks, along with the Forest Service get

together. Setting priorities in these times is really critical. I have seen probably more effective work done where we could just get agreement across a broad spectrum. It is so easy today to stop things. It is hard to actually do things. The Forest Service is anxious. I know it hasn't changed in the 17 months I have been out. The Forest Service is anxious in southern Arizona, northern Arizona, all across the Southwest, to work with State Foresters and local folks to accomplish meaningful projects. That is why the Good Neighbor Authority that you adopted in the 2014 Farm Bill was so important to note.

Mr. O'HALLERAN. Thank you. A little follow up on that. We already have a project, Four Fry Project it is called, four forests in northern Arizona to be able to thin those forests out. And yet, time and time again we run into problems, there is agreement, Center for Biological Diversity, the cattlemen, from one extreme to the other extreme are on board.

What my question is, since we have these agreements, but our problem is always either, first, funding; or second, the inability of the Forest Service to be able to let out contracts in an extended process out past 5 year or 10 year cycle. Do you have any comment about that?

Mr. HARBOUR. And I am going to throw him under the bus because I know he is my friend, but sitting behind me here is a guy that is the Deputy Regional Forester for the Southwestern Region, and specifically how Four Fry operates in the current issues and opportunities they have with Four Fry, I am sure Mr. Jim Upchurch, who is in town for a couple of months, would be more than happy to talk to you. Because I know, again, I was the fire guy. There are lots of other disciplines in the Forest Service, but the importance of active forest management so we can have a better place for our firefighters to be safe, it is very, very important.

Mr. O'HALLERAN. This is just a statement: when we have these programs and we have the ability to get appropriate management and thinning in the forests completed, time and time and time again, and we find that we just don't have the funding or we don't have the regulatory environment in which to do it. It is frustrating for the citizens that live in these areas. I live in the middle of a National Forest, and luckily, I decided to have a fire-wise house, but people like Wally Cubbington from Northern Arizona University have been stating this time and time and time again. Rodeo Trudeski, which is the fire you were referring to, 550,000 acres, that fire was preventable, although it was set by people. It is a preventable fire because of the issues involved.

I just had a fire in my district and the White Mountain Apache were able to thin out a forest near one of our communities, and that fire got close to that community and just laid down on the ground because of the thinning that took place. If we are going to try to save communities and create jobs, we need to have a working process, going forward.

I yield back, Mr. Chairman.

The CHAIRMAN. The gentleman yields back the balance of his time. The chair now recognizes the gentleman, Congressman Kelly, for 5 minutes.

Mr. KELLY. Thank you, Mr. Chairman, and thank you, witnesses, for being here.

First of all, to Ms. Humphries, I am disappointed because my friends in the northeast Mississippi Hill Country Strutters are having their banquet tonight, and I am here instead of being there. That being said, I want to thank the National Wild Turkey Federation for what you do and being so conservation-minded, but also providing family and recreational opportunities for so many. I just want to thank you, and I truly mean I would rather be there than here.

Ms. HUMPHRIES. Thank you.

Mr. KELLY. Now in general, and any of you can answer, in many of your written testimonies, several of you mentioned the need to provide private landowners with regulatory assurance if they manage for at-risk or listed wildlife. I know there is one program, the Healthy Forest Reserve Program, that provides landowners with safe harbor protections, but what else can we do through conservation programs to provide this regulatory relief?

Mr. NEIMAN. And your question is in reference to private landowners only?

Mr. KELLY. Yes.

Mr. NEIMAN. Well, our company is 80, 90 percent dependent on Federal land in some states, but we do a fair amount of work on private, and some of the references to SIP and FIP programs that we see come along in the past clearly can help some of those areas. Change in the culture, some of the ranches that look at that being a product that they are selling and figure out to help them look like the Forest Service needs to out over the next 25 and 50 years, and what do we want this landscape to look like for the next generation? To thin, they are going to need some support for thinning projects and stuff, whether it is Forest Service or private, to thin some of those acreages. Looking at what kind of programs, including FIP and SIP and others that can help that private landowner to create healthy forests, forest resiliency needs to be what we look at on our Federal lands, and hopefully we can start educating our private lands out West to look at that and look at the resiliency as a very key part. What is their carrying capacity? They understand that term, when you look at carrying capacity on their land, and with the drought and other issues, we have less carrying capacity. We have to recognize what kind of volume can we put on these acreages, what can it withstand? Just like the excellent examples earlier when there is nobody grazing the grasslands, our forest is very much related to that.

Mr. KELLY. Mr. Neiman, this is for you, but any of the rest can answer. The National Environmental Policy Act, in your opinion, why does the NEPA process currently take so long, and what can we do to speed it up? I think that is important. If we do the controlled burns, we wind up not having as many wildfires, so what can we do to speed that process up?

Mr. NEIMAN. Well, we clearly have talked a little bit about CEs and expanding in those, but we really need to get the decision making to the lowest level possible, instead of these national standards with heavy weight from D.C. and the regional level. Get the deci-

sion level and give them some protection down at the forest level, if you can.

But unfortunately, the Forest Service has the most extravagant process of doing EIS work of any agency. How we can get them to be more standardized, and rightfully so with the environmental community attacking timber sales and so many lawsuits, they have had to come away with a perfectionist attitude. They have to be 100 percent right. Nobody can be perfect, so we have to take the handcuffs off. And then internally, the Forest Service since the 1990s has started putting their own handcuffs on too, beyond what the House and Senate has done. We have to encourage them to take some risks, and then give them support so we can move ahead. You can't do it any other way. They can't be perfectionists and write policy. You have to find more doers.

Mr. KELLY. I wholeheartedly agree, and it is better to do a controlled burn and put too much smoke or pollution in the air than to have an out of control wildfire which does much more harm to the environment in the long run than controlled burns. I agree. We need to get it at a local level.

Thank you, Mr. Chairman. I yield back.

The CHAIRMAN. The gentleman yields back, and in order to maintain the custom for Ranking Member, the chair now notes that the gentleman from California, Mr. Panetta, is not a Member of the Subcommittee but has joined us today. I have consulted with the Ranking Member, the various ones, and pursuant to Committee Rule XI(e)(2), we are pleased to welcome him to join us in the questioning process. And with that, you are recognized for 5 minutes, sir.

Mr. PANETTA. Thank you very much, Mr. Chairman. I appreciate this opportunity. Thanks for squeezing me in.

First of all, thank you to all the witnesses who came, prepared their testimony, and actually took the time to testify today. Thank you very much. But I will let four of you off the hook. A lot of my questions are going to be directed at Mr. Harbour today.

That being said, the reason for that is because I represent the central coast of California, Monterey, Salinas, Santa Cruz area, and Mr. Harbour, as you probably know, this past summer we had the most expensive wildfire in the history of our nation called the Soberanes Fire. And it burned over 132,000 acres along the Big Sur area where it started, kind of went south down in the Monterey County area towards actually my home in Carmel Valley where myself, my wife, and my two daughters could actually look out our window and see the flames up in the hills burning, fortunately quite a ways away.

One bulldozer operator during the fighting of that fire lost his life, unfortunately, and there was a lot that was asked about not just how to fight it, obviously, although that was a big question, considering the steep terrain that it was in and the fact that it burned so long, and how difficult it was to battle. But also what could be done to prevent it?

And so obviously, that is what my questions are going to be tailored around, Mr. Harbour. In regards to something like this, in relation to management programs of Federal areas like that area

which I am sure you are familiar with, what can be done to lessen the chance of a fire?

Mr. HARBOUR. Well, aggressive prevention programs certainly are important, despite Smokey Bear's enduring message, still nationwide 90 percent of fires are caused by humans, and you need to keep the Bear active and his message going. The Los Padres National Forest and the area in southern California represents a special concern, because the vegetation is flammable. The vegetation depends upon fire to regenerate and reproduce in a natural sense, and much like the example, Mr. Chairman, about too much grass, where we have over the last several decades done what we thought was good public policy at the time, we kept putting fires out. What we inadvertently did in many of these areas, and it happens in the timber ground too, is there is too much fuel. There is too much to burn on those lands. And so when you get the right type of ignition in the right place where the fire wants to go, you get these high intensity fires that take lives, that threaten communities.

I would say in addition to the prevention efforts, we certainly have to learn about what is reasonable for Cal Fire, the Forest Service, the state agencies in general to do, because it is wrong to put them all out all the time. In fact, I am here to tell you we can't do it. We shouldn't be putting them all out all the time. Mr. Kelly mentioned the importance of prescribed fire and low intensity fire, and the kinds of ecological regimes that happen around Carmel are important.

So there are complex issues complicated by Endangered Species Act, complicated by wilderness, complicated by smoke concerns, but we have the tools, sir. It is simply getting local, state, and Federal folks together to agree to apply those tools. I know Mr. LaMalfa has been particularly vocal about how easy it is to stop projects, and I will tell you that in the case of some of what has happened on the Los Padres National Forest, Bob Berry, the forest supervisor there has wanted to do more. It is tough sometimes to get those projects actually off the ground.

Mr. PANETTA. Thank you. I appreciate that. Within 10 seconds, please.

Mr. NEIMAN. Okay.

The CHAIRMAN. The gentleman has time to respond.

Mr. NEIMAN. It is okay, in a related story, and there are some similarities to what you are seeing in Oklahoma and Kansas and in California. In the Black Hills, on the north slopes of the Black Hills, once they cut the grazing permits back to about ⅓ of what they were from historical highs in the 1960s and 1970s on the National Forests, we are now developing huge understory brush, particularly, and of course with no predators, the sheep have all left and the grazing permits on cattle are cut back to about ⅓, we are seeing understory now getting into the 10′, 15′, 20′ height. That should have had some landscape controlled burns years ago, but now you have three levels of ladder fuels into the overstory of old growth forests that there is no way you are going to stop it without going in with some kind of a treatment.

We have similar problems now with the dry conditions and now you will have a wet spring, the grass gets 1′ to 2′ tall. You have the 5′ to 10′, 15′ understory of the shrubs and everything, and then

the ponderosa pine, and we have a disaster waiting. Similar story to what you see. You nailed it on the head. We need to figure out some way to have some controlled burns on your hillsides in California.

I just visited San Diego a few weeks ago. I have been down there seeing what the fires are doing north of there. It is scary.

Mr. PANETTA. Thank you. Thank you, Mr. Chairman.

The CHAIRMAN. The gentleman's time has expired. The chair now turns to the gentleman from Georgia, Mr. Allen, for 5 minutes.

Mr. ALLEN. Thank you, Mr. Chairman, and thank you, all of you, for being with us today.

Several of you mentioned in your testimony that the conservation programs are important to forest owners, just like farmers. I know in my home State of Georgia, a lot is being done there on these programs to provide landowners support and tools to do conservation practices on their lands, like tree planting, fire breaks, and improvement for wildlife habitat and water quality.

Of course, the biggest thing that we have talked about here today, which Mr. Harbour, in your testimony you were saying, I was not surprised but the damage that we have had over the past few years in our forest fires, wildlife fires and things like that. Obviously, you mentioned ways to fix that problem. What is keeping us from actually fixing it? Because it seems like that if you tried to take care of this problem, you get on somebody else's turf. You mentioned the wildlife and things like that, but obviously, a forest fire is not good for wildlife either. What is the answer to this problem?

Mr. HARBOUR. I wish I knew. I have been thinking about this for 47 years. I do suggest that perhaps in concert with State Foresters and others, maybe more of the answer now lies on private land. Maybe more aggressive incentives and help for tree farmers and private lands are going to be a significant part of the solution, because we have been for decades trying to figure out what we do, especially on National Forest system lands. And we haven't fixed it, even though we know there is a significant problem.

Mr. ALLEN. Ms. Humphries, I am from Augusta, and you are my neighbor over there. And of course, you said that the cost of wildfire, you described in your testimony, no, excuse me, I am going to the EQIP program, as far as adequate flexibility to meet the conservation and wildlife needs for our private forest owners, what can you tell us about that and how can we improve that program?

Ms. HUMPHRIES. Well, the EQIP program has been very helpful, but it is really important, moving forward, that we get on the ground technical assistance and that we look at ways to get active management out on the ground on private lands.

Mr. ALLEN. And Ms. Benedict, in my district, we have, well, everybody is buying all our sawmills, and I saw where you said that you didn't have available sawmills to harvest your timber. How did that take place, because I am a little concerned that everybody wants to buy our sawmills now and I don't want them to disappear. What happened there in your area?

Ms. BENEDICT. Well, there are a lot of factors at play. Part of the problem is that during the economic recession that began in 2008, there just wasn't enough activity to support a hardwood market. A

lot of that goes for furniture and fixtures and paneling and so forth, and so the housing downturn really hit that market. That, of course, puts a lot of economic pressure on mill owners and loggers and everybody else, and so investment, it just becomes too costly to maintain the investment. The other thing that happens also is that there is not enough—it would be helpful for landowners to have technical assistance to be able to do appropriate land treatments and then get that wood to a market.

Mr. ALLEN. Right.

Ms. BENEDICT. And when that market is evaporating, that is where we have problems. The Timber Innovation Act that is looking to build markets for timber would be very helpful in that.

Mr. ALLEN. Mr. Geissler, you were shaking your head. Do you have any comments in regard to that?

Mr. GEISSLER. Yes, sir. Bottom line——

Mr. ALLEN. How do we deal with cyclical economies?

Mr. GEISSLER. I know, and I have heard the other members here on this panel describe it of getting additional technical assistance on the ground, but a lot of it really involves with the fact that if there are no markets out there, management of private lands really does fall off. And so there are ways and things that we can do to encourage the use of forest products and to actually site mills.

One of the things which is not directly within the farm bill, though, is the Forest Inventory and Analysis Program, where we inventory all of our Federal and private lands, and even that, though, is giving industry an opportunity to site these mills around the United States in places where sustainable forestry occurs. When you have a market for stuff, you definitely get management in place, and that is where a lot of what the state agencies do, as well as a lot of the folks at this table, is when we are in the position where maybe there is not a mill close enough yet, but looking for a market and still maintaining the technical assistance with the idea that the wood is there to encourage greater development in the future.

Mr. ALLEN. Good. Thank you for your testimony.

I yield back.

The CHAIRMAN. The gentleman's time has expired. The chair now recognizes the gentleman from California, for 5 minutes, Mr. LaMalfa.

Mr. LAMALFA. Thank you, Mr. Chairman, and thank you, panelists, for being here today.

I come from the way north part of California where we have a lot of mountain country and a lot of fires too, on the eastern side of the Sierra and at the top of the state, so I will try and get several questions here in my 5 minutes.

Mr. Geissler, again, thank you for being here. Obviously California has so many dead and dying trees, over 100 million or something, in our forest inventory there. We see insect infestation, we have suffered from drought. We don't have drought anymore. I can see the broken spillway from my front window, to borrow a phrase from Ms. Palin, but the situation is very, very fluid, changing all the time. There are a lot of ways we can be going with this. We have trouble in California even getting after salvage when there is a fire. We had ¼ million acres burn in the top part of the state

in 2014. It was a year and a half later before we could actually get through the nonsense to start processing and getting some of that value out of there while it still has value, instead of a negative.

So please just elaborate for a minute, what things do you think we should be doing, especially since U.S. Forest Service owns so much of the land in the West, so much of the land in northern California. What can we break through, especially in conjunction with what we are talking about with the good things that were passed in the 2014 Farm Bill?

Mr. GEISSLER. Right. Well thank you. Like you said, the bottom line for it is we do have insects and disease issues, we have drought issues, we have wildfire issues that are out there. We have a glut of wood that potentially is out there that needs to be harvested and salvaged. It all comes down to the need for having a mechanism in place. There are not enough markets for this wood, and in a lot of cases throughout the West, not just in California, the mills have left. If you look at California and Wyoming, there are two mills in some of these states for the entire state.

Mr. LAMALFA. Let's talk about markets now. We can even talk about whole logs going on ships export, but let's look at the whole picture, please, on that, export.

Mr. GEISSLER. Yes. What I was going to get to is that the idea of developing these markets that are out there, but there are also the limitations that are placed with even getting the wood off, and that is where some of the things that are in the farm bill related to the Good Neighbor Authority, insect and disease areas, as well as if there was something related to wildland fire, similar to the insect and disease, to potentially shorten the timeframe that is necessary to get this product off the——

Mr. LAMALFA. How much of this is California unique, because I have colleagues that tell me like in other states that salvage is a fairly simple operation to get to without this much paperwork.

Mr. GEISSLER. I am sorry, sir?

Mr. LAMALFA. Well, this much paperwork, in other states, they can actually get salvage done timely.

Mr. GEISSLER. Exactly.

Mr. LAMALFA. It is a California——

Mr. GEISSLER. California does have some rather extensive laws related to that, but some of the things can be taken out with red tape, just being clipped, if you want to know. There are both state issues there, as well as Federal stuff that can be addressed through Good Neighbor and some of the other programs that are available.

Mr. LAMALFA. Yes, Good Neighbor Authority. All right.

Mr. GEISSLER. The capacity is there. State forestry can provide assistance. Forest Service can provide assistance. There is never going to be just purely enough money to accomplish that.

Mr. LAMALFA. I would like to see the money come to the private-sector by making money off the products than having to come from the Treasury.

Mr. Harbour, again, thank you for being here and for your many, many years of service dedicated to stopping wildfire and limiting it, *et cetera.*

One of the things I am really interested in as well is biomass, which just seems to be a huge opportunity for us to have renewable

power with something that puts jobs right in our backyard, not importing wind mills or solar panels from somewhere else, to have that be the renewable energy. Biomass seems to be the key towards healthier forests, cleaner air: many positive things. Jobs in our backyard, jobs trucking the material from there to the power plants, the power plants we could be building, and meeting these renewable mandates that keep popping up and getting higher and higher. California wants to go 100 percent renewable by 2050. They are throwing some ideas around, and I don't even know where I am going to live anymore after a while.

Would you touch on that a little bit, please, and also more use of the Good Neighbor Authority? Is there more room for Tribes, Indian Tribes to be able to be part of that Good Neighbor Authority with compacts? Are you aware of that? Please touch on those two things.

Mr. HARBOUR. Sure. Well first, let me talk about small woody biomass. I am no scientist and I told folks for a long time, I am interested in getting the small stuff off the ground because it is what makes the big stuff burn. And when the big stuff burns is when my guys, what used to be my guys, I still think of them that way, women and men, that is what causes all the problems with the huge conflagrations that we get into. You are exactly right. I have listened to presentations on nanotechnology. Utilization of biomass, as long as I have been a forester, and that was a little ways into my fire career, is the pot at the end of the rainbow. We have to take good wood product off private and public lands, no question, but getting that biomass, that small woody biomass off is just incredibly important.

Two of the things that you did in the 2014 Farm Bill, permanent authority of stewardship contracting and Good Neighbor were all linked together in terms of this biomass issue, and yes, Good Neighbor Authority needs to be expanded and certainly, biomass needs to be a focus of what we do on private and public lands. It is what provides the fuel to get them started and sustainable.

Mr. LAMALFA. Mr. Chairman, are we going to have a second round of questions? It is just us.

The CHAIRMAN. The chair would recognize the gentleman for an additional 5 minutes.

Mr. LAMALFA. All right. Let's just keep rolling. Thank you, my friend.

The CHAIRMAN. I can be positive sometimes.

Mr. LAMALFA. Good Neighbor. I see Jim maybe or George wants to talk about it too, but it is——

Mr. NEIMAN. If you are done on that, I would like to let you finish up on the Good Neighbor and anything we are doing on biomass.

Mr. HARBOUR. And like I said, I want to just emphasize as importantly as I can, I think that if you could utilize farm bill forestry title incentives to help us on the biomass side, it has so many beneficial impacts in terms of the fire program, forest health, what can happen on private and public lands. It is just an absolute key, but for too long the stuff has been worthless. We can't get it off the ground. We got to pay too much to get if off the ground——

Mr. LAMALFA. Let me jump in there, because we are so heavily subsidizing solar and wind in this country. Everybody is just gaga, "Oh, it is the biggest thing." We have all this material in our backyard. Is it going to go up in smoke like my colleagues talked about, or it can be done in a controlled fashion in a power plant, making green, renewable, anytime baseline power you can turn on. You don't have to wait for the wind to blow or the sun to come up. It seems like the perfect world here to me. Put the jobs in our backyard, clean up something that needs to be cleaned up, save the wildlife, save the habitat. All those good things are going to come from this. Maybe we need to have a subsidy that is directed towards getting that material out of the woods to where it needs to go where they can make money once it is on the landing at the power plants. Is that a reasonable way to go? Anybody on the panel, please. Mr. Harbour, you can finish up and anybody on that panel.

Mr. HARBOUR. I will just say before Jim goes, that is the whole key. It is just investing a dollar ahead of time to do something like treating biomass so you don't have to pay $100 or $1,000 per acre in suppression costs. And I will shut up here.

Mr. NEIMAN. If I could comment?

Mr. LAMALFA. Please.

Mr. NEIMAN. I appreciate it. When I look at the big picture and I look at trying to figure out how to treat more and more acres, a lot of times our focus is on biomass only, which has to be subsidized, and you could be correct in that. But you also mentioned how do we do it at the least amount of cost? If you could find areas and attach—when that biomass is attached to a saw log and you are focusing on highest and best use of value of those trees and put the rest into biomass, that is your best economic situation, and you can treat four to ten times more acres by attaching that biomass. I am really perplexed——

Mr. LAMALFA. You mean by taking a saw log that you are making some money off of and the rest of it comes along with it?

Mr. NEIMAN. Yes, the top or the whole thing. Bring it along.

Mr. LAMALFA. I am all for it.

Mr. NEIMAN. Yes. I am perplexed by California, because you used to have about 36 power plants and they are shutting down right and left throughout the state. I have a lot of friends out there, along with companies like SPI and different ones, and I am frustrated with the lack of support that they did get 10 years ago. I like your thoughts there, but when you look at biomass in our areas, they are heavily subsidized, whether it is a power plant or pellets or whatever. You never know how long that funding is going to go on. When you are looking at investments for a pellet plant of $10 to $30 million, a co-gen plant, 11 to 20 megawatts going to be from $50 to $75 million. You have to really look at 20, 30 years minimum to finance that.

Mr. LAMALFA. It is a long-term investment.

Mr. NEIMAN. There are a lot of elements here to look at.

Mr. LAMALFA. And let's really get real about who we are subsidizing here. We are taking care of the public's land that the U.S. Forest Service is unable to do, and so the cost is going to be like the Fram filter guy, "You can pay me now, or pay me later." We

can burn it all up and have to regenerate and have all the stuff that gets in the streams from a wildfire, or we can go $1 ahead of time, like you folks are saying, and do it on the front end. These dollars are worth a lot more in this than in any of the other la-di-da renewable power we are talking about here. And so this is the message we have to get across is we are saving the people from these hundreds of millions of dollars of fire suppression we have to pay for each year up front and putting jobs here. This is the message we need to be doing. I don't understand why it doesn't catch far more.

Anybody else?

Mr. GEISSLER. I would like to say, the idea of putting a dollar up front, realize that it is not just the idea that we are getting this wood out. We are lowering the risk to the people and the property that is around there. Like you are saying about whether it is biomass or investments in saw mills or sending stuff offshore, getting as many tools as possible. There is small scale biomass. There was a Fuels for Schools Program. There are all of these different things. There was not one single answer to the entire situation that we have found ourselves in. But anything that can be done within the farm bill which increases the number of tools that we have and the availability of the markets out there will be a great asset to it.

Mr. LAMALFA. Thank you. It is just one of these things that you go hat in hand every year begging for the secure rural school funding. Instead, we could be doing the work in the forest and not have to do that.

Mr. Chairman, I thank you for your indulgence. I yield back.

The CHAIRMAN. The gentleman has offered many observant points, and his time has expired.

One of the privileges of being the Chairman of a Committee or Subcommittee is I get to make the concluding remarks.

First and foremost, thank you to the panel for your insight, your willingness to stay late as we voted on the Floor, and to answer our myriad questions and offer your observations and opinions and experience. I would be remiss if I did not, as a good Oklahoman, note that while I talk many times about the lack of trees in northwest Oklahoma, that we have substantial forest resources in southeastern Oklahoma, and have managed those well for 100+ years, and will continue to do so.

I do observe on the fire issues that our challenge still, not only in Oklahoma, but our quadrant, that next month will be the 125th anniversary of the Cheyenne and Arapaho area land run. Farmers did not come to my neighborhood until 125 years ago the next month, and when I visit with my Cheyenne and Arapaho and other descendants of Plains Indian Tribes, they discuss how in their oral histories, now the written versions of their oral histories, think about that for a moment, but that is the way it works, their discussions about how before Europeans the massive fires that occurred on the Plains in the summertime. The fires they lit to attract the buffalo to particular grazing areas or they lit as a part of a struggle with some other band. Massive fires, and starting with the arrival of farmers, we suppressed all of that. And through, some might say, the misguided agrarian practices that led up to the 1930s Dust Bowl, that were finally turned around in the 1950s and 1960s

through education and the things that we have accomplished here, now we are back to the point of addressing Mother Nature where she was before we came.

These issues of fire, whether it is in the grasslands or forests, simply won't go away, and it would appear, at least in my experience in Oklahoma, we are doing an amazing job of fighting the wildfires when they occur. But that underlying issue about how to address the fuel load, whether it is to turn it into another product or whatever, that is where we are. Just having amazing amounts of grass or amazing amounts of timber only makes these issues more complicated. In my area, we have to duplicate what the buffalo did for eons before the farmers arrived.

And with that, I thank the panel and we will continue to move forward in this process of improving the farm bill as we prepare for the next draft.

Under the Rules of the Committee, the record for today's hearing will remain open for 10 calendar days to receive additional material and supplemental written responses from the witnesses to any question posed by a Member. This hearing of the Subcommittee on Conservation and Forestry is adjourned.

[Whereupon, at 3:49 p.m., the Subcommittee was adjourned.]

[Material submitted for inclusion in the record follows:]

SUBMITTED LETTER BY KATHRYN C. BROWNING, BOULDER, CO

To: The U.S. House Subcommittee on Conservation and Forestry
From: Kathryn C. Browning
Date: 26 March 2017
RE: The Next Farm Bill: Forestry Initiatives Hearing—16 March 2017

As the Committee begins preparing the 2018 Farm Bill, I respectfully urge its Members to fully fund programs that promote forest conservation actions and innovation. Specifically I ask that the Committee conserve or increase funding for the Conservation Stewardship Program (CSP), the Environmental Quality Incentives Program (EQUIP) including sufficient funds for the Wildlife Habitat Incentives Program (WHIP), the Healthy Forest Reserve Program (HFRP), and the Conservation Innovation Grants (CIG).

The 2014 Farm Bill marked the first decrease in funding for conservation since 1985. These cuts decreased expected funding for conservation programs by $4 billion and oversaw the consolidation of 23 different conservation programs into 13. These cuts exceed the increases to conservation initiatives gained in the 2008 Farm Bill. Further, when the $2.1 billion in automatic sequestration spending cuts and changes in mandatory program spending are also considered, the funding decrease also cancels out a significant share of the gains in conservation funding from the 2002 bill. These funding reductions to conservation programs constrain the ability of public and private landowners to steward their forested lands in an economically and ecologically sustainable manner.

These cuts have had—and will continue to have—real and tangible effects that are felt deeply by landowners across the country. For example, decreases in funding for the Conservation Stewardship Program (CSP) will cause 28 million eligible acres not to be conserved over the coming decade.[1] This hurts both farmers and the sensitive lands they wish to protect. Sufficient funds should be allocated for CSP in the 2018 Farm Bill and the Committee should take steps to reverse the acreage limits from the current 10 million acres back to 12.8 million acres or larger.

The Environmental Quality Incentives Program (EQIP) is also an important conservation tool that should be fully funded in the 2018 Farm Bill. EQIP provides resources to help landowners plan and institute conservation practices that improve forest health and productivity, such as forest stand improvement, riparian forest buffers (5% of the program is used to improve forested land adjacent to farmland), and invasive plants control, and provides funding to offset the cost of implementing those practices.[2] The program serves the important and increasingly needed role of providing on-the-ground technical planning and conservation assistance to help private landowners actively manage their lands. As such, the 2018 Farm Bill should increase funding for the EQIP program by at least 10% annually, and maintain the 75% cost sharing provisions for developing forest management plans and for the aforementioned conservation practices. Where possible, the bill should place emphasis on long-term incentive payments and contracts to encourage sustained management of wildlife.

The Wildlife Habitat Incentives Program, which was rolled into EQIP as part of the consolidation of programs in the 2014 bill, should also preserve its ability to provide both technical assistance and up to 75% cost sharing assistance to private landowners for land stewardship, including the establishment and improvement of fish and wildlife habitat. The 2018 Farm Bill should make lands capable of production, as well as lands already in production, eligible to receive funds, as they were in the 2014 bill, and allow private landowners the option of managing their forestlands specifically for wildlife habitat.

The 2018 Farm Bill offers a substantive and unique opportunity for the Committee to strengthen the CSP–EQIP linkage. After the passage of the 2014 Farm Bill, the NRCS began an administrative "reinvention" of the CSP, making it more closely aligned with EQIP. As a result of this administrative transformation, EQIP's conservation practices are now more than ever a logical stepping-stone to the more advanced conservation activities available through the CSP. The Committee should be mindful and purposeful in realizing and strengthening this relationship in order to maximize the benefits of both programs. It should also keep a watchful eye on

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[1] "What is in the 2014 Farm Bill For Sustainable Farms and Food Systems?" National Sustainable Agriculture Coalition *What is in the 2014 Farm Bill For Sustainable Farms and Food Systems Comments.* January 31, 2014. Accessed March 25, 2017. *http://sustainableagriculture.net/blog/2014-farm-bill-outcomes/*.

[2] "Environmental Quality Incentives Program." Environmental Quality Incentives Program, NRCS. Accessed March 25, 2017. *https://www.nrcs.usda.gov/wps/portal/nrcs/main/national/programs/financial/eqip/*.

the effects of these recent changes to the program to ensure that they achieve the desired effect of transforming the program into one that fully supports wildlife and forestry. This includes ensuring that rankings and payments reward enhancements with higher conservation benefits that are focused on sustained conservation outcomes.

The Healthy Forest Reserve Program (HFRP) is a central forest initiative offered through the farm bill. The HFRP assists private landowners in restoring, enhancing, and protecting forest resources on their lands through easements, 30 year contracts, and 10 year cost-share agreements.[3] These provisions have the effect of promoting biodiversity, controlling soil erosion, enhancing carbon sequestration, improving water quality, and adding value to private lands.[4] The 2018 Farm Bill should provide for at least $12 million in mandatory annual funding for the HFRP to ensure continued delivery of this important value to private landowners.

Finally, the Committee should strive to sustain or increase support for Conservation Innovation Grants (CIGs). CIGs offers competitive grant funding to EQIP-eligible non-Federal governmental or non governmental organizations, American Indian Tribes, and individuals to support the development and adoption of innovative approaches to conservation on agricultural lands.[5] The CIG program promotes innovation while also increasing the value of Federal investments in environmental restoration and protection. In short, CIGs facilitate research into how future conservation investments by the Federal Government can go farther and provide greater value to America's private landowners, and should be fully funded in the 2018 Farm Bill.

The Committee, in developing the 2018 Farm Bill, should take seriously the opportunity to strengthen forest conservation programs that support America's private landowners. It should work to reverse the ill-effects of spending cuts mandated by the 2014 bill and to strengthen the conservation initiatives provided in the Conservation Stewardship Program (CSP), the Environmental Quality Incentives Program (EQIP) including the Wildlife Habitat Incentives Program (WHIP), the Healthy Forest Reserve Program (HFRP), and Conservation Innovation Grants (CIG).

Thank you for your important work on the 2018 Farm Bill.

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[3] "Healthy Forests Reserve Program." Healthy Forests Reserve Program, NRCS. Accessed March 25, 2017. *https://www.nrcs.usda.gov/wps/portal/nrcs/main/national/programs/easements/forests/*.

[4] "Healthy Forests Reserve Program—How to Apply and Benefits." Healthy Forests Reserve Program—How to Apply and Benefits, NRCS. Accessed March 25, 2017. *https://www.nrcs.usda.gov/wps/portal/nrcs/detail/national/programs/easements/forests/?cid=nrcs143_008410*.

[5] "Conservation Innovation Grants." Conservation Innovation Grants, NRCS. Accessed March 25, 2017. *https://www.nrcs.usda.gov/wps/portal/nrcs/main/national/programs/financial/cig/*.

THE NEXT FARM BILL
(NUTRITION DISTRIBUTION PROGRAMS)

TUESDAY, MARCH 21, 2017

HOUSE OF REPRESENTATIVES,
SUBCOMMITTEE ON NUTRITION,
COMMITTEE ON AGRICULTURE,
Washington, D.C.

The Subcommittee met, pursuant to call, at 10:01 a.m., in Room 1300 of the Longworth House Office Building, Hon. Glenn Thompson [Chairman of the Subcommittee] presiding.

Members present: Representatives Thompson, Crawford, Hartzler, Davis, Yoho, Rouzer, Comer, Marshall, Faso, Conaway (*ex officio*), McGovern, Adams, Evans, Fudge, Lujan Grisham, Lawson, Panetta, Soto, and Maloney.

Staff present: Bart Fischer, Callie McAdams, Jennifer Tiller, Mary Rose Conroy, Stephanie Addison, Kellie Adesina, Lisa Shelton, Liz Friedlander, Troy Phillips, and Nicole Scott.

OPENING STATEMENT OF HON. GLENN THOMPSON, A REPRESENTATIVE IN CONGRESS FROM PENNSYLVANIA

The CHAIRMAN. Good morning, and welcome to today's Nutrition Subcommittee hearing on distribution programs. This hearing continues the Committee's series where each Subcommittee is undertaking a comprehensive review of the current farm bill as we move to draft the next. I want to thank you, everyone, for taking the time to be here, particularly our witnesses for their participation and their respective insights.

USDA's food distribution programs, The Emergency Food Assistance Program, TEFAP, the Commodity Supplemental Food Program, and the Food Distribution Program on Indian Reservations, strengthen the nutrition safety net through the distribution of USDA Foods and other nutrition assistance to children, low-income families, emergency feeding programs, Indian Tribal organizations, and the elderly. These programs provide support to populations in need and help decrease food insecurity in our low-income communities.

It is important to have a general understanding of these three programs, how they differ from one another, how they interact, and how they, along with our nation's largest anti-hunger program, SNAP, Supplemental Nutrition Assistance Program, work together to meet the nutrition needs of our most vulnerable citizens. The panel we will hear from this morning will offer insight based on their operational and policy experience. These on-the-ground per-

spectives will be critical as we look towards the farm bill reauthorization with a focus on improving what works and reducing administrative burdens so that program benefits reach those most in need in the most effective and efficient manner possible.

The food distribution programs are each designed to meet the needs of a particular population. TEFAP helps supplement the diets of low-income Americans by providing them with emergency food assistance at no cost. CSFP is targeted at improving the nutrition of low-income elderly people at least 60 years of age by supplementing their diets with food packages. In both programs, USDA purchases the food and ships it to state agencies and provides support for administrative costs. TEFAP and CSFP state agencies work closely with local agency partners to distribute the USDA Foods in communities.

FDPIR provides USDA Foods to income-eligible households living on Indian reservations, and to American Indian households residing in approved areas near reservations or in Oklahoma. Many households participate in FDPIR as an alternative to SNAP because they do not have easy access to SNAP offices or authorized food stores. FDPIR is authorized locally by either Indian Tribal organizations or an agency of a state government. USDA purchases and ships FDPIR foods to ITOs and state agencies based on their orders from a list of available foods and provides them with administrative funding. These agencies store and distribute the food, determine applicant eligibility, and provide nutrition education to recipients.

We will also hear from Diane Kriviski, Deputy Administrator for the Supplemental Nutrition and Safety Programs, who will provide valuable insight into not only TEFAP, CSFP, and FDPIR, but ultimately what is being done to improve access to healthy foods.

I want to thank all of our witnesses for sharing their time and expertise today, and making the trip here to Washington.

[The prepared statement of Mr. Thompson follows:]

PREPARED STATEMENT OF HON. GLENN THOMPSON, A REPRESENTATIVE IN CONGRESS FROM PENNSYLVANIA

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I want to thank all of our witnesses for sharing their time and expertise. I now recognize Mr. McGovern for his opening statement.

The CHAIRMAN. Now I am very pleased to recognize the Ranking Member of this Committee, Mr. McGovern, for his opening statement.

OPENING STATEMENT OF HON. JAMES P. MCGOVERN, A REPRESENTATIVE IN CONGRESS FROM MASSACHUSETTS

Mr. MCGOVERN. Well thank you very much, Mr. Chairman, and thank you for calling today's hearing on nutrition distribution programs. I want to thank all the witnesses for being here. Mr. Chairman, this is your first hearing as Chairman of this Subcommittee. I want to congratulate you, and I hope recalling the words of that great philosopher, Humphrey Bogart, in the movie *Casablanca* when he said to Claude Raines, "I think this is the beginning of a beautiful friendship." I hope.

Anyway, The Emergency Food Assistance Program, TEFAP, the Commodity Supplemental Food Program, and the Food Distribution Program on Indian Reservations are all critical to ensuring our most vulnerable neighbors have access to food, and they are well-deserving of our support. In particular, I would like to highlight the incredible work of food banks in my Congressional district, the Food Bank of Western Massachusetts, and the Worchester County Food Bank, in working to alleviate hunger in central and western Massachusetts.

But with over 42 million Americans, including children, seniors, veterans, and yes, some very poor childless adults, too, living in food-insecure households, I think we can all agree that more needs to be done to address hunger in our country. We are the richest country in the history of the world, and 42 million of our fellow citizens are hungry or food-insecure.

Last Congress, this Subcommittee held 18 hearings on SNAP. We heard more than 30 hours of testimony from over 60 experts. We learned from these experts, conservative and liberal, that SNAP benefits should not be cut and that current benefits are inadequate. We also learned that SNAP does not discourage work, and that case management and job training programs can be suc-

cessful in helping to move people out of poverty, but these efforts require a well-funded, multi-year commitment.

Recently, I have read in the press that Chairman Conaway will use the White Paper he compiled from these hearings to make changes in our anti-hunger safety net. And I am reading that a big part of these changes will impact 18 to 49 year olds who do not have children, known as ABAWDs, able-bodied adults without dependents. And while it is convenient to demonize this group of vulnerable adults, the truth of the matter is we do not have a clear picture of the ABAWD population. We know it is a diverse group. We know that many have limited educational experiences, and some have mental health issues, difficult histories of substance abuse, or are ex-offenders with nowhere else to turn. I now come to learn that up to 60,000 of them are veterans, people who served our country.

Members of this Committee could benefit, I hate to suggest another hearing, but I am going to suggest another hearing. But maybe we could benefit from a hearing on this vulnerable population. Maybe before we start kicking people who fall into this ABAWD category off of Medicaid and out of the SNAP program, we should have a hearing to explore this vulnerable population and work to understand their struggles as opposed to belittling them. Kicking vulnerable people off of food assistance does nothing to help them find work. It just makes them hungry. It is mean-spirited, and it is a rotten thing to do.

If we are serious about ending hunger in this country, we need to realize that while our states, charities, local providers, and our Federal programs are all doing incredible work to alleviate hunger, more needs to be done. Charities, even with Federal support, cannot solve hunger alone. We need to maintain the structure of SNAP, increase SNAP benefits, and boost our anti-hunger safety net to reach those who are still facing incredible hardship. And we need to commit to and fund programs that provide an economic ladder to those struggling in poverty.

I look forward to the distinguished panel of witnesses, and I thank them for being here, and thank you, Mr. Chairman, for yielding me the time. I yield back.

The CHAIRMAN. I thank the gentleman. The chair would request that other Members submit their opening statements for the record so the witnesses may begin their testimony to ensure that there is ample time for questions, and I appreciate the Members' understanding.

I would like to welcome our witnesses to the table. Ms. Carrie Calvert, Director of Tax and Commodity Policy, Feeding America here in Washington, D.C.; Mr. Frank Kubik, CSFP Director, Focus: HOPE, from Detroit, Michigan; Mr. Jerry Tonubbee, Director, Food Distribution Program, Choctaw Nation of Oklahoma, Durant, Oklahoma; and Ms. Diane Kriviski, Deputy Administrator, Supplemental Nutrition and Safety Programs, Food and Nutrition Service, FNS of USDA located, here in Alexandria, Virginia.

Ms. Calvert, go ahead with your 5 minutes of testimony when you are ready.

STATEMENT OF CARRIE T. CALVERT, DIRECTOR, TAX AND COMMODITY POLICY, FEEDING AMERICA, WASHINGTON, D.C.

Ms. CALVERT. Great, thank you. This is actually my first time officially testifying before a Congressional Committee, so thank you very much for inviting me.

Mr. Chairman, Ranking Member McGovern, and Members of the House Agriculture Subcommittee on Nutrition, I am thrilled to be here today to talk about the nation's food distribution programs, in particular, The Emergency Food Assistance Program, also known as TEFAP. I represent Feeding America, which is the nation's largest anti-hunger nonprofit, serving 46 million people each year through our network of almost 200 food banks. Our network serves every state in the country as well as the District of Columbia, and supports 60,000 local agencies like food pantries, after school and summer programs, senior meal sites, and soup kitchens, providing four billion meals each year to people in need. Our mission is to not only provide emergency food assistance to those in need today, but to engage the country in the fight to end hunger so that we can reduce the number of families that must rely on charitable food assistance tomorrow.

Since its inception in the early 1980s as a program to connect surplus commodity products with emergency feeding organizations, strangely enough, it was surplus cheese that was the first product distributed through TEFAP. TEFAP has served a dual purpose of providing nutritious food to the nation's charitable community while supporting U.S. grown commodities. As the program has proved its efficacy and efficiency, it has expanded to become an essential part of how food banks and other local organizations provide food to people in need. Today, TEFAP has become a backbone of the nutritious food our food banks are able to distribute.

The Feeding America network receives food from Federal commodity programs like TEFAP and CSFP, as well as through food donation partnerships with thousands of growers, food manufacturers, retailers, and food service companies across America. We also do purchase some of the food we distribute as well when there is a shortfall or to serve specific populations or dietary needs.

Feeding America food banks received 723 million pounds of food from TEFAP in Federal Fiscal Year 2016, accounting for about 600 million meals. These are meals that go straight into the effort to fight hunger and to relieve food insecurity, but should be viewed as part of an array of Federal nutrition programs. We know the community members that we help are also often relying on SNAP, school lunch, WIC, or senior meals to meet their families' needs. Our work would not be possible without the continued strong support of Federal nutrition programs. In fact, Feeding America's entire food distribution in 1 year equals only ten percent of the food purchases provided by the SNAP program in 1 year.

We know from Feeding America's *Hunger in America 2014* report that although 55 percent of the people we serve participate at some time in the SNAP program, another 45 percent do not. Some of that population is likely eligible, yet not participating, but millions of others make too much to qualify for SNAP assistance, yet still need charitable food assistance. This is where strong funding for TEFAP is essential to our ability to fulfill our mission.

TEFAP works by directly supplying nutritious food purchased by USDA to charities such as Feeding America food banks. In addition to the food, USDA also provides funding to defray some of the storage and distribution costs of getting the food to hungry Americans. As you can see from the pie chart here, which I apologize might be hard for you to read from where you are sitting, the foods provided through TEFAP are highly nutritious and represent household pantry staples, foods that you would find in your home. In fact, protein items are the number one category purchased, followed by fruits and vegetables. Our food banks combine TEFAP foods with other donated and purchased food to give food-insecure Americans access to a nutritionally well-balanced grocery package.

The farm bill also authorizes funds for storage and distribution, which helps defray part of the cost that food banks incur getting TEFAP foods to people in need; however, it is not mandatory funding and depends on an annual appropriation, and unfortunately, the funds that are appropriated are only ½ of the authorized amount. There is a significant shortfall that many of our food banks are dealing with, and frankly, it means that they have to divert funds from other valuable programs to meet that shortfall.

We hope to work with you as the next farm bill process gets underway to not only show the significant, strong impact that TEFAP foods have had, and the impact that the increase in TEFAP foods provided by the last farm bill has had in communities, but also to make the case that being able to fully fund TEFAP storage and distribution would have a significant impact on our ability to invest in other programs that we are doing, such as mobile pantries, job training programs, SNAP outreach assistance in communities. There are many, many valuable programs that our food banks are actively working on, and so we would definitely appreciate stronger funding for that.

And with that, I conclude my testimony. Thank you.

[The prepared statement of Ms. Calvert follows:]

PREPARED STATEMENT OF CARRIE T. CALVERT, DIRECTOR, TAX AND COMMODITY POLICY, FEEDING AMERICA, WASHINGTON, D.C.

Mr. Chairman, Ranking Member McGovern, and Members of the House Agriculture Subcommittee on Nutrition, thank you for inviting me to testify on the importance of The Emergency Food Assistance Program, also known as TEFAP. I represent Feeding America, which is the nation's largest anti-hunger nonprofit, serving 46 million people each year through our network of almost 200 food bank members. Our network serves every state in the country as well as the District of Columbia. Our food banks support over 60,000 food distribution agencies, such as food pantries, after school and summer programs, senior meal sites, and soup kitchens. We have a network of two million volunteers and we are proud to say that we provide four billion meals annually to people in need. Our mission is to not only provide emergency food assistance to those in need today, but to engage the country in the fight to end hunger, so that we can reduce the number of families that must rely on charitable food assistance tomorrow.

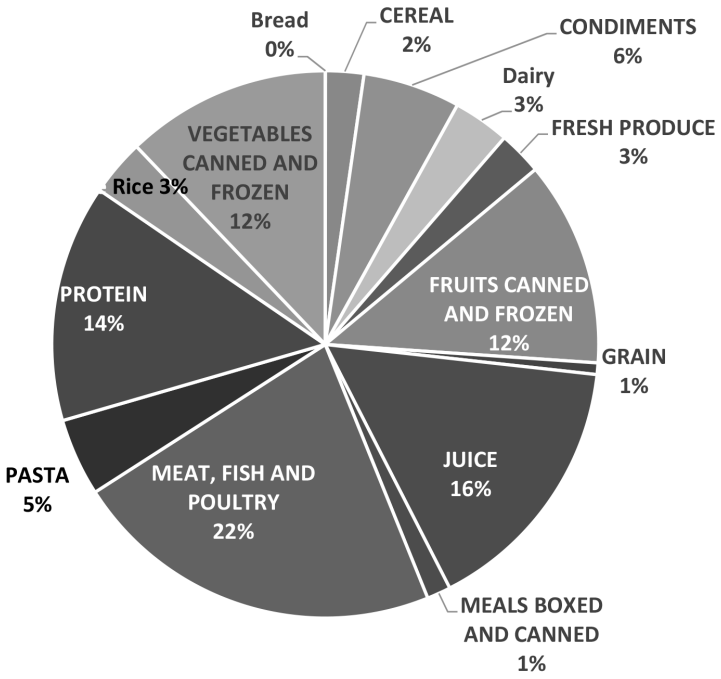
Since its inception in the early 1980's as a program to connect surplus commodity products with emergency feeding organizations, TEFAP has served a dual purpose of providing nutritious food to the nation's charitable community while supporting U.S. grown commodities. As the program proved its efficacy and efficiency, it expanded to become an essential part of how food banks and other local organizations provide food to people in need. Today, The Emergency Food Assistance Program is the backbone of the charitable food system with an impact that is felt in every state across the country.

The Feeding America network receives food from Federal commodity programs like TEFAP and CSFP, as well as through food donation partnerships with thousands of growers, food manufacturers, retailers, and food service companies across America. We also purchase some of the food we distribute as well when there is a shortfall. Feeding America food banks received 723 million pounds of food from TEFAP in FY 2016, accounting for about 600 million meals.

These are meals that go straight into the effort to fight against hunger and to relieve food insecurity, but should be viewed as part of an integral array of Federal nutrition programs. We know the community members we help are also often relying on SNAP, school lunch, WIC, or senior meals to meet their families' needs. Our work would not be possible without the continued strong support of Federal nutrition programs. In fact, Feeding America's entire food distribution in 1 year equals only 10% of the food provided by the SNAP program. We know from Feeding America's *Hunger in America 2014* report that although 55% of the people we serve participate at some time in the SNAP program, another 45% do not. Some of that population is likely eligible yet not participating, but millions of others make too much to qualify for SNAP assistance, yet still need charitable food assistance. This is where strong funding for TEFAP is essential to our ability to fulfill our mission.

TEFAP works by directly supplying nutritious food purchased by USDA to charities, such as Feeding America food banks. In addition to the food, USDA also provides funding to defray some of the storage and distribution costs of getting the food to hungry Americans. As you can see from the pie chart, the foods provided through TEFAP are highly nutritious and represent household pantry staples, foods that you would find in your kitchen. Our food banks combine TEFAP foods with other donated and purchased food to give food-insecure Americans access to a nutritionally well-balanced grocery package.

Feeding America: TEFAP Food Categories FY 2016



There are two categories of TEFAP commodities, mandatory and bonus commodities. Mandatory commodities are paid for through mandatory funding authorized directly in the farm bill. Food banks, working with their state agencies, order food directly from USDA, which contracts with food producers to achieve significant cost savings. This is a highly efficient purchasing program. Each pound of nutritious food

by USDA costs about 64¢.[1] Food banks select these foods from a long menu of options made available by USDA. Mandatory spending is essentially demand driven.

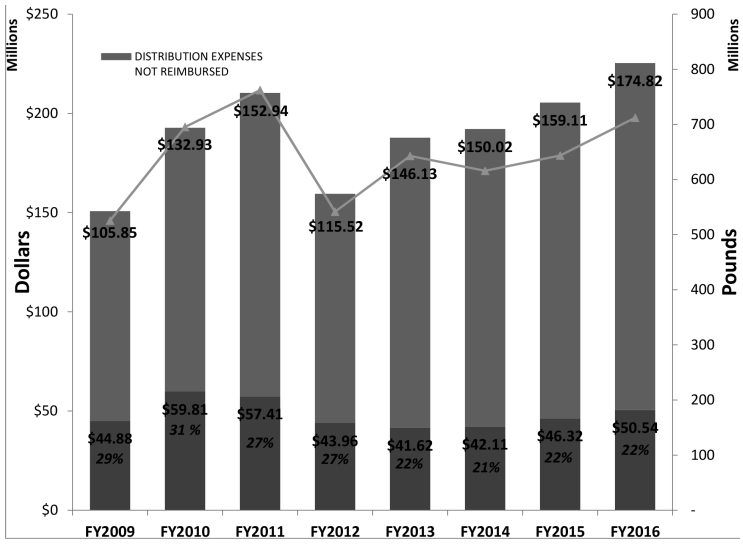
TEFAP Bonus commodity purchases are driven by the need for commodity support as prices for commodity foods fluctuate. When the price of an agriculture commodity falls so low that the market for it is in danger, the Department of Agriculture spends money to purchase enough of that commodity to stabilize the market. These purchased foods are then distributed through the TEFAP program to those who need a helping hand. This is a highly-efficient public-private partnership, supporting agricultural markets, while allowing for the purchase of nutritious food when it is at a very low price point. In FY 2016, USDA made additional purchases under its market support authority of $297.44 million worth of food.[2]

The farm bill also authorizes funds to support the storage and distribution of TEFAP commodities, although this is not mandatory funding and depends on an annual appropriation. These are dollars spent to help defray the cost of storing commodities and then moving them to the distribution point so they can be accessed by our clients.

Unfortunately, the funds Congress has historically appropriated for the purposes of TEFAP storage and distribution are significantly less than the costs incurred by our food bank members. For years now, Congress has appropriated these critical funds at around ½ of the authorized level of $100 million annually. TEFAP storage and distribution's current funding level of $54 million only covers 23% of the cost to our food banks of distributing TEFAP commodities—leaving food banks to cover the difference. This is especially acute in food banks with larger service areas and which are serving rural populations.

Food banks help to make up the shortfall for the storage and distribution costs by redirecting funding that would otherwise go to other initiatives they run, such as veteran's programs and school weekend back pack programs. If Congress were to appropriate the full authorized amount of storage and distribution funds, food charities would have additional resources to provide services in their communities. The chart below illustrates the costs our food banks report to us, and the small amount that is offset by TEFAP storage and distribution.

TEFAP Storage & Distribution Funding Gap for Feeding America Food Banks

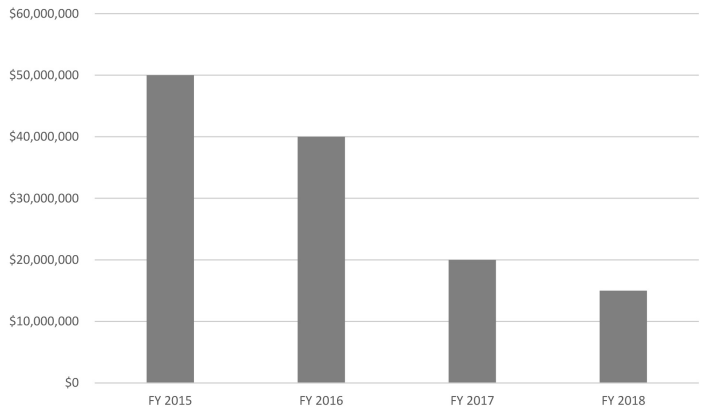


TEFAP foods and funds are distributed to states on the basis of relative poverty and unemployment levels. In FY 2016, Congress provided $318 million in funding

[1] Based on Feeding America analysis of USDA delivery order reports.
[2] USDA FY 2016 Bonus Purchases, published 9/30/16.

for TEFAP food purchases,[3] down from $327 million in FY 2015.[4] This occurred because the 2014 Farm Bill called for the gradual reduction of additional program funding. Because of the reduction in funding, most states saw their TEFAP dollars shrink. The 2014 Farm Bill provided an additional $205 million in TEFAP funding over 10 years. The chart below shows the impact this funding has had. While we are grateful for the additional funding, the idea behind front loading the funds was to provide assistance when demand was highest. As our food banks can attest, the economic recovery has been uneven for many of the working poor that we serve, and they continue to respond to a high degree of demand. We would urge you to consider methods to address the need for additional TEFAP support in a more stable manner in the next farm bill.

2014 Farm Bill: Additional Funding for TEFAP Mandatory Food



The food charities that distribute TEFAP foods are subject to government oversight to ensure that the commodities are reaching low-income consumers. State agencies develop uniform statewide criteria for determining recipient eligibility.[5] Local charities are required to prove that they serve predominantly needy communities. States are required to regularly review local charities to ensure effective and efficient program operations. USDA conducts Management Evaluations of states deemed to be at the highest risk of program deficiency.

In addition to the oversight from USDA and state agencies, Feeding America contractually requires all of our food bank members to undergo audits by our compliance team to ensure all Federal, state and local regulations are complied with and that the food bank is operating in a financially responsible manner. We also require a third party food safety audit to ensure that we are distributing food in a way that protects clients from potential food borne illness, which is especially important as the amount of perishable food we distribute has increased.

The Emergency Food Assistance Program illustrates how a government program, nonprofits, and the private-sector can work together to provide targeted, accessible, and cost efficient food assistance that is responsive to immediate need in local communities. TEFAP is a very responsive program, because it can be accessed by struggling families and individuals on an as needed basis. After a sudden emergency leaves a family without money, there is a place to turn. For many of the people we serve, the need for food assistance can be episodic and due to unexpected expenses, such as a car breaking down or a sudden layoff. TEFAP helps fill the gaps when this happens.

A story by CBS reported that most Americans said they would be unable to handle a sudden $500 car repair bill.[6] As we have seen, the lack of well-paying jobs has left more people living closer to the margin than they have ever before. Many are just one bad day away from suddenly experiencing that strange sense of going from the middle class, to wondering how they will feed their family.

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[3] USDA, "Fiscal Year (FY) 2016 Food and Administrative Funding for The Emergency Food Assistance Program (TEFAP)," published 1/7/16.
[4] USDA, "The Emergency Food Assistance Program," published June 2016.
[5] USDA, "The Emergency Food Assistance Program," published June 2016.
[6] Picchi, Aimee, "Most Americans can't handle a $500 surprise bill," *CBS News,* 1/6/16.

TEFAP provides a stop gap measure by empowering local organizations to provide immediate food. This food is there today and is available tonight. This sort of immediate response is so important, because people live their lives day-by-day and not by government timelines. By being there when people need it, TEFAP can be the steadying hand that keeps a family stable through an emergency.

TEFAP food is also very healthy. Research conducted by USDA's Food and Nutrition Service found that TEFAP provides extremely nutritious foods. In fact, using the Healthy Eating Index, a tool developed by USDA to measure diet quality, the food distributed through TEFAP earned a score of 89 out of 100. By comparison the overall U.S. food supply scored only 55 out of 100.[7]

The availability of nutritious foods is highly important to our clients. According to our Hunger in America study, 79% of client households report having bought the cheapest food available, regardless of its nutritional content.[8] This is especially concerning, because nearly ½ (47%) of our client households that contain seniors have a member with diabetes.[9] Feeding America works hard to provide those we serve with food that is healthy and filling.

As the Subcommittee works on a new farm bill, we look forward to working with you to demonstrate how strong support for nutrition programs and agriculture programs can strengthen communities nationwide. We know that for many of America's growers, this has been a difficult time with low commodity prices leading to many challenges in rural America.

One of the misconceptions about food insecurity in America is that it is only an urban problem; in fact, the counties identified as most food-insecure by Feeding America's *Map the Meal Gap* report are in rural areas. We believe that we can achieve a farm bill that helps strengthen our agriculture economy, provides support to rural communities, and reduces hunger through partnership and collaboration, and look forward to engaging with you to achieve these shared goals.

The CHAIRMAN. Thank you very much.

Mr. Kubik, you are now recognized for 5 minutes.

STATEMENT OF FRANK KUBIK, DIRECTOR, COMMODITY SUPPLEMENTAL FOOD PROGRAM, FOCUS: HOPE, DETROIT, MI

Mr. KUBIK. Good morning, Mr. Chairman and Members of the Subcommittee. Thank you for this opportunity you are giving me today.

I work with the Commodity Supplemental Food Program in Detroit for an organization called Focus: HOPE, which is a human and civil rights nonprofit organization. I also work with the National CSFP Association. I appreciate this opportunity to speak on behalf of Focus: HOPE and its 41,000 monthly participants of CSFP, as well as the 600,000 monthly CSFP participants in 48 states, District of Columbia, and two Indian Tribal organizations. Since 2010, CSFP has added ten additional states. Thank you to Congress and FNS for your continued support for the program.

In the Farm Bill of 2014, CSFP became an elderly-only program. We thank the Subcommittee for the legislation that enables us to exclusively serve our vulnerable senior population.

CSFP is a discretionary program funded through annual appropriations. While it is authorized in the farm bill, it receives no mandatory money.

CSFP is a unique program which brings together Federal and state agencies, along with public and private entities. By using their buying power, USDA is able to provide the monthly nutritionally balanced food package at a cost of less than $24 per box. That

[7] USDA, "White Paper on The Emergency Food Assistance Program (TEFAP) Final Report," Published August 2013.

[8] Weinfield, Nancy, *et al.,* "Hunger in America 2014," Feeding America, Published August 2016.

[9] *Ibid.*

same food package goes for a retail value of about $45 to $50. This makes CSFP a cost effective program. In Fiscal Year 2016, CSFP provided services to more than 150 nonprofit community and faith-based organizations at 1,800 locations across the country.

State agencies provide administrative oversight in contract with local and faith-based organizations to warehouse and distribute food, certify eligibility, and provide nutrition education to participants. These local organizations build collaboration among nonprofits, health providers and their agencies on aging, to provide easy access to the program. We are able to reach isolated and homebound seniors.

A 2013 National CSFP Association survey showed that ½ of the seniors who responded reported that they lived alone with an average income of less than $750 a month. Seventy percent of those senior respondents said they choose between food and medicine each month.

Frederick is a 92 year old World War II veteran and Tuskegee airman. He honorably served this country at a time of its greatest need. We are now honorably trying to serve him at a time of his greatest need. For the past 10 years, Frederick and his wife have relied on their monthly CSFP food package they have picked up at Focus: HOPE. Frederick has said, "For me and my wife, Focus: HOPE means food. It allows us to use our fixed income on other needs, like housing and medicine, and still eat at the end of the day." Frederick did not enroll in CSFP until he was 82 years old. He only reached out to us when he had no other choice. He needed help, and fortunately we were able to provide him and his wife with a monthly food package. A year ago, Frederick's son passed away and recently his wife passed away as well. For many of us, Frederick is a hero. We are privileged to be able to help him, especially for all he has done for our country.

Barbara's story is a familiar one. Seniors who are forced to take care of someone else, and in so many cases, grandchildren. Barbara has recently signed up for the first time to receive CSFP benefits. Her husband passed away suddenly. Barbara says, "At this time I'm at a point where I can't afford to pay my medical bills, rent, utilities, and I have a mentally challenged adult son who needs medication as well as every day necessities." CSFP is a lifeline to Barbara and other seniors in need.

Providing food assistance in many cases is not enough. Many CSFP agencies network with other health providers and can bring additional assistance to low-income seniors. Volunteer services are increasing because we are able to partner with health organizations and others to bring additional help to our seniors. We have regular events at our sites such as blood pressure checks, cholesterol screenings, eye exams, seasonal flu shots, and mobile mammograms, as well as other screenings. We are also increasing our additional help in other Focus: HOPE sites. Income tax assistance, utility bill payment assistance is also being offered to our community, and we are working with our local food bank to provide additional food to our CSFP participants, as many other CSFP programs do.

The stories I have described in this testimony are all too typical for many seniors in this country. The lack of access to high quality

food, reliable public transportation, and adequate healthcare and too often unsafe neighborhoods collude to make the so-called golden years far less than golden. People who have worked all their lives and contributed so much to this nation are being neglected and left on their own in a time when they need help the most. Indeed, there is much left to be done to address the issues of hunger and poverty, both locally and nationally.

On behalf of the nation's Commodity Supplemental Food Program participants and volunteers nationwide, thank you for this opportunity to present testimony for the record. Thank you.

[The prepared statement of Mr. Kubik follows:]

PREPARED STATEMENT OF FRANK KUBIK, DIRECTOR, COMMODITY SUPPLEMENTAL FOOD PROGRAM, FOCUS: HOPE, DETROIT, MI

Mr. Chairman and Members of the Subcommittee:

I am Frank Kubik, the Commodity Supplemental Food Program Director at Focus: HOPE, a civil and human rights nonprofit organization in Detroit, Michigan. I also work with the National CSFP Association. Thank you for the opportunity to speak on behalf of the Focus: HOPE CSFP and its 41,000 monthly low-income senior participants in the metropolitan Detroit area, as well as the 600,000 monthly CSFP participants in 48 states, the District of Columbia, and two Indian Tribal organizations.

The Commodity Supplemental Food Program (CSFP) began in 1969 to supplement protein, calcium, iron, and vitamins A and C for low-income pregnant and post-*partum* mothers and children under the age of 6. The U.S. Department of Agriculture (USDA) purchases nutrient-rich foods at wholesale prices to provide a nutritionally balanced monthly food package. Pilot programs in 1982 added seniors as eligible participants. In the Farm Bill of 2014, CSFP became an elderly only program. We thank the Subcommittee for the legislation that enables us to exclusively serve our vulnerable senior population.

CSFP is a discretionary program funded through annual appropriations. While it is authorized in the farm bill, it receives no mandatory money. As the issue of hunger among our elderly has grown, more and more states have become interested in CSFP. In 1999, CSFP was in 17 states, the District of Columbia, and two Indian Tribal organizations. As a result of the work of interested states and local agencies, Congress has increased the funding to allow expansion into new states, and today CSFP is in 48 states, the District of Columbia and two Indian Tribal organizations (Red Lake, Minnesota and Oglala Sioux, South Dakota). Each month 697,865 participants are authorized to receive a nutritionally balanced food box. The National CSFP Association is working with the two remaining non-CSFP states to submit their plans of operation to USDA and with the support of Congress they will be able to provide CSFP food packages to their low-income seniors in the near future.

CSFP is a unique program which brings together Federal and state agencies, along with public and private entities. In FY 2016, CSFP provided services through more than 150 nonprofit community and faith-based organizations at 1,800 locations across the country. State agencies provide administrative oversight and contract with local and faith-based organizations to warehouse and distribute food, certify eligibility, and provide nutrition education to participants. These local organizations build broad collaboration among nonprofits, health providers, and area agencies on aging to provide easy access to the program. These partnerships reach even homebound seniors in both rural and urban settings with vital nutrition and remains an important market for commodities supported under various farm programs.

The 2013 supplemental report by Ziliak and Gundersen for the National Foundation to End Senior Hunger: *The State of Senior Hunger in America 2011: An Annual Report,* demonstrated that seniors continue to face ever increasing food insecurity challenges despite the end of the recession. For example, recent data from USDA's Economic Research Service (ERS), *Household Food Security in the United States in 2015, Table 2,* shows that 2.9 million (8%) households with seniors age 65 and older experienced food insecurity while more than 1.2 million (9%) of households composed of seniors living alone experienced food insecurity.

A 2013 National CSFP Association survey showed that ½ of the seniors who responded reported that they lived alone with an average income of less than $750 a month. One-half of respondents from two-person households reported an income

under $1,000 per month. Twenty-five percent were enrolled in the Supplemental Nutrition Assistance Program (SNAP) and 50% said that they ran out of food during the month. Seventy percent of senior respondents said that they choose between food and medicine.

Many national studies have indicated that malnourished elderly patients experience more medical complications, have longer hospital stays, and incur higher hospital costs than well-nourished elderly patients. It should come as no surprise that proper nutrition promotes good health, treats chronic disease, decreases hospital length of stay, and saves health care dollars. Studies indicate that seniors are our fastest rising group of hungry in this country. Programs like CSFP can make a difference in fighting hunger among our elderly.

I have been with Focus: HOPE's CSFP since 1981. We provide CSFP food packages to 41,000 senior citizens each month and distribute over 700 tons of food annually. We have four primary distribution centers in our four county service areas, but we also work with almost 300 volunteer distribution agencies as well as individual volunteers to reach those seniors who are unable to make it to our food centers. Community outreach such as this allows us to reach many seniors who would be unable to access the CSFP program and receive the nutritional assistance that they need to maintain their independence and a healthier lifestyle, thus lowering the need for assisted living and increased medical care.

Unfortunately, many of our senior citizens find themselves struggling to make ends meet. Low-income seniors living on fixed incomes are facing an increasingly difficult time making their limited resources stretch to meet all of their daily needs, particularly with getting enough food to eat. They are making daily choices between whether to eat, buy medication, or pay their utility bills because their severely limited income does not allow them to adequately provide for themselves. The average income for a senior on our program is under $700 a month. Many of these individuals worked long and productive lives as cooks, maids, janitors, and other low wage jobs but did not have employers who paid into the [S]ocial [S]ecurity [S]ystem on their behalf. Still others find that the companies that they retired from are no longer in business and the pensions that they thought would be there for retirement no longer exist. Many of our seniors are forced to buy lower priced items at the supermarket, which by itself is difficult considering the food deserts that exists in cities like Detroit, items that are not as healthy for them as the higher priced items that are on the same shelves in the store. Fortunately, USDA has done an outstanding job in making the foods in CSFP healthier by lowering the sodium, sugar, and fat content and that goes a long way to keeping our seniors healthier and independent.

Frederick is a 92 year old World War II veteran and Tuskegee Airman. He honorably served his country, at a time of its greatest need. We are now honorably trying to serve him at a time of his greatest need. For the past 10 years Frederick and his wife have relied on their monthly CSFP food package that they have picked up at Focus: HOPE. Frederick has said, "For me and my wife, Focus: HOPE means food. It allows us to use our fixed income on other needs, like housing and medicine, and still eat at the end of the day." Frederick did not enroll in CSFP until he was 82 years old. He only reached out to us when he had no other choice. He needed help and fortunately we were able to provide him and his wife with a monthly food box. A year ago Frederick's son passed away and recently his wife passed away as well. For many of us Frederick is a hero. We are privileged to be able to help him with CSFP and to be a family to him, especially for all that he has done for us and for our country.

My agency is fortunate that we partner with many others in our community to help our senior participants receive the food that they need. We are able to utilize businesses, schools, and other community volunteers to pack and deliver boxes. Many of the volunteers come in to build boxes for home deliveries and end up providing additional support for the seniors. We've had food drives, donations of gloves, and donations of hats and scarfs in the cold weather months, which are really important because so many seniors dial down their homes in the winter to keep from paying higher energy bills. Gloves, hats and scarfs are not always a given when you have a limited income. Volunteers have adopted low-income senior buildings and bought the seniors Christmas presents. One volunteer group bought fans for seniors living in an apartment building that didn't provide air conditioning to everyone living there. We always encourage our volunteers to talk to the seniors. That visit is sometimes just as important as the food that they are delivering. It shows that someone cares about them and that they are not alone. It also helps the volunteers to understand what many low-income seniors in this country are going through. Not everyone has enough to eat or enough money to pay their medical bills and other

daily living expenses. Not everyone has a reliable car or family and friends to take care of them.

Barbara's story is a familiar one. Seniors who are forced to take care of someone else and in so many cases, grandchildren. Barbara has recently signed up for the first time to receive CSFP benefits. Her husband passed away suddenly. Barbara says, "At this time I'm at a point where I can't afford to pay my medical bills, rent, utilities, and I have a mentally challenged adult son who needs medication as well as every day necessities." Stretching your own resources to take care of yourself is challenging enough, adding someone else makes it almost impossible. CSFP sites offer referrals to other programs and many have connections with other agencies to provide additional help. As Barbara said to us, "After calling Focus: HOPE I was assured that they could help me immediately. Not only did they assist me with food, they treated me with respect and gave me resources to call for additional assistance. I don't know if I could have made it through another day with my crisis. Thank you for understanding and listening to my concerns." Providing food assistance, in many cases, is not enough. Many CSFP agencies network with other help providers and can bring additional assistance to low-income seniors, but as Barbara said it's also understanding and listening to concerns. Too many seniors are by themselves and have no one to talk to. We stress how important it is for our staff to listen and be respectful to the seniors we interact with. Life is very difficult for too many of our seniors. Sometimes they just need to be able to tell somebody their story.

As I stated earlier, volunteers play a crucial role in our program. Volunteer services are increasing because we are able to partner with health organizations and others to bring additional help to our seniors. We have regular events at our sites such as blood pressure checks, cholesterol screenings, annual eye exams, seasonal flu shots, and mobile mammograms, as well as other screenings, which are increasing in our food centers. Income tax assistance and utility bill payment assistance is also being offered to our community, and we are working with our local food bank to provide additional food to our CSFP participants. However, without volunteers we would not be able to do our jobs and reach as many seniors in need that we do. Many seniors are unable to access the additional help that they may need. Reliable public transportation is still an issue in Detroit and needs much improvement. To make matters worse, there are those who prey on seniors in a number of ways. Safety concerns are always a reality for too many of our elderly people so they are often times trapped in their homes or apartments and can't get out. Our volunteers and staff do an incredible job reaching those seniors and bringing them the additional nutritional help they need.

Phyllis is another senior on our food program. Phyllis worked for low wages and took jobs that didn't always pay into [S]ocial [S]ecurity. She needed work and sometimes those were the only jobs that she could find. Now, without a pension and a small [S]ocial [S]ecurity check, she worries about how she will make it from day to day. Phyllis lives alone and has no one to help her. Phyllis says, "If Focus: HOPE would stop distributing food for seniors, I don't know what I would do for food. I can barely afford to pay my household bills, medical bills, property taxes, and car insurance. Once I pay my bills I have only a few dollars left to my name." Phyllis worked all of her life. She did everything right. Now she needs a helping hand. CSFP is a lifeline to so many seniors like her.

One of the blessings of doing the work that we do is meeting the seniors who are on CSFP and getting to know them. They don't complain, they don't blame anyone, they are just grateful that programs like CSFP exist. They don't like to ask for help and many times feel that they are taking something away from someone that needs it more than them. I delivered food each month for years to Annette who lived on Detroit's eastside. Annette was legally blind, she couldn't see much of anything, but, other than that, for the most part she was in pretty good health and was happy to stay in her home by herself. She always loved canned peaches and I would make sure that if we had them, she got them. By the time I last visited with her she was 92 and sharp as she had ever been. We would talk and she was always so grateful for the food and the visit, and the truth is I probably got more out of visiting her than she did. She would make you feel good about things no matter what was going on because she was so positive, but the reality was that she needed the CSFP food to get her through the month. Her family lived out of state so she truly was by herself, but she didn't let that keep her from being upbeat and happy to be alive. The reality is that when you get attached to seniors, you know the day is coming when things may not be so good for them. They may get sick, or worse, but you try not to think about that because we are appreciative for what we have now. One day I called Annette to let her know that I was coming by to bring her monthly food box. Her phone was disconnected. I drove by her house and it was empty. In the 30 days since I last saw her something obviously had happened. I would like to be-

lieve that she came into a lot of money or that one of her relatives from out of state came and moved her out to a better situation, but I guess I'll never know. We grow close to the seniors that we meet and deliver food to and sometimes we don't know what happened to them, but we do it again and again because we know what a difference that box of CSFP food makes for them. We know that for a brief time they know someone cares for them and it makes their day that much brighter. This is the very least that we can do for our greatest generation.

The stories that I have described in this testimony are all too typical for many seniors in this country. The lack of access to high quality food, reliable public transportation, inadequate affordable health care, and too often unsafe neighborhoods collude to make the so-called golden years far less than golden. This is unconscionable for the most prosperous nation in the world. People who have worked all of their lives and have contributed so much to this nation are being neglected and left on their own at a time when they need help the most. Indeed, there is much left to be done to address the issues of hunger and poverty locally and nationally.

Working for others is an honor and a privilege. Thank you, Mr. Chairman and Members of this Subcommittee, for allowing us to do our part by your support of the Commodity Supplemental Food Program. We are deeply appreciative of you, and I know that the seniors who this program has impacted share my great appreciation for all that you have done and continue to do on their behalf. We ask for your continued support of CSFP and for the seniors and others who rely on the program for their most basic needs. Your commitment to this nation's most vulnerable seniors and the leadership that you have shown in this regard will never be forgotten.

On behalf of the nation's Commodity Supplemental Food Program Participants and volunteers nationwide, thank you for this opportunity to present testimony for the record.

The CHAIRMAN. Mr. Kubik, thank you so much for your testimony.

Mr. Tonubbee, please go ahead and proceed with your 5 minutes of testimony when you are ready.

STATEMENT OF JERRY TONUBBEE, DIRECTOR—FOOD DISTRIBUTION PROGRAM, CHOCTAW NATION OF OKLAHOMA, DURANT, OK

Mr. TONUBBEE. *Halito; sv hohchifot Jerry Tonubbee. Oklahoma Chahta Okla ya Illimpa Ahopela I nushkoboka sia. Himak nittak a vla li kvt sv na yukpa.* Hello, my name is Jerry Tonubbee. I am the food distribution Director for the Choctaw Nation of Oklahoma.

The Food Distribution Program serves 93,000 Native Americans each month, about 6,000 in our Choctaw Nation area. They are among our neediest families. I know this program well, from my own personal experience on the commodity programs as a kid. I have come to have a deep respect for this program because it provides vital help to people in need. I am passionate about serving my fellow Tribal citizens who need these services today.

My last name, Tonubbee, is a Choctaw warrior name. This, combined with my other family name of Pistubbee, instill in me a strong heritage of fighting for Choctaw people who need the help the most.

On behalf of my chief, the Honorable Gary Batton, thank you for the opportunity to testify today on the achievements of the Choctaw Nation Food Distribution Program, our challenges, and recommendations on improvement.

The Choctaw Nation serves all eligible Tribal members throughout our treaty territory. That is over 11,000 miles in southeastern Oklahoma. The Choctaw Nation was designated the first Promise Zone in January of 2014. All the 10½ counties located within the Choctaw Nation fell into the USDA's extremely high poverty designation. A large portion of this area is also classified as a food

desert by the USDA. Our statistics on poverty, unemployment, educational attainment, health, and nutrition are among the worst in America. FDPIR is one program that helps to combat those awful statistics. FDPIR is intended to be a supplemental program, but for far too many of our Tribal members, it is their primary source of healthy food. Our FDPIR items have low sodium and low fat content. Our participants receive fresh fruit and vegetables, milk, beans, lean meats, and other items that can be prepared in full nutritional meals.

Using Choctaw Tribal funds, the Nation has built five facilities for food distribution to give our citizens a well-rounded shopping and learning experience in a grocery store setting. Before we built these stores, our people were handed food from the back of a truck. We believe our citizens deserve a more dignified way of obtaining food, and that is why we have invested millions of dollars of Tribal funds to help mold this into this program.

In conclusion, we offer three recommendations that would make food distribution more streamlined, as well as give Tribes critical access to other Federal feeding programs. First, remove the urban place limitations. Some towns within the Choctaw Nation are slightly larger than 10,000 residents, and we have Choctaws that live outside our treaty lands in Tulsa and Oklahoma City. We believe all of our Choctaw citizens should have access to nutritional foods in the FDPIR. Removing urban place limitation has the unanimous support of the National Congress of American Indians.

Second, fix carryover and funding certainty. FDPIR funding can be uncertain and the amounts can change from year to year. This forces us to guess as to what the amount of our Tribal match will be each year. A carryover provision allowing us to carry forward a percentage of our annual FDPIR budget would mean better management. This would also help ease the uncertainty of late Federal budget approvals.

Third, allow Tribes to run The Emergency Food Assistance Program. Providing nutritious foods to our Tribal citizens is of utmost importance to the Choctaw Nation. The TEFAP program would be a good fit, but it does not allow for Tribal administration. Instead, the Choctaw Nation has to apply to the State of Oklahoma. This would subordinate the Choctaw Tribal Government to the state government, and creates inefficient and an impractical relationship. The Choctaw Nation has continually demonstrated our programmatic capacity and our commitment to a Tribe-Federal partnership. We should be on par with the states for TEFAP.

Finally, as you prepare for the next farm bill, your Subcommittee has a unique opportunity to further improve how Indian Country's nutritional needs are met. The Choctaw Nation stands with you and is ready to embrace that opportunity. *Yakoke!*

[The prepared statement of Mr. Tonubbee follows:]

PREPARED STATEMENT OF JERRY TONUBBEE, DIRECTOR—FOOD DISTRIBUTION PROGRAM, CHOCTAW NATION OF OKLAHOMA, DURANT, OK

Mr. Chairman. Members of the Subcommittee. *Halito; sv hohchifot Jerry Tonubbee. Oklahoma Chahta Okla ya Illimpa Ahopela I nushkoboka sia. Himak nittak a vla li kvt sv na yukpa.*

Hello. My name is Jerry Tonubbee. I am the Food Distribution Director for the Choctaw Nation of Oklahoma. It is my pleasure to be here today.

I oversee Choctaw Nation's implementation of the USDA's Indian Reservation Food Distribution Program. Nationwide, this program serves approximately 93,000 Native Americans each month. In Choctaw Nation alone, we serve close to 6,000 Native Americans monthly, including our own Tribal citizens and other Indians who reside in our area. This program serves our neediest families, providing close to $300,000 worth of food each month.

I am honored to serve my Choctaw Nation in this way. I am very familiar with the struggles many of our low-income families go through while trying to put food on the table. My family went through difficult times while I was growing up, and the USDA Food commodity program, as it was called at the time, was very important for my family and me as we all worked to put food on the table. If not for this program, my family would have had to rely on relatives for food, or maybe even go hungry. From my own personal experience, I have come to have a deep respect for programs like this that provide real, practical and vital help to people in need. This program is very personal to me, and I am passionate about serving my fellow Tribal citizens who now need these services. My last name, Tonubbee, is a Choctaw warrior name. This, combined with my other family name of Pistubbee, both instill in me a strong heritage of fighting for Choctaw people. It's my honor to carry on that family legacy and standing up for our people who need help the most.

On behalf of my Chief, the Honorable Gary Batton, thank you for the opportunity to testify today on the achievements of the Choctaw Nation Food Distribution Program, our challenges, and recommendations on how to ensure improvements in the implementation of this program to feed Tribal members around the country through the next farm bill.

FDPIR and the Choctaw Nation

Choctaw Nation is proud to be a partner with the USDA's Food and Nutrition Service to administer the Food Distribution Program on Indian Reservations (FDPIR).

In administering FDPIR, the Choctaw Nation serves all eligible Tribal members throughout our treaty territory—over 11,000^2 miles in southeastern Oklahoma. This is one of the largest, most rural, and highest need Tribal areas in the country. Because of this, the Choctaw Nation was designated as the first Tribal Promise Zone in January 2014. At the time of our application, all of the 10.5 counties located within the Choctaw Nation fell into the USDA's extremely high poverty designation. A large portion of this area is also classified as a food desert by the USDA. No matter how we are measured, our statistics on poverty, unemployment, educational attainment, health, and nutrition are among the worst in America. However, through the leadership and record success of Choctaw Nation, we are using the Promise Zone designation to improve our situation by establishing strong partnerships with Federal, state, and local governments, community leaders, and nonprofits. FDPIR is one program that helps to combat our awful statistics and is crucial to our continued success as a Promise Zone.

FDPIR is intended to be a supplemental program, but for far too many of our Tribal members, it is their primary source of food. When compared to other Federal feeding programs, FDPIR is a healthier choice for our people. Food supplies our citizens receive monthly adhere to strict nutritional guidelines. The food has low sodium and low fat content, and little to no sugar. Things like cakes, pies, and sodas are not available through FDPIR. Our participants receive healthy ingredients each month like fresh fruit and vegetables, milk, beans, lean meats, and other items that can be prepared into full, nutritional meals.

Choctaw Nation has five locations around the Choctaw Nation for food distribution. The Choctaw Nation has used Tribal dollars to build these facilities, in order to provide our citizens a well-rounded shopping and learning experience as they get their family's food supplies for the month. Our five stores are top-notch facilities and provide a real grocery store experience for our citizens. There are also kitchen facilities and cooking classes offered on a regular basis to help teach our citizens how to prepare nutritional meals. Before the Choctaw Nation built these stores, food was shipped to designated locations around Choctaw Nation and program participants were handed their food from the back of a truck. We believe our citizens deserve a more dignified way of obtaining food, and that's why we have invested millions of Tribal dollars to help mold this program into a well-rounded experience for our citizens.

Food and Nutrition Recommendations for the Next Farm Bill

The Choctaw Nation works diligently to administer FDPIR and serve thousands of Tribal citizens each month. However, there are challenges we and other Tribes face in administering this program. We offer for your consideration the following

recommendations that would make food distribution more streamlined and efficient in serving our Tribal citizens. We also offer a recommendation on how Tribal nations should be given access to administer other Federal feeding programs to meet nutritional needs in Indian Country.

1. Urban Place Limitation

The USDA bars us from providing FDPIR to residents of any 'urban place', which USDA defines as any city or town with a population over 10,000. By and large, Choctaw Nation is very rural. However, we have some bustling communities that exceed the 10,000 population threshold. We have to apply for a waiver from USDA to serve our Tribal members in each of these communities. We see this as an unnecessary burden that delays service to some of our neediest citizens. This limitation also excludes our Tribal citizens from receiving services who live outside our treaty territory. Choctaws live in every single state in the U.S., and we also have a large population of Choctaws who live in Oklahoma, but outside our treaty territory. So the large number of our Tribal citizens who live in and around Tulsa or Oklahoma City and need food assistance cannot access FDPIR. They may be eligible to access other Federal programs, but programs like SNAP don't have the same nutritional focus as FDPIR. Removing the urban place limitation from FDPIR would enable Choctaw Nation to better serve those of our citizens who reside in slightly larger communities, as well as Tribal members who live in and around Tulsa or Oklahoma City for whom the Choctaw Nation provides other Tribal services.

The Choctaw Nation has received broad support for this request from other Tribal nations around the country. In 2016, Choctaw Nation passed a resolution with the National Congress of American Indians (NCAI), and it passed unanimously. NCAI is the largest and oldest group of its kind representing Indian Country and its interests. (See *Addendum*) The urban place limitation is a barrier to serving our citizens, even in relatively small communities. Thank you for considering our request that you eliminate this barrier through the next farm bill.

2. Carry-Over and Funding Certainty

FDPIR funding can be uncertain and the amounts can change from year to year. This requires us to seek Choctaw Nation Tribal Council approval for a Tribal dollar match often before we know what the Federal funding amount will be. We ask you to consider a carry-over provision for FDPIR funding in the next farm bill that would allow us to carry forward a certain percentage of our annual FDPIR amount so we can always be good stewards of the funds we are given. This would better enable us to serve our Tribal citizens in a continuous and consistent manner that effectively manages both Tribal and Federal funds. Additionally it would be helpful if we could get annual Federal FDPIR budgets approved in a little more timely fashion. We are often halfway through the fiscal year before we know the final approved budget. A carry-over process would help ease that uncertainty, and forward funding a year ahead of expenditures would greatly assist us in administering FDPIR.

3. The Emergency Food Assistance Program and Tribes

Providing nutritious food to our Tribal citizens is of utmost importance to the Choctaw Nation of Oklahoma. We are looking beyond FDPIR to see how else we can serve our people, and The Emergency Food Assistance Program (TEFAP) would be a good fit for the Choctaw Nation. However, TEFAP does not currently allow for Tribal administration of the program. Under current rules, the Choctaw Nation would have to apply to the State of Oklahoma in order to become an eligible recipient agency. This would subordinate the Choctaw Nation to the state, which would create an unacceptable, impractical and complicated relationship. The Choctaw Nation has continually demonstrated our programmatic capacity and our commitment to a Tribe-Federal partnership through our administration of FDPIR. We ask this Subcommittee to consider amending and expanding TEFAP to allow for Tribal administration, on par with states. The previous farm bill called for USDA–FNS to examine which Federal feeding programs, other than FDPIR, would be a good fit for Tribal administration. However, when this study was done, it focused on programs like SNAP to the exclusion of TEFAP and other programs. We know TEFAP is a much better fit for Tribal communities due to its nutritional guidelines. We recommend that the Congress authorize Tribal administration of TEFAP in the next farm bill.

As you prepare the next farm bill, your Subcommittee has the unique opportunity to further support and improve how Indian Country's nutritional needs are met. The Choctaw Nation is honored by this opportunity to testify before you, and we appreciate your time. We look forward to engaging with you as you develop the next farm bill.

Yakoke!

ADDENDUM



Groundbreaking ceremony on the new Choctaw Nation Food Distribution Center in Broken Bow.



Tribal citizen shopping at a Choctaw Nation Food Distribution Center.



Demonstration and teaching kitchen at a Choctaw Nation Food Distribution Center.

The National Congress of American Indians Resolution No. SPO–16–022

Remove the "Urban Place" Limitation in USDA's Food Distribution Program on Indian Reservations

Whereas, we, the members of the National Congress of American Indians of the United States, invoking the divine blessing of the Creator upon our efforts and purposes, in order to preserve for ourselves and our descendants the inherent sovereign rights of our Indian nations, rights secured under Indian treaties and agreements with the United States, and all other rights and benefits to which we are entitled under the laws and Constitution of the United States, to enlighten the public to-

ward a better understanding of the Indian people, to preserve Indian cultural values, and otherwise promote the health, safety and welfare of the Indian people, do hereby establish and submit the following resolution; and

Whereas, the National Congress of American Indians (NCAI) was established in 1944 and is the oldest and largest national organization of American Indian and Alaska Native Tribal governments; and

Whereas, The U.S. Department of Agriculture (USDA) Food Distribution Program on Indian Reservations (FDPIR) program classifies an "Urban Place" as a town or a city with a population of 10,000 or more people; and

Whereas, Tribal citizens who reside in urban areas can only be served in this program through a waiver process; and

Whereas, Tribal citizens living in slightly larger communities and the metropolitan areas are excluded from receiving nutritious food through the FDPIR program due to the "urban place" definition; and

Whereas, Tribal communities are growing and expanding due to increased economic development to include more Tribal citizens from many Tribal nations; and that there are thousands of Tribal citizens who live in urban areas who are excluded from receiving nutritious and culturally relevant food supplies from the FDPIR program; [and]

Whereas, the FDPIR, which is administered by over 270 Tribes, is a vital program which provides feeding program services and food packages for the most food-insecure Tribal citizens and should be allowed to reach all Tribal citizens in need.

Now Therefore Be It Resolved, that NCAI asks the U.S. Department of Agriculture to remove the "Urban Place" definition and limitation to a population of 10,000 people for the Food Distribution Program on Indian Reservations, allowing Tribal nations and the USDA to work collaboratively to serve even more Tribal citizens who need nutritious food, regardless of where they live.

Be It Further Resolved, that this resolution shall be the policy of NCAI until it is withdrawn or modified by subsequent resolution.

Certification

The foregoing resolution was adopted by the General Assembly at the 2016 Mid-year Session of the National Congress of American Indians, held at the Spokane Convention Center, June 27 to June 30, 2016, with a quorum present.

Brian Cladoosby

BRIAN CLADOOSBY, *President.*

Attest:

Aaron A. Payment

AARON PAYMENT, *Recording Secretary.*

The CHAIRMAN. Thank you, Mr. Tonubbee, for your testimony.

Ms. Kriviski, please go ahead and proceed with your 5 minutes of testimony whenever you are ready. Thank you.

STATEMENT OF DIANE KRIVISKI, DEPUTY ADMINISTRATOR, SUPPLEMENTAL NUTRITION AND SAFETY PROGRAMS, FOOD AND NUTRITION SERVICE, U.S. DEPARTMENT OF AGRICULTURE, ALEXANDRIA, VA

Ms. KRIVISKI. Thank you. Thank you, Chairman Thompson and Ranking Member McGovern for this opportunity to appear before you today. I am pleased to share information regarding the commodity distribution programs, which are part of the nation's safety net of nutrition assistance programs administered by the Food and Nutrition Service. As a Deputy Administrator for the Supplemental Nutrition and Safety Programs, I am the career senior executive overseeing the commodity distribution programs. I have served at FNS for over 30 years at all levels in the organization.

We commonly call the commodity distribution program the USDA Foods programs to emphasize the fact that these programs provide 100 percent domestically produced high quality and nutritious foods. USDA Foods are distributed to a variety of organizations and nutrition assistance programs. Today, I will focus my remarks on the smaller but critical portion of USDA Foods programs that are distributed to low-income households through three farm bill authorized programs: The Emergency Food Assistance Program, or TEFAP, the Food Distribution Program on Indian Reservations, known as FDPIR, and the Commodity Supplemental Food Program, known as CSFP. Additionally, USDA Foods are distributed through FNS' National School Lunch Program and Child and Adult Care Food Program, which make up the bulk of our purchases of USDA Foods.

In Fiscal Year 2016, over 200 USDA Food items, valued at over $2 billion, were purchased from food producers in almost every state, and distributed to program operators across the country. These purchases not only support our agriculture producers and farm economy, they ensure the most vulnerable people have access to nutritious foods through our programs. USDA Foods are 100 percent American grown, meeting the highest safety and nutrition standards, and including high quality fruits, vegetables, dairy products, whole grains, lean meats, poultry, and fish that contribute to a healthy diet.

TEFAP helps supplement the diets of low-income people by providing them with food at no cost. Through TEFAP, USDA offers a variety of food items to state distributing agencies in sizes appropriate for household distribution. States then order food items from the list of available USDA Foods, and provide it to local agencies they have selected, usually food banks, which in turn distribute the foods to local organizations such as soup kitchens and food pantries that directly serve the public. States may also provide USDA Foods to local organizations which distribute foods directly to low-income households.

The Food Distribution Program on Indian Reservations, or FDPIR, provides a monthly package of USDA Foods to low-income households living on Indian reservations and to low-income American Indian households residing in approved service areas near reservations or in Oklahoma. It serves as an alternative to the Supplemental Nutrition Assistance Program, or SNAP, for households residing in areas where food stores may not be readily accessible.

The last program I would like to mention is the Commodity Supplemental Food Program, or CSFP. The 2014 Farm Bill amended the eligibility requirements for CSFP, phasing out Women, Infants, and Children, and transitioning it to a program focused on providing nutrition assistance to the elderly. The program works to improve the health of low-income persons age 60 and over by providing a monthly food package comprised of specific nutritious USDA Foods, which supplement their diet.

Each of these programs are operated as a Federal-state partnership. The Federal Government provides the resources, USDA Foods, and administrative funding to state agencies or Indian Tribal organizations. They are then responsible for submitting orders for USDA Foods and establishing a distribution system to local pro-

gram operators. To procure the food ordered by our program operators, FNS works closely with USDA's Agricultural Marketing Service, or AMS, who serve as our procurement office. AMS follows Federal procurement requirements to purchase and provide USDA Foods in the quantities and the varieties needed to meet the demands of our programs. AMS also identifies and approves food manufacturers, issues and accepts bids, and ultimately awards contracts for the purchase and delivery of USDA Foods ordered by the states.

While the Food and Nutrition Service provides administrative funding as appropriated by Congress to states and Indian Tribal organizations for the operation of these programs, I want to recognize that many state and local organizations, as well as Indian Tribal organizations, also provide financial and in-kind support to help maximize the administrative resources available from the Federal Government. I am proud of the dual mission of the Food and Nutrition Service and USDA Foods program, supporting domestic agriculture and supplementing the nutrition needs of low-income people. These programs play an important role in stimulating the agricultural economy and ensuring the most vulnerable populations have access to high quality, safe, and nutritious foods. I look forward to your questions on the operational aspects of these programs. As you know, I am unable to answer questions on forward looking policy at this time.

[The prepared statement of Ms. Kriviski follows:]

PREPARED STATEMENT OF DIANE KRIVISKI, DEPUTY ADMINISTRATOR, SUPPLEMENTAL NUTRITION AND SAFETY PROGRAMS, FOOD AND NUTRITION SERVICE, U.S. DEPARTMENT OF AGRICULTURE, ALEXANDRIA, VA

Thank you, Chairman Thompson and Ranking Member McGovern for this opportunity to appear before you today. I am pleased to share information regarding USDA's Food, Nutrition, and Consumer Services' (FNCS) commodity distribution programs, which are part of the safety net of nutrition assistance programs administered by the Food and Nutrition Service (FNS). As the FNS Deputy Administrator for the Supplemental Nutrition and Safety Programs, I am the career Senior Executive leading the commodity distribution programs. I have served FNS for over 30 years at all levels of the organization.

Let me begin by expressing my appreciation to you, Chairman Thompson and Ranking Member McGovern, along with other Members of this Subcommittee, for your ongoing support for Federal nutrition programs. I appreciate you taking the time today to highlight these programs that support American agriculture and meet the supplemental nutrition needs of low-income people.

Our programs, which operate as partnerships with state, Tribal, and local service providers across the country, work to prevent hunger and improve nutrition, while also supporting American farmers. We commonly call the commodity distribution programs the "USDA Foods Programs" to emphasize the fact that these programs provide 100 percent domestically-produced, high quality, and nutritious foods purchased by USDA. USDA Foods are distributed through a variety of organizations and nutrition assistance programs. USDA helps families stretch their food budgets and puts healthy foods within reach by distributing USDA Foods to schools, food banks, disaster feeding organizations, Indian Tribal Organizations, charitable institutions and other feeding organizations. In Fiscal Year (FY) 2016, over $2 billion in USDA Foods were purchased from food producers in almost every state and distributed to program operators across the country. These purchases for our programs not only support our agricultural producers and farm economy; they ensure that the most vulnerable Americans have access to nutritious food. USDA Foods are 100 percent American Grown, meeting the highest safety and nutrition standards. They include high quality fruits, vegetables, dairy products, whole grains, lean meats, poultry, and fish that can contribute to a healthy diet.

Today, I will focus my statement on a critical portion of USDA Foods that are distributed through three farm bill authorized programs: The Emergency Food Assistance Program or TEFAP; the Food Distribution Program on Indian Reservations, known as FDPIR; and the Commodity Supplemental Food Program, known as CSFP. USDA Foods are also purchased and provided for use in the FNS' child nutrition programs, such as the National School Lunch Program and the Child and Adult Care Food Program.

TEFAP

The Emergency Food Assistance Program, or TEFAP, helps supplement the diets of low-income people by providing them with food assistance at no cost. Through TEFAP, USDA offers a variety of food to state distributing agencies. States order the food from FNS and provide it to local agencies selected by the state agencies, usually food banks, which in turn distribute the food to local organizations, such as soup kitchens and food pantries that directly serve the public. States may also provide the food to other types of local organizations, such as community agencies, which distribute the foods directly to low-income households. Recipients of TEFAP commodity assistance must meet income-based program eligibility criteria set by the state.

USDA offers states a variety of healthy, domestically grown foods for TEFAP including fresh fruits and vegetables, fruit canned in extra-light syrup, dried fruits, low sodium and no salt added canned vegetables, dried and low sodium canned beans, canned and frozen meats, cereal, rice, pasta, peanut butter, oats, shelf stable milk, and eggs. State and local agencies count on the stability of the TEFAP food offerings. They fill a gap in the variable array of donated foods, supplementing both the quantity and quality of private food donations, which vary greatly throughout the year. TEFAP foods are important to these operations, though USDA Foods only make up approximately 20 percent of foods provided to food banks and other local organizations.

USDA Foods distributed through TEFAP are purchased by USDA using funds appropriated specifically for TEFAP food benefits. In addition, FNS also directs foods from USDA's marketing programs to TEFAP; these are known as bonus foods. USDA purchases these domestically grown bonus foods with funds authorized by Section 32 of the Agriculture Act of 1935. Each purchase is analyzed by USDA and approved by the Secretary to ensure they support American agriculture. These products are then provided to FNS and directed to the TEFAP program, helping to provide larger food inventories for distribution. In FY 2016 USDA Foods donated through TEFAP include chicken, catfish, salmon, eggs, shelf stable milk, cheese, pinto and great northern beans, walnuts, dates, blueberries, cherries, cranberries, grapes, grapefruit, oranges, and potatoes.

In total, FNS provided USDA Foods valued at $623.5 million for distribution through TEFAP in FY 2016. Of that, USDA was appropriated $318 million by Congress and purchased approximately $305.5 million in bonus foods.

During the same period, FY 2016, $54.4 million was appropriated for TEFAP administrative funds, a slight increase from previous year funding levels. TEFAP administrative funds are provided to states to support the storage and distribution of USDA Foods which in turn are provided to local providers, supplementing their operating budget. It is worth noting that many local TEFAP agencies are faith-based organizations and most depend significantly on volunteers to operate their local programs.

The allocation of both TEFAP food and administrative grants to states is based on a statutory formula that considers the states' unemployment levels and the number of persons with income below the poverty level. Each state is responsible for selecting organizations to participate in the program, allocating foods and administrative funds among such organizations, and establishing eligibility criteria for recipients.

I know TEFAP meets a critical and unique need in the nation's food safety net. In 2013, FNS published a white paper that described the impact of TEFAP and found that it fills nutrition assistance gaps for those extremely vulnerable households and individuals who do not typically participate in other USDA nutrition assistance programs. Research found that more than ⅓ of TEFAP participants who used soup kitchens and about ⅕ who used food pantries to obtain emergency food assistance did not report participating in other FNS nutrition assistance programs. Additionally, a report published in 2003 by USDA's Economic Research Service found that households where TEFAP was their only source of food assistance were more likely to face homelessness, have very low food security, and suffer greater hardships relative to other households.

FDPIR

The Food Distribution Program on Indian Reservations, or FDPIR, provides a monthly package of USDA Foods to low-income households living on Indian reservations, and to low-income Indian households residing in approved service areas near reservations or in Oklahoma. FDPIR serves a very food-insecure population, primarily living on Tribal lands; many households participate in FDPIR as an alternative to SNAP because they do not have easy access to SNAP offices or authorized food stores. A report published in December 2014 by USDA's Economic Research Service, *Measuring Access to Healthful, Affordable Food in American Indian and Alaska Native Tribal Areas,* found that American Indian and Alaska Native (AIAN) populations have about twice the rate of nutrition-related health conditions, including cardiovascular disease, diabetes, and obesity, as non-Hispanic White Americans. The authors also found likely sources of healthful, affordable food to be limited in many Tribal areas, a factor that may influence diet and food choices. A USDA study of the characteristics of FDPIR participants completed by the Urban Institute in 2016 found that the percent of FDPIR households with low food security was more than four times U.S. households as a whole (34 percent compared to 8 percent). The percent of FDPIR households with very low food security was also much higher, 22 percent compared to six percent.

FDPIR is administered locally by either Indian Tribal organizations (ITOs) or an agency of a state government. Currently, approximately 276 of the 567 federally recognized American Indian and Alaska Native Tribes and villages receive benefits under FDPIR through 102 ITOs and three state agencies. The ITOs and state agencies that administer FDPIR have to work under unique and often difficult circumstances to provide food and nutrition education to FDPIR participants. Program directors and managers tailor warehouse hours, distribution options, and product selection to the circumstances and preferences of participants. Due to the remote nature of much of the Tribal lands in the United States, program sites often use large trucks to drive food out to central distribution sites and/or provide home delivery for their participants. This allows FDPIR to reach more households in need and effectively deliver FDPIR services to eligible participants that otherwise face transportation challenges. In smaller or less remote locations, some FDPIR programs set up their distribution sites like grocery stores, allowing participants the opportunity to select a variety of nutritious food.

Each month, households participating in FDPIR receive a food package to help them maintain a nutritionally balanced diet. The FDPIR food package allows participants to select from more than 100 domestically grown, nutritious foods in a variety of categories including meat, poultry, fish, dairy, grains, fruits, and vegetables. FDPIR participants also select from about 40 different types of fresh produce through an agreement between USDA and the Department of Defense (DOD), which maximizes efficiencies as DOD produce vendors are already delivering to defense installations in rural or remote areas. In many FDPIR locations, a variety of quality and affordable fresh produce would not otherwise be readily accessible.

The food package also consists of a selection of traditional foods including bison, blue cornmeal, wild sockeye salmon, and traditionally-harvested wild rice. The 2008 Farm Bill first introduced the FDPIR Traditional and Locally-Grown Food Fund. This provision, subject to appropriations, authorized $5 million for use in purchasing traditional foods for FDPIR for FY 2015 and FY 2016. Using the funds appropriated, along with additional FDPIR food funds, USDA purchased over $17 million in healthy, traditional foods for FDPIR participants, much of it from Native American-owned businesses. For example, the Leech Lake Band of Ojibwe and White Earth Nation received awards to provide traditionally harvested wild rice to FDPIR participants. Both ITOs currently administer FDPIR on their reservations. Tribal partners were instrumental in developing first-of-their-kind product specifications that facilitated the purchase of traditional foods for FDPIR as well as sharing information on the USDA Vendor approval process for new Tribally-owned businesses to provide traditional foods to FDPIR. Traditional foods are important to maintaining the appeal of this nutritious food package as well as supporting Native American economies. USDA and FNS leadership meet regularly with elected Tribal leaders as well as FDPIR program directors to review the individual food items in the FDPIR food package.

In FY 2016 FDPIR received a total of $145.2 million to support the program's projected participation levels and food costs and support the acquisition of traditional foods for participants. Since FY 2013, FDPIR has seen an increase of 23 percent in program participation (from 75,600 individuals in 2013 to 93,038 in FY 2016). Participation increases may be attributed, at least in part, to relatively recent policy changes in both FDPIR and SNAP. In FY 2013, USDA published a final rule which expanded the medical deduction for FDPIR and permitted a new income deduction

for shelter or utility expenses. Both changes more closely aligned FDPIR to SNAP eligibility requirements. In FY 2014, a temporary increase in SNAP benefits received from the American Recovery and Reinvestment Act of 2009 expired which may have also caused some SNAP participants to switch to FDPIR. High program participation continues into FY 2017 with the program serving approximately 93,250 individuals in an average month as of November 2016.

USDA provides FDPIR state agencies with administrative funding to support program administrative costs such as eligibility determination, food warehousing and transportation, and nutrition education activities such as individual nutrition counseling, group cooking demonstrations and distribution of recipes for preparing USDA Foods. FNS also annually awards approximately $1 million in Food Distribution Program Nutrition Education (FDPNE) grants in order to enhance the nutrition knowledge of FDPIR participants. Since FY 2008, ITOs that received funding have conducted programs designed to increase fruit and vegetable consumption and physical activity.

CSFP

The next program I would like to talk about serves primarily the elderly. The Commodity Supplemental Food Program, or CSFP, works to improve the health of low-income persons ages 60 and over by providing a nutritious monthly food package that supplements their diets. The 2014 Farm Bill amended the eligibility requirements for CSFP, phasing out women, infants, and children and transitioning it to a program focused on providing service to the elderly. The elderly population faces unique health, social, and nutrition challenges, which can include decreased mobility, limited shopping and cooking ability, and health challenges related to food insecurity. In a 2008 USDA report, the Urban Institute found that CSFP can be a significant source of nutritional assistance for low-income seniors and provide a substantial portion of the food they need each month.

Seniors represent a particularly vulnerable demographic to food insecurity, and the number of food-insecure seniors has increased in recent years. While some seniors may be eligible for SNAP, many are not participating or are receiving very minimal SNAP benefits. In FY 2015, approximately 4.8 million seniors (age 60 and older) participated in SNAP, which represents about 42 percent of seniors eligible to participate in the program.

Through CSFP, USDA distributes both food and administrative funds to participating states and ITOs. CSFP food packages are supplemental and the foods provided are good sources of the nutrients typically lacking in the diets of the elderly population. Food packages include a variety of foods, such as nonfat dry and shelf-stable fluid milk, juice, farina, oats, ready-to-eat cereal, rice, pasta, peanut butter, dry beans, canned meat, poultry, or fish, and canned fruits and vegetables. State agencies that administer CSFP are typically departments of health, social services, education, or agriculture. State agencies store CSFP food and distribute it to public and nonprofit private local agencies. Local agencies determine the eligibility of applicants, distribute and may store the foods, and provide nutrition education. Local agencies also provide referrals to other programs, such as SNAP, Medicaid, and Medicare.

With the funding provided by Congress over the last 3 years, FNS has added nine additional states to CSFP. CSFP now operates in 48 states, the District of Columbia, and on two Indian reservations. Two states, Alabama and Wyoming, do not participate in CSFP and have not submitted a request to do so. If these states choose to participate, additional funds would be required to support such a request without reducing available funding and caseload to other states. CSFP Regulations require FNS to prioritize the caseload needs of currently participating states over requests from new states to begin operating the program. Based on the level of funding currently available in FY 2017, CSFP provides for a participation level of 697,865 nationally.

Conclusion

The impact of these programs is vast. They serve some of the most vulnerable people in our country and directly support American farmers across the country. Without access to these critical programs, many recipients would face higher levels of food insecurity and farmers would have fewer outlets for their products.

The economic impact of these programs is also large. In FY 2016, USDA purchased USDA Foods from 43 individual states contributing $2.2 billion to these states' economies and 2.5 billion pounds of food to families in need across the United States.

While my testimony has focused on the important Federal-state relationships of these programs, I want to recognize and highlight the critical role of volunteers at

the local level that make these programs operate effectively. Local organizations, including faith-based organizations, play a key role as local-level providers for many of the programs. Many state and local organizations, as well as ITOs, also provide financial and in-kind support to help maximize the resources available.

In closing, I am proud of the dual mission of the Food and Nutrition Service and the USDA Foods programs—supporting domestic agriculture and meeting the supplemental nutrition needs of low-income people. These programs play an important role in keeping local agriculture strong, stimulating the agricultural economy and ensuring the most vulnerable populations have access to high-quality, safe and nutritious food.

Thank you for the opportunity to join you today and I look forward to your questions.

The CHAIRMAN. Ms. Kriviski, thank you so much for your testimony. Thank you to all the panel that is here for sharing your expertise.

The chair would like to remind Members that they will be recognized for questioning in order of seniority for Members who were here at the start of the hearing. After that, Members will be recognized in the order of arrival. I appreciate the Members' understanding. I am going to recognize myself initially here for 5 minutes of questions.

I want to start with Ms. Kriviski. This Committee has had numerous hearings about SNAP, and today, we have had a chance to talk about several commodity distribution programs. I want to understand if there is any overlap in the programs that we have discussed here, and why these three programs are needed in addition to SNAP?

Ms. KRIVISKI. Thank you for your question.

As you know, our programs at the Food and Nutrition Service, 15 nutrition assistance programs, really work to complement each program. Where there is a direct overlap really is in FDPIR and SNAP. You do need to choose as a participant what program that you want to go into. They may choose to participate in FDPIR. They may go out of FDPIR and choose to receive SNAP benefits. You are only allowed to be in one of those programs at a time.

The other two programs, CSFP and TEFAP, serve a unique population and serve to fill the gaps that a person receiving SNAP may have. I know you have heard stories of recipients of SNAP running out of food before the end of the month. That is exactly when you would see them going to a food bank or a food pantry and picking up a bag of food stuffs that would help them get through the month until that next SNAP benefit arrives. We also know that seniors participate in SNAP at much lower levels. Right now, we are happy to report we think we have about a 40 percent coverage rate of seniors in SNAP; however, there is a minimum benefit for seniors that is fairly small, $16. You would see those same seniors being able to supplement their SNAP purchases by going through and enrolling in CSFP and receiving a box, as we mentioned, valued at close to $50 of, again, nutritious, healthy food produced by U.S. farmers that they can take home and help them get through the month.

While we know that there is some thought abroad that these are duplicative programs, we would assert that they are there supporting each other and weaving the nutritional safety net that everybody needs to get through the month.

The CHAIRMAN. Thank you very much.

Ms. Calvert, both your testimony and the white paper on the TEFAP program mentioned that nearly ½ of households participating in TEFAP and report that they are not participating in SNAP, and while some of those may be ineligible, can you speak to why households in need may rely on TEFAP and not pursue SNAP? And do you think that households are more likely to access TEFAP on a one time or episodic basis, or are they obtaining TEFAP benefits to meet an ongoing need?

Ms. CALVERT. Sure. I am happy to address that.

First, when we did our last *Hunger in America* survey, we asked clients how many were in a household receiving SNAP benefits? Fifty-five percent of them were, and if we look at the reported income levels of people we are serving, we would estimate that potentially up to an additional ten to 15 percent above that are eligible but not participating. There are many reasons for that. They may be unaware. They might have family assets that make them ineligible, even though their reported income seems like SNAP should be an option for them. Most of our food banks operate either SNAP outreach, or many of them now are doing SNAP application assistance, so it is our goal when people come to us for help to figure out how we can provide services to them, including figuring out what Federal programs they may be eligible for. But as Ms. Kriviski said in her answer to your earlier question, many people are turning to us for food distributions that include TEFAP foods when their SNAP benefits are running out. They are just not lasting long enough, and without enough income coming into the family, they need charitable food assistance to fill that gap.

We saw a big change after 2007, 2008 with a lot of families coming to us for longer episodes of need rather than, we certainly still do see families that come to us because of a short-term economic situation, but 54 percent of the clients that we serve have visited a food pantry for at least 6 months or more when we look at our frequency of use data, and certainly, we don't see that trend abating.

The CHAIRMAN. Thank you. Mr. Kubik, Actually, at this point my time has expired. I will try to follow back around. I have a question that maybe we can talk one-on-one about transportation barriers. I belong to Howard Area Lions Club, I am very proud of it. We operate the food bank in my area, and as a Lion, we do a lot of delivery for folks who have transportation issues. But I will circle back with you individually on that.

My time has expired. I am pleased to recognize the Ranking Member, Mr. McGovern, for 5 minutes of questioning.

Mr. MCGOVERN. Well thank you, Mr. Chairman.

Ms. Calvert, as I mentioned in my opening statement, I am concerned about this group called ABAWDs, or able-bodied adults without dependents, and I am reading from an agriculture report that the Chairman of this Committee spoke to their farm bill summit, and he basically called it the current law that allows able-bodied adults without dependents to collect SNAP benefits for 90 days out of a 3 year period, and he is quoted as saying, "If they are able to work, why would they have 90 days?"

And as I mentioned in my opening, this group is very difficult to define, but extremely vulnerable to food insecurity, and under

SNAP rules, are held to a very strict time limit on the benefits. I suspect that your network serves a lot of ABAWDs, and there is a surprisingly small amount of information on this group. Many of them have barriers to employment like illiteracy or undiagnosed mental illness, or drug dependence, or homelessness, as I mentioned earlier, we know that there are a number of them that are returning veterans who are struggling to reintegrate into society.

So given the nationwide work that your network does for this group, what kind of information do you have on ABAWDs? Who are they, why are they so difficult to reach, and just as a follow up, as I understand it, there are limitations in some places as to how many times per month people can access food packages from food banks. Can you speak to that as well? And if ABAWDs are kicked out of SNAP and there is a limit to the food they can access from food banks, where do these vulnerable adults turn to?

Ms. CALVERT. Thank you for your question.

I would agree that serving able bodied adults without dependents and assessing what their challenges and barriers to employment is a very, very difficult task.

First, it is important to realize that, as you stated earlier, most childless adults on SNAP who can work do so, but there are multiple challenges, including homelessness, physical and mental health limitations, language barriers, lack of educational attainment, as well as unstable employment histories or criminal records that can really complicate the path to employment for many able-bodied adults without dependents. Some of the best data that we have on that is coming from our Food Bank State Association in Ohio, so I would be happy to connect all of the Subcommittee Members with those findings, since it might take some time to go into it here.

[The information referred to is located on p. 629.]

Ms. CALVERT. It is very important that as the Committee looks at this population in the next farm bill, that you really take a look at what data is there on how do we assess what intervention will help an unemployed adult obtain a job, because sometimes it is really not that simple, as you know. Many of our food banks are involved in job training programs. Those are very costly to do right, so there is a lot of work to collectively be done here to address this population.

On the subject of pantries, most pantries that our food banks serve do restrict the number of times people can come to around two or three times a month for food distributions. Frankly, it is because there is not enough food to distribute to everyone coming. There is a real challenge for people when they lose SNAP benefits, because they are going to have limited avenues for that food.

Mr. MCGOVERN. I appreciate that.

Mr. Kubik, there have been rumored proposals for the next farm bill that would change the age of those eligible under the ABAWD rule from 59 to, for example, 65. Given your experience with the older population, are there many low-income hungry Americans between 60 and 65 who can find a job in a 3 month time period so as to maintain their SNAP benefits, and how would such a change affect your organization?

Mr. KUBIK. Well I can speak for the area I live in. I live in Detroit. We represent the metropolitan Detroit area. It is difficult to find work for people under 60 at this point in our area, so the lack of skilled workers is a real problem in Michigan that we can't provide workers for the jobs that are there. I can only imagine that those seniors that are over 60 would have difficulty filling those jobs as well. But even finding the jobs that unskilled workers qualify for, so that would be difficult for our seniors to even try to find jobs like that. Those that can work, do work.

Mr. MCGOVERN. Right.

I will just conclude by saying that this population doesn't fit into a stereotype or a neat generalization. It is a complicated population, and we need to be very careful in this Committee before we start going down a road that may end up adversely impacting many Americans in a way where they will literally go hungry, and there aren't many options available to them when they get cut off of this benefit. I hope we can do a hearing. I hope we better understand who we are talking about, before we do something that we are going to regret.

I thank you.

The CHAIRMAN. The gentleman yields back. I am pleased to recognize Mr. Marshall, for 5 minutes.

Mr. MARSHALL. All right. Thank you, Mr. Chairman.

My first question is for Ms. Calvert. Ms. Calvert, my family has been very involved in this issue on a personal basis. My wife volunteered for the food bank for years. We helped with soup kitchens, Meals on Wheels, taking my kids on the Meals on Wheels trips. Our senior centers are so, so important in rural Kansas, often these are the only meals that they have. We all work together. The grocers work together. It is a beautiful thing. And what I see is that the big success of that is local people helping each other, and that is what I love about the program.

What can we do to accentuate the positive? What can we do to help empower those local people to do more and do what they love doing that we are not doing now?

Ms. CALVERT. I would agree that volunteerism and the commitment to giving back is part of what makes this country great. We see that all the time in our network. In fact, two million volunteers each year are helping at our food banks, and it is significant, I will be honest with you. It is a significant part of the manpower that helps keep a lot of these smaller agencies in local communities going. We know that there is no way that we could do what we do without that, that volunteer army of support.

In terms of supporting volunteerism, I think something that comes up, and I hesitate to raise it because it is not in the jurisdiction of this Committee. The volunteer mileage reimbursement rate is fairly low, and so there have been proposals in past tax bills to raise that, the allowable volunteer mileage reimbursement rate to a higher rate, because a lot of our volunteers are delivering meals. They are helping provide an extra set of hands to deliver things in local communities, whether it is mobile pantries or Meals on Wheels, and the reimbursement rate can be an impediment to volunteers doing more of that.

Mr. MARSHALL. Okay. All right.

My next question is for Ms. Kriviski. In my own communities, it is hard to believe that we have food insecurities. We have mountains of wheat we can't sell, mountains of sorghum we can't sell. They are just sitting there and rotting. In years of plenty like this, is there any type of storage opportunities so we can use this in the future?

Ms. KRIVISKI. What I would say is that FNS and AMS work together to identify both the needs from our participants as they order the food on our approved food list. We have over 200 items of foods that they can order, and to the degree that those foods are on that food list, that is an opportunity. But it is not going to be easy for us to reach down to a food that we are not currently offering and offer assistance. The other aspect of USDA's food purchases rests with purchases under Section 32, which would be looking to do market support purchases for crops in excess, to the extent that the Secretary of Agriculture makes those decisions and provides those foods to AMS, who then turn around and ask FNS if they are suitable to be distributed for households in TEFAP. That is another avenue that it could go.

Mr. MARSHALL. Okay. Probably the two biggest concerns I have now with food insecurity issues in my state are; first, preschool age kids that are not getting adequate nutrition for their brains to develop to their full potential, and weekends, weekends for our kids and the summers to some extent. What are we doing to help reach preschool kids and the weekend kids? I don't know who wants to answer the question first. Ms. Calvert, go ahead.

Ms. CALVERT. Well I will jump in and just talk about the challenge of surveying kids in the summertime. There is a huge gap between the number of children that are participating in the National School Lunch Program for free and reduced price lunch during the school year, and children that are receiving food during the summer. And certainly there are a lot of barriers to that. One of the things that our food banks find, especially in larger service areas, even in the suburbs, but also in rural areas, is that there aren't a lot of waivers to the congregate requirement. This might be an area where some additional regulatory flexibility would enable many, many more food banks to actually participate and be reimbursed through the summer food program, especially in Kansas. This can be a problem. The Kansas Food Bank serves a significant amount of really rural counties there. It costs a lot of money to do that. It is hard to operate a summer meal site if you have 20 kids in one community, 30 in another. It is a little cost prohibitive.

The CHAIRMAN. The gentleman's time has expired. I now recognize the gentlelady from Ohio, Ms. Fudge, for 5 minutes.

Ms. FUDGE. Thank you very much, Mr. Chairman. Let me just first thank my colleagues, Representatives Davis and Goodlatte, for joining me on our annual TEFAP appropriations letter where we requested $329 million for TEFAP, and another $100 million for storage and distribution. I want to thank my colleagues for that.

Mr. Chairman, as I look at where we are and try to pull all this together, if I look at the effects of what TrumpCare is going to do, which is going to make elderly, poor, and sick people pay an awful lot more for their healthcare, they are going to pay a lot more for their prescription drugs. Healthcare may actually send them into

bankruptcy. When I look at the elimination of the Community Development Block Grant, which is going to do away with Meals on Wheels, when I look at the fact that we are going to cut $6 billion from HUD, which is going to put more veterans on the street, more seniors on the street, and more children will become homeless, so if they are homeless, they probably don't have any food either. If I look at the cuts to after school programs that are being proposed in this budget, and the cuts to school nutrition, I am trying to figure out how our Chairman could this morning say that he is willing, "Food aid is one of the things I would cut." Please tell me how you think all of those other cuts that are proposed are going to affect food in this country. Anybody? Let's just start with Ms. Calvert and go down the line.

Ms. CALVERT. Sounds great.

It is a little hard to comment on something when we just have high level details without the specific line items, but there are many valuable programs funded through Community Development Block Grants, Meals on Wheels being one of them, that we would see having a domino impact on communities that we operate in if those funds were cut.

There has been a long standing tradition to fund international food aid through the McGovern-Dole, right.

Ms. FUDGE. What I am really trying to get to is all of those other programs are either eliminated or cut. Certainly it is going to put more strain on the food programs.

Ms. CALVERT. Absolutely. When we look at the number of people that have been able to obtain health coverage and we look at our data on the tradeoffs people say they are making, they are already making tradeoffs between food and utilities, food and medicine. It is not a far jump to realize that a lot of the changes that Congress is considering right now could potentially increase food insecurity and will add to the burdens that many of our organizations feel.

Ms. FUDGE. Thank you. I would like to just try to get everybody a little time to answer. Please, Mr. Kubik?

Mr. KUBIK. When I hear about cuts like this and I think about the seniors that I deal with and we deal with across the country who are making do already on limited resources, they are not always able to access some programs that they could possibly use because of transportation issues, isolation, not being able to get out. We know the strain that we are under when folks come and they need more food than we can provide for them. We can refer them to other networks, but it is difficult.

Any problems in that chain, anything where something disappears and is not there that is there now, just would compound the problem for seniors. The choices, as Carrie said, "about choosing between medicine and food, that is a reality for so many people." If we are going to remove some part of that system, that support system, it is going to be devastating to seniors, making them go to work when they have health issues is going to be difficult. It would be catastrophic to a lot of seniors.

Ms. FUDGE. Thank you. Yes, sir.

Mr. TONUBBEE. Yes, I agree. These cuts would affect things like the summer food programs or the after school feeding programs that our Tribe is just starting to get involved in some of these

things and setting up places where we can feed our children during the summer or after school, sending backpacks home with kids. Cuts to these programs are going to affect those, and not only that, but training programs that are trying to get people back to work, if we make cuts where that would affect those, then it is going to increase our load as far as the number of participants we are going to be trying to serve, because people are not able to find jobs if they are not able to get trained.

Ms. FUDGE. Thank you very much. I am not going to put you on the spot, Ms. Kriviski, but if you would like to respond, go right ahead.

Ms. KRIVISKI. I would just say the Federal nutrition safety net depends on all the strands being there. Once those strands are gone, there are gaps. And when those gaps need to be filled, they turn to our programs, and I would expect an impact on both TEFAP and the mandatory side with the mandatory formula, it would actually ratchet up the need for additional funding. For FDPIR, the same aspect would occur, and on a discretionary side for CSFP, which is entirely discretionary, it would make it very difficult for that program to grow under constraining discretionary spending.

Ms. FUDGE. Thank you very much. I yield back, Mr. Chairman.

The CHAIRMAN. The gentlelady's time has expired. I now recognize the gentleman from Arkansas, Mr. Crawford, for 5 minutes of questions.

Mr. CRAWFORD. Thank you, Mr. Chairman.

Mr. Kubik, in your testimony you mentioned both home delivery and pick up of CSFP food packages. Can you talk about the distribution process and give us a little more detail on that?

Mr. KUBIK. Yes, thank you for the question. Yes, a lot of our seniors can't get to our sites. We have four fixed sites, but we cover four counties so it is hard to expect folks to drive to our sites. A lot of them don't have reliable transportation and public transportation in our areas is limited. We work with groups, and not only our volunteer groups and ourselves, to get our food to our seniors who are homebound, or take it to their apartment building. We are fortunate that we have a lot of support in the community from some of the businesses there, because our organization doesn't have the resources by itself to reach all these homebound seniors. We are able to reach them through the volunteer groups and through our own staff. And once that senior is signed up, we can also assign a proxy. That senior can choose a proxy to pick up the food for them during the certification period. If that senior has health issues, doesn't have good transportation, they can have a proxy pick up the food. But it is important that we get that senior initially the first time, so we get a lot of calls from folks who may be blocks away from our sites. You get approximately 30 pounds of food. If you don't have a car, like I said, our public transportation is lacking in our area. It is difficult for seniors to get out. There are safety concerns as well because so many people prey on seniors, take advantage of them. We have a network in place working with the other groups in the area, not only, again, nonprofit groups, but businesses who step forward, some of the schools will help out also with getting the food to the homebound seniors and those in apart-

ment buildings. We are very fortunate we have a network in place that can get to those seniors.

Mr. CRAWFORD. Are there any particular policy changes you would advocate for us to consider?

Mr. KUBIK. I can just speak from, again, my program on this one, but the process is pretty fair with that proxy allowance for the seniors. If that wasn't in place, that would be difficult to allow those seniors to get to us because they just couldn't physically come to our site. As long as that proxy is there and we can send the trained volunteers or staffer to that senior's home, we can sign the person up and get the food to them.

Mr. CRAWFORD. Excellent.

Ms. Kriviski, in your testimony you mentioned the various types of commodity foods available in each of the programs. How does USDA evaluate the nutritional value of the foods provided through CSFP, TEFAP, and FDPIR? What I am asking, are there ways the Department is working to improve nutritional quality?

Ms. KRIVISKI. We have undertaken a 10 year review of all the offerings of USDA Foods, and we are very pleased to report that of our 200+ USDA Foods, what we offer today to all of the programs that use USDA Foods are lower in salt, sugar, and fat. We have completely changed the nutritional profile of our offerings. As some of our witnesses testified today, we have a number of nutritionists on staff at FNS that continue to provide technical guidance and advise as needed. We also produce a number of nutrition education products that are available to the public at no cost. This is a continuous process. We will continue as we look at additional foods to add or subtract to look at the nutritional profile to make sure that it fits within the nutritional standards for the *Dietary Guidelines for Americans* and other nutritional advice.

Mr. CRAWFORD. Okay, thank you.

Anybody who wants to comment on this: in many cases, food preparation is just as important as the type of foods selected or distributed, so I am interested to hear from the panel about current efforts underway, educational efforts that have shown to have been effective. Ms. Calvert, it looks like you want to weigh in on that, and can you give us your views on practical, easy to understand, nutrition education recommendations and how they benefit your constituents?

Ms. CALVERT. Sure. We have really focused on trying to involve the entire family in either the food distribution or nutrition education process. We know that when families are able to—actually, there are a bunch of models here in D.C. that all of our food banks operate this, especially in your state as well. They have been really active in implementing Share Our Strength's, Cooking Matters, a nutrition education module that I think has made a real difference. But by involving the entire family having a demonstration of here is how to cook the meal, everyone tastes it, here is the recipe card, here is the food distribution from the food bank to take this home so that you can cook this meal yourself, it is a lot easier to educate people on the fruits and vegetable that we are distributing. We are distributing over 1 billion pounds of fresh fruits and vegetables every year. I know how much effort it has taken my children to be willing to even look at spaghetti squash covered in meatballs and

spaghetti sauce, so certainly our food banks are really, really aware of the need to focus on this.

Mr. CRAWFORD. Thank you. My time has expired. I yield back.

The CHAIRMAN. The gentleman yields back. I am pleased to recognize the gentleman from Florida, Mr. Soto, now for 5 minutes.

Mr. SOTO. Thank you, Mr. Chairman. As we all know, since 1996 there has been a work requirement in the SNAP program, able-bodied adults without dependents have to work. The only exception is with age or disability or other specific reasons that are proved. All we are talking about in the potential reform is about whether able-bodied adults without dependents can qualify for a limited exception of 3 months in a 3 year period. And so my question for Ms. Calvert and Mr. Kubik is do you know what the percentage of SNAP recipients are that are able-bodied adults without dependents, and based upon that, do we know what the savings would be in benefits and the additional costs if we were to take this segment and limited 3 month exception out of the program?

Mr. KUBIK. Thank you for the question. That question is kind of difficult for me to answer in that a lot of our seniors, the qualifications are different for CSFP and SNAP. Without knowing every senior's financial state, I couldn't tell you whether they all qualify. I don't know what impact this would have particularly on CSFP. But as I mentioned earlier, it just seems it would be very difficult for seniors to be in the workforce, and I said those that can work are working that need a job, but jobs are hard to find and, realistically, it would be difficult for our program's participants.

Ms. CALVERT. I would just add that one of the most important things to look at when you are focusing on that is, what are the barriers, how recent have the able-bodied adults without dependents that are on SNAP been employed? About 75 percent have either been working in the year before or after they have received SNAP, so one of the things when we look at this population, we realize that most of them are living in extreme poverty, averaging, in fact, less, and are not eligible for many other government supports. I think that is the thing that I would like to focus on there. There is a real need to examine what meaningful employment and training means, and what the barriers are to obtaining employment for this population.

Mr. SOTO. Thank you.

Ms. Kriviski, since you are the numbers person from USDA, what is the percentage of SNAP recipients that are able-bodied adults without dependents?

Ms. KRIVISKI. While I am the senior executive in charge of programs we are talking about today, I am not overseeing SNAP, but I can certainly go back and get that number for you.

Mr. SOTO. And so we don't know today what the savings would be and the benefits or the additional costs to the program if we exempted out this limited 3 month every 3 years exception?

Ms. KRIVISKI. Thank you.

Mr. SOTO. I would just say, Mr. Chairman, these are numbers that we would have to have in order to make an informed decision on whether we can eliminate this limited exception to the work requirement for the 3 month every 3 years period so that we can make this decision with all the information.

And I yield back the remainder of my time.

The CHAIRMAN. The gentleman yields back. I would also note that we are really here looking at these three programs, and quite frankly, I don't think we are drawing any conclusions. That is the purpose of hearings, to try to flush out details and good information so that, going forward, we can set good policy based on good information.

So I am pleased to recognize the gentleman, Mr. Davis, for 5 minutes.

Mr. DAVIS. Thank you, Mr. Chairman, and thank you to all of my colleagues who are talking about an issue that has been very important to me over my 4½ years as a Member of this Committee. I am very appreciative of my good friend, Ms. Fudge, who is one of my co-leaders in trying to ensure that our TEFAP funding is stable for those who need it the most, those in districts all throughout this country who use this program, and we need to continue to make sure the funding is there to get that food to those who can't afford to get it themselves.

Ms. Calvert, you spoke to the Committee about the need for additional TEFAP support in a more stable manner in the next farm bill. Can you maybe just elaborate on that point?

Ms. CALVERT. Sure. The 2014 Farm Bill included an additional $205 million over 10 years for TEFAP. Now most of that funding was front-loaded, in Fiscal Year 2015 there is an additional $50 million for TEFAP, then the next year $40 million, then it went down to $15 million. The idea behind that was to hopefully as the economy improved and more people were obtaining full-time employment, food banks would be seeing an alleviation of demand for their services as the TEFAP funding went down. Unfortunately, we haven't seen that. A lot of people that have gone back to work, it has been more part-time or seasonal employment, and since it is not in the baseline, we are really starting over in terms of advocating for more TEFAP funding in the next farm bill.

Based on the demand patterns we are seeing at our food banks, we feel that it would be definitely a much more reliable source of support for our food banks if the baseline funding for TEFAP was increased per year, rather than a one-time infusion that is scaled down. If we are not seeing demand scale down, then that might not be the best policy approach.

Mr. DAVIS. Okay. You also note that currently TEFAP administrative funding is appropriated at about ½ of its authorized level, and that provided funds account for just 23 percent of the cost of distribution of food banks.

Ms. CALVERT. Yes.

Mr. DAVIS. And my good friends in Springfield, Illinois and Champaign, Illinois, Pam and Jim do an excellent job of advocating on behalf of Feeding America. I want to ask on their behalf if additional funds were appropriated for TEFAP administration, what improvements or changes could the food banks in your network make?

Ms. CALVERT. Sure. TEFAP storage and distribution, to find out that 23 percent number, we really look at, food banks report to us their operating expenses for all sorts of things. We black out all the other expenses that aren't related to TEFAP and what is your staff,

your refrigerated trucks, your storage costs, your gas, it costs money to get food to people, obviously. The fact that it is only covered at 23 percent, that means the food bank is using privately raised dollars that could be going into backpack programs, SNAP outreach, job training, weekend feeding or summer feeding programs, and instead, they are needing to use those funds for that shortfall.

So I definitely don't want to put words in Jim's mouth because he has——

Mr. DAVIS. Oh, you don't have to.

Ms. CALVERT.—an excellent food bank, and I know he is not afraid to tell you what those additional funds would mean to him, but those are some of the tradeoffs that a lot of our food banks have to make. Road Runner Food Bank in New Mexico, they have their own long haul truck because it costs so much to get food across the state. I mean, a significant amount of money that they are having to make up there.

Mr. DAVIS. Obviously, you have some experience working with many of the individuals that I serve who serve our communities with very important programs, so thank you for your willingness to work with those food banks in the district I serve, and thank you for your willingness to work on these issues, and to each of you for being here today. I yield back.

The CHAIRMAN. The gentleman yields back. I am pleased to recognize the gentleman from California, Mr. Panetta, for 5 minutes.

Mr. PANETTA. Thank you, Mr. Chairman. I appreciate that. And thanks to all the witnesses for being here and taking the time to prepare and actually coming here and testifying. Thank you very much.

I hail from the central coast of California. As my colleagues are going to get sick of me saying, we are the salad bowl of the world. A number of diverse crops, fruits, vegetables, you name it, we got it. Obviously our food banks there have pretty easy access to these fruits and vegetables that are there; first, because of the geography, and second, because the growers have actually stepped up and donated a significant amount of their products to these food banks, which is fantastic.

But I would imagine there are other places throughout our country that don't have as easy of access to fresh fruits and vegetables, and so my question to anybody who would be willing to answer it would be: are there any steps that have been taken recently in order to make sure that fresh fruits and vegetables are accessible to seniors or other people who qualify for these programs?

Mr. TONUBBEE. No, the Choctaw Nation and the FDPIR program, we are provided fresh fruits and vegetables through a DOD program that is shipped directly to our stores. We order weekly and allow our clients to come as often as they want to our stores to shop so they are able to get fresh fruit and vegetables on a weekly basis. Seniors, whoever, all of them have the availability of fresh fruits and vegetables.

Mr. PANETTA. Good.

Ms. CALVERT. We have really found that USDA does a great job, especially when there are bonus commodity opportunities. If there is an easy way to distribute that as a fresh fruit and vegetable to

the food banks or the TEFAP agencies in the area, they definitely will. But, the nutrition profile of many of the fruits and vegetables that are offered through TEFAP, fresh is great, but just access to fruits and vegetables is amazing. And especially if our food banks are able to combine that with locally sourced fresh fruits and vegetables, I think that really makes for a powerful combination.

Mr. PANETTA. All right.

Mr. KUBIK. What we do at our agency is we are fortunate the local food bank does give us about 1 million pounds of fruits and vegetables every year. It is not enough to serve all of our participants, but it is nice to have that for those who are there when the trucks arrive from the food bank. But we also encourage our participants to use, if they are participating in SNAP and CSFP, consider using CSFP for the goods that we can provide and use SNAP for the fresh produce and the items that we don't have. We also work with our farmers' market in Detroit so that during the summer season, they come to our site once a week and they do accept the SNAP card, the bridge card in Michigan, which you can use that to get your produce also.

We are trying to come up with ways to bring produce into the community. We are in a food desert. We are hoping that working with our partners like our food banks, our farmers' market, that we can get fresh produce into the hands of seniors.

Mr. PANETTA. Great.

Ms. KRIVISKI. I just want to mention the DOD program. We are very proud that we are in partnership with DOD to provide fresh fruits and vegetables, both to the National School Lunch Program, as well as FDPIR. We are up to offering over 42 kinds of fresh fruits and vegetables to our Tribal members. In addition, we purchase, as Carrie mentioned, large truckloads of fresh apples and different fresh produce that can go into TEFAP, and then last, another one of those programs that supports CSFP is the Senior Farmers' Market Program, and that is a good connection between CSFP and the Senior Farmers' Market Program.

Mr. PANETTA. Outstanding, great. Thank you all again. I yield back my time. Thank you, Mr. Chairman.

The CHAIRMAN. I thank the gentleman. I am now pleased to recognize the gentleman from Florida, Mr. Yoho, for 5 minutes.

Mr. YOHO. Thank you, Mr. Chairman. I appreciate you all being here, and I appreciate the work you do. Being a recipient of food stamps a long, long, long time ago, I understand the importance of that and I appreciate the outreach that you guys do and the education.

Ms. Kriviski, as we have talked about many times in this hearing about we have had multiple hearings on SNAP, and today we have had a chance to talk about several commodity distribution programs. I want to understand if there is any overlap in the programs we have discussed here, and why these three programs are needed in addition to SNAP? What are your thoughts on that?

Ms. KRIVISKI. First let me start with the three programs. There is a choice to be made for our participants between participating in the SNAP program and FDPIR, so it is either one or the other. It is not both together. The other two programs, CSFP and TEFAP, can be used in conjunction with the SNAP program, and in fact,

what we know is that the SNAP benefit, as it goes through the month, we have families and individuals running out of food and they would access the TEFAP program to fill that short food gap, maybe for a week or 2. It may be a one-time hit or it may be that they go to the food bank almost monthly towards the end of the month when they run out of food.

Similarly, the senior participation in the SNAP program is fairly low, and the minimum benefit is around $16. And so we would see CSFP as supplementing and complementing the SNAP program, and being able to provide 100 percent domestic foods to our seniors to be able to take home, shelf stable, would last a little longer.

Mr. YOHO. Thank you.

Mr. Tonubbee, did I say that right? What programs did you say gives funding for the fresh fruits and vegetables?

Mr. TONUBBEE. Sorry, it is the DOD program, Department of Defense.

Mr. YOHO. That is what I thought. I wasn't aware of that.

And then again, Ms. Kriviski, it is my understanding that there are differences in types of products allowed under each of the three commodity distribution programs that have been the focus of today's hearing. Can you describe why there are differences and what commodities are available?

Ms. KRIVISKI. Certainly. I do want to clarify that the funding for the DOD program is actually our funding. We pull it off of the funding that FNS receives, and it is set aside for our Tribes to order fresh fruits and vegetables through DOD.

The reason that there are: first let me point out that there are over 40 types of products that are available to all three programs. In addition, the programs both have a specific population they are trying to reach, and they have specific construction. CSFP and FDPIR is a defined food box with categories of food that need to fit in it. FDPIR actually has the most offerings from our food, because we are trying to replace what they might have accessible in a food store. They have a wider variety to be able to fit into a fuller package. For CSFP, the package contents have evolved over time and historically. Both CSFP and FDPIR package have a very high nutritional profile. Our Healthy Eating Index at USDA suggests that it is over 70 percent in terms of the nutritional profile. For a normal American, we are usually around 50 percent.

And then finally, TEFAP is a completely demand driven system. We offer foods that states can choose to take or not take, so they really have a shopping list that they can go through. And a lot of their choices depend on what they know they are already getting or they anticipate getting in the public side of donations.

Mr. YOHO. Thank you.

Ms. Calvert, one of the things I have seen in our district is the big food trucks, the semi tractor trailers will show up and they will go to an area that there is a lot of homeless people, and they will give out frozen chickens or frozen goods, but people don't have ovens or refrigeration to store them in. When you look at a program like that, we want to be as efficient as we can. Have you guys got safeguards to prevent those kinds of things?

Ms. CALVERT. Yes. This might be dangerous to make this statement, but I feel fairly——

Mr. YOHO. We do that all the time.

Ms. CALVERT.—confident that our food banks in your district are not distributing frozen chicken out of a truck to a population that does not have the facilities to cook them.

Mr. YOHO. I have seen that. I have been there, and it was like come on, guys.

Ms. CALVERT. Right. No, and I don't doubt that there are some food distribution programs that do that, and they mean well, but it is very important to know who you are serving. Certainly, many of our food banks, the food we would distribute to a homeless population through a mobile pantry would be a lot different than the food we would distribute like in a school setting or to a family.

Mr. YOHO. I agree. Okay.

Ms. CALVERT. All of our food banks are required to undergo a third party scored food safety audit with us. They have a contract with us. There are plenty of regulatory safeguards in place with the TEFAP program as well, and we audit our food banks every year to make sure they are in compliance with it.

Mr. YOHO. Thank you.

Ms. CALVERT. Yes.

The CHAIRMAN. The gentleman's time has expired.

The chair wants to take a point of personal privilege, given the fact that nutrition matters and farmers feed, we have been joined at least for a short time by members of the Pennsylvania FFA leadership, so we welcome them and thank them for being a part of our future of being able to grow this food that we are talking about how we get it to Americans in need.

And keeping with the Pennsylvania theme, it is an honor to welcome my colleague from Pennsylvania and recognize him for 5 minutes of questioning. Mr. Evans.

Mr. EVANS. Thank you, Mr. Chairman. I would like to start off with a question and go to the three organizations, starting with Feeding America. What is the typical profile of the people that your networks serve, and how has that profile changed over the recent years?

Ms. CALVERT. Thank you for your question.

In some ways, there is no typical profile, but we do know some things about our network and who we are serving. There are 46 million people that we are serving, 12 million children, seven million seniors. Thirty-nine percent of people we are serving have a child in the household under the age of 18. One in three households that we serve has a household member that is a senior over 60 years of age. Many people that we serve are working. I think that is what I really want to focus on. More than ½ of the households we serve have had one or more people in the household employed in the last year. Nearly ¾ of people we are serving live at or below the poverty line. I want you to realize that many of the people we are serving are working or want to work.

The other challenge that we see is that many people might be making too much to qualify for Federal help and they may not qualify for SNAP nutritional assistance, and so they may need to turn to the food banks. You have some great ones in your district. Philabundance is one of our members in Philadelphia, and I know

they serve many of the working poor that may not qualify for SNAP.

Mr. KUBIK. Our program serves seniors 60 and over. The typical senior has the income on our program of about $750 a month or less, and about ½ of them live alone. Their challenges are trying to make ends meet on a limited income, choosing between food, medicine, utilities. One of the biggest calls we get for help is for utility assistance, which is why we have a utility provider now who is on our site offering that assistance. But even in home repairs, there are so many challenges seniors have, transportation issues. Food is just one of many, and so we try to inform people either through advocacy or through our volunteer network. A lot of volunteers come in and want to package food or do a home delivery, and they sometimes think that may be the only issue seniors have is not having enough food. We try to let the senior talk to that person and say what their needs are beyond food. And so many seniors, we find out, that food is just one of many issues that they have.

Mr. TONUBBEE. Obviously as a Tribal organization, our profile is 100 percent Native Americans, or at least there has to be one household member that has to be a Native American. There can be a child in the household or a mother that is not Native, but there has to be at least one Native in the household. Most of the time their employment is challenged in our area. It is a high unemployment area for our Tribal members. We run anywhere from 25 to 75 percent higher unemployment rate than the state does. It is just low-income people that are having difficult times, basically are the profiles of our people.

Mr. EVANS. Ms. Calvert, can you shed light on Feeding America's work on food waste and the importance of Federal incentives for food and fund donations?

Ms. CALVERT. Yes, I would love to talk about that.

I like to say that we have been involved in trying to reduce food waste since it became a hip issue for people to focus on, but it is really a matter of how do we use our resources wisely. With 70 billion pounds of food being wasted every year, obviously there is a lot at stake to try to get this nutritious food to people in need, especially when you look at where a lot of the available food is. There are a lot of nutritious fruits and vegetables, dairy products that are being produced that are not being connected with people in need, so we have been really focused on what are the improvements that we need to do with programs or Federal policies to help strengthen that connection.

Oftentimes it might cost a grower actually more money to donate food than it would to till it under. In Pennsylvania you have a lot of dairy, so it can cost money to get it pasteurized and bottled and to a food bank if you have excess fluid milk. Federal incentives, either tax incentives or making it easier for additional food to be donated can have a big role to play there.

Mr. EVANS. Thank you, Mr. Chairman.

The CHAIRMAN. I thank the gentleman. I am pleased to recognize the gentleman from Kentucky, Mr. Comer, now for 5 minutes.

Mr. COMER. Thank you, Mr. Chairman. Before I ask a question, I just want to address something that was mentioned earlier in the Committee about the President's proposed budget cuts, specifically

Meals on Wheels. That is something that is very important in my district. I represent a poorer district. I have parts of Appalachia all the way to the river counties on the Mississippi River, in a very gerrymandered district that is 6 hours from east to west in the district.

One good thing that happened when that cut was announced was Meals on Wheels got a record amount of private donations overnight, and I think that is because people recognize that is a good program. It is a needed program. But in the future, we are going to have to tighten our belts in Congress. I mean, the debt rapidly approaching $20 trillion, that is not sustainable. It is immoral what Congress in the past has done to our children and grandchildren.

So having said that, I support the SNAP program, but I am wondering, Ms. Kriviski, are there duplications of services? Are there things that we can do to make this more efficient? And let me add this. I was Kentucky Commissioner of Agriculture. One of our divisions was commodity distribution. We had a commodity distribution program, and knowing how that was administered, knowing who was eligible, who was not eligible, is there a duplication of services? Are there things that we can do to be more efficient when we craft the next farm bill?

Ms. KRIVISKI. Well, as I have said, I believe that our programs are designed to complement and support each other, and not overlap or duplicate each other. The programs that we are talking about today, FDPIR, cannot be duplicated with SNAP. You have to choose to either be in one program or the other. It is a very clear line there.

For CSFP and TEFAP, they really do support the gaps in somebody's ability to get through the month on a SNAP benefit. We know that we see an increase in food stamp lines, frankly, towards the end of the month when they run out of food, and in CSFP, we know that seniors don't participate at a very high rate and they are actually more encouraged to take a box of food that is grown by American farmers. We know some of the challenges for seniors participating in SNAP, and one of them is the stigma of receiving a cash benefit. But they feel like they are supporting American agriculture by participating in CSFP and getting domestic food.

Mr. COMER. Okay. Thank you, Mr. Chairman. I yield back.

The CHAIRMAN. I thank the gentleman. The gentleman yields back. I am now pleased to recognize Ms. Lujan Grisham, for 5 minutes of questioning.

Ms. LUJAN GRISHAM. Thank you, Mr. Chairman, and thank you to the panelists.

I ran in New Mexico the then-State Unit on Aging or state agency, and it became a Department, I was the Cabinet Secretary of Aging and Long-term Services for 14 years, over several different gubernatorial Administrations. I remember being in your position and talking to legislators and realizing as somebody who knew the aging services, that while we were receiving funding from a different Federal Government entity and through the Older Americans Act, and it does home delivered meals for seniors and it does congregate meals, that I quickly realized that the seniors who were coming in for a congregate meal were often getting that one meal

a day. And for the home-delivered meals, they were getting one lunch and no breakfast, no dinner, and no weekend meals. And I proposed that if we were really trying to address hunger, then we should be providing three meals a day. But I don't get funding for three meals a day, so I asked the state legislature to fund that. And I spent year after year after year trying to explain how the number of individuals served was "X," but the amount of money we were spending on those meals was "Y," was much larger than they anticipated. Until they actually met these folks, right, who we were for years and years and years not talking about, that we were just under this program giving them one meal a day. And so literally they are starving.

I think about how we want to make sure that we don't have redundant programs. We don't want there to be any administrative waste. I actually go nuts about that. And that we all recognize that we have to make tough choices, but there is a sense that there are so many easy ways and that it is all duplicated, and that in fact we are overfeeding or over-providing. And I live in a state, as you mentioned, Ms. Calvert, that since I have been in Congress is either the hungriest state in the nation, or it has the hungriest children in the nation, or is second or third. All untenable and all unacceptable. And in fact, today while in Congress, because we also have the highest unemployment, and some of the most difficult challenges of any state in the country, the state dollars that I got appropriated are all gone. We are back to the same situation that we resolved to the degree that we could where people get, if they are lucky, one meal a day and the next person on the waiting list gets a meal when that person goes to a nursing home, their family moves them away, or they die, which is terrible.

I am really grateful that we are as a Committee, as a whole, talking about ways to make sure that food is getting to who we need it to go to. I also appreciate that we are doing lots in private donations, but it is not sustainable, and people want food, and you made some very practical points, Ms. Calvert, about sometimes you can't even get food, fresh food, but we are not getting cash and we are not getting distribution and storage efforts by grocery stores and by farmers, because they can't do that. And so I am delighted to hear that we have at least one Member, one of my colleagues, who is interested in figuring out what we do with $100 million authorized in TEFAP, but only $50 million appropriated.

I had a bill, H.R. 4967, the Food Bank Assistance Act of 2016 that we are reintroducing again this year that says spend the $100 million, because now you are addressing hunger, because you are getting food to the places that you need it to get. I have a state with many, many Tribal nations, 22. You have opportunities to deal in these remote and rural areas, and in addition, I want there to be more food because without changing the amount appropriated in TEFAP for actual food, we are not meeting the need.

I am in favor of at least a 57 percent increase. Instead of $338 million, it ought to be $500 million. And we really need to be leveraging, and then we can talk about the impacts we are having at reducing hunger, and helping folks move.

I haven't left anybody any time, which is typical for me and I don't mean to, but I get a sense that the whole panel sees the ben-

efit of making sure that we can store and distribute food, and that the bulk of our money is getting to food purchases that are getting into the hands and bellies of the people that we want to make sure don't go hungry. Yes?

Ms. CALVERT. I would agree. Thank you for your past support. Obviously we are big supporter of the Food Bank Assistance Act of 2016. We think it is a great way to augment what the other Federal nutrition programs do in fighting hunger, and I can just say that I am 100 percent confident that our food banks can safely receive and distribute any additional allocation that is provided.

Ms. LUJAN GRISHAM. I guess everyone is yes. Thank you, Mr. Chairman.

The CHAIRMAN. The gentlelady's time has expired, and she did get at least one opportunity to hear from a witness.

Ms. LUJAN GRISHAM. I am getting better.

The CHAIRMAN. You are getting better, absolutely, and I appreciate it.

I am pleased to recognize the gentleman from New York, Mr. Faso, now for 5 minutes.

Mr. FASO. Thank you, Mr. Chairman. I hadn't thought to ask this question, but I noted in terms of Ms. Calvert's organization that you have over 200 food banks in your organization, and many other local organizations are affiliates. And one of the more satisfying things I did as a private attorney a few years ago, obviously before I got elected to Congress, was to set up a 501(c)(3) for a local food bank in my area. And it just occurred me, I wonder are most of your 200 food banks incorporated as 501(c)(3)?

Ms. CALVERT. Thank you for your question.

Feeding America is the national network. We are a 501(c)(3) association. Our member food banks are also 501(c)(3). They have a contractual relationship with us as part of our network, but they are also all their own individual 501(c)(3) organizations.

Mr. FASO. Good. Okay, and Ms. Kriviski, I am particularly interested in the commodity program that you mentioned in your testimony in terms of your dealings with the states and the distribution. It mentions that you have enough money for approximately just under 700,000 participants annually. How much was appropriated for the program in the last fiscal year?

Ms. KRIVISKI. The last fiscal year we were provided a total of $222 million, and $45 million of that was for administrative costs and $176 million of that was for food purchases. In the ongoing CR, there was an anomaly that provided some additional funding for 2017, so our total funding stream is now up to about $236 million.

Mr. FASO. And that $45 million that you mentioned for administration, is that at both the Federal and state level?

Ms. KRIVISKI. No, that goes directly to our state agencies who turn around and pass it down to the local area agencies.

Mr. FASO. I see, and are you satisfied that that level of administrative spending is appropriate?

Ms. KRIVISKI. I would turn to Mr. Kubik for that answer, but I would say that it has been stabilized over many, many years. That is not an amount that has grown over the past 10 years.

Mr. FASO. And are the almost 700,000 participants that you mentioned in your testimony, what do you think the actual need would be out there compared to the 700,000 who are receiving it?

Ms. KRIVISKI. The issue about CSFP is it is neither statewide or nationwide, and so while we are serving about 700,000 participants, we know that many of our states, we have 48 states participating right now. Many of our states, if they felt funding was available, would be putting in additional requests for additional caseloads. We have been fortunate in that the funding has allowed us to add, we are at that number of 700,000 is up from about 588,000, just a couple of years ago. We are able to meet some demands for new states participating. Over the last 2 years, over nine states have come into the program. They are just getting the program started. We would anticipate those states would need additional caseload as they grow their infrastructure.

Mr. FASO. Yes, it struck me that the 700,000 was actually fairly low across the nation. Could you provide the Committee for the record some information on the state-by-state participation, and areas where they are fulfilling the need and other areas where perhaps there are gaps? Because I certainly would like to know that for New York State, and I know there is a significant need out there. I would appreciate if you could provide that to the Committee.

Ms. KRIVISKI. I would be happy to.

Mr. FASO. Thank you, Mr. Chairman. I yield back.

The CHAIRMAN. The gentleman yields back. I am now pleased to recognize Mr. Lawson, for 5 minutes of questioning.

Mr. LAWSON. Thank you very much, and first, I would like to compliment you all in the area that you work in. It is so very important to people to sustain life. Three weeks ago, I had the opportunity to do two things with USDA. One was to visit a middle school where 100 percent of the students were on free and reduced lunch, and that was an incredible experience, even though it was right in my back yard. And then to go to Second Harvest Food Bank, where I can see the operation that was going on. In fact, that was the first time I had ever been in a 0° freezer. It didn't take long to get out, and most of the people there were volunteers. There were volunteers that had careers that were coming in to work with people there. I know the importance. What I really want to do is piggyback on the question—not the question that I wanted to ask, but the question from the gentlelady from New Mexico, and that is what is a wish list that you all did not get a chance to respond to in terms of funding, and what would it do to alleviate hunger in this country? And I guess we can just go down the line. She spoke, but she did not get a chance for all of you all to respond. In this coming budget, what would be the wish list that you need in terms of providing resources for people?

Ms. CALVERT. In the coming budget or the coming farm bill? Well just very quickly, we have all really talked about the strength of the Federal commodity programs. There is a lot that could be done to make those much stronger: 700,000 seniors served on CSFP, yet we are serving seven million seniors that are food-insecure. There is an argument for expansion and greater funding right there. As you saw at the Second Harvest Food Bank of Central Florida, they

do a great job and distribute a lot of food but there is a lot that additional TEFAP funding would provide them. There are a lot of opportunities to strengthen the SNAP program, which is although not the subject of the hearing today, is a source of significant support for millions of food-insecure Americans.

Mr. KUBIK. A start with my wish list would be an end to hunger in this country. That would be my first wish. But in terms of the seniors we represent, I would like to see those seniors who need CSFP to have access to it. As we have heard, it is a smaller program in the FNS budget with the 700,000 caseload. We know that there is more of a need within our country for that. There are two more states we would like to see come on board. The last two would be Alabama and Wyoming to join our community. But we would like to see the program available to those who need the program. And if there are some regulatory changes, we thought about perhaps Medicare. The Medicare portion is considered income that comes out of a Social Security check. We would like to see maybe that being addressed to remove it as a portion of income, because some seniors don't quality for CSFP, and their Medicare portions put them over it. Without the Medicare portion, which isn't really actual dollars, in their account, they would qualify. And we know from seniors, the story that I told of Frederick. He was 82 years old when he signed up for CSFP. They only apply for it when they need it.

Thank you.

Mr. TONUBBEE. My first thing on the wish list would be a carry forward provision on our budgets. Too many times at the end of the year you have plans on doing something with your budgeted funds; however, a snafu may occur that you can't spend that money. And if you don't get it spent by the end of the fiscal year, it has to go back to the government. If we had a carry forward provision, I could go forward with the planned projects that we had for the program without having to return those funds and then turn around the following year and ask for them again, and not know if I would get them because we don't know what the budget is going to be for the following year.

Ms. KRIVISKI. While I can't share my personal wish list with you, I do want to point out that the TEFAP mandatory formula imbedded in the farm bill can actually result in a decrease of food funding, as well as an increase of food funding. It actually depends on the state of the economy, and so the last farm bill recognized the additional need for TEFAP on top of the mandatory formula, adding additional amounts appropriated over the next 5 years, which is getting ready to expire. In the absence of action, there is a possibility that our current law right now on the funding formula would cause the amount of funding to go down.

The CHAIRMAN. I thank the gentleman. I am now pleased to recognize the gentlelady from North Carolina, Ms. Adams, for 5 minutes.

Ms. ADAMS. Thank you, Mr. Chairman, and I want to thank all of our witnesses for being here today.

The Emergency Food Assistance Program is very important for food banks and soup kitchens that help feed our most vulnerable populations in the 12th District of North Carolina that I represent.

Funding for storage and distribution costs are needed to help food banks store food items until they can be distributed to partner feeding organizations and families in need of assistance.

Ms. Calvert, there are several members at this hearing that would like for storage and distribution funds within The Emergency Food Assistance Program to be fully funded at their authorized level of $100 million. How would fully funding storage and distribution funds enhance Feeding America's capacity to provide food assistance?

Ms. CALVERT. Thank you for your question. We certainly would support that as well, and having had the pleasure of working with the food banks that serve your district and talking with them about many of the unmet needs, I know that part of that funding they used to partner with the ag industry so that when there is surplus food, they are able to reimburse the grower for the costs to get the food to the food bank. That is a big deal. North Carolina grows a lot of fruits and vegetables, and it makes no sense that we can't help a lot of these smaller agencies connect nutritious food with people in need. They do a lot of mobile pantries and a lot of work in schools. I know that that is really important to your food bank members, and many of our other food banks to increase the programs that we are able to provide in schools to help children that are food-insecure.

Ms. ADAMS. Thank you. Ms. Kriviski, one thing this Committee has examined over the past 2 years is the need for improved coordination at the state and Federal levels with the administration of programs. Is there anything that we can do to assist you in making sure that funding for all the distribution programs, including the School Meal Programs, are working together?

Ms. KRIVISKI. What I would say is that we do have referral requirements in most of our programs, so when somebody walks in seeking assistance in CSFP, there is very likely to be additional information connecting those seniors to other services around the state. In food banks around the country, that same aspect exists in that I think our partners do a really great job of trying to connect people in need with the other programs. Our School Lunch Program is used to actually help confer eligibility to some of our other nutrition assistance programs, so if you participate in the School Lunch Program, for many of the food banks they operate a backpack program, and by virtue of being a recipient of a free reduced price meal, you are going to also receive a backpack to go home over the weekend.

We do a fairly good job of connecting the dots, but I am very happy to discuss at a later date other ways that I think we could be more effective.

Ms. ADAMS. Thank you. Ms. Calvert, many nutrition advocates are concerned at the end of waivers to work requirements for able-bodied adults in the SNAP program will put more pressure on food banks. As waivers from SNAP work requirements continue to expire, are you seeing more demand for your services at partner agencies?

Ms. CALVERT. We are, and actually I wanted to highlight a study that was done in Maine by our food banks there. The state decided to make some changes and to remove work waivers, and so they

surveyed the people that they were effected, and they found that 25 percent of those surveyed who lost SNAP benefits, that it was due to a time limit. Eighty percent of those individuals reported that they are using the food pantry more this year than in the past. Many others actually shouldn't have been kicked off the program. In Maine, 13 percent of those that lost their SNAP benefits due to the time limit actually had health and care giving barriers that should have made them exempt from that. I would just highlight that there is going to be significant, if changes were made to work waivers for able-bodied adults without dependents, there is a significant amount of implementation challenges that would come with that. Thirteen percent losing benefits when they shouldn't have in this population that already is not eligible for other benefits, that is kind of unconscionable that that happened, and we worry that that is jut the tip of the iceberg if work waivers are done away with.

[The information referred to is located on p. 651.]

Ms. ADAMS. Thank you very much. My time has expired.

The CHAIRMAN. I thank the gentlelady. I want to take this time to really thank all the members of the panel for your travels, for your expertise, for your passion. It is certainly a passion that I share, and Members of this Subcommittee share, of making sure that we are providing the right type of assistance to meet the nutritional needs of individuals.

It is a team effort. There is no doubt about it. It is about personal resources and family support and community programs and SNAP and our TEFAP, the commodities program, and what we do on our Tribal lands, all part of the formula of not, as I like to say, not leaning left or right, but standing squarely behind American citizens and their nutritional needs.

I want to thank my colleagues for being here. We had a great turnout. As you notice, Members come and go. That is just kind of part of the wear and tear and the responsibilities here, but we saw the interest. We had almost close to 100 percent participation today by Committee Members. Finally, I just want to thank the staff. It is your hard work that keeps us on track and helps us to put together such great hearings.

Under the Rules of the Committee, the record of today's hearing will remain open for 10 calendar days to receive additional material and supplementary written responses from the witnesses to any question posed by a Member. This hearing of the Subcommittee on Nutrition is adjourned.

[Whereupon, at 11:46 a.m., the Subcommittee was adjourned.]

[Material submitted for inclusion in the record follows:]

SUPPLEMENTARY MATERIAL SUBMITTED BY CARRIE T. CALVERT, DIRECTOR, TAX AND COMMODITY POLICY, FEEDING AMERICA

Insert 1

Mr. MCGOVERN. Well thank you, Mr. Chairman.

Ms. Calvert, as I mentioned in my opening statement, I am concerned about this group called ABAWDs, or able bodied adults without dependents, and I am reading from an agriculture report that the Chairman of this Committee spoke to their farm bill summit, and he basically called it the current law that allows able bodied adults without dependents to collect SNAP benefits for 90 days out of a 3 year period, and he is quoted as saying if they are able to work, why would they have 90 days?

And as I mentioned in my opening, I mean, this group is very difficult to define, but extremely vulnerable to food insecurity, and under SNAP rules, are held to a very strict time limit on the benefits. I suspect that your network serves a lot of ABAWDs, and there is a surprisingly small amount of information on this group. Many of them have barriers to employment like illiteracy or undiagnosed mental illness or drug dependence or as I mentioned earlier, we know that there are a number of them that are returning veterans who are struggling to reintegrate into society.

Given the nationwide work that your network does for this group, what kind of information do you have on ABAWDs? Who are they, why are they so difficult to reach, and just as a follow up, as I understand it, there are limitations in some places as to how many times per month people can access food packages from food banks. Can you speak to that as well? And if ABAWDs are kicked out of SNAP and there is a limit to the food they can access from food banks, where do these vulnerable adults turn to?

Ms. CALVERT. Thank you for your question.

I would agree that serving able bodied adults without dependents and assessing what their challenges and barriers to employment is a very, very difficult task.

First, it is important to realize that, as you stated earlier, most childless adults on SNAP who can work do so, but there are multiple challenges, including homelessness, physical and mental health limitations, language barriers, lack of educational attainment, as well as unstable employment histories or criminal records that can really complicate the pass to employment for many able bodied adults without dependents. Some of the best data that we have on that is coming from our Food Bank State Association in Ohio, so I would be happy to connect all of the Subcommittee Members with those findings, since it might take some time to go into it here.

A Comprehensive Assessment of Able-Bodied Working Adults Without Dependents and Their Participation in the Work Experience Program in Franklin, Ohio Report: 2015

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Executive Summary

Franklin County is one of the 72 Ohio counties that did not receive a waiver to exempt able-bodied adults without dependents (ABAWD) receiving benefits through the Supplemental Nutrition Assistance Program (SNAP) from participating in the Federal work requirement to ensure they are able to maintain their food assistance benefits.

Under Contract No. 25–14–9000, in partnership with Franklin County Department of Job and Family Services (FCDJFS), the Ohio Association of Foodbanks has implemented the Work Experience Program (WEP) to assist with the fulfillment of the monthly work requirement for ABAWDs in Franklin County.

The Work Experience Program began at the Ohio Association of Foodbanks in December of 2013 and expanded quickly to accommodate the increasing number of ABAWD referrals. Hundreds of ABAWDs meet with an Ohio Association of Foodbanks WEP Assessment Specialist each month to complete a comprehensive assessment at their local FCDJFS Opportunity Center. Clients are then required to attend one three-part clinic to receive a background check and are offered a variety of valuable job related opportunities. After clients complete the assessment and have attended the clinics, they are placed at a qualified partner organization to complete their monthly work requirement which allows them to maintain their SNAP benefit eligibility for the duration of their participation.

Our interest in the ABAWD population does not end when they exit our program. We are concerned about the well-being and long term outcomes of our clients. We conducted a post-WEP client study to examine the course of clients after they have exited the program. The findings of this report provide information about post-participation employment status and the most common causes of failure to comply with FCDJFS mandated WEP involvement. This study has also helped us understand from where some of the discrepancies in our program stem, which has influenced how we conduct business and communicate with our clients, our host sites, and FCDJFS. As we continue to innovate and improve the program we seek to offer more necessary resources and work related opportunities to our clients. One of our many goals in hosting WEP is to assist ABAWDs with finding sustainable employment to become economically self-sufficient.

The data we have collected through ABAWD assessments has allowed us to identify transportation, criminal records, education, and health problems as key barriers for ABAWDs struggling to find stable long term employment. Our deeper understanding of these issues has led us to partner with organizations that can help ABAWDs navigate through many of their challenges, giving our clients a better chance at improving their lives and supporting themselves. The data has prompted many recommendations to FCDJFS including but not limited to: providing additional funding for programs that support WEP participants and low-income households, expanding enrollment of nationally certified educational programs as well as programs for youth aging out of foster care, and creating an employment pipeline into strategic aspects of the job market.

Program Regulations

The Work Experience Program (WEP) is a platform that provides experience and training for employable participants, who are currently unemployed or underemployed, to enhance their ability to secure sustainable work.

While this program is largely regulated by the USDA due to Federal guidelines, the Franklin County Department of Job and Family Services (FCDJFS) has additional defining requirements which must be met by the Ohio Association of Foodbanks, ABAWDs, and host-site organizations.

USDA Guidelines for Serving ABAWDs

According to the USDA Food and Nutrition Service, "the Personal Responsibility and Work Opportunity Reconciliation Act of 1996 (PRWORA) limits the receipt of SNAP benefits to 3 months in a 3 year period for able-bodied adults without dependents (ABAWDs) who are not working, participating in, and complying with the requirements of a work program for 20 hours or more each week, or a workfare program."[1] ABAWDS risk losing their SNAP benefits if they do not diligently comply with the work requirement.

USDA ABAWD Exclusions

Individuals are not considered ABAWDS and are not subject to the work requirement provision if they are:

- Under 18 years old or 50 years of age (or older).
- Responsible for the care of a child or incapacitated household member or relative.
- Medically certified and documented as physically or mentally unfit for employment, or pregnant.

[1] More information can be found at *http://www.fns.usda.gov/sites/default/files/Guide_to_Serving_ABAWDs_Subject_to_Time_Limit.pdf*.

- Already exempt from other general SNAP work requirements.

FCDJFS Work Requirement

FCDJFS mandates that an ABAWD must serve 23 WEP hours a month to remain compliant with the work requirement. This timeframe is the result of dividing a household's food assistance allotment by the higher of the applicable Federal or state minimum wage.

Ohio Association of Foodbanks Responsibilities

The following information outlines the exact responsibilities of the Ohio Association of Foodbanks as the operator of the Work Experience Program. This information has been outlined in the grant under contract with FCDJFS, and the association has diligently adhered to the standards with strict compliance.

Multi-Strategy Approach to Serving ABAWDs

To remain compliant with the program guidelines referenced in the WEP contract with the Ohio Association of Foodbanks and FCDJFS, the association is responsible for the following:

- Meeting with ABAWDs to assess their work capabilities and any other issues they may be experiencing.
- Working with ABAWDs to create resumes and register clients on the Ohio *Means Jobs* website.
- Developing and maintaining viable work sites and activities to support ABAWDs. However, due to the size of the population, the association will document all attempts and strategies employed if limited work sites are available in specific areas.
- Placing ABAWDs at community, social service, faith-based, and government agency partners to be placed in a work experience opportunity to work for up to 23 hours per month [2] to maintain their food assistance benefits.
- Attempting to employ numerous site development strategies in order to address the various barriers exhibited by ABAWDs, such as difficulties with transportation, encounters with the criminal justice system or limited job skills.
- The Ohio Association of Foodbanks makes every effort to place clients no more than an hour bus ride from their residential address. FCDJFS offers a monthly $62 travel stipend issued to ABAWDs for the purposes of travel to and from work sites or other WEP related activities. The Food and Nutrition Service regulations insist that workfare participants are able to request a hardship when asked to travel more than 2 hours to a worksite.

Assessment Data

The Ohio Association of Foodbanks developed the Work Experience Assessment Portal, an online form used to interview ABAWDs. Through a series of questions we are able to ascertain the employability of the individuals we serve in Franklin County. This information is used to help us place clients in WEP positions that fit their aptitude and increases their work experience to broaden their employability.

Ohio Association of Foodbanks WEP Assessment Process

When Franklin County Job and Family Services caseworkers make the determination that a client is an ABAWD and is considered work required, the client is referred to their local opportunity center to be assessed by an Ohio Association of Foodbanks WEP Assessment Specialist. Each specialist completes an in-depth interview with the clients using a series of questions on the Work Experience Assessment Portal.

[2] Effective January 2015, with the increase in minimum wage for the state of Ohio, the work requirement to maintain food stamp eligibility decreased from 24 hours per month to 23 hours per month.

Assessment Question Development

An able-bodied adult without dependents is defined by the USDA as a physically and mentally fit (able-bodied) person between the ages of 18–49 (adult), who is not responsible for the care of a dependent child (without dependents). This criterion was the basis for a portion of our questions as they could potentially exempt any person that may have been overlooked in the original processing of their status as an ABAWD. The questions used to screen for physical and mental health are mirrored from validated questions from the "*Hard to Serve*" scientific study developed by a cohort of researchers through Freestore Foodbank in Cincinnati, Ohio.

All other relevant questions collect job skills, and other important information which identifies the challenges our clients encounter while they strive to meet the work requirement as they attempt to secure stable employment.

Assessment Data Findings

During the Ohio Association of Foodbanks WEP pilot period from December 10, 2013 through February 23, 2015, WEP Assessment Specialists were able to complete 4,145 ABAWD assessments. Some of this information was collected online through self-assessments for clients who were unable to report to a regionally located Franklin County Job and Family Services Opportunity Center. The following data reflects who our clients are, their background, and their job skills. Our findings include undiagnosed mental and physical disabilities, inadequate access to transportation, previous encounters with the criminal justice system, previous work experience and training, differing levels of education, veteran status, participation in other government programs (Medicaid, SSI/SSDI, and unemployment compensation), knowledge of and registration with Ohio Means Jobs, and caregiver or non-custodial parent status.

Staff Experiences

Going out to the Job and Family Services opportunity centers to do in person assessments help me put a face to the data. I find that it is natural to be more empathetic when I know my clients, and it makes the process of placing them at sites easier.

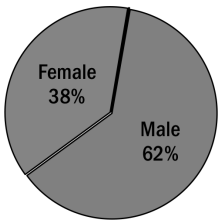
A. POTTER,
WEP Assessment Specialist.

Unpacking the Data

We find out so much more about our clients through the assessments. Something as simple as an address does not just tell us where to send mail, it can also tell us if a client is experiencing homelessness or if they are currently displaced.

Gender

While collecting demographics on the basis of gender we noticed that a disproportionate amount of ABAWDs are male.



Able-Bodied

To evaluate the abilities of clients both mentally and physically, they are asked if they are disabled, or if they have any physical or mental limitations we should know about. If they indicate they suffer from any physical or mental health condition they are then asked if the limitations affect their ability to work.

- *30.8% of clients reported they have a physical or mental health limitation.*

- *17.8% of clients reported that they had filed for Supplemental Security Income (SSI), or Social Security Disability Insurance (SSDI).*[3]

Client Stories

The stress of being unemployed for a long time, my recent divorce, the death of my parents, and watching my debt grow out of control has finally taken a toll on my mind and my body. I had a nervous breakdown and went to North Central Mental Health for services because I could no longer deal with all of it on my own. I was diagnosed with depression and severe anxiety.

ERIC W.
WEP client, interviewed during an assessment at the North Opportunity Center.

Clients who self-report they are disabled with a physical or mental condition that renders them unable to work may need more outreach and supportive services to complete an application for SSI or SSDI.

Just over ½ of the clients (54 percent) have applied for Medicaid, although all qualify for recently expanded necessary health coverage due to their low-income status. This potentially shows why so few clients are under a doctor's care (21.3 percent), and only 24.9 percent of clients are on medication. Many clients explicitly report not taking medication because they are unable to afford the medication they have been prescribed.

Most common mental health limitations reported:

- 13.7% other, (multiple mental/physical limitations).
- 4.2% depression.
- 3.5% bipolar disorder.
- 2.9% anxiety.
- 1.5% learning and mental disabilities.
- 1.3% Post Traumatic Stress Disorder (PTSD).
- 5.5% other, *including schizophrenia and addiction*.

Most common physical health limitations reported:

- 7.7% problems with standing and heavy lifting.
- 5.9% back problems and back pain.
- 5.3% leg problems including severe pain.
- 2.5% breathing problems such as asthma or COPD.
- 1.5% high blood pressure.
- 1.5% diabetes.

8.2% of clients requested special accommodations which included requests for work assignments that require no heavy lifting, or no standing/walking for long periods of time.

Staff Experiences

While completing an assessment, a client explained she has a social anxiety disorder that made it difficult to leave her home and contributed to her lack of employment. I encouraged her to sign up for Medicaid so she could get some help. I saw her on the bus a few months later and she hugged me and said that having healthcare has allowed her to get the medication she needs to feel more comfortable in public.



ANJANETTE P.
WEP Assessment Specialist.

Age

The average age of the ABAWDs assessed in this program is 34 years old. While ABAWDs must be between the ages of 18–49, over 60 referrals were made for clients over the age of 50 years old. These clients should have been screened out of the referral process and exempted from participating in WEP.

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[3] After September 9, 2014 we began screening self-reported disabled clients if they were able to work and earn more than $1010 per month. This question identifies whether the client could potentially qualify for SSI/ SSDI. The earned income amount is determined by the Social Security Administration's definition of a substantial gainful activity, which could disqualify a person from being considered disabled for the purposes of SSI/SSDI.

Veteran Status

Only *3% of clients are veterans*. We inquire about veteran status to determine if eligible clients may be able to participate in programs designed to assist veterans, or if they qualify for veteran specific services.

Dependents

According to the USDA definition of an ABAWD, it is assumed that all clients do not have dependents.

- ***24.4% of clients reported having children not in their custody.***
- *17.7% disclosed that they owe child support.*
- *1.9% of clients who responded also reported they need childcare.*

Client Stories

> *I've been home from prison for 34 days. I'm a hard worker, but I don't know what jobs are available besides the work I can get through a temp service. I have five kids and want to be able to take care of them. With all of my felonies I don't know if I will be able to do that.*
>
> DOMINIQUE R.
>
> WEP client, interviewed during an assessment at the West Opportunity Center.

Having the status of caregiver to a relative should potentially exempt an individual from participating in WEP. Caregivers can often replace the services of a Medicaid or Medicare home-healthcare provider. Caring for children is not the only form of dependent care examined.

- *13% of clients are caregivers for a parent, relative, or friend.*

Education

While the unemployment rate in Ohio is declining, clients in this population may not meet the educational standards for the jobs becoming available. Analyzing the statistics we have collected on education, we find how limited the prospects are for clients to enter the workforce in a position that will pay a sustainable living wage.

- *30% of clients have no high school diploma or GED.*

Although 68.5% of clients have graduated from high school or have earned a GED, only 38.1% have attended college. A very small portion of clients (10.5 percent) who have attended college went on to earn a degree.

In speaking with clients during assessments we have noticed some clients appear marginally and functionally illiterate. This prompts a deeper examination of social promotion policies that may exist in schools, and inquiry about undiagnosed learning disorders, mental disabilities, and autism.

Criminal History

As part of the assessment clients are asked if they are willing to complete an FBI/BCI background check. An overwhelming 98.6% of clients agree to comply with this request. Clients who declined a background check do not qualify to participate in WEP with the Ohio Association of Foodbanks.

Domestic violence can happen in any household regardless of socioeconomic status, race, age or any other demographically defining factor. Studies show that domestic violence is three times as likely to occur when couples are experiencing financial strain.[4] *More than 11.1% of clients assessed reported having domestic violence charges.*

A history of criminal activity or previous incarceration can have a tremendously negative impact on someone. They miss out on many opportunities, job related or otherwise. The stigma of a felony conviction can follow someone for a lifetime, even if their release is meant to suggest that they have been rehabilitated. Over *35.3% of the clients in our program have felony convictions; some clients have multiple felonies, or a combination of felonies and misdemeanors.* Close to 12.1% of clients are on probation or parole which means they may not qualify for services offered through legal aid, such as record sealing.

Staff Experiences

> *I noticed a client hanging around after one of the monthly clinics. I let him know he had completed his hours for the day. We began talking about*

[4] Michael L. Benson & Greer Litton Fox, Department of Justice, NCJ 193434, *Economic Distress, Community Context and Intimate Violence: An Application and Extension of Social Disorganization Theory, Final Report* (2002).

how his old criminal background has been holding him back. He said, "It's been over 10 years and I am still judged on my past." I placed him at one of our sites that works with mostly ex-felons. The site supervisor called to say, "He is one of my hardest workers and I am really glad to have him as a volunteer."



MECHELLE D.
Client was placed at Welcome Home Ohio.

This area warrants further analysis to determine the full repercussions of a criminal record and the future it creates for individuals.

A recent report from the Kirwan Institute found that one in four people incarcerated in the State of Ohio were between the ages 18 to 24. The incarcerated population from the 18 to 24 age group in Ohio has grown nearly 70% in recent years. Prison intake data from Franklin County indicate that the median age of first arrest for those entering the state correctional system in 2012 was 19 years old.

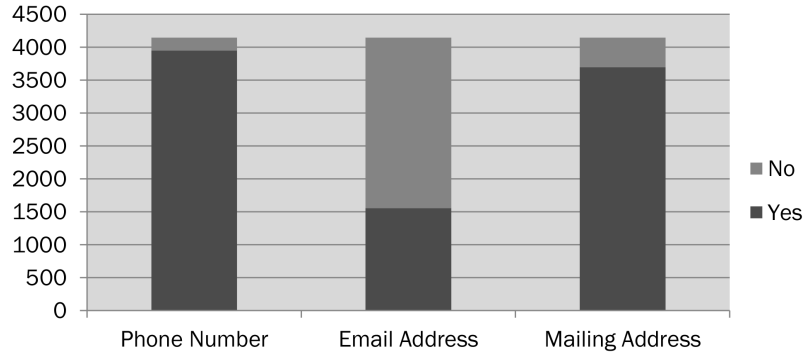
Communication

Maintaining a reliable form of communication with clients has proven to be a massive challenge. While clients offer contact information, they rarely respond to communications. This could be happening for a number of reasons. Although *95.3% of clients reported having phone numbers,* this does not mean that they have continuous access to a phone. We often call clients and find out they have run out of minutes before the end of the month (this is often the case with government provided cell phones), their phone has been disconnected, or their phone number has changed due to using prepaid cellular devices. We can only assume that if we are unable to contact clients, potential employers are also unable to reach them.

Mailing addresses appear to be as transient as phone numbers. A lot of mail is returned to our office on a regular basis. Over *89.2% of clients reported having mailing addresses,* but many of them are in short-term housing situations. In many cases, the phone number or address given to us by clients does not belong to them, but is that of a friend, family member, or homeless shelter.

Even if we attempt to communicate with clients via e-mail, we cannot guarantee that all clients will have reliable or readily available community based access to the Internet. *Only 37.5% of clients reported having an e-mail address.* The Ohio Association of Foodbanks would like to increase this number by offering to help clients sign up for an e-mail address and encouraging clients to visit their local libraries to check their messages as this can be a viable alternative to having a phone number.

Types of Communication



Transportation

Clients are supposed to receive a monthly travel stipend from their FCDJFS caseworker. Many clients call Ohio Association of Foodbanks to report that they have not received the stipend. This could be due to an inaccurate mailing address, the inability to contact their caseworker, or a delay in dispersing of funds. Some clients report that the travel stipend is not enough to cover travel to and from work sites. Some clients do not have bank accounts and have to pay a service fee to cash the check they receive from FCDJFS, leaving an insufficient amount to purchase a monthly bus pass which the stipend should cover.

More than *56% of clients report they have reliable access to transportation. This can be a personal vehicle, public transit, or utilizing friends and family members for transportation.* It is important to note that the use of a friend or family member's vehicle may not always be reliable. Owning a vehicle may pose its own challenges for low-income populations, as the car could break down and the client may not have the means to fix it.

Only *38.8% of clients have a valid driver's license,* which indicates that clients are either using public transportation or are driving without a license. Some clients may not be able to obtain a driver's license if they owe child support and have had their driving privileges suspended, or if they have outstanding tickets or unpaid fines which they may be unable to resolve with their limited income. Additionally, only *17.5% of clients report having car insurance,* inferring that some are driving without insurance which can be attributed to a variety of factors, including affordability. More than 72% of clients report they live near a bus stop, which leaves 28% in a tough situation if they do not have reliable transportation to their work site.

Having a DUI/OVI on an individual's driving record can affect their ability to obtain employment or housing, it can result in higher car insurance which they may be unable to afford, or loss of driving privileges.

Staff Experiences

At 15 years old, a client was sentenced to 15 years in prison. Now, at 30 he has been released and is eager to start his life over. He was nervous during the assessment, but I was able to get him to relax as he told his story. Later, he called our office to thank me for being so sweet during the assessment and for also believing in him. He was thrilled to tell me that he learned to drive and is now enrolled at Columbus State Community College. I'm very proud of him!



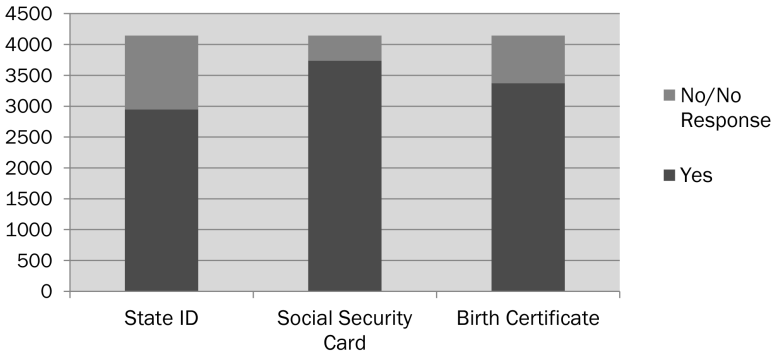
KELLY R.
WEP Assessment Specialist.

- *14.6% of clients report they have been documented as Driving Under the Influence (DUI) or Operating a Vehicle Impaired (OVI).*

Forms of Identification

To apply for jobs, housing, government benefits, vote, or obtain a driver's license most agencies usually require two forms of Identification (ID). More than *71.1% of clients report having a state ID, 90.2% of clients report having a [S]ocial [S]ecurity card, and 81.4% of clients report having a birth certificate.*

Forms of Identification



Employment & Job Seeking Needs

Working 20 or more hours of paid employment per week, every week can exempt an ABAWD from participating in WEP. Close to *10.6% of clients are currently working.* Many clients were unable to identify how many hours they work per week because they are employed through a temporary employment agency (including day labor and labor pool agencies), which means clients may not have consistent work on a weekly basis. About *10.3% of clients reported working in-kind for rent or housing,* and 240 clients report they work more than 20 hours per week in-kind, which

can exempt them from the work requirement if the client has adequate documentation.

Clients were asked if they had ever been dismissed from a job, and *24.4% of clients reported they had been dismissed from a job.* When this question appears on a job application it can be a deterrent for employers to hire an applicant that has previously been fired from a position.

A recipient of unemployment compensation benefits is exempt from fulfilling the work requirement.[5]

- *78.5% of clients have never been eligible for unemployment compensation benefits.*

When asked what the most recent year of employment was, the answers ranged from 1980–2015. *On average, a client's last year of employment was 2014.* Having gaps in a resume can influence an employer's decision in the hiring process, which can negatively impact a client's chances of obtaining employment.

Staff Stories

Under the leadership of Franklin County we were given the opportunity to hire several staff members directly from the affected ABAWD population. One of our first employees came to us very timid and quiet, and was obviously frustrated after months of looking for work. Over the past few months I have seen her grow into an amazing employee! The diligence, hard work, and the empathy that our team holds for our clients has helped this program become a tremendous success. My experience with them speaks to the great opportunity and latent talent to be found within the ABAWD population.



TYLER DAVIS,
WEP Program Manager.

94.4% of clients listed their job skills and training in the following fields:

- Warehouse work (32.6%).
- Customer service (20.7%).
- Fast food/restaurants (18.9%).
- Cooking and food preparation (15%).
- Janitorial and cleaning (14.7%).
- Computer skill (13.2%).
- Construction/building (10.1%).
- Office/clerical work (9.6%).
- Landscaping/lawn care (9.5%).
- Cashier (9.4%).
- Retail/sales (8.6%).
- Healthcare [nurse, aide, *etc.*] (7.7%).
- Forklift operation (7.6%).
- Pick & Pack (7.2%).
- Management (6.2%).

Ohio Means Jobs Registration

In an effort to offer more job seeking resources to clients, they are referred to Ohio Means Jobs (*www.ohiomeansjobs.com*). When asked if clients were already registered with Ohio Means Jobs *74.1% reported they were not registered, and most clients reported they have never heard of the website.* This shows that the outreach for the Ohio Means Jobs website has been ineffective in reaching this population.

Staff Experiences

We haven't needed assistance in over 20 years. My husband got sick and lost his job, which brought me to SNAP. The volunteer position I had led to a job I actually like, and has helped me catch up on all of our bills. When

[5] According to *Ohio Revised Code* 5101:4–3–11 Food assistance: work registration and exemptions: a person receiving unemployment compensation benefits. A person who has applied for, but is not yet receiving, unemployment compensation benefits is also exempt if that person is complying with the requirements of the unemployment compensation application process.

I tell WEP clients my story they relate to me, and when they tell me what they are going through I can certainly relate to them.



P. LEHMAN.
WEP Assessment Specialist.

Additional Barriers

To ensure a client is able to perform the duties assigned to them, we inquire about any supportive services they may need to successfully complete their work assignment. Over *15.8% of clients report needing supportive services.* The most common services requested were language interpretation (especially for Somalian refugees) and help with transportation.

Clients experiencing homelessness, health problems, language barriers and a lack of stable employment to fit their skill set make up nearly *12.7% of clients who reported other barriers standing in the way of employment.*

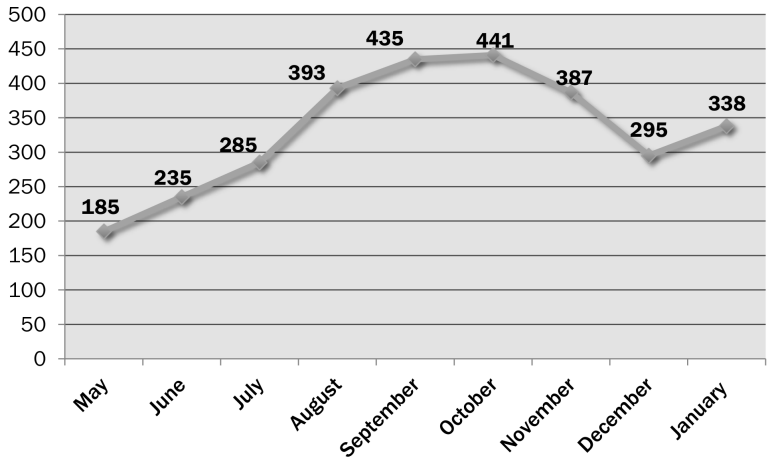
Monthly Clinics

Beginning in May of 2014, the end of each month marked the start of a three part monthly clinic for newly assessed WEP clients. Three days of consecutive clinics allow first month WEP participants to gain their required work hours through a series of purposeful activities. There is a job skills clinic, a benefits clinic, and a background check and legal aid clinic.

WEP Monthly Clinics

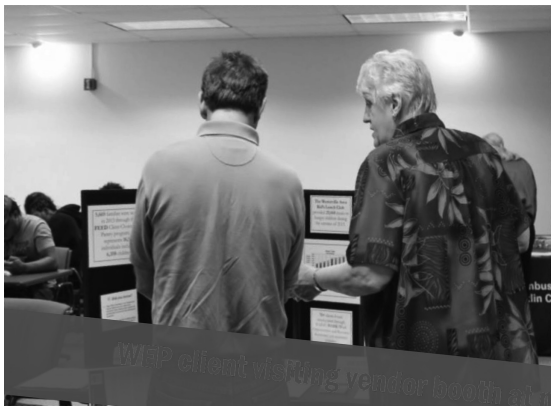
Because the WEP placement process requires a background check, the monthly clinics were initially developed to offer background checks to hundreds of clients in a convenient location. They expanded to include other resources found to be helpful to clients. The clinics also serve to ensure that assessed clients can complete their hours if they are waiting to be placed at a WEP host site.

2014 Clinic Attendance Growth over a Nine Month Period





WEP clients signing up for Adult Continuing Education (A.C.E.) at a monthly clinic.



WEP client visiting vendor booth at monthly job skills clinic.

Partners & Clinic Content

Each clinic serves a unique purpose. The background check clinic is usually paired with representatives from the Legal Aid Society of Columbus. Recognizing that criminal records are a major barrier to many of our clients, we invite legal aid to the clinics each month to answer questions and offer services.

Understanding how education can impact a person's ability to access sustainable income, we found it necessary to include education programs in the monthly clinics. Job skill clinic days boast a wide network of adult education opportunities. Clients can learn more about certificate programs, or enroll in classes that will help them earn a GED. We work with many workforce development partners such as the Columbus Urban League (My Brother's Closet) and Dress for Success. These partners offer job readiness training courses and gives clients business suits to wear for interviews.

At the monthly benefits clinic, clients are able to access the services of The Ohio Benefit Bank with certified counselors and healthcare navigators. Knowing that our clients qualify for SNAP, means they may qualify for other programs available to low-income individuals like the Home Energy Assistance Program (HEAP) or Ohio Medicaid.

Monthly Clinic Outcomes

As a result of our monthly clinics over 90% of attendees receive background checks.[6] Clients can even request a copy of their background check from the Ohio Association of Foodbanks if an employer requires one. About 16% of clients apply for Medicaid at each monthly clinic, with an Ohio Benefit Bank Counselor, or a Certified Application Counselor. Over 30% of clients also utilize other services offered through The Ohio Benefit Bank, such as filling out Home Energy Assistance Program (HEAP) applications or completing their taxes.

Placements

Our growing network of nonprofits, workforce development partners, and faith-based organizations make it possible for Franklin County ABAWDs to obtain their required work hours through volunteer service or job readiness, while also offering work experience.

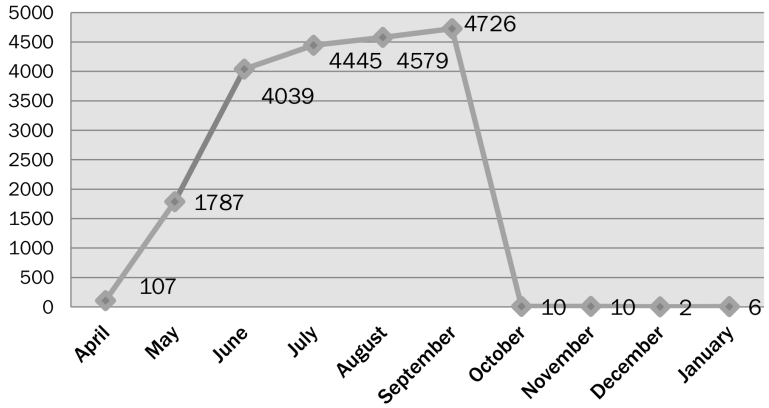
Placements are made at these organizations after clients have completed a background check at the WEP monthly clinics. Ohio Association of Foodbanks requires clients to have a background check to ensure that we are not placing clients in situations that may compromise the integrity of our partners, and to protect their clients and staff in the event of a known conflict of interest.

WEP Host Sites

At the program's inception there were less than ten host-sites. In 3 short months that number grew to over 50 sites, and has expanded to more than 126 sites as of February 23, 2015.

The recruitment process for developing new sites involves calling, mailing, and emailing numerous nonprofit and faith-based organizations in Franklin County. The *Ohio Association of Foodbanks has contacted over 19,711 potential new sites, but only 0.64% of organizations were willing to host WEP volunteers.* The low number of interested sites may be due to a lack of incentive for organizations to participate in the program. By October of 2014 recruitment outreach decreased as most organizations had previously been contacted.

Sites Contacted 2014–2015



Host-Site Memorandum of Agreement (MOA)

All host sites must sign and agree to the terms and conditions set out by the Ohio Association of Foodbanks and FCDJFS when hosting WEP volunteers. This partnership agreement covers all requirements and expectations of both the site and the Ohio Association of Foodbanks.

Host sites must work with WEP clients to arrange a schedule that will meet the 23 hour per month work requirement. Clients are to receive an on-site orientation and supervised training that meets Occupational Safety and Health Administration (OSHA) standards for their volunteer assignment.

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[6] Clients must present a valid driver's license or state ID to successfully complete a background check.

As part of the MOA, sites also agree to maintain attendance records for all WEP participants who volunteer with their organization. In addition they agree to report all hours for which the client was actively volunteering throughout the month.

Host-Site Stories

"We were able to hire one of our WEP volunteers. She had all of the qualifications we needed for someone to work in our kitchen. She has worked out great and we really appreciate her hard work."

MARILYN O.
Site Supervisor at Community Kitchen.

Host-Site Volunteer Restrictions (MOA)

To ensure civil rights, and to guarantee that WEP volunteers are not engaged in unauthorized activities while they are volunteering, the MOA explicitly states all restricted activities as defined by the Ohio Association of Foodbanks and FCDJFS.

Sites are informed that WEP participants cannot be used to assist, provide or participate in partisan and nonpartisan political activities associated with a candidate, including voter registration. They are unable to make direct or indirect attempts to influence passage or defeat of legislation or proposals by initiative petition. Clients are also restricted from participating in labor [union] or anti-labor organization or related activities.

Due to the number of faith-based organizations we recruit as host-sites, the association clearly outlines all religious activities WEP volunteers cannot complete as part of their duties. These provisions include providing religious instruction, leading worship services, proselytization, or any other religious activities.

Other restrictions outlined in the MOA are to ensure that WEP volunteers are not displacing paid staff or being used to fill existing vacant positions, or performing work which reduces the number of hours by regular or part-time employees or reduces the number of positions that would otherwise be filled by regular employees. Host-sites are encouraged to consider hiring qualified WEP volunteers for vacant positions if the individual has displayed good work habits and has met the site's expectations throughout the assignment.

* *To read the MOA in its entirety, reference the* ***Appendix.***

Staff Experiences

I was discouraged from trying to find a job. I was convinced that joining the workforce was no longer for me. Medical bills made me seek out Medicaid which led me to SNAP. Due to the work requirement I found full time work and really enjoy my job. When I speak to upset clients I tell them, "I have been on the other side of this phone and in your seat, I will do everything I can to help you." I feel so blessed to be in a position to help others every day.

M. DARBY.
WEP Assessment Specialist.

Placement Barriers

It can be very difficult to place clients at a volunteer site if their location is not on the bus line or if it is not easily accessible by public transportation. Some host-sites require a college education or degree, which many of our clients do not have. Some sites have a list of restricted felonies which would limit a large portion of our clients from volunteering with those sites. The same is true for workforce development programs. Many clients do not meet the minimum education requirements to enroll in such programs, or struggle with passing an entrance exam. Additionally, clients are not eligible to be placed at a host site until their FBI/BCI background check is received.

The Ohio Association of Foodbanks makes every effort to place all clients, no matter how limiting their personal situations may be. Not all clients report to their assigned placements each month. Between May 2014 and January 2015, exactly 1,790 clients had been placed at host sites, with a 58.7% rate of compliance.

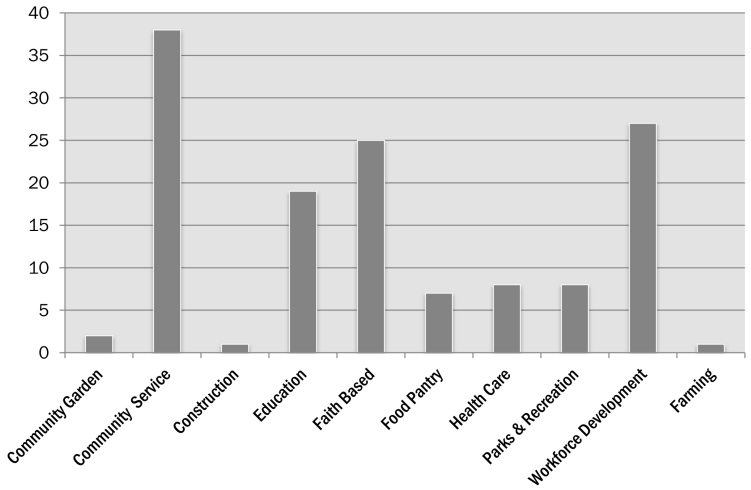
Volunteer & Workforce Development Opportunities

Volunteer experience through WEP is intended to give participants training, education, or experience that would be beneficial in an ABAWD's search for future employment. A list of possible volunteer roles could include but is not limited to janitorial duties, painting, grounds maintenance, warehouse positions, office work, manual labor, or any position providing valuable experience for future employment.

Workforce development partners offer a variety or resources including but not limited to job readiness programs, résumé and cover letter writing workshops, inter-

view suiting, certification programs such as State Tested Nursing Assistant (STNA) certificates, and adult education courses.

Type of WEP Host Sites



WEP Outcomes

The short term goals of WEP are to actively ensure viable opportunities for ABAWDs in Franklin County to fulfill the work requirement to maintain their SNAP benefits and prepare ABAWDs for reentry into the workforce. The long term goals and objectives for WEP are focused on decreasing unemployment among Franklin County ABAWDs to break systemic cycles of poverty and hunger, and ensuring clients can become economically self-sufficient.

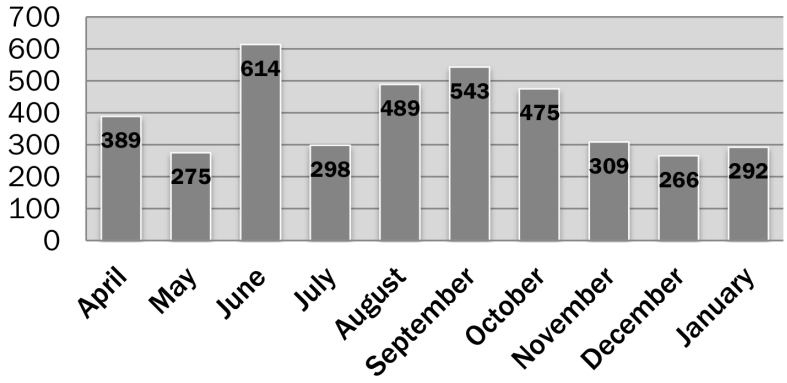
Program Outcomes

The WEP grant under contract with FCDJFS explicitly states that the Ohio Association of Foodbanks will assess and place clients at qualified worksites during the program pilot period. Ohio Association of Foodbanks was expected to assess and place 1,000 ABAWDS. The association has exceeded this expectation and has assessed over 4,143 clients and has placed over 1,796 clients at sites.

Rate of Compliancy

In order for a client to remain compliant with WEP they must report to their worksite for 23 hours per month. An estimated 50% of clients are sanctioned each month due to noncompliance. When clients are sanctioned they lose their monthly SNAP benefits. Clients can restore their benefits by talking to their caseworker to get an exemption on the basis of good cause, or they can reapply for SNAP benefits and reenroll in WEP.

Noncompliant Clients Exited WEP



Good Cause Exemptions

Clients can be excused from a work assignment if they have a "good cause" exemption, determined by their FCDJFS caseworker. Good cause may not be granted prior to a failure to complete hours, and is determined subjectively. Good cause is intended to recognize that temporary barriers may be present during a specific timeframe. A lack of work sites or assignments is not good cause.

Regaining Eligibility

An ABAWD who fails to meet the requirement and loses eligibility may attempt to regain eligibility any time during the 3 year period by meeting the work requirements for 30 consecutive days, or if they are no longer considered an ABAWD. An ABAWD who regains eligibility during the 3 year period and then stops meeting the work requirement may receive an additional 3 months of eligibility. The additional 3 months must be used consecutively and will be granted only once during the 3 year period.

Program Expenses

The total grant award for WEP has been applied to two categories, participant expenses and operational expenses. Participant expenses include everything from background checks to equipment needed for clients to perform their duties at their work assignment. Operational expenses cover staff needs for assessments, placements, sanction reporting, and other administrative needs.

Benefits Retained

In calculating the amount of SNAP benefits retained in Franklin County's economy by WEP participants we took the total number of clients who reported to their placements or attended a monthly clinic from March 2014 to January 2015, and multiplied by the maximum SNAP benefit[7] for an ABAWD. We found that over $ 856,200 in SNAP benefits have been retained through WEP.

2014 Post-WEP Client Survey Findings

In an effort to learn more about the outcomes of clients after they exit WEP, we conducted a comprehensive study to examine program effectiveness, job prospects, income, and food access. The findings of this study have helped us to better understand our program from a client perspective, the effects of this program on clients who exited due to noncompliance and lost their benefits, and the type of jobs an ABAWD can expect to find in Franklin County.

Over 900 former clients were contacted, but only *247 clients elected to participate in the full survey.*

Quantitative Analysis

When asked why a client exited WEP, the most common responses were:

- **44.1%** Failed to Complete Hours (Sanctioned).

[7] From March 2014 to September 2014, the maximum SNAP benefit for a single person household was $189. Effective October 2014 the maximum SNAP benefit for a single person household increased to $194. More information can be found by visiting *http://www.fns.usda.gov/snap/cost-living-adjustment-cola-information.*

- *25.1% Found Employment.*
- **23.1%** Miscommunication with the Ohio Association of Foodbanks.
- *21.1% Found to be Exempt.*
- **17%** Miscommunication with Caseworker.
- **11.3%** Transportation Stipend Not Received.
- **11.3%** Difficulty with Transportation (Unrelated to Transportation Stipend).
- **8.5%** Time Barrier.
- **8.5%** Miscommunication with Host Site.
- **4.5%** No Desire to Continue Participation

A miscommunication with Ohio Association of Foodbanks, a FCDJFS caseworker, or a host-site highlights the importance of clear communication from start to finish of the program. Any misstep can place a client in the position of potentially losing their benefits.

Found to be Exempt

Clients were given the option to offer multiple answers to this question, on average clients gave 2.05 reasons for exiting WEP. Clients who indicated that they were found to be exempt gave the following reasons for exemptions:

- **38.5%** Physical Disability.
- **25%** Employment 20+ Hours per Week.
- **9.6%** Mental Disability.
- **9.6%** In-Kind Work 20+ Hours per Week.
- **5.8%** Responsible for Dependents

Found Employment

One in four WEP participants listed "Found Employment" as their reason for exiting the program, the highest percentage listed aside from not completing hours. Some clients have had help finding employment through WEP workforce development partners; others have found employment on their own.

One in three clients reported having taxable employment from February to August. The average length of employment reported by the 86 clients who answered positively to this question was 79 days (11.3 weeks). The average hourly wage reported was $10.23. The average number of hours worked per week was 29.49 hours. This means the average number of dollars generated per employed individual over the 7 month period was $3,409.01. It is estimated that clients generated close to $293,175 during this time period.

Of the 86 clients who reported some kind of employment, the following were the most common occupations reported:

- **4.9%** Warehouse.
- *4.5% Temp Agency.*
- **4.5%** Fast Food/Restaurant.
- **2.8%** Retail/Sales.
- **1.6%** Shipping & Receiving.
- **1.2%** Landscaping.
- **1.2%** Elderly Care.
- **1.2%** Cooking/Food Prep.
- **1.2%** Automotive.
- **0.8%** Office Clerical.
- **0.8%** Hotel/Hospitality.

In just these 11 occupations, there were an estimated 126 jobs obtained by WEP participants over the past 7 months. These findings point to an estimated one in three success over the past 7 months.

Churn Rate

When a client is no longer a participant in WEP due to a sanction, they may need to have a state hearing to overturn their sanction. Nearly 66% of clients reported taking this step to overturn their sanction, or reapplied for food assistance in another way after exiting WEP. It is estimated that there is a 3 month churn window, which is the average amount of time it takes for WEP participants to reenter SNAP after exiting the program.

The amount of churn generated by the most common causes of noncompliance creates increased work for both FCDJFS and the Ohio Association of Foodbanks, as an average two out of every three participants, including those who identified some form of employment, must restart the entire process by reapplying through their case worker for SNAP benefits.

Food Sources

If a client is not receiving food assistance due to a loss of SNAP benefits, they look for food elsewhere. When asked, "*How are you providing food for yourself in the absence of food benefits,*" clients gave multiple answers to the question:

- **81% Food Pantry.**
- **80% Family Support.**
- **18.1% Asking (Getting Food from Strangers, Panhandling, Dumpster Diving, *etc.*).**
- **18.1% Soup Kitchen/Meal Line.**
- **10.5% Homeless Shelter.**
- **10.5% Church.**

Many clients are utilizing the services of local emergency feeding programs in Franklin County. It is unclear why 42.5% of clients choose not to answer this question.

Recommendations

The following recommendations are supported by the findings of the WEP assessment data and the post-program client report. These recommendations have been presented to FCDJFS and are meant to encourage other government organizations to consider a further examination of the implication of programs like WEP.

Program Next Steps

The specific program needs of the Ohio Association of Foodbanks will enhance the overall client experience while strengthening relationships with our partners.

- Coordinate with other Departments of Job and Family Services statewide in an effort to replicate the positive results we have seen in Franklin County, to expand this program to other metro and rural areas.
- Increase the efficiency of our program in order to enhance client satisfaction and success while working with very limited resources.
- Coordinate with Franklin County to offer more opportunities for clients to connect with available employment and training.
- Improve quality assurance measures and outcomes as well as communication channels between the Ohio Association of Foodbanks, clients, host sites, and Franklin County Department of Job and Family Services.
- Improve relationship with new ABAWD specific units at FCDJFS.
- Improve our ability to assist clients with resumes and other work support initiatives.

Provide Additional Funding to Organizations Supporting WEP

- Accor[di]ng to the findings in our post-program client survey, over 80% of former WEP participants are utilizing the services of their local emergency food programs. This warrants more emergency funding to be provided to Mid-Ohio Foodbank to support the purchase, acquisition and distribution of additional food for Franklin County food pantries, soup kitchens, shelters and churches who are feeding the individuals affected.
- Provide additional funding to the Ohio Association of Foodbanks to support the cost of emergency vouchers for transportation, travel vouchers and basic needs.
- To increase interest in becoming a part of the host-site network, there needs to be more incentive for organizations to serve ABAWDs through WEP. By offering operating support to the nonprofit and faith-based organizations that are providing WEP services and slots we can motivate more sites to partner with the Ohio Association of Foodbanks, while current sites may be able to effec[ti]vely increase their capacity to serve more ABAWDs.
- Provide supplemental support for the continuation, expansion and analysis of YouthCorps, a program of the Ohio Association of Foodbanks for Young Adults Aging out of the Foster Care System. All youth who have successfully completed this program were either enrolled in school or working, which exempts from partic[i]pating in WEP as ABAWDs.

- Improve the funding and training of a specialized unit dedicated to the implementation of this work requirement and the ABAWD population's specific needs.

Increase Oversight To Improve Effectiveness

- Ensure that the foundation of the statewide grant application for the *2015 Pilot Project to Reduce Dependency and Increase Work Requirements and Work Effort Under the Supplemental Nutrition Assistance Program (SNAP)* is based upon this project and the data collected in these studies. Furthermore, assign specific staff and help lead the application and implementation of this grant
- Analyze the expenditures of Workforce Development Programs funded by FCDJFS compared to outcomes. WEP at the Ohio Association of Foodbanks has proven a 24% success rate, compared to a 16% success rate of similar government funded workforce programs in Franklin County.

Provide More Work Support Opportunities for ABAWDs

- Expand enrollment, participation, and successful completion of nationally certified programs such as the FastPath program at Columbus State Community College, including ServSafe, customer service, advanced logistics, and STNA.
- Create an employment enterprise or pipeline into strategic aspects of the job market. This will help harder to employ individuals find opportunities to gain sustainable employment.
- Prioritize Workforce Investment Act funding to provide education, training, and supportive services to ensure a seamless delivery of services.
- Establish a relationship with the Ohio Department of Reentry, Rehabilitation, and Corrections in order to address the specific concerns of the employer community in regards to the future employment of felons.
- Examine opportunities to secure additional USDA/SNAP Employment and Training funds to enhance service delivery.

Study the Social and Economic Impact of WEP

- Monitor and report on the impacts to well-being, health and safety of clients, WEP host-site staff/volunteers and the community at-large.
- Conduct an Economic Impact Analysis on the loss of food assistance/SNAP benefit issuance on the Franklin County economy.
- Provide funding for comprehensive case-management, longitudinal tracking of employment, wages, public assistance participation, and well-being of the ABAWD population.

Examine and Evaluate the Needs of Special Populations

- Provide support and funding for a study on the mental and physical health status and outcomes of the ABAWD population and their utilization of Medicaid.
- Fund person-centered community-based case management of ABAWD applying for SSI/SSDI, and supportive services including Legal Aid Assistance to non-custodial parents and individuals with criminal charges and felony convictions.
- Convene a study group to examine the impact of temporary and day labor employment services and its effects on this population.
- The Ohio Association of Foodbanks will continue to analyze assessments and data including current and previous encounters with the criminal justice system, community impact and these associated cost.

Appendix

Host Site Memorandum of Agreement

Host-sites must sign and return the Memorandum of Agreement (MOA) to the Ohio Association of Foodbanks before they are set up to receive WEP clients. Without agreeing to the terms and conditions set forth in the MOA they are ineligible to participate as a host-site.

Memorandum of Agreement

This Host Site Memorandum of Agreement, hereinafter referred to as "the Agreement," between the following two parties: (1) the Ohio Association of Foodbanks; hereafter referred to as "Sponsor" and (2), **Host Site,** hereafter referred to as "Host Site," sets forth the parties' understanding concerning the establishment and operation of a local project under Franklin County Department of Job and Family Services (FCDJFS) pursuant to Chapter 5107.54 to 5107.69 of the Ohio Revised Code and rules promulgated by the Ohio Department of Job and Family Services. The pri-

mary purpose of this Agreement is for the Sponsor to provide the Host Site with Food Assistance Recipients recognized as Able Bodied Adults without Dependents (ABAWD) for purposes of the Work Experience Program (WEP). These participants will have been directly referred to the Sponsor by FCDJFS.

I. General Provisions

1. Duration of This Agreement

This agreement will go into effect the date the Memorandum of Agreement is issued and will be null and void as of July 1, 2015, regardless of early termination of any WEP participants for any reason.

2. Status of WEP Participants During Service

WEP participants, in the course of their service, shall not be considered employees of the Host Site, the Sponsor, the Franklin County Department of Job and Family Services, or the Ohio Department of Job and Family Services. Therefore, the WEP participant is not entitled to any benefits and privileges of any employee. WEP participants are not covered by unemployment compensation.

II. WEP Participant Assignment Description

The Host Site will provide experience and training for WEP participants receiving Food Assistance Program benefits (also known as SNAP benefits) who are not otherwise able to obtain employment, in order to assist them to move into regular employment. Individual WEP Participants assigned to the Work Experience Program (WEP) will be utilized in various occupations, such as but not limited to: clerical, groundskeeper, painter, custodial, building maintenance, and appliance repair in an on-the-job training environment. The Host Site shall adhere to the WEP Participant Assignment Description, which was submitted during the Host Site application process, including but not limited to: the description of the work to be performed and the schedule for completing the work.

If at any time, the Host Site deems it imperative to amend the WEP Participant Assignment Description, the Sponsor is to be notified before any changes are made.

III. Records and Reporting

1. The Host Site will:

a. Maintain such records and accounts, and make such reports and investigations concerning matters involving WEP Participants and the project as the Sponsor may require. The Host Site agrees to retain such records as the Sponsor may require for a period of 1 year after completion or termination of the project, or longer if required for administrative proceedings and/or litigation purposes, and to provide access to such records to the Sponsor for the purpose of litigation, audit or examination.

b. Work with the Sponsor to schedule a site visit quarterly at times convenient for both the Sponsor and Host Site.

c. Submit monthly reports of hours served for all WEP participants at your agency no later than the last business day of the month at 5:00 p.m. EST

d. Report any knowledge of the employment placement and retention of any WEP participants to the Sponsor, including the following information:

a. Date of hire.
b. Hourly wage.
c. Full or part time.
d. Employer.
e. Whether Health Benefits are available.
f. Industry.

IV. Further Responsibilities of the Parties

1. **Sponsor Responsibilities**. The Sponsor will:

a. Assign **WEP participants** to the Host Site at its discretion.

b. Periodically review and assist the Host Site's use of WEP participants to achieve the objectives and perform the task(s) specified in the WEP Participant Assignment Description

c. Promptly respond to written requests by the Host Site to move any WEP participant from the project.

d. Ensure that the WEP participant has undergone a FBI/BCI Criminal Background Check prior to assignment.

e. Ensure that the WEP participant is provided with all necessary tools, equipment, transportation, and supplies required on the worksite for the WEP participant to complete assigned duties.

2. **Host Site Obligations.** The Host Site will:

a. Arrange and be responsible for providing on-site orientation and training for all incoming WEP participants within a week of being contacted by the WEP participant and the Sponsor.

b. Operate the project in accordance with applicable program policies and regulations, and other Federal laws, regulations, and policies which are, or become, applicable to the program.

c. Provide opportunities for WEP participants to develop existing skills or learn new skills to enhance their chances for securing unsubsidized employment and to assign WEP participants duties that are consistent with their WEP Participant Assignment Description.

d. Agree to ensure that WEP participants work 24 hours per month, but no more than 24 hours per month, or the required number of hours as established by the FCDJFS, and to allow WEP participants to observe those holidays which are observed by the WEP Host Site.

i. Limitations regarding hours of participation are exclusive of:

1. Travel time to and from the worksite.
2. Travel time to and from the child care provider.
3. Mealtime for which regular employees of the WEP Host Site are not compensated.

ii. The Sponsor shall not require WEP participants to report to the worksite if a strike or other labor dispute develops after the start of the work assignment.

e. Provide the Sponsor with a list of necessary tools, equipment, transportation, and supplies required on the worksite for the WEP participant to complete assigned duties.

f. Provide training or orientation and supervision vital to the WEP participant's efficient performance of the work assignment.

i. Provide on-the-job training, if necessary, to improve the skills of WEP participants for the type of WEP assignments provided.

ii. Ensure the WEP participants are knowledgeable of the work standards they are expected to meet.

g. Agree that WEP participants shall not engage in activities which result in the displacement of other persons. Should an employee of the WEP Host Site feel he/she has been displaced due to the activities of a WEP participant, he/she may file a complaint with the Sponsor. Displacement occurs when a WEP participant's assignment results in removing or discharging employees or individuals or otherwise denying such assignment to persons who:

i. Are already employed as regular full-time or part-time employees.

ii. Are or have been employed full-time or part-time as WEP participants in publicly subsidized employment and training programs.

iii. Are or have been involved in a dispute between a labor organization and the WEP Host Site.

iv. WEP participants shall not be used to fill existing vacant positions or to perform work which reduces the number of hours by regular or part-time employees or reduces the number of positions that would otherwise be filled by regular employees.

h. Understand that the Sponsor shall investigate all complaints that a violation may have occurred. If it is determined that a violation exists:

i. No WEP participant shall be assigned to the WEP Host Site until the violation(s) have been corrected and

ii. And such violation(s) cannot be corrected to the satisfaction of the FCDJFS, this agreement is null and void.

iii. Further, the Sponsor will administer a complaint procedure available for regular employees of the WEP Host Site who feel displacement has occurred because of a WEP participant assignment.

i. Agree that if as a party to a collective bargaining agreement which is in effect at the worksite, the WEP Host Site will notify the union that WEP participants are being assigned to the worksite and provide the Sponsor with docu-

mentation that such notification has been given. The FCDJFS will inform the WEP participant of the existence of a collective bargaining agreement when one exists at the worksite.

i. The Host Site further agrees that the WEP assignments and positions will not have been developed in response to, or are in any way associated with the existence of a strike, lockout, or bona fide labor dispute; also they do not violate any existing labor agreement, or interfere or conflict with the collective bargaining agreement.

j. Agree to consider for hire qualified WEP participants when the individual has displayed good work habits and has met the Host Site's expectations throughout the WEP assignment period.

k. Understands that penalties are provided under law for any WEP Host Site who knowingly obtains a benefit to which he/she is not entitled. If such violation occurs, this agreement shall be null and void. This agreement may be terminated at any time upon thirty days written notice by either party.

Termination notice should be sent to:

Attention: Work Opportunity Coordinator,
Ohio Association of Foodbanks,
101 East Town Street Ste. 540,
Columbus, OH 43215

l. Agree that in any publicity release or other public reference including media releases, information pamphlets, *etc.* on the services provided under this agreement, it will be clearly stated that the services are funded by the Ohio Department of Job and Family Services administered by the Franklin county Department of Job and Family Services through its Employment Opportunities Program.

m. Understands that the FCDJFS will pay premiums which are assessed by coverage of WEP participants for work related injuries or disabilities under public work relief compensation administered by the Bureau of Worker's Compensation. Benefits under public work relief compensations differ from those under regular worker's compensation. Detailed provisions of coverage are found in Chapter 4127 of the Ohio Revised Code.

n. Make every reasonable effort to ensure that the health and safety of WEP participants are protected during the performance of their assigned duties.

o. Report to the Sponsor, within 24 hours, the unscheduled departure of WEP participants, and otherwise keep the Sponsor timely informed of unscheduled changes of status and conditions of WEP participants, such as arrests, hospitalization, and absence without leave. The Host Site must also indicate to the Sponsor the actual departure date(s) of WEP participants(s) who leave prior to completion of service date(s) when requested.

3. **Nondiscrimination**

a. **General Prohibition**

No person with responsibilities in the operation of the project, whether affiliated with the Sponsor or the Host Site, shall discriminate against any WEP participant, or member of the staff of, or beneficiary of the project, with respect to any aspect of the project on the basis of race, religion, color, national origin, sex, sexual orientation, age, disability, political affiliation, marital or parental status, or military service.

b. **Sexual Harassment**

Sexual harassment is a form of discrimination based on sex, which is prohibited as addressed directly above. The Host Site must prohibit sexual harassment and take immediate corrective action and/or disciplinary action if violations occur. Such sexual harassment violations include:

(1) Acts of "*quid pro quo*" sexual harassment where a supervisor demands sexual favors for service benefits, regardless of whether the Host Site, its agents or supervisory employees should have known of the acts.

(2) Unwelcome sexual advances, requests for sexual favors and other verbal or physical conduct of sexual nature which have the purpose or effect of creating an intimidating, hostile or offensive service environment.

(3) Acts of sexual harassment toward fellow WEP participants or non-employees, where the Sponsor or Host Site, its agent or its super-

visory employees knew or should have known of the conduct, unless it took immediate and appropriate corrective action.

4. **Prohibitions of Use of WEP Participants By Sponsor and Host Site**

The Sponsor and Host Site both agree that no WEP participant assigned to the Host Site, under this Agreement, shall be used to assist, provide or participate in:

a. Partisan and nonpartisan political activities associated with a candidate, including voter registration.

b. Direct or indirect attempts to influence passage or defeat of legislation or proposals by initiative petition.

c. Labor or anti-labor organization or related activities.

d. Religious instruction, worship services, proselytization, or any other religious activity as an official part of their duties.

5. **The Sponsor and Host Site further agree not to:**

a. Carry out projects resulting in the identification of such projects with partisan or nonpartisan political activities, including voter registration activities, or providing voter transportation to the polls.

b. Assign WEP participants to activities that would result in the hiring of or result in the displacement of employed workers, or impair existing contracts for service.

c. Approve the involvement of any WEP participants assigned to it in planning, initiating, participating in, or otherwise aiding or assisting in any demonstration whatsoever.

6. **Amendments**

This Memorandum of Agreement may be amended at any time, in writing, executed by authorized representatives of the Sponsor and Host Site.

Franklin County Leadership

This project could not have been possible without the high degree of cooperation from the Franklin County Department of Job and Family Services, who have been essential in every step of the process.

- ANTHONY TROTMAN, *Director* Franklin County Department of Job and Family Services.
- AMIEE BOWEE, *Deputy Director—Development Support Services.*
- DAWN CARSON, *WFD Director.*
- JAIME BROWN, *Information Technology.*
- JEREMY HOLLAND, *WFD Administrator.*
- LASHAWN CAPITO, *Social Program Developer.*
- LAVINNA BANNER, *Work Activity Supervisor.*
- LAWRANCE SPANN, *Director*—Northland Community Opportunity Center.
- MAURICE MILLER, *ABAWD Unit Supervisor.*
- VIVAN TURNER, *Administrative Officer.*

A Special Thank You To:

- The Franklin County Board of Commissioners

Opportunity Center Leadership

Opportunity Center Administrators

- Christy Hentschel
- Daniel Vaccarella
- Darren Henderson
- Denise Hughes Curtis
- Erin Heinzman
- Jodi Lanthorn
- Kristin Retherford
- Lavina Banner
- Lawrence Spann
- Lynette Bennett
- Melissa France
- Sherri Herrell

Opportunity Center Supervisors

- Aimee Knouff
- Alicia Jones
- Alison Franklin
- Althea Letang
- Angela Wagner
- Arnita Mason
- Bernadette Wilson
- Brandy Mays
- Christina Rumpel
- Chuck Haggins
- Comfort Kenneh
- Darnell Doaks
- Denise Hensley
- Dwand Montgomery
- Gbesreport Jusu
- Heather Mackey
- Jacqueline Sorrell
- Jessica Henry
- Joyce Danflous
- Keyna Stephens
- LaNae Rhodes
- Latonya Truett
- Leandra Coles
- Lisa McGowan
- Margaret Wright Rolland
- Mark Rodgers
- Mary Milner
- Melissa Clark
- Michael Hampton-Simpkins
- Michelle Taylor
- Pamela Hall
- Pamela Ware
- Rick Evans
- Sandra Langston
- Som Opma
- Stan Daugherty
- Tony Richardson
- Twila Lucas

Volunteer Host Site Partners

Without the support of our wonderful network of nonprofit and faith-based organizations we could not offer so many meaningful volunteer opportunities to ABAWDs in Franklin County. We extend our sincere gratitude to each organization for their continued partnership and dedication to serving the community.

- A&L Afterschool Literacy and Institute
- Advanced Recovery Services
- Agora Christian Ministries
- African American Alzheimer's and Wellness Association
- Authority of the Believers Ministries, Inc.
- Big Brothers Big Sisters
- Boy Scouts of America, Exploring Program
- Brice United Methodist Church
- Broad Street Food Pantry
- Broad Street United Methodist Church
- Cat Welfare
- Community Development for All People and Freestore
- Central Community House
- Central Ohio Youth Advocacy Program
- Central Ohio Youth for Christ
- Charitable Pharmacy of Central Ohio, Inc.
- Christ Harvest Church
- Christian Assembly Church
- City of Whitehall
- Clintonville Beechwold Community Resource Center
- Colony Cats & Dogs
- Columbus Humanities, Arts, and Technology Academy Day by Day
- Community Kitchen
- COVA
- Covenant Presbyterian Church
- EL Hardy Center
- Family Missionary Baptist Church
- Franklinton Board of Trade
- Franklinton Gardens
- Genesis of the Good Samaritans
- The GLORY Praise and Help Center
- Godman Guild
- Greater Ebenezer Cathedral of Praise and Kingdom Kids Daycare
- Greater Linden Development Corp.
- Grove City—Parks and Recreation
- Habitat for Humanity's ReStore
- HandsOn Central Ohio
- Heart Food Pantry
- Heart of Christ Community Church
- Heart of Ohio Family Health Centers
- Holy Family Soup Kitchen
- Homes on the Hill CDC
- House of Refuge for All People
- HUB Community Development Corporation
- Ibnu Taymiyah Masjid and Islamic Center
- IMPACT Community Action Agency
- Isabelle Ridgway Care Center
- Jerusalem Tabernacle MBC
- J. Jireh Development Corp
- JLG Academy
- Jewish Family Services
- Kingdom Alive Word Church
- Libraries for Liberia Foundation
- Licking Heights Steering Committee
- Life Church at Easton
- Long Lasting Community Development
- Loving Hands Learning Center
- Lutheran Social Services Ohio Benefit Bank—South Location
- Lutheran Social Services Ohio Benefit Bank—West Location
- Magic Johnson Bridgescape
- Metro Columbus Christian Job Corps
- Mid-Ohio Foodbank
- Mock Rd University for Children
- National Parkinson Foundation
- Near East Side Cooperative Market
- New Directions Career Center
- NNEMAP Inc
- New Salem Baptist Church and Community Development Corporation
- Ohio Empowerment Coalition
- One Hope Community Church of the Nazarene
- Pri-Value Foundation
- Reaching Higher Heights 4-Life
- RF Hairston
- Reeb Hossack
- St. Dominic Roman Catholic Church
- Seven Baskets CDC
- Shiloh Christian Center
- Short North Stage
- Somali Bantu Youth
- Southeast Inc.
- St. Philip
- The Center for Family Safety and Healing
- The CORE Resource Center
- Thurman Avenue United Methodist Church
- Trinity Assembly of God Church
- Trinity UCC
- Twin Valley Behavioral Healthcare
- Unity of Columbus
- Upper Arlington Public Library
- Welcome Home OHIO
- Wesley Church of Hope United Methodist Church
- YouthBuild Columbus Community School

Workforce Development Partners

Our workforce development partners make education and career planning a priority. Their partnership affords ABAWDS easy access to programs and services, which connects our clients to opportunities that open doors to future employment.

- Center for Vocational Alternatives (COVA)
- Columbus City Schools—ACE
- Columbus Literary Council
- Columbus Urban League (CUL)
- Delaware Area Career Center
- Dominican Learning Center
- Dress for Success
- Eastland Fairfield Career Center
- Ethiopian Tewahedo Social Services
- Global to Local Language Solutions
- Godman Guild
- Goodwill
- IMPACT Community Action
- Jewish Family Services
- Legal Aid Society of Columbus
- Metro Columbus Christian Job Corps
- New Directions Career Center
- Oakland Park School of Technology
- Per Scholas
- Salvation Army
- Tolles Career and Technical Center
- Vocational Guidance Services (VGS)
- Westerville Area Resource Ministry (WARM)
- WrightChoice, INC

Insert 2

Ms. ADAMS. Thank you. Ms. Calvert, many nutrition advocates are concerned at the end of waivers to work requirements for able bodied adults in the SNAP program will put more pressure on food banks. As waivers from SNAP work requirements continue to expire, are you seeing more demand for your services at partner agencies?

Ms. CALVERT. We are, and actually I wanted to highlight a study that was done in Maine by our food banks there. The state decided to make some changes and to remove work waivers, and so they surveyed the people that they

were surveying, and they found that 25 percent of those surveys who lost SNAP benefits, that it was due to a time limit. Eighty percent of those individuals reported that they are using the food pantry more this year than in the past. Many others actually shouldn't have been kicked off the program. In Maine, 13 percent of those that lost their SNAP benefits due to the time limit actually had health and care giving barriers that should have made them exempt from that. I would just highlight that there is going to be significant, if changes were made to work waivers for able bodied adults without dependents, there is a significant amount of implementation challenges that would come with that. Thirteen percent losing benefits when they shouldn't have in this population that already is not eligible for other benefits, that is kind of unconscionable that that happened, and we worry that that is jut the tip of the iceberg if work waivers are done away with.

Hunger Pains

Widespread Food Insecurity Threatens Maine's Future

Executive Summary

February 2017

Roughly 203,000 Mainers struggle with hunger, more than the total number of people living in Portland, Lewiston, Bangor, South Portland, Auburn, and Biddeford combined.[1] Since the Great Recession officially ended in 2009, much of the nation has experienced recovery and relief, but Maine is moving against the national trend, and high rates of poverty and hunger continue to harm our state.

"If I'm working as hard as I do, I want to have the right to survive and live instead of going hungry."

Senior man in Hancock County.

One in six Mainers is food-insecure, while the rate among Maine children is even higher: nearly one in four children in Maine experiences food insecurity.[2]

Very low-incomes for roughly ⅓ of the Maine workforce are an important factor underlying food insecurity; Maine's employment structure provides a livable wage for only about ⅔ of its roughly 620,000 workers.[3]

Defining Terms

What we commonly refer to as "hunger" is termed "food insecurity" by the United States Department of Agriculture (USDA) and divided into two categories: low-food security is characterized by a reduction in the quality and variety of diet, and very-low-food security by "disrupted eating patterns and reduced food intake."

Nevertheless, over the last 2 years, Maine instituted both a time limit and an asset test for the Supplemental Nutrition Assistance Program (SNAP), which reduced the number of households eligible for the federally funded food assistance benefits.[4] In November 2016, the state's Department of Health and Human Services reported 188,425 Mainers were participating in SNAP, a substantial decline from 2013 when 249,119 Mainers were receiving benefits.[5]

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[1] *Population and Housing Unit Estimates,* U.S. Census Bureau. *www.census.gov/programs-surveys/popest/data/data-sets.html.*

[2] Alisha Coleman-Jensen, Matthew P. Rabbitt, Christian A. Gregory & Anita Singh, H*ousehold Food Security in the United States in 2015,* USDA, September 2016, p. 7. *https://www.ers.usda.gov/webdocs/publications/err215/err-215.pdf?v=42636; Map the Meal Gap 2016,* Feeding America, 2016. *http://www.feedingamerica.org/hunger-in-america/our-research/map-the-meal-gap/2014/ME_AllCounties_CDs_MMG_2014.pdf.*

[3] MIT Livable Wage Calculator. *http://livingwage.mit.edu/states/23/locations;* Maine Center for Economic Policy, "Restoring the Value of Work," August 2016. *http://www.mecep.org/wp-content/uploads/2016/08/Minimum-wage-brief_final_08-17-16.pdf.*

[4] Childless adults aged 18 to 49 lose benefits after 3 months unless they can find work, job training, or volunteer opportunities. Assets of more than $5,000 disqualify adults without children, including seniors and those with disabilities.

[5] *Geographic Distribution of Programs and Benefits for November 2016,* Maine Department of Health and Human Services, p. 25. *http://www.maine.gov/dhhs/ofi/reports/2016/GeoDistrib_Nov.pdf;* Profile of SNAP Households, USDA, March 2015. *https://www.fns.usda.gov/sites/default/files/ops/Maine.pdf.*

Preble Street Maine Hunger Initiative and Good Shepherd Food Bank sought to look beyond the numbers to gain a clearer understanding of who is struggling with hunger in Maine and what challenges they face in their attempts to attain food security. The research team surveyed 2,053 food pantry users across all 16 Maine counties, held focus groups, and conducted interviews in an effort to gather both qualitative and quantitative information.

Survey respondents ranged in age from 15 to 95, with an average age of 52. The average household size was 2.7 people. Eighty-seven (87) percent of households contain a child, a senior, or a person with a disability.

What Did the Study Find?

➢ *Emergency Food System Has Become Everyday Means of Survival*

Food pantries were conceived as a source of emergency food assistance. Instead, they have become a regular source of food for many low-income Americans, including thousands of Mainers. Most survey respondents (86 percent) report using the food pantry at least once a month, with 29 percent visiting a pantry every week and 15 percent visiting a pantry every 2 weeks.

> *"The pantry helps us out a whole lot. We're getting some food stamps, but they cut them back, so we never know from month to month what they're going to do. They don't give you much, that's for sure."*
>
> Senior man in Aroostook County.

Fifty-nine (59) percent of respondents report that they are using the food pantry more this year than they did last year.

➢ *SNAP Benefits Offer Limited Assistance*

Fifty-seven (57) percent of survey respondents indicated that they receive monthly SNAP benefits. Of these respondents, 83 percent report that benefits last 2 weeks or less, and 49 percent reported that benefits last just 1 week or less.

> *"When they are establishing the amounts for the food stamps, they need to check the regular grocery stores, because those prices are going up, and it may take years to get an increase in food stamps."*
>
> Middle-aged man in Cumberland County.

The SNAP benefit received each month depends on the size of the household. The vast majority of survey respondents who received SNAP benefits reported receiving between $16 and $200 a month.

➢ *SNAP Policy Changes Have Increased Reliance on Food Pantries*

One in four respondents (486 people) reported they had lost SNAP benefits in the past year. Nearly ⅓ of this group said they were removed from the program because of the time limit (24 percent) or the asset test (7 percent). The remaining ⅔ were dropped from the program for reasons including increased earnings, marriage, lost application paperwork, and being unable to schedule a required interview with a DHHS caseworker.

> *"The whole point of these benefits, after you have served your country, is to be able to rely on them. Then I find myself having to jump through hurdles to achieve them and it doesn't work."*
>
> U.S. Navy veteran in Knox County.

Of the respondents who lost benefits because of the time limit,

- 13 percent reported health and caregiving barriers that likely should have made them exempt from the time limit.
- 59 percent reported being unable to find work or not having transportation to get to work.
- 79 percent report using the food pantry more this year than they did last year.

Of the respondents who lost SNAP benefits as a result of the asset test, 63 percent have a household member over 60 years old, and 44 percent have a household member with a disability. Fifty-eight (58) percent report using the food pantry more this year than last.

➢ *Low-Wage Jobs with Limited or No Benefits Keep Maine Families in Poverty*

When asked about the highest hourly wage at their last job, the median response was $10 per hour—below the Federal poverty level for a family of four. A very small portion of respondents reported receiving employee benefits. For example,

- only 15 percent have had access to health insurance through their current or most recent employer.
- 13 percent currently have or previously had sick days.

With the collapse of manufacturing in many rural areas, Mainers struggle to find work. Of those respondents who were looking for work but having a hard time finding it, fully half faced significant barriers, such as mental or physical health problems, lack of transportation to get to work, or lack of needed schooling or training to qualify for a job.

"The work is all fast food and jobs that don't pay them enough."
Senior man in Aroostook County.

➢ *Paying for Food Means Making Trade-offs*

When asked whether they have to sacrifice other necessities in order to be able to afford food, 73 percent of respondents said yes. The trade-offs that were reported most often were between buying food and paying utilities and other bills, paying for medication and health care, and paying for transportation.

"My biggest concern is insurance. Elderly people are dropping their medicines, to keep money for them to survive . . . It's either the medication or they don't buy food."
Senior man in Kennebec County.

Trade-offs are even more acute for those who lost SNAP benefits because of the recent policy changes, of whom 86 percent report making difficult choices between getting food on the table and paying for rent, heat, health care, and transportation.

State Policies Should Help Rather Than Hurt Mainers in Need

When Mainers have access to nutritious food, our communities thrive and grow. When our neighbors struggle with hunger, the impacts on our state are dire and wide-reaching.

"People have this image of what a person on assistance looks like. It's affecting people who are working . . . it's your neighbor, coworker, lady in line at the grocery store . . . it's everyone around you, and people just don't talk about it."
Middle-aged woman from Lakes Region.

Our results show that while SNAP is a critical safety net, it is not catching enough people and now fewer than ever. SNAP policy changes have forced many Mainers to rely more heavily on charitable food assistance programs to meet their basic food needs. Just like clean water, public safety, and education, making sure everyone has enough to eat is an obligation of a just society, not something that should be done only when individuals and private donors feel generous.

We offer the following set of urgent policy recommendations (see full report for more details):

➢ Preserve and protect the Federal Supplemental Nutrition Assistance Program (SNAP).

➢ Restore and bolster access to SNAP in Maine by pursuing waivers and eliminating the asset test.

➢ Bolster childhood nutrition programs in schools and invest in more summer meals sites.

➢ Support Maine workers and families with adequate benefit policies and job training programs.

➢ Invest in public transit statewide and increased access to affordable transportation options.

➢ Accept Federal funds to expand MaineCare to more low-income people.

➢ Invest in affordable housing and fund Housing First initiatives to end homelessness.

In addition to ensuring these policies are in place, Maine should support the charitable food assistance network to serve as an effective emergency food system.

Preble Street is a social work organization founded on the principles of access for everyone and unconditional positive regard. Since 1975, Preble Street has served some of the most vulnerable people in Maine, working to turn hunger and homelessness into opportunity and hope through 14 low-barrier programs throughout the state. As the hub of services in northern

New England's largest urban area, Preble Street provides round-the-clock services 365 days a year to not only meet urgent needs, but to empower people to move beyond the crises in their lives, and to build and advocate for solutions to homelessness, hunger, and poverty. Contact: (207) 775–0026; *www.preblestreet.org; www.facebook.com/preblestreet; www.twitter.com/PrebleStreet*.

As the largest hunger relief organization in Maine, Good Shepherd Food Bank provides for Mainers facing hunger by distributing nutritious food to more than 400 partner agencies across the state, including food pantries, meal sites, schools, and senior programs. Together with its network, the Food Bank helps combat the root causes of hunger by engaging in advocacy, nutrition education, and strategic partnerships. In 2016, the Food Bank distributed more than 21 million meals to families, children, and seniors in need throughout Maine. Contact: (207) 782–3554; *www.feedingmaine.org; www.facebook.com/feedingmaine; www.twitter.com/feedingmaine*.

The research team for this project consisted of staff people from Good Shepherd Food Bank and Preble Street Maine Hunger Initiative, AmeriCorps VISTA members serving at the Maine Hunger Initiative, graduate students at the University of Southern Maine overseen by Dr. Michael Hillard, and Jean Bessette, doctoral student at the University of New Hampshire.

Hunger Pains

Widespread Food Insecurity Threatens Maine's Future

Final Report February 2017

A collaborative project of Good Shepherd Food Bank and Preble Street

Introduction

During the Great Recession, hunger in the United States skyrocketed, rising in just a single year from 11.1 percent of households in 2007 to 14.6 percent in 2008.[1] Maine saw a similar increase. In the years since the recession officially ended in 2009, much of the nation has experienced recovery and relief, but Maine is moving against the national trend, and high rates of poverty and hunger continue to harm our state. The rate of hunger, or "food insecurity," in the United States as a whole dropped to 12.7 percent in 2015. In Maine, it remained elevated at 15.8 percent.[2]

According to the United States Department of Agriculture (USDA), one in six Mainers is food-insecure, meaning they live without reliable access to a sufficient quantity of affordable, nutritious food.[3] The rate of food insecurity among Maine children is even higher: nearly one in four children in Maine experiences food insecurity.[4] Maine also ranks third in the nation for the portion of households experiencing "very low food security," an indication that one or more people were hungry at times during the year because they could not afford enough food.

The rate of hunger, or "food insecurity," in the United States as a whole dropped to 12.7 percent in 2015. In Maine, it remained elevated at 15.8 percent.

These statistics mean that every day, roughly 203,000 Maine people are struggling with hunger, more than the total number of people living in Maine's six largest municipalities—Portland, Lewiston, Bangor, South Portland, Auburn, and Biddeford—combined.[5]

While hunger rates are high across Maine, the highest rates of food insecurity are in some of Maine's less-populated northern and rural counties: Washington (17.2

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[1] Alisha Coleman-Jensen, Matthew P. Rabbitt, Christian A. Gregory & Anita Singh, *Household Food Security in the United States in 2015,* USDA, September 2016, p. 7. *https://www.ers.usda.gov/webdocs/publications/err215/err-215.pdf?v=42636*.

[2] *Ibid,* pp. 7, 21. What we commonly refer to as "hunger" is termed "food insecurity" by the United States Department of Agriculture (USDA) and divided into two categories: low food security is characterized by a reduction in the quality and variety of diet, and very low food security by "disrupted eating patterns and reduced food intake." Detailed definitions can be found at *https://www.ers.usda.gov/topics/food-nutrition-assistance/food-security-in-the-us/definitions-of-food-security.aspx*.

[3] *Ibid.*

[4] Gundersen, C., A. Dewey, A. Crumbaugh, M. Kato & E. Engelhard, *Map the Meal Gap 2016: Food Insecurity and Child Food Insecurity Estimates at the County Level,* Feeding America, 2016. *http://www.feedingamerica.org/hunger-in-america/our-research/map-the-meal-gap/2014/ME_AllCounties_CDs_MMG_2014.pdf*.

[5] *Population and Housing Unit Estimates,* U.S. Census Bureau. *https://www.census.gov/programs-surveys/popest/data/data-sets.html*.

percent), Aroostook (17.1 percent), and Piscataquis (16.9 percent). The lowest rates are in the coastal counties of Sagadahoc (13.4 percent), Knox (13.6 percent), and Lincoln (13.7 percent).[6]

Not surprisingly, the three most populous counties have the largest numbers of Mainers facing food insecurity. A 2016 report conducted by Feeding America, a national hunger relief charity, identified 40,330 people as food-insecure in Cumberland County, which includes Portland and South Portland; 27,590 in York County, which includes Biddeford; and 25,280 in Penobscot County, which includes Bangor, compared to 2,910 people facing food insecurity in sparsely populated Piscataquis County.[7]

Alarmed by the persistence of widespread food insecurity in Maine, Preble Street Maine Hunger Initiative and Good Shepherd Food Bank sought to look beyond the numbers to gain a clearer understanding of who is struggling with hunger in Maine and what challenges they face in their attempts to attain food security. This research focuses on people who receive food assistance through hunger relief organizations in Maine and examines their household demographics, use of charitable food assistance, participation in the Supplemental Nutrition Assistance Program (SNAP), and employment. The report also examines the effects of two recent policy changes in Maine's administration of SNAP and the impact on food security for individuals who have lost benefits because of the changes.

The research team for this project consisted of staff people from Good Shepherd Food Bank and Preble Street Maine Hunger Initiative, AmeriCorps VISTA members serving at the Maine Hunger Initiative, graduate students at the University of Southern Maine overseen by Dr. Michael Hillard, and Jean Bessette, doctoral student at the University of New Hampshire.

Hunger in Maine

Mainers who face food insecurity look to both charitable organizations and Federal and state assistance programs in order to access enough food for themselves and their families.

Charitable Food Assistance

Forty-seven million Americans rely on the charitable food assistance system.[8] Although hunger relief organizations were conceived as an emergency service for people who are temporarily in need, they have instead become an ongoing source of food support.[9] In 1980, there were just 200 food pantries in the entire country. By 2013, there were more than 40,000.[10]

> *Although hunger relief organizations were conceived as an emergency service for people who are temporarily in need, they have instead become an ongoing source of food support.*

Maine has seen a similar expansion of the emergency food system, with the number of pantries increasing an estimated tenfold since the 1980s.[11] The state's charitable food assistance network consists of hundreds of food pantries, soup kitchens, shelters, and other community-based organizations that provide for the needs of people who lack access to sufficient food. Good Shepherd Food Bank, Maine's only statewide food bank, partners with the majority of these local organizations to distribute millions of pounds of food throughout the state each year. As of December 2016, the Food Bank had 399 partners—303 food pantries, 50 meal sites, and 46 other organizations, including homeless shelters, youth programs, and group buying clubs. Hunger relief organizations are spread throughout the state, although there are fewer in less densely populated areas.

Local food pantries and meal sites are typically small organizations with limited resources and cannot meet the food needs of all Mainers who are struggling with food insecurity. A 2014 report by Good Shepherd Food Bank and Feeding America found nearly ¾ of Good Shepherd's partners reported employing no paid staff and

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[6] *Ibid.*

[7] *Ibid.*

[8] Nancy S. Weinfield, *et al., Hunger in America 2014,* Feeding America, August 2014, p. 44. *http://www.feedingamerica.org/hunger-in-america/our-research/hunger-in-america/*.

[9] J. Molnar, P. Duffy, L. Claxton, & C. Bailey (2001). "Private food assistance in a small metropolitan area: Urban resources and rural needs," *Journal of Sociology and Social Welfare,* 28: 187–209.

[10] Peter Pringle (ed.), *A Place at the Table* (Participant Media, 2013), p. 137.

[11] While statewide figures are not available, historical data for southern Maine show four pantries in 1979, 60 in 2005, and 80 in 2010. Donna Yellen, Mark Swann, and Elena Schmidt, "Hunger in Maine," *Maine Policy Review* 20.1 (2011): 140–150. *http://digitalcommons.library.umaine.edu/mpr/vol20/iss1/21.*

relying entirely on volunteers. Nearly half of the volunteers were over 60 years old. Local organizations also reported having to scale back their programs or turn clients away for various reasons, including lack of financial resources and not having enough food to meet the need.[12]

Nearly ¾ of Good Shepherd Food Bank's partners reported employing no paid staff and relying entirely on volunteers.

The 2014 report counted more than 178,000 Mainers who regularly sought assistance at local food pantries and meal sites. This estimate does not account for children and families who participate in Good Shepherd's school-based initiatives such as school food pantries and programs that fill student backpacks with food for the weekend. The study found that people were visiting a local hunger relief charity 11 out of 12 months a year, on average, indicating chronic food insecurity and an ongoing need for food to supplement what they could obtain through other means.[13]

Supplemental Nutrition Assistance Program

The Supplemental Nutrition Assistance Program (SNAP, also known as Food Stamps, or the Food Supplement Program) is an important component of the nation's social safety net. The program is designed to help individuals and families stretch their food budgets and buy the nutritious foods they need to live healthy lives. SNAP provides financial assistance for food purchases, on average about $1.40 per person per meal, to eligible persons via an electronic benefits transfer (EBT) card. These benefits are entirely federally funded.[14] As of October 2016, 43.5 million people were participating in SNAP nationally at a cost to the Federal Government of about $75 billion annually.[15]

Nationally, ½ of SNAP recipients participate for just 10 months or less, until they get back on their feet or find higher-paying employment. Fifty-eight (58) percent leave the program within 1 year.[16] Since 1980, households with full-time, year-round workers have grown as a share of SNAP recipients more than any other group.[17] This means that more people who are working full time are not paid a wage high enough to sustain their families.

In Maine, SNAP is administered by the state Department of Health and Human Services (DHHS), with the Federal Government sharing ½ of the administrative cost. SNAP enables participants to shop at a local grocer when and where it is convenient, like any other Maine family. The program provides a step toward a sense of normalcy and stability for families struggling to make ends meet.

SNAP is not only our nation's first line of defense against hunger, but it also stimulates the economy through a multiplier effect.

In November 2016, DHHS reported 188,425 Mainers were participating in SNAP, a decline from the previous year and a substantial decline from 2013 when 249,119 Mainers were participating.[18] Thirty-six (36) percent of SNAP households in Maine are families with children, 25 percent have one or more people 60 years and over, and 35 percent have one or more people with a disability.[19]

SNAP is not only our nation's first line of defense against hunger, but it also stimulates the economy through a multiplier effect. During Fiscal Year 2015, SNAP brought $282,015,650 in Federal funds to grocery stores and other retailers through-

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[12] *Hunger in America 2014: Report for Good Shepherd Food Bank,* Feeding America, August 2014. *http://www.gsfb.org/wp-content/uploads/2014/10/FB259_report.pdf.*

[13] *Ibid.*

[14] "Policy Basics: Introduction to the Supplemental Nutrition Assistance Program (SNAP)," Center on Budget and Policy Priorities, March 24, 2016. *http://www.cbpp.org/research/policy-basics-introduction-to-the-supplemental-nutrition-assistance-program-snap.*

[15] *SNAP Program: Number of Persons Participating,* USDA, data as of January 6, 2017. *https://www.fns.usda.gov/sites/default/files/pd/29SNAPcurrPP.pdf.*

[16] "A Review of Strategies to Bolster SNAP's Role in Improving Nutrition as well as Food Security," Food Research & Action Center, updated January 2013.

[17] James P. Ziliak, "Why Are So Many Americans on Food Stamps? The Role of the Economy, Policy and Demographics," in J. Bartfield, C. Gunderson, T. Smeeding, & J. Ziliak, *SNAP Matters: How Food Stamps Affect Health and Well-Being* (Stanford University Press, 2015), p. 27.

[18] *Geographic Distribution of Programs and Benefits for November 2016,* Maine Department of Health and Human Services, p. 25. *http://www.maine.gov/dhhs/ofi/reports/2016/GeoDistrib_Nov.pdf; Profile of SNAP Households,* USDA, March 2015. *https://www.fns.usda.gov/sites/default/files/ops/Maine.pdf.*

[19] *Characteristics of Supplemental Nutrition Assistance Program Households: Fiscal Year 2015,* USDA, November 2016. *https://www.fns.usda.gov/sites/default/files/ops/Characteristics2015.pdf.*

out Maine.[20] With $5 in SNAP generating $9 in the local economy, these funds could be expected to generate more than $500 million in total economic activity.

SNAP Policy Changes in Maine

Maine recently enacted a **time limit** on receipt of SNAP benefits for childless adults aged 18 to 49. After 3 months of receiving benefits, members of this group become ineligible for SNAP unless they can find work, job training, or volunteer opportunities. Since Maine instituted the time limit in early 2015, more than 9,000 food-insecure individuals have lost access to SNAP benefits, and the state's economy has lost the economic benefits Federal SNAP dollars provide.[21]

Since 1996, Congress has recognized the difficulty of finding work in areas with high unemployment and given states the option to waive the 3 month limit on SNAP in those areas. Congress has also provided for discretionary waivers from the time limit for certain vulnerable populations, including veterans and the homeless. Maine has consistently sought these waivers in the past as factories, in particular paper mills, and fisheries downsized and/or shut their doors. Under these past policies, Maine has offered critical food assistance to those struggling to find livable wage jobs, so they have the basic sustenance they need to survive. Beginning in 2015, Maine no longer requested these waivers even though there are still many Mainers in need and high unemployment areas in the state that would qualify for the time-limit waiver.

There is no evidence that dropping people from SNAP leads them to find jobs, particularly in regions with high unemployment. While some argue that the 3 month time limit functions as an incentive for SNAP participants to enter the workforce, according to the Center for Budget and Policy Priorities, "Many able-bodied SNAP participants aren't working because they can't find a job or enough job training, or because they face challenges that prevent them from getting or keeping a job, such as health issues or homelessness."[22]

There is no evidence that dropping people from SNAP leads them to find jobs, particularly in regions with high unemployment.

Many who are willing and able to work are in need of job training, but such programs are not consistently available. A person who needs job training, but for whom a placement in a job training program is not available, still loses all SNAP benefits after the 3 month period. A qualifying disability can exempt a person from the SNAP time limit, but low-income people often lack access to a regular health care provider who could certify a disabling condition. For many in this group, obtaining necessary treatment or getting documentation to qualify for a waiver from the time limit can be an uphill battle.[23]

Nearly all states have eliminated asset tests for seniors and those with disabilities, making Maine an extreme outlier as one of only five states that apply an asset test to these two groups.

In 2016 Maine also instituted an **asset test** to reduce the number of adults eligible for SNAP. Previously, Mainers with income at or below 185 percent of the Federal poverty line were eligible for SNAP regardless of assets. With the recent policy change, many Mainers are ineligible for SNAP benefits if they have more than $5,000 in assets. Disqualifying assets for households now include most second cars, any property other than a primary home (like a lot used for harvesting wood for heating), and any money in savings.

Families with children are not subject to the asset test, but seniors and those with disabilities are. Nearly all states have eliminated asset tests for seniors and those with disabilities, making Maine an extreme outlier as one of only five states that

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[20] *Supplemental Nutrition Assistance Program, State Activity Report,* Fiscal Year 2015. *http://www.fns.usda.gov/sites/default/files/snap/2015-State-Activity-Report.pdf.*

[21] "APNewsBreak: More than 9,000 fewer Mainers receiving food stamps under new work requirements," March 24, 2015. *http://www.usnews.com/news/us/articles/2015/03/24/apnewsbreak-9-000-mainers-lose-food-stamps-under-new-rules.*

[22] Brynne Keith-Jennings, "Limiting SNAP Doesn't Boost Employment," Center on Budget and Policy Priorities, August 18, 2015. *http://www.cbpp.org/blog/limiting-snap-doesnt-boost-employment.*

[23] Ed Bolen, *et al.,* "More Than 500,000 Adults Will Lose SNAP Benefits in 2016 as Waivers Expire," Center on Budget and Policy Priorities, March 18, 2016. *http://www.cbpp.org/research/food-assistance/more-than-500000-adults-will-lose-snap-benefits-in-2016-as-waivers-expire.*

apply an asset test to these two groups.[24] Asset tests can disqualify needy retirees who rely on income from modest retirement savings.[25]

Summer Challenges for Families

Low-income parents face an additional challenge in the summer months when school-based meals may be unavailable or inaccessible.[26] During the school year, schools often provide children who are eligible for free or reduced-price meals with both breakfast and lunch. A family with two school-age children must provide an estimated 200 additional meals over summer vacation.

While the Summer Food Service Program (SFSP), funded by the USDA, offers meals for eligible children, many families do not have access to summer meal sites. In 2015, SFSP reached only 25 percent of eligible Maine children with summer meals.[27]

During the summer recess, children from low-income families often lack access to recreational and academic enrichment opportunities as well as adequate nutrition. Learning loss that occurs during the summer months, the so-called "summer slide," accounts for about ⅔ of the achievement gap in reading between low-income ninth graders and their higher-income peers.[28] When summer meals are offered together with summer learning programs, these initiatives can provide necessary nutrition and help address the achievement gap.

Transportation

Access to reliable transportation is important for employment options as well as food access. Getting to and from work can be a challenge for low-income workers. The expense and the time involved in commuting to low-wage jobs can be daunting, and coordinating available transportation options to accommodate both family and work obligations is often difficult.

> *Car ownership can be critical to the ability of low-wage workers to maintain employment, especially in areas where public transit is minimal or nonexistent.*

A 2006 study of a rural welfare-to-work program identified the lack of reliable transportation as an impediment to employment among low-income adults. In the study region, as in most of Maine, public transit was extremely limited. Approximately ⅓ of the study sample did not own a car or have reliable access to one or have access to public transportation.[29]

Numerous studies have found that car ownership can be critical to the ability of low-wage workers to maintain employment, especially in areas where public transit is minimal or nonexistent. For recipients of public assistance, car ownership is associated with higher rates of employment and higher earnings.

Research has also shown that car ownership has a greater impact on low-skilled workers than it does on higher-skilled workers. In addition, individuals who have access to a car are likely to be unemployed for shorter periods.[30]

Hunger and Maine's Labor Market

The national recession of 2007–2009 caused the loss of tens of thousands of Maine jobs, especially in rural Maine, and was followed by a slow jobs recovery. Maine lost about 30,000 jobs during the recession, and 3 years into the recovery, had regained only 5,900 of the jobs lost. Employment has now recovered to about ¾ of its pre-

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[24] *USDA Categorical Eligibility for SNAP,* USDA, updated August 2016. *https://www.fns.usda.gov/sites/default/files/snap/BBCE.pdf.*

[25] "Press Release: Government Programs Penalize Retirement Saving By Low- and Moderate-Income Households," Center on Budget and Policy Priorities, June 21, 2005.

[26] Rachel L. Wilkerson, Durwesh Khalfe, and Kathy Krey (2015), "Associations Between Neighborhoods and Summer Meals Sites: Measuring Access to Federal Summer Meals Programs," *Journal of Applied Research on Children: Informing Policy for Children at Risk,* Vol. 6: Iss. 2, Article 9.

[27] *Hunger Doesn't Take a Vacation: Summer Nutrition Status Report,* Food Research & Action Center, June 2016, p. 6. *http://frac.org/wp-content/uploads/2016_summer_nutrition_report.pdf.*

[28] Karl L. Alexander, Doris R. Entwisle, and Linda Steffel Olson, "Lasting Consequences of the Summer Learning Gap," *American Sociological Review,* April 2007, Vol. 72: 167–180. *http://www.ewa.org/sites/main/files/file-attachments/summer_learning_gap-2.pdf; National Summer Learning Association infographic,* undated. *http://summerlearning.org/wp-content/uploads/2016/06/TheAchievementGapInfographic.pdf.*

[29] Alicia Meckstroth, *et al.,* "Paths to Work in Rural Places: Key Findings and Lessons from the Impact Evaluation of the Future Steps Rural Welfare-to-Work Program," Mathematica Policy Research, March 22, 2006. *https://www.acf.hhs.gov/sites/default/files/opre/paths_to_work.pdf.*

[30] "Shifting into Gear," National Consumer Law Center, April 2014, p. 2. *http://www.workingcarsforworkingfamilies.org/images/files/shifting-into-gear.pdf.*

recession peak. While economic recovery overall has been hampered by both population and labor force stagnation, there are still large numbers of discouraged workers (not technically in the labor force but who would take a job if available) and part-time workers in Maine who would prefer full-time work but can't find it.[31]

Maine lost about 30,000 jobs during the recession, and 3 years into the recovery, had regained only 5,900 of the jobs lost.

Very-low-incomes for roughly ⅓ of Maine workers are an important factor underlying food insecurity; for many, having a job does not liberate them from persistent hunger. Maine's employment structure provides a livable wage for only about ⅔ of its roughly 620,000 workers. Full-time work at $10 an hour provides annual income of about $20,000, less than even the most conservative estimate of a livable wage for a single adult.[32]

Simply put, a huge portion of Maine's labor market does not provide wages adequate for meeting basic needs for food, housing, utilities, a vehicle, and health care. Low wages make workers and their families economically insecure; a car repair or eviction notice can easily rob them of the stability and means to maintain employment and avoid even more dire poverty.

Ongoing changes in the structure of the Maine labor market also exacerbate the inability of the Maine economy to provide access to employment and sufficient wages to avoid food insecurity. Economists considering structure look at changes in the mix of employment by occupation, industry, and the location of jobs. On the employment side, rural Maine continues to see the loss of manufacturing jobs, most visibly with serial and permanent shutdowns of the state's historic paper mills in Millinocket and East Millinocket, Bucksport, Lincoln, Madison, and elsewhere. From 2007 (4th quarter) to 2016 (2nd quarter), Maine lost 8,672 manufacturing jobs, a 12.8 percent decline. Manufacturing employment fell by 40.7 percent in Penobscot County (East Millinocket was home to now-shuttered Great Northern Paper); by 30.3 percent in Oxford County (home to historic Rumford paper mills); by 17.5 percent in Franklin County (Jay was home to the former International Paper mill); and a 17.3 percent decrease in Aroostook County (home to a number of small paper mills and the former Fraser Paper mill in Madawaska).[33]

With the exception of health care, growth in better-paid service employment is concentrated far away from where rural Mainers losing factory jobs are located. The ongoing decline of employment options in rural Maine is so strong that rim counties (Oxford, Franklin, Somerset, Piscataquis, Aroostook, and Washington) are seeing sizable losses of population and labor force participants, as many flee to southern Maine or out of state seeking employment, or move into a premature semi-retirement.[34]

Compounding the loss of jobs is the aging of Maine's labor force; older workers face more challenges in gaining new skills when they lose jobs and are more likely to have injuries or other disabilities that make them unattractive to employers. The cost-benefit profile for older workers seeking retraining is relatively poor, as they have fewer years to benefit from the higher wage.

With the exception of health care, growth in better-paid service employment is concentrated far away from where rural Mainers losing factory jobs are located.

Southern Maine's economy is relatively prosperous, and it is where better-paying service jobs (health care, law, banking and insurance) are concentrated. One-third

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[31] Maine employment peaked at 621,000. At the end of the recession in summer 2009, Maine employment had contracted to 592,100; in August 2012 it had recovered to only 598,000. Maine employment reached 617,800 in July 2016. Maine Department of Labor, Center for Workforce Research and Information. *http://www.maine.gov/labor/cwri/ces.html*. On discouraged and involuntary part-time workers, see "Policy Basic: Maine's Unemployment Rate, More than Meets the Eye," Maine Center for Economic Policy, May 2016. *http://www.mecep.org/wp-content/uploads/2016/05/Unemployment-calculation-5-18-2016-Final_final.pdf*.

[32] Projections for the impact of the state's new minimum wage law show some 181,000 Maine workers benefitting from the increase to $12. Recent estimates of a livable wage in Maine range from approximately $10.38 per hour for a single adult up to $26.87 per hour for a household with a single adult and two children, benchmarks that assumes full-time, year-round work. *MIT Livable Wage Calculator, http://livingwage.mit.edu/states/23/locations;* Maine Center for Economic Policy, "Restoring the Value of Work," August 2016. *http://www.mecep.org/wp-content/uploads/2016/08/Minimum-wage-brief_final_08-17-16.pdf*.

[33] Maine Department of Labor, Center for Workforce Research and Information. *http://www.maine.gov/labor/cwri/qcew1.html*.

[34] Population in rim counties alone decreased by 8,522 between 2010 and 2015. Personal e-mail communication with Glenn Mills, Chief Economist, Maine Department of Labor, Center For Workforce Research, January 3, 2017.

of Cumberland County employment is in low-wage retail and service occupations, however. Data for 2015 show that 32.8 percent of the Portland/South Portland labor market's 195,055 jobs were concentrated in low-wage industries, with annual earnings ranging from $20,611 to $26,366.[35] While employment growth in southern Maine's economy has been strong, for many the combination of low wages and rising rents threatens their ability to feed themselves.

In sum, the realities of Maine's labor market for up to ⅓ of our workforce are that low wages mean vulnerability to hunger. Despite the state's current low unemployment rate, the decline of Maine's rural manufacturing employment and the concentration of employment growth in low-wage service occupations mean that gaining employment does not ensure an end to food insecurity.

The Research

Methodology

To achieve a holistic understanding of the problem of hunger in Maine, we employed both quantitative and qualitative methods of data collection. We administered a four-page paper survey at food pantry sites across Maine. We then conducted a series of focus groups in various geographic locations, and several in-depth follow-up interviews with people who participated in either the survey or the focus groups, whose comments help to illustrate the quantitative data.

Administering the Survey

Surveys were administered at hunger relief organizations, including food pantries and meal sites, in all 16 Maine counties. Members of the research team visited organizations over a 4 month period and handed out surveys to be completed on-site. Respondents were offered assistance if needed to fill out the survey. Copies of the survey were also mailed to hunger relief organizations across the state. Organization staff administered the survey during food distributions, collected completed surveys from clients, and mailed them to the research team. As it was not feasible to develop a random sample of food pantry users, the research team set general targets for the number of surveys to be collected from each county in order to reflect the approximate distribution of food-insecure individuals across the state. The survey tool is provided in *Appendix A.*

Focus Groups

Surveys were administered at hunger relief organizations, including food pantries and meal sites, in all 16 Maine counties.

We held six focus groups to gather qualitative data about respondents' experiences with food insecurity in Maine. Two focus groups were held in Portland at a food pantry with an on-site soup kitchen; the other four were held at food pantries in Bridgton, Ellsworth, Waterville, and Presque Isle. Focus group participants were recruited through contact information they voluntarily provided on the completed paper surveys and by food pantry directors who sought out pantry clients willing to participate. Members of the research team conducted the focus groups using a standard set of facilitation questions. The conversations were audio recorded, transcribed, and analyzed. The focus group protocol is provided in *Appendix B.*

Interviews

University of Southern Maine graduate students supervised by Dr. Michael Hillard conducted in-depth follow-up interviews with three people, and Preble Street staff conducted an additional seven in-depth interviews. Interviewees were identified by Preble Street staff who were familiar with their circumstances. The students developed a set of interview questions related to food acquisition, experience with public assistance programs, work history, transportation issues, and public perceptions of low-income citizens in Maine. The conversations were audio recorded and then summarized by the students. The interview questions are provided in *Appendix C.*

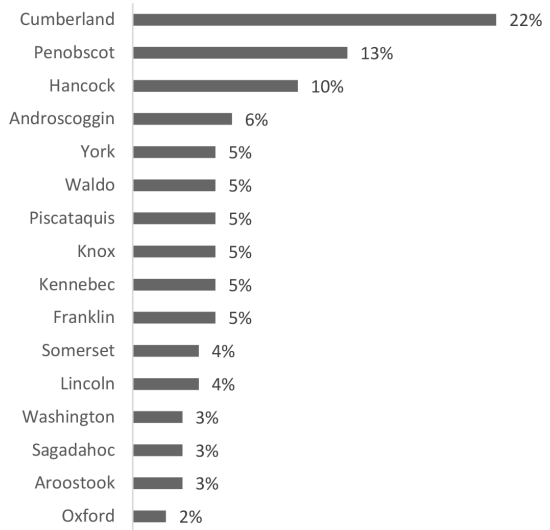
[35] These low-wage sectors include retail trade, leisure and hospitality, along with health care/social services industries (residential mental health facilities, continuing care assisted living facilities, social assistance, individual and family services, and childcare).

Study Results

Demographics of Survey Respondents

In total, 2,053 people responded to the survey.[36] Respondents came from 244 different towns spread across all 16 Maine counties. The geographic distribution of survey respondents is shown in *Figure 1.*

Figure 1. Surveys Collected by County



Food Pantry Survey, July 2016, (n = 2,027).

One-third of food-insecure Mainers reside in just two counties: Cumberland County is home to 20.1 percent and Penobscot County to 12.6 percent.[37] The research team collected surveys in these two counties at similar rates: 22.2 percent of surveys were collected from Cumberland County residents, and 12.6 percent of surveys were collected from Penobscot County residents.

One-third of food-insecure Mainers reside in just two counties: Cumberland County is home to 20.1 percent and Penobscot County to 12.6 percent.

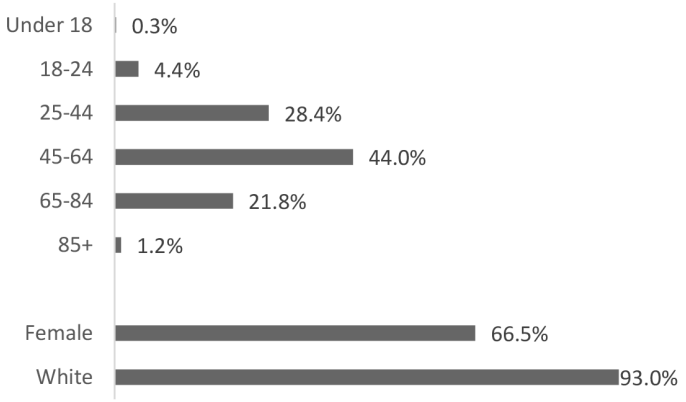
Figures 2, 3, and *4* present selected survey respondent and household characteristics. All demographic data collected are available in *Appendix D.*

Respondents ranged in age from 15 to 95, with an average age of 52. One in five respondents was 65 or older. Two-thirds of respondents were female, and 93 percent were white (see *Figure 2*).

[36] Since respondents did not always answer all survey questions, the totals in this section may not equal 2,053.

[37] Gunderson, *et al., Map the Meal Gap 2016.*

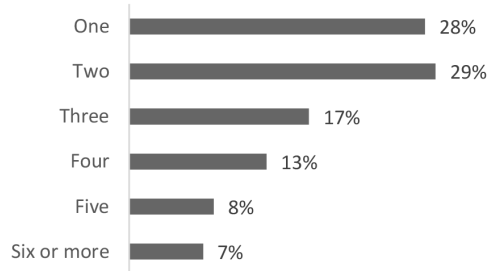
Figure 2. What is your age, gender, ethnicity/race?



Food Pantry Survey, July 2016 (Age n = 1,991), (Gender n = 1,903), (Ethnicity/race n = 1,758).

The majority of households had one or two members. Average household size was 2.7, with a range of one to 14 household members (see *Figure 3*).

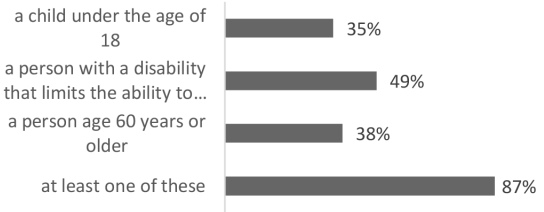
Figure 3. How many people are living in your household?



Food Pantry Survey, July 2016, (n = 1,969).

Thirty-five (35) percent of respondents indicated that they had a child under 18 living in their household. Nearly ½ of respondents (49 percent) reported a person with a disability living in the household. Thirty-eight (38) percent reported a senior over the age of 60 living in the household. In total, 87 percent of households surveyed (n = 1,785) contain a child, a senior, or a person with a disability, and some contain members of more than one of these groups (see *Figure 4*).

Figure 4. Respondent households with . . .



Food Pantry Survey, July 2016, (n = 2,053).

Focus group participants offered insights into the kinds of issues that Mainers face. They spoke about a wide array of disabilities and health problems, from autism, diabetes, depression, and heart attacks to a rare eye disease and a bone infection linked to surgery after a broken limb.

"Last year right before Christmas we had to dish out almost $600 because my husband has a disease in his eye that runs in the family. So we had to sit down with the kids and say, 'We can't do Christmas because Dad's got to have surgery to correct this.'"

Mother in Kennebec County.

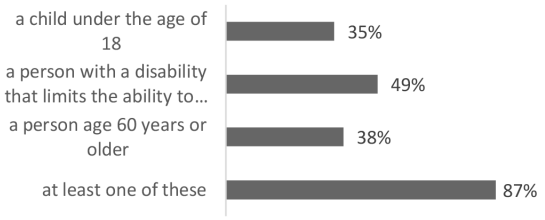
"Right now I am so exhausted because I have a bipolar son. I tried to get him help and the police threw him in jail. If you have a bipolar child and are poor, most everybody ends up in jail—that is just the way you get any treatment at all."

Mother in the Lakes Region.

Use of Charitable Food Assistance

Figure 5 shows how frequently survey respondents visit food pantries. Eighty-six (86) percent of respondents report using a food pantry at least once a month. More than 40 percent of households use a food pantry monthly, and an additional 44 percent are using a pantry every week or every 2 weeks.

Figure 5. How often do you utilize a food pantry now?



Food Pantry Survey, July 2016, (n = 1,844).

Many food pantries only distribute food once a month, so for those visiting the pantry monthly, that frequency may reflect the pantry's limited operations. The household may be in need of assistance more often than once a month. Households reporting more frequent use may be visiting multiple pantries to meet their needs.

Among households with children, 40 percent use a pantry more than once a month; among households with a member who has a disability, 46 percent use a pantry more than once a month; ½ of households with a member 60 years or older use a pantry more than once a month.

Fifty-nine (59) percent of respondents report that they are using the food pantry more this year than they did last year, including eight percent who reported that they did not use a pantry at all the previous year.

Many focus group participants noted their reliance on food pantries, along with a patchwork of other resources, including meal sites, SNAP, Special Supplemental Nutrition Program for Women, Infants, and Children (WIC), Social Security, Meals on Wheels (for homebound seniors and individuals with disabilities), afterschool and summer meals for children, and more.

"The pantry helps us out a whole lot. We try to budget the best we can. We're getting some food stamps, but they cut them back, so we never know from month to month what they're going to be. They don't give you much, that's for sure."

Senior man in Aroostook County.

"I don't know what we would do without the food pantry. It is something I think about a lot because I do not know where we would be."

Middle-aged mother in the Lakes Region.

The limitations of charitable food assistance are evident to those who rely on it. Focus group and interview respondents spoke about the difficulty of relying on food pantries and other charities for food on an ongoing basis. Problems included the amount or variety of food offered, the hours of distribution, and the fact that in some cases you can only receive assistance once a month.

"I do rely on the food pantries and soup kitchens a lot of the time around here, and it has been very hard for me to eat."

U.S. Navy veteran in Knox County.

"For nutrition, I used to use canned vegetables and fruits. With my husband being diabetic, he has to watch what he eats and it is very difficult—pantries mostly offer pasta and carbs."

Middle-aged mother in the Lakes Region.

"Coming here [to the pantry], it helps a lot. We go to the evening program [meal site], and it does help, but we try not to go there all the time because it's always the same thing—sandwiches. After a while, you get tired of sandwiches. You want a home-cooked meal."

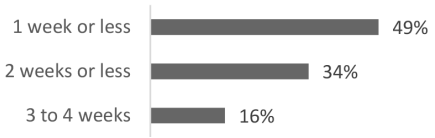
Mother in Kennebec County.

Food-insecure Mainers, including the veterans we interviewed, report skipping meals because they can't get the food they need. One U.S. Navy veteran in Knox County describes eating one soup kitchen meal per day and meeting the rest of his food needs by stretching the food from the one pantry box he receives each month. He often only has the resources to eat one meal per day. A veteran of the U.S. Marines in Androscoggin County similarly skips breakfast and supper because he must rely solely on the limited soup kitchens and food pantries in his area.

Supplemental Nutrition Assistance Program (SNAP)

Fifty-seven (57) percent of survey respondents indicated that they receive monthly SNAP benefits. Of the respondents who receive SNAP, 83 percent report that their benefits last 2 weeks or less, as seen in *Figure 6*.

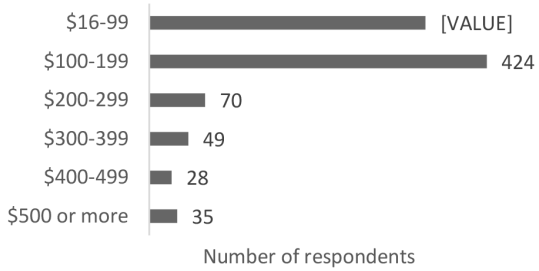
Figure 6. How long do monthly SNAP benefits last?



Food Pantry Survey, July 2016, (n = 1,216).

The amount of SNAP received each month depends on the number of people in the household. The vast majority of survey respondents reported SNAP benefit amounts of between $16 and $200 a month (see *Figure 7*).

Figure 7. How much money in food stamps do you receive each month?



Food Pantry Survey, July 2016, (n = 953).

"When they are establishing the amounts for the food stamps they need to check the regular grocery stores, because those prices are going up, and it may take years to get an increase in food stamps."

Middle-aged man in Portland.

Loss of SNAP Benefits

One in four survey respondents (486 people) indicated that they had lost SNAP benefits in the past year. Nearly ⅓ of this group said they were removed from the program because of recent state policy changes, specifically the 3 month time limit (24 percent) and the asset test (7 percent). The remaining ⅔ who lost SNAP benefits were dropped from the program for a variety of reasons including increased earnings, marriage, lost application paperwork, and being unable to schedule a required interview with a DHHS caseworker.

Time Limit

Maine's time-limit policy applies only to childless adults aged 18 to 49 who do not have a documented disability. Of the 100 respondents who lost benefits because of this time limit, 13 percent reported health and caregiving barriers that likely should have made them exempt from the time limit and eligible to continue receiving SNAP assistance.

A veteran of the U.S. Marines living in Androscoggin County explained in an interview that he is disabled and receives a disability pension from the Veterans Administration (VA) due to an injury incurred during the Gulf War. Even though specific guidance from the USDA makes it clear that this should exempt him from the time limit, his benefits were cut when Maine made the policy change. His benefits were only restored in January 2017 after several years without access to SNAP.

A veteran of the U.S. Army living in Waldo County who has disabling medical conditions was dropped from SNAP because of the time limit until he could get connected to VA health care and linked with a provider. During the months it took him to make this happen, he struggled to get the food he needed.

Of the 100 respondents who lost benefits because of the time limit, 59 percent reported looking for work and not being able to find it or not having transportation to get to work.

A U.S. Navy veteran in Knox County who was dropped from SNAP because he couldn't find work explained in an interview, "*It's been a 6 year struggle to get back on my feet. I have a whole list of skills, if I brought my résumé it would shock you.*" Despite his extensive job search, he cannot find work and was dropped from SNAP due to the time limit policy's work requirements. He frequently skips at least one meal a day, regularly experiences hunger, and cannot make ends meet. As he explains, "*The whole point of these benefits, after you have served your country, is to be able to rely on them. Then I find myself having to jump through hurdles to access them and it doesn't work.*"

Seventy-nine (79) percent of those who lost SNAP benefits because of the time limit report using the food pantry more this year than they did last year.

Asset Test

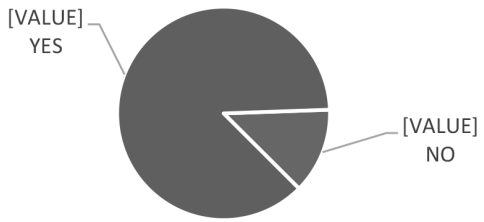
Of the 27 respondents who lost SNAP benefits as a result of the asset test, 63 percent have a household member over 60 years old, and 44 percent have a household member with a disability. (Families with children are exempt from the asset test.)

Of those who lost SNAP benefits due to the asset test, 58 percent report using the food pantry more this year than last.

Summer Hunger

Respondents with children under age 18 in the household reported overwhelmingly that their supplemental food needs increase in the summer (see *Figure 8*).

Figure 8. Does your need for food go up in the summer when your kids are out of school?



Food Pantry Survey, July 2016, (n = 493).

Trade-offs and Challenges

When asked whether they have to sacrifice other necessities in order to be able to afford food, 73 percent of respondents said yes. The trade-offs that were reported most often were between paying for food and paying for utilities and other bills, medication and health care, and transportation.

The necessity of making trade-offs because of limited income is amplified for people who have lost access to SNAP. Of those who lost SNAP benefits because of the time limit, 86 percent report making difficult choices between getting food on the table and paying for rent, heat, health care, and transportation. Similarly, of those

who lost benefits because of the asset test, 86 percent said they have to make trade-offs between buying food and paying for necessities.

Focus group participants echoed these survey findings, reporting that they have to skip bills, pay for expensive car repairs, and choose between buying food and buying medications.

"You can have the grocery money to go to the store, but not have the gas to get there."

Middle-aged mother in the Lakes Region.

"I feed my children before I feed myself. And I hate this, but I have to limit the portions that [my children] can have for a meal."

Middle-aged mother in the Lakes Region.

"We are on a strictly tight budget. My other half works . . . I'm here [at the pantry] every 2 weeks. I don't work. I'm disabled. I have three kids, so it's hard . . . If we have to skip a bill, we skip a bill, to put food on the table. If that means that Dad and I don't eat, to make sure our family is provided [for]—as parents, you have to do what's right for your kids."

Mother in Kennebec County.

"My biggest concern is insurance, because insurance is even hard for the elderly. Elderly people are dropping their medicines, to keep money for them to survive . . . It's either the medication or they don't buy food."

Senior man in Kennebec County.

Transportation was cited as a major obstacle for Mainers trying to obtain the food they need. In rural areas particularly, commute times can be long, and cars are often necessary for work, school, health appointments, and food acquisition. But cars require frequent repair and maintenance, as well as registration, inspection, and insurance, and the expenses compound. One respondent indicated that he/she can only afford gas money by collecting and redeeming returnable bottles and cans.

"I cannot get my car inspected, and the sticker is expired. I am just crossing my fingers every time I see a trooper."

Middle-aged mother in the Lakes Region.

"I had a [car] and things kept going wrong with it. I needed to repair it because I needed to get to work . . . then my brake line went, then this, and that, and I had to spend it all to get it fixed so I could go to work. The day that I had it fixed I couldn't work, so I was out money that day plus the cost to fix it."

Young single mother in the Lakes Region.

Respondents who live in more densely populated areas, including Portland, Waterville, and Rockland, find that public transportation routes do not always link residential neighborhoods with supermarkets and food pantries. Getting food home can be a major difficulty, especially for people who are elderly or disabled.

"South Portland has some places [to get food], but I can't get there on the buses, and walking is hard because I have to carry all of the stuff by myself."

Single mother in Portland.

"For food it will take me about an hour to just get there, then walk back in the rain, sleet or snow, with my groceries the same distance."

U.S. Navy veteran in Knox County.

"We're fortunate because he's got the truck. But you leave here [the pantry] with five or six bags and you've got to carry it home? When I was living a mile or so out of town, I was just hoping that my little rolling bag didn't give out. It's one thing to get here, but to haul everything home, it's hard."

Middle-aged woman in Kennebec County.

Labor Market Participation

When asked to describe their work ethic, 96 percent of survey respondents responded positively, using words such as good, excellent, hardworking, dependable, timely, and honest. A senior man from Hancock County explained, "*If I'm working as hard as I do, I want to have the right to survive and live instead of going hungry.*"

When the survey asked about the highest hourly wage at respondents' last job, the median response was $10 per hour—below the Federal poverty level for a family of four.

A very small portion of respondents reported receiving benefits at their current or last job. Only 15 percent reported having access to health insurance through their current or most recent employer. Thirteen (13) percent currently have or previously had sick days, and 15 percent have or had vacation days.

Of those currently working either full time or part time, 78 percent still have to make difficult trade-offs between buying food and paying for rent, health care, and other expenses.

"Jobs that are here just aren't paying. The standards, the pay rates are not keeping up with the rest of the country. Minimum wage has to be livable for the area that you're in."

Middle-aged woman in Kennebec County.

"Many of the women that I work with . . . they're in that position . . . if they don't have the means to feed their family it might keep them in the abusive situation longer. That fear of not keeping a roof over their heads or being able to feed their kids is a big thing."

Middle-aged woman in the Lakes Region.

"I consider my family low- to middle-income, but we struggle every day."

Mother in the Lakes Region.

With the collapse of the manufacturing industry in rural areas, Mainers struggle to find work.

"I'm 67 years old, and if they brought a mill back, I'd go back to work in a heartbeat."

Senior man in Kennebec County.

"Back when he started, you had six guys on a paper machine. Now you might have five guys on the entire floor, but they're not on the floor . . . now it's all computer screens . . . you don't need workers anymore."

Working-age man in Kennebec County.

"The work is all fast food and jobs that don't pay them enough."

Senior man in Aroostook County.

Of those who were looking for work but having a hard time finding it, fully ½ faced significant barriers, such as[:]

- schooling, training, or experience in the field in order to prepare them for a job.
- resources to improve their mental and/or physical health.
- a driver's license, functioning car, or access to a vehicle or public transportation in order to get back to work.

Some people need a job that accommodates special family circumstances, *e.g.,* a "*part-time night job so I can be home with my kids because I'm a single parent.*"

Survey Respondents' Thoughts on Ending Hunger in Maine

Ninety (90) percent of respondents agreed that Maine has a high rate of hunger. Respondents point to three key factors: the ailing labor market, lack of access to SNAP benefits, and lack of transportation options. Maine jobs with livable wages are hard to come by, and the seasonal and temporary nature of many jobs also contributes to hunger. One respondent explained, "*Seasonal work is high in this state, so a lot of people suffer in the winter.*"

Many respondents noted that the closing of factories and mills, which once provided lifetime employment for many Mainers, makes it hard to get by in rural areas. For those who are lucky enough to have found work, low wages in Maine keep people hungry. Respondents said that the pay is insufficient to keep up on expenses while also buying food.

Lack of transportation also contributes to hunger. Respondents said that lack of transportation not only makes it difficult for them to get to food pantries and grocery stores, but also poses a major barrier to getting to work. Respondents explained that transportation is expensive: bus passes, gasoline, and upkeep for a vehicle all add up.

Respondents want to strengthen community and to form networks for people to help one another. As one respondent said, "people have to look after one another."

When asked about solutions to hunger, respondents called for livable wage jobs, increased availability of SNAP benefits, and improved access to transportation. Many anticipate that boosting the minimum wage will ease rates of hunger.

Mainers want increased access to public assistance programs like SNAP. One respondent asserted that people should "*get more food stamps until you're stable on your feet.*" Respondents called for eliminating both the time limit and the asset test and for expanding access for all struggling Mainers to participate in SNAP.

Mainers care for each other. One respondent said we need to "*find a way to dispel the stigma of people who use public assistance,*" while another says we must "*treat everyone equally,*" and another suggests we should "*pay more attention to the needy and homeless*" to end hunger. Respondents want to strengthen community and to form networks for people to help one another. As one respondent said, "*people have to look after one another.*"

Discussion and Policy Recommendations

In Maine, we are both independent and interdependent people. When Mainers have access to nutritious food, our communities thrive and grow. Hunger hurts us all. When one Mainer experiences hunger, there is a ripple effect: these are our friends, neighbors, grandparents, and children.

Hunger has reached epidemic proportions in Maine. Our results show that while SNAP is a critical safety net, it is not catching enough people. SNAP policy changes have forced many Mainers to rely more heavily on charitable food programs to meet their basic food needs, but charity alone can't feed everyone who's hungry. Just like clean water, public safety, and education, making sure everyone has enough to eat is an obligation of a just society, not something that should be done only when individuals and private donors feel generous.

Food pantries and soup kitchens are typically run by small, grassroots groups struggling to meet the ongoing needs of communities facing economic hardships. Churches, nonprofits, and other private food charities have already been stretched too thin and are not the answer to ending hunger in our nation. Charity is not enough, and Maine families go without.

The trend toward reducing access to SNAP and forcing Mainers to rely on charitable resources moves us toward a two-tiered food delivery system: food pantries and soup kitchens for people living in poverty and grocery stores for everyone else. Federal nutrition programs like SNAP are the single fairest and most efficient way to feed low-income Americans. When people get food from a food pantry, while it's a laudable community effort, it is not a success. It's a failure of American policy.

In the 1970s, the United States succeeded in virtually eliminating hunger.

We must focus on the underlying problems of poverty and inequality. Ending poverty could be within our reach; we just need to harness the political will to do it. In the 1970s, the United States succeeded in virtually eliminating hunger. Livable wage jobs and increased access to USDA programs like SNAP and child nutrition programs in schools to fill the gaps made ending hunger possible. Since the 1970s, Maine has been on a steady decline: loss of manufacturing jobs, growing income inequality, high rates of hunger and poverty.

Maine is at a crossroads. Will our state continue to rely on an ever-expanding charitable food assistance system that cannot stem rising food insecurity? Or will Maine start to turn the tide and, like other states across the country, commit to ending hunger in our state?

We offer the following set of urgent and immediate policy recommendations:

➢ Protect and preserve the Federal Supplemental Nutrition Assistance Program (SNAP)[:]

- Maintain SNAP's effective programmatic structure, which enables it to[:]
  - respond to increased need in economic downturns.
  - meet the needs of increasing numbers of older Mainers as our population ages.
  - provide access to essential nutrition to those in our communities who cannot afford an adequate diet.

➢ Restore and bolster access to SNAP in Maine[:]

- Pursue geographic waivers to the time limit in areas that qualify for a Federal waiver because of high unemployment.
- Pursue an exemption from the time limit for veterans.
- Follow USDA guidance to ensure that exemptions for those with work-limiting disabilities and those experiencing homelessness are correctly and uniformly administered.
- Join the vast majority of states in eliminating the asset test for SNAP.

➢ Bolster childhood nutrition programs in schools[:]

- Require high-need schools to serve breakfast after the bell.
- Invest in more summer meal sites across the state.
- Eliminate the reduced-price category for school meals.
- Create a statewide online application for school-based meals.

➢ Support Maine workers and families[:]

- Require basic benefits for all employees including sick time and paid family leave.
- Invest in job training and education programs for workers.

➢ Invest in transportation[:]

- Develop programs that provide access to affordable transportation for low-income Mainers through taxi fare assistance, car donation, or subsidized lease or loan programs.
- Improve public transportation options statewide and provide free or discounted bus passes to low-income people.

➢ Expand health care coverage[:]

- Encourage legislators to accept Federal funds to make MaineCare (Maine's Medicaid program) available to 75,000 Maine people with low-incomes who need health care and can't afford it.

➢ Invest in affordable housing[:]

- Build more permanent, affordable housing.
- Fund Housing First initiatives to end homelessness in Maine[:]
- Increase access to housing vouchers.
- Create a housing voucher option for TANF families.

In addition to implementing these policies, Maine should[:]

➢ Strengthen the charitable food assistance network to serve as an effective emergency food system[:]

- Invest in Maine's network of hunger relief charities as a public-private partnership to ensure all Mainers have access to nutritious food when and where they need it.

Preble Street is a social work organization founded on the principles of access for everyone and unconditional positive regard. Since 1975, Preble Street has served some of the most vulnerable people in Maine, working to turn hunger and homelessness into opportunity and hope through 14 low-barrier programs throughout the state. As the hub of services in northern New England's largest urban area, Preble Street provides round-the-clock services 365 days a year to not only meet urgent needs, but to empower people to move beyond the crises in their lives, and to build and advocate for solutions to homelessness, hunger, and poverty. Contact: (207) 775–0026; *www.preblestreet.org; www.facebook.com/preblestreet; www.twitter.com/PrebleStreet*.

As the largest hunger relief organization in Maine, Good Shepherd Food Bank provides for Mainers facing hunger by distributing nutritious food to more than 400 partner agencies across the state, including food pantries, meal sites, schools, and senior programs. Together with its network, the Food Bank helps combat the root causes of hunger by engaging in advocacy, nutrition education, and strategic partnerships. In 2016, the Food Bank distributed more than 21 million meals to families, children, and seniors in need throughout Maine. Contact: (207) 782–3554; *www.feedingmaine.org; www.facebook.com/feedingmaine; www.twitter.com/feedingmaine*.

Appendix A

The Survey

The Maine Hunger Initiative and Good Shepherd Food Bank of Maine want to hear about your experiences with getting your food needs met. Your participation in this survey is voluntary and confidential. There is no right or wrong answer to these questions and you may choose not to answer a question at any time. Your answers will not affect your ability to get food from the food pantry or other food assistance programs.

Your Background

1. What town do you live in? ____
2. How many people are living in your household that share meals? ____
3. Check if someone in your household is:
   - ☐ A child under the age of 18
   - ☐ Age 60 or older
   - ☐ Has a disability that limits their ability to work
4. What is your age? ————
5. What is your gender? ——
6. Do you currently receive Food Supplement (Food Stamps/SNAP) benefits?
   ☐ Yes ☐ No

6a. How much money in food stamps do you receive each month? ____

7. Did you or someone in your household lose food stamp benefits any time in the last year?
   ☐ Yes ☐ No
8. If yes, why did you (or they) lose benefits?
   - ☐ I lost my benefits after 3 months because of the new work rule
   - ☐ I had more than $5,000 in assets
   - ☐ I tried to reapply for benefits but my paperwork got lost
   - ☐ I was not able to do my interview in-person or over the phone
   - ☐ Other ____
9. If you lost your benefits because of the work requirements. check all that apply:
   - ☐ I looked for work but couldn't find it
   - ☐ I was not able to find a volunteer placement
   - ☐ I wanted more education or training but couldn't get it
   - ☐ I am not able to work but lost benefits anyhow
   - ☐ I don't have transportation to get work/volunteer
   - ☐ Other ____
10. If you lost your benefits because of the work requirements and participated in a food supplement employment and training program did those services help you? Please describe:

_____

_____

11. How often do you utilize a food pantry now?
    - ☐ Once a week
    - ☐ Every 2 weeks
    - ☐ Once a month or more
    - ☐ Once every few months
    - ☐ I don't use a food pantry
12. Did you use the food pantry more this year than last year?
    - ☐ Yes
    - ☐ No
    - ☐ I didn't use a food pantry last year
13. If you have asked for help from Maine's Department of Health and Human Services recently, please tell us about your experience. Are these statements true or not true?

True	Not True	N/A	Statement
			DHHS staff helped me get the information and help I needed.
			I was able to get through on the phone to DHHS and get the information I needed in a reasonable amount of time.
			I was treated respectfully in my interaction(s) with DHHS staff.
			I discontinued my application process/benefits because of my experience.
			I experienced delays in getting the help I needed.
			I received inconsistent information from different DHHS staff

Cost of a Healthy Diet

14. When do you use all of your food stamps?
    - ☐ On the first day I get them
    - ☐ During the first week I get them
    - ☐ Within the first 2 weeks after I get them
    - ☐ They usually last 3–4 weeks
15. Does your need for food go up in the summer when your kids are out of school?
    - ☐ Yes
    - ☐ No
    - ☐ Not applicable
16. Do you ever have to make choices between spending money on food and spending money on other needs? (such as medications, heating fuel, rent, car repairs, *etc.*)
    - ☐ Yes
    - ☐ No
17. If yes, what sacrifices have you had to recently make to put food on the table?

_____

_____

Work History

18. Are you or anyone in your household currently employed?
    - ☐ Yes, full time
    - ☐ Yes, part time
    - ☐ No
19. If you are not working, would you take a job if one were available?
    - ☐ Yes
    - ☐ No
20. If No, why not? _____

_____

If no, skip to question 28

21. How would you describe your work ethic?
24. Did any of your previous three jobs last more than a year?
    - ☐ Yes
    - ☐ No
25. What was your highest hourly wage at your current or last job? _____
26. Which benefits do/did you have at your current/last job:
    - ☐ healthcare
    - ☐ paid sick days
    - ☐ vacation
    - ☐ childcare

_____
_____
_____

22. If you had appropriate support or training, what would your dream job be?
_____
_____
_____

23. If you aren't working right now, what do you think you need to re-enter the labor market?
_____
_____
_____

☐ none

27. What services would be most useful to help you find a job:
_____
_____
_____

28. What is your citizenship status?
_____

29. What is your ethnicity/race?
☐ White
☐ Black
☐ Hispanic/Latino
☐ Middle Eastern
☐ Asian
☐ Other: ____

30. Do you agree with this statement? Maine has a high rate of hunger
☐ Yes
☐ No
If yes, why do you think there is so much hunger in Maine?
_____
_____

31. What changes are needed to make sure that you and others you know have enough to eat?
_____
_____
_____
_____

32. Would you like to receive the results of this survey and information about what we are doing to end hunger and how you can help?
If yes, please fill out the information below:
Name: _____
Phone: _____
E-mail: _____

Thank you for your participation!

Appendix B

Focus Group Questions

Thank you for being here today. We are interested in finding out the experiences of people in Maine struggling to make ends meet. We'll be using this information to educate the public and inform policy change. We appreciate your time and input. We plan to create a report from this information and hold events moving forward. We would love for you to be part of that. Please fill out the demographic form, the consent form, and let us know if you'd like to stay involved. Your answers today will remain completely confidential.

1. Please tell us your name and a little about yourself.
2. What do you do to get enough food for yourself and your family?
   (What is a typical day for you? What is that like?)
3. What are some of the things that make it difficult to make ends meet and get enough food? Can you explain?
   (*E.g.,* wages too low, not enough jobs, disability that limits your ability to work, or disability in the house that limits household income, rent too high, number of people in the household sharing food, cost of childcare, lack of transportation, other expenses—medical, rent, transportation, *etc.?*)
4. What works about SNAP (Food Supp/Food Stamps)? Is there anything you would change?
   (Tell us experiences you or people you know have had with SNAP? Have you lost SNAP? Do you know people who have lost SNAP?)
5. What would make it easier for you and others you know to have enough to eat without having to come to a food pantry?
6. When you watch television, read the newspaper, or hear Maine politicians speak, how do they portray Mainers living in poverty?
   (Do you think this is accurate? How does that make you feel?)
7. What do you think your life will be like in 5 years?
8. Is there anything else you think we should know that we didn't think to ask?

Appendix C

In-Depth Interview Questions

Food:

Describe what you eat over the course of a week. What are the ways you get your food?

Benefits:

What benefits are currently available to you? How do these benefits affect your life? Your ability to get food (SNAP status, been cut, why)?

Work:

Are you able to work? Can you describe your current work situation (barriers, part-time, full-time, wages)? What kinds of jobs did you have in the past?

What are the barriers to working faced by other people you know?

Transportation:

In your daily life, how do get around? (get food, get to job, public transportation, walking, biking, cabs, own or borrow car)

How do you get to your food sources?

Perceptions:

In your view, how do the media and politicians depict Mainers in poverty? In general, how well do you feel supported by society?

Appendix D

Survey Respondent Demographics

Table 1. Respondent Characteristics

	Number of respondents	Percent of respondents	Mean
Age (n = 1,991)			52
<18	5	0.25	
18–24	88	4.42	
24–44	565	28.38	
45–64	875	43.95	
65–84	434	21.8	
85+	24	1.21	
Gender (n = 1,903)			
Female	1,265	66.47	
Male	628	33.00	
Other	10	0.53	
Race/ethnicity (n = 1,758)			
White	1,634	92.95	
Black	62	3.53	
Hispanic	29	1.65	
AI/AN	21	1.19	
Other	12	.69	

Table 2. Household Characteristics

	Number of respondents	Percent of respondents	Mean
Number in household			2.7
One	545	27.68	
Two	563	28.59	
Three	326	16.56	
Four	247	12.54	
Five	159	8.08	
Six or more	129	6.55	
Total	**1,969**		
Households with children under 18			
Yes	725	35.31	
No	1,328	64.69	
Total	**2,053**		
Households with member with disability			
Yes	1,009	49.15	
No	1,044	50.85	
Total	**2,053**		
Households with member over 60 years of age			
Yes	777	37.85	
No	1,276	62.15	
Total	**2,053**		

THE NEXT FARM BILL

(LIVESTOCK PRODUCER PERSPECTIVES)

TUESDAY, MARCH 21, 2017

HOUSE OF REPRESENTATIVES,
SUBCOMMITTEE ON LIVESTOCK AND FOREIGN AGRICULTURE,
COMMITTEE ON AGRICULTURE,
Washington, D.C.

The Subcommittee met, pursuant to call, at 2:02 p.m., in Room 1300 of the Longworth House Office Building, Hon. David Rouzer [Chairman of the Subcommittee] presiding.

Members present: Representatives Rouzer, DesJarlais, Marshall, Conaway (*ex officio*), Costa, Bustos, Plaskett, Evans, and Peterson (*ex officio*).

Staff present: Caleb Crosswhite, Mykel Wedig, Patricia Straughn, Stephanie Addison, Mary Knigge, Matthew MacKenzie, Troy Phillips, and Carly Reedholm.

OPENING STATEMENT OF HON. DAVID ROUZER, A REPRESENTATIVE IN CONGRESS FROM NORTH CAROLINA

The CHAIRMAN. This hearing of the Subcommittee on Livestock and Foreign Agriculture entitled, *The Next Farm Bill: Livestock Producer Perspectives,* will come to order.

I would like to welcome everyone here this afternoon, and thank all of you for gathering here again as the Committee continues its work to reauthorize the farm bill prior to its expiration next fall.

Last month this Subcommittee held a hearing on the importance of USDA's trade promotion and market development programs, and the benefits they bring to the agricultural sector as a whole. Today, we will highlight a variety of issues facing the livestock industry.

From wildfires across the Plains, to recently confirmed cases of High-Path Avian Influenza in Tennessee, to an ongoing battle against cattle fever ticks in south Texas, there is no shortage of challenges facing America's livestock producers. On top of that, there are a host of ill-conceived and burdensome Federal regulations to contend with, including the so called GIPSA rules that threaten producers' longstanding marketing arrangements and the National Organic Program standards that go well beyond the scope of the law by mandating animal welfare practices. Now, I know that livestock producers are a resilient bunch, but I am hopeful that the new Administration will continue efforts to roll back these regulations, just as they have, for example, with the disastrous *Waters of the United States* regulation.

I am eager to hear from those of you here today about how all of these issues are affecting your operations, which USDA programs and initiatives have proven most beneficial in mitigating those effects, and what sort of tweaks or modifications might be needed to be made to those programs in the next farm bill. In addition to enhancing and supporting existing programs, I understand that that there is widespread interest, and I certainly have an interest in it as well, in a new provision designed to bolster the United States' ability to respond to the potential outbreak of devastating animal diseases; namely foot-and-mouth disease, or FMD, as we call it. In exploring the linkages between agriculture and national security last Congress, this Subcommittee developed a better understanding of the devastation that would result from such an outbreak, and the need to improve our response capability. I look forward to hearing more specifics today about your proposals for establishing and funding such an effort.

Again, thank you all for being here.

[The prepared statement of Mr. Rouzer follows:]

PREPARED STATEMENT OF HON. DAVID ROUZER, A REPRESENTATIVE IN CONGRESS FROM NORTH CAROLINA

Good afternoon, and thank you all for gathering here again this afternoon as the Committee continues its work to reauthorize the farm bill prior to its expiration next fall.

Last month this Subcommittee held a hearing on the importance of USDA's trade promotion and market development programs and the benefits they bring to the agricultural sector as a whole.

Today we will highlight a variety of issues facing the livestock industry.

From wildfires across the Plains, to recently confirmed cases of high path avian influenza in Tennessee, to an ongoing battle against cattle fever ticks in south Texas, there is no shortage of challenges facing America's livestock producers.

On top of that, there are a host of ill-conceived and burdensome Federal regulations to contend with, including the so called "GIPSA rules" that threaten producers' longstanding marketing arrangements and the National Organic Program standards that go well beyond the scope of the law by mandating animal welfare practices.

I know that livestock producers are a resilient bunch, but I am hopeful that the new Administration will continue efforts to roll back these regulations, just as they did with the disastrous *Waters of the United States* rule.

I am eager to hear from the industry leaders here today about how all of these issues are affecting your operations, which USDA programs and initiatives have proven most beneficial in mitigating those effects, and what sort of tweaks might need to be made to those programs in the next farm bill.

In addition to enhancing and supporting existing programs, I understand that that there is widespread interest in a new provision designed to bolster the United States' ability to respond to the potential outbreak of devastating animal diseases—namely Foot-and-mouth disease (FMD).

In exploring the linkages between agriculture and national security last Congress, this Subcommittee developed a better understanding of the devastation that would result from such an outbreak and the need to improve our response capability. I look forward to hearing more specifics today about your proposals for establishing and funding such an effort.

Again, thank you all for being here. I now yield to the Ranking Member for his remarks.

The CHAIRMAN. I now yield to the Ranking Member for his remarks.

OPENING STATEMENT OF HON. JIM COSTA, A REPRESENTATIVE IN CONGRESS FROM CALIFORNIA

Mr. COSTA. Thank you very much, Mr. Chairman. And I want to welcome our witnesses to this Subcommittee hearing, and Members of the Subcommittee.

The next farm bill, obviously, is what we are focused on, and livestock producer perspectives are an interest to the entirety of this Subcommittee, certainly with the livestock producers that I represent in California. We understand the important role you play every day in putting dinner on America's dinner table.

As we begin the process of formulating the farm bill, this hearing and other hearings like it play an important role in giving us the opportunity to hear from you as to what changes, modifications we ought to be considering in the reauthorization of the farm bill. At a time when there are many voices that are calling to increase the production of American products, we have before us today representatives that are very capable at increasing that production, not only by raising domestic products consumed by Americans, but also creating the opportunity for more jobs and being able to export those products around the world.

Our livestock producers, all of you represented here, from beef to poultry, to the other commodities, represent 42 percent of our domestic and global markets that are increasingly a significant part of this effort, and people understand the high quality of the products you produce. Nobody does it better.

Today's hearings, I know the Chairman and I believe, will cover issues that we have been working on in the past so that you can continue to maintain that high-level productivity, and be able to compete in those foreign markets.

We hear about the importance that animal health plays in stabilization of markets globally, and the effect regulations can have on the livestock industry. One such regulation in which there is bipartisan support is the U.S. Department of Agriculture Grain Inspection, Packers and Stockyards Administration's, otherwise known as GIPSA, proposed rule. We are very concerned about the potential interruption of livestock and poultry industries, and the massive costs that could be added as a result of that. Last year, the Congress responded to prevent that rule from taking effect. If it were to, it would fundamentally, as the Chairman said, negatively change the way livestock industry and poultry industry has been able to market in this country for decades, and also the value-added, and value-added is an important part of everything you do.

These agreements are important, they help producers get more return on their animals, and the last thing we want to do is open up a situation to a flood of baseless litigation. Clearly, if USDA does not withdraw this rule, Congress must continue to act legislatively.

As important as marketing is here at home, our producers' ability to export their goods is very important in California. We obviously produce more than we can consume in so many of the commodities we produce, and that is why I feel very strongly we must not, not retreat from international trade agreements. And I am very concerned about the Administration's comments as it relates to NAFTA, its impacts with our trading partners in Mexico and in

Canada, and our ability to work with our partners in Asia. Last week, the Trans-Pacific Partnership met in South America without us. I think that was a mistake for us.

Obviously, we have other markets where we need to have fair and level playing fields as it relates to the Europeans, and so we must be working with you as a partnership to ensure access to those markets remains and improves. The vast growth potential for our livestock products resides overseas, and trade agreements help open those doors to these markets.

With growing production comes growing demand for labor, and let me just be plainspoken here, as Sergeant Friday used to say, "Just the facts, ma'am." Seventy percent of our agricultural labor force in California is undocumented. That is the reality. They came to this country for a lot of different reasons, but primarily to seek a better life for themselves and their families, and provide the necessary labor to care for all these various kinds of agricultural productivity that we see in the various commodities that we produce. However, because the livestock production is not seasonal, producers are not eligible to use the H–2A visa system, and that is a problem. We know we have a broken immigration system in this country, and we must figure out how to go about fixing it in a bipartisan manner. I get calls from students, from families, from farmworkers, from labor contractors, and from farmers and farm organizations, in which there is a shortage of the necessary labor to do the work. And clearly, we need to do something about this in a constructive, positive sort of way, that does not bring further fear in so many of the farming communities that I represent.

Mr. Chairman, I look forward to hearing the testimony of our witnesses. And I thank you for convening this hearing.

The CHAIRMAN. I thank the Ranking Member. I noticed that the Chairman of the full Committee has joined us. And, Mr. Chairman, I don't know if you have an opening statement you would like to make?

OPENING STATEMENT OF HON. K. MICHAEL CONAWAY, A REPRESENTATIVE IN CONGRESS FROM TEXAS

Mr. CONAWAY. I am just glad to be here and participate in the hearing, and look forward to what our witnesses have to say.

The CHAIRMAN. The chair would request that other Members submit their opening statements for the record so the witnesses may begin their testimony, and to ensure that there is ample time for questions.

I would like to welcome our witnesses to the table. And, Mr. Chairman, I understand there is one in particular that you would like to introduce.

Mr. CONAWAY. Well, I do. Bob is here, Bob Buchholz from Eldorado, Texas. Bob is a good, long time friend of mine. I used to get to represent that community for the first 8 years I was in Congress, and Bob and I have had more than several occasions to have conversations. He is here today representing the American Sheep Industry Association, and while I don't represent the home, I represent part of the ranch, and I hope it is the tropical part of the ranch that gets most of the rain, but the rest of his place is in Will

Hurd's district. So, Bob, thanks for being here today. I appreciate you coming up.

The CHAIRMAN. Thank you, Mr. Chairman.

We also have Mr. Craig Uden, President of the National Cattlemen's Beef Association. Thank you for being here. We have Mr. Carl Wittenburg, Chairman of the National Turkey Federation. And then we have my good friend, Mr. David Herring, Vice President, National Pork Producers Council, from Newton Grove, North Carolina, right around the corner from where I reside. And, David, great to have you here again.

Mr. Uden, please begin when you are ready.

STATEMENT OF CRAIG UDEN, PRESIDENT, NATIONAL CATTLEMEN'S BEEF ASSOCIATION; PARTNER, DARR FEEDLOT, INC., JOHNSON LAKE, NE

Mr. UDEN. Thank you. Chairman Rouzer, Ranking Member Costa, thank you for allowing me to testify on behalf of the United States beef industry today.

I am Craig Uden, a fourth generation cattleman from Johnson Lake, Nebraska, and current President of NCBA. I am a partner in Darr Feedlot, Inc., a commercial cattle feeding operation, and my wife, Terri, and I own and operate 3 cow/calf operations. Today I would like to discuss the 2018 Farm Bill, and the cattle industry's priorities as you all begin to assemble this important legislation.

We oppose agricultural policies that pit one industry against another, distort market signals, and inadvertently cause economic harm to the livestock sector. The vast majority of my fellow livestock producers believe the livestock industry is best served by the process of free enterprise and free trade. We continue to oppose attempts to narrow business options or limit the individual freedom of livestock producers to market their product. We will oppose the inclusion of a livestock title as we believe the items with industry-wide support can be included in the miscellaneous title. The vast majority of cattle producers also oppose the involvement of the Federal Government in determining how their cattle are marketed.

The NCBA is in opposition of the Grain Inspection, Packers and Stockyards Administration, GIPSA, interim final rule on competitive injury. The rule has been opposed by cattle producers since it was first introduced in 2010, and they continue to oppose it today.

Our analysis of the interim final rule leads us to believe that if this rule is implemented, the packers will offer one price for all cattle, regardless of quality. Packers have indicated they will not be willing to open themselves up to these frivolous lawsuits that this change in the competitive injury standard would create. We believe this rule would eliminate value-based marketing programs, and negatively impact producers and ultimately consumers.

In that same vein, NCBA also opposes any attempts to restrict the ownership of livestock. In the past, a handful of Members of Congress have proposed language placing restrictions on packer ownership of livestock, commonly referred as the packer ban. These types of restrictions would limit the marketing options available to our producers, and would represent interference in the marketplace by the Federal Government.

NCBA would also like to reiterate its opposition to mandatory government-run COOL. Repeal of the previous mandatory program was necessary since, after 6½ years of implementation, it provided no market benefit to beef producers or consumers.

Another 2018 Farm Bill priority for NCBA is the protection of conservation programs. Several of these programs authorized in previous farm bills have played an important role in assisting farmers and ranchers in the enhancement of our nation's natural resources for food production, wildlife habitat, and water quality. I would also like to mention today a need for a stronger, more adequate foot-and-mouth disease, FMD, vaccine bank. Estimates show that an FMD outbreak in the United States could potentially cost our nation's livestock producers billions of dollars in the first 12 months alone. An FMD outbreak has the potential to cause enormous economic losses to the livestock producers, auction markets, slaughterhouses, food processors, as well as consumers. NCBA would be requesting the support of this Committee for dedicated funds of $150 million a year for 5 years, to develop a more robust bank.

Research is another topic that is of great importance to the beef industry. We support increased funding for research on production practices, genetics, animal diseases, economics, nutrition, food safety, and environmental impacts. Trade is vital to the beef industry, and protecting trade promotion programs such as Foreign Market Development and Market Access Programs within the 2018 Farm Bill are extremely important.

As 96 percent of the world's consumers live outside the U.S., we recognize the growth and profitability of the U.S. cattle and beef industry is closely tied to our ability to market our products to those customers.

Finally, I ask that you help us protect the national beef check-off. This check-off is a producer-led and funded research and promotion program that has helped our industry with food safety, nutrition, recipe development, and the successful *Beef, It's What's for Dinner* advertising campaign. The success of the check-off is why the majority of beef producers in this country still support it.

On behalf of all cattle producers, thank you for allowing me to come testify today. We look forward to working with each of you on the development of the 2018 Farm Bill.

[The prepared statement of Mr. Uden follows:]

PREPARED STATEMENT OF CRAIG UDEN, PRESIDENT, NATIONAL CATTLEMEN'S BEEF ASSOCIATION; PARTNER, DARR FEEDLOT, INC., JOHNSON LAKE, NE

Chairman Rouzer, Ranking Member Costa, thank you for allowing me to testify on behalf of the United States Beef industry today. I am Craig Uden, a fourth-generation cattleman from Elwood, Neb. and I am a partner in Darr Feedlot Inc., a commercial cattle feeding operation.

My wife Terri and I also own and manage three commercial cow/calf operations. My daughter Blair and her husband are involved in agribusiness and they own a registered Red Angus operation in Minnesota. My son Andrew lives in Lincoln, NE and owns a high tech agriculture company that runs data analytics, and he still finds time to run cattle. I have always been active in helping to shape the ever-challenging and changing beef industry. I believe in giving back to an industry that has been good to me, and while I have stepped aside from the day to day management, I still enjoy buying and selling cattle and building relationships within this industry. People in the cattle business work towards a common goal to improve and learn so that their industry is sustainable for future generations.

I am currently serving as NCBA President, and I have been involved in a number of positions on the local and state level, including past Chairman and elder of Trinity Lutheran Church in Lexington, Nebraska, member and past chair of the Dawson County Cattlemen, and a 4–H leader. Along with serving on the Nebraska Beef Council, I have served on the Nebraska Cattlemen's Board of Directors as a Committee Chairman and Vice Chairman, the Nebraska Cattlemen's Research & Education Foundation, and am involved in the Nebraska Feedlot Council. I am also a member of Nebraska Ag Builders and sit on the Foundation Board of Alpha Gamma Rho Fraternity.

Today I would like to discuss the 2018 Farm Bill and the cattle industry's priorities as you all begin to assemble this important legislation. Development of this next farm bill is an important process for livestock producers. Whether directly or indirectly, the programs that are included in this farm bill have lasting effects, and sometimes a dramatic impact on livestock producers. We will oppose agriculture policies that pit one industry group against another, distort market signals, and inadvertently cause economic harm to the livestock sector.

The vast majority of my fellow livestock producers believe the livestock industry is best served by the process of free enterprise and free trade. Market freedom works better in our industry than government-regulated markets which deter innovation and distort production and market signals. We continue to oppose attempts to narrow the business options or limit the individual freedom of livestock producers to innovate in the marketing of their product.

We also oppose inclusion of a "livestock title" in the next farm bill. Items with industry-wide support can be included in the "miscellaneous title." I ask for the support of Members of this Committee in opposing a livestock title in the next farm bill.

The vast majority of cattle producers, oppose the involvement of the Federal Government in determining how their cattle are marketed. The beef industry continues to transition toward more value-based marketing methods. These systems allow cattle producers to capture more of the value of their cattle, while also allowing producers to better market to their consumers and their specific needs and requests. We believe these market signals have helped drive a significant improvement in Quality Grade, a predictor of a satisfactory eating experience. It is vitally important that we continue to protect each individual producer's ability to market their cattle in the way that best benefits their business.

With that being said, NCBA must reiterate our opposition to the Grain Inspection, Packers and Stockyards Administration (GIPSA) interim final rule on competitive injury. The rule has been opposed by the vast majority of cattle producers since it was first introduced in 2010. In issuing the interim rule, GIPSA ignored the comments submitted by thousands of cattle producers in opposition to the rule, the decisions of eight separate Federal appellate courts and the intent of language included by Congress in the 2008 Farm Bill.

Our analysis of the interim final rule leads us to believe that if this rule is implemented, the packers will offer one price for all cattle, regardless of quality. Packers have indicated that they are not willing to open themselves up to frivolous lawsuits and the legal risks this change in the competitive injury standard would create. GIPSA claims the rule is needed to protect producers. However, we believe, since it would eliminate value-based marketing programs, it would in fact negatively impact producers and make it more difficult to provide the types of beef products that consumers are clamoring for. We do not want to see any attempt to bring this, or a similar discussion, forward in a new farm bill.

In that same v[e]in, NCBA also opposes any attempts to restrict the ownership of livestock. There have been times previously that a handful of Members of Congress have proposed language placing restrictions on packer ownership of livestock, commonly referred to as the "packer ban." These types of restrictions would limit the marketing options available to our producers and would represent interference in the marketplace by the Federal Government which we adamantly oppose. Furthermore, attempts to put a "packer ban" in place have been tried in the past and have failed under both Republican and Democrat control of Congress.

NCBA would also like to reiterate its opposition to country-of-origin labeling (COOL) and any mandatory COOL programs. Repeal of the previous mandatory program was necessary since, after 6½ years of implementation, it provided no market benefit to beef producers. On top of that, it also violated trade agreements with two of our largest and vital trading partners. I ask the Committee to resist any attempt to reinstate this failed program within this farm bill or any other Congressional vehicle.

Overall, we believe that the farm bill is no place for activities which restrict our market freedoms. Our priority for the 2018 Farm Bill is to finally have one that does not include provisions like the ones above, or any others similar to it.

Another 2018 Farm Bill priority for NCBA is the protection of conservation programs. Several of these programs authorized in previous farm bills have played an important role in assisting farmers and ranchers in the enhancement of our nation's natural resources for food production, wildlife habitat, and water quality. In Nebraska, the Environmental Quality Incentive Program (EQIP) is improving habitat for grassland-nesting birds under consideration for listing as threatened or endangered species, enhancing the health of grazing lands, improving water quality, improving soil quality, and reducing soil erosion. One important feature of EQIP has been its focus on livestock operations, and we would like to see continued funding to preserve this program. Federal funds spent on conservation are a good investment in our country's natural resources and the sustainability of agriculture and wildlife.

I would like to mention today something that my fellow producer David Clawson discussed during a recent Senate Agriculture Committee Field Hearing in Manhattan, KS. He testified about the need for a stronger and more sufficient foot-and-mouth disease (FMD) vaccine bank.

Please let me be very clear, an FMD outbreak is of great concern to the beef industry. FMD is highly contagious and has the potential to spread widely and rapidly, debilitating cloven-hoofed animals, such as cattle, swine, and sheep. The rapid spread of FMD can cause severe meat production losses; therefore, a widespread outbreak of the disease would have disastrous economic consequences. Analysts estimate that an FMD outbreak in the United States could potentially cost our nation's livestock producers billions of dollars in the first 12 months alone.

An FMD outbreak has the potential to cause enormous economic losses to not only livestock producers, but also to auction markets, slaughterhouses, food processors and related industries, as well as consumers. The economic consequences also include trade disruptions and decreased tourism.

NCBA will be requesting the support of this Committee for the creation of a larger and more adequate FMD vaccine bank within the 2018 Farm Bill. We feel that this vaccine bank is vitally important to the beef industry as FMD is still a threat as countries around the globe continue to grapple with this disease. APHIS has publicly stated that our current FMD vaccine supply is insufficient to deal with a large scale outbreak in the U.S. and that a larger vaccine bank is needed. APHIS has also noted that expanding the current FMD vaccine supply is not an inexpensive investment, however having sufficient quantities of vaccine readily available and deployable to control an FMD outbreak would appear to be a critical part of the USDA APHIS mission. Rapid control of FMD protects the security of the U.S. food supply, limiting the economic damage from livestock losses due to the disease, and also shortens disruptions to trade and commerce that would occur as long as FMD goes uncontrolled due to a lack of vaccine.

For all of these reasons, we support additional funds dedicated to the development of a more adequate FMD vaccine bank in the amount of $150 million a year for five years. In addition, we support more work around Foreign Animal Disease preparedness that will continue to shed light on our response plans that recognize the limitations of current vaccination capabilities in an FMD outbreak.

Research is another topic that is of great importance to the beef industry. We support increased funding for research on production practices, genetics, animal diseases, economics, nutrition, food safety, and environmental impacts. The research components of USDA and our land-grant universities continue to provide critical knowledge to our industry allowing us to be the most efficient and effective producers possible. The impact of environmentally sensitive lands and species on agricultural operations is a critical component in advancing animal agriculture. Increased investment in this type of research is vital to the security and viability of our agricultural industry and overall food supply.

Trade is vital to the beef industry, and protecting trade promotion programs such as the Foreign Market Development and the Market Access Programs within the 2018 Farm Bill, are important to us. Ninety-six percent of the world's consumers reside outside U.S. borders. We recognize that the growth and profitability of the U.S. cattle and beef industry is closely tied to our ability to market our products to those consumers. We support international trade policies that aggressively pursue expanded market access for U.S. beef, enforce trade agreements that are based on internationally recognized standards and guidelines, and hold our trading partners accountable for their international trade commitments.

Since I am here testifying on behalf of the cattle industry, I wanted to briefly mention an item of great concern to our producers down in Texas, and that is the

ongoing problem of Cattle Fever Ticks. These ticks carry and spread a blood parasite that causes Bovine Babesiosis commonly known as Texas Cattle Fever or Cattle Fever, a devastating disease for the industry. Symptoms of Cattle Fever include anemia, seizures, high fever, aggressiveness and jaundice, resulting in decreased milk production, poor weight gain, damaged hides and leading to death in 90% of cattle not previously exposed. They were effectively eradicated from the United States in 1943, after which a Permanent Fever Tick Quarantine Zone was established along 500 miles of Texas' southern border with Mexico, to contain natural fever tick movements to the United States/Mexico border.

NCBA is working closely with USDA–APHIS Veterinary Services to adequately respond to current fever tick outbreaks and protect against further outbreaks in the United States. The hope is to improve current technologies and develop new ones, and also to encourage all public lands to be required to comply with the same regulations as private landowners, for the prevention and treatment of cattle fever tick. NCBA would encourage continued work between USDA–APHIS, the Texas Animal Health Commission, and any other interested parties to work in collaboration to eradicate this pest.

I wanted to also take a moment to mention our support for the programs established under the permanent disaster provisions of the 2014 Farm Bill. Currently we do not have any suggestions on ways to improve these programs. However, with the ongoing rangeland fires occurring in the Midwest and Texas, barring any concerns that may arise from these tragic events, we will not seek any changes within the 2018 Farm Bill.

Finally, I ask that you help us protect the national beef check-off. The check-off is a producer-led and funded research and promotion program which has helped our industry with food safety, nutrition, recipe development, and the successful "Beef, It's What's For Dinner" advertising campaign. The success of the check-off is why the majority of beef producers in this country still support it. In fact, several states have passed local referendums to increase their state check-offs because they know it is a sound investment in our future. The check-off, however, has come under attack by a small minority who don't want to pay or support the check-off. We will fight any attempt to attack, change, or kill the national beef check-off. We have a model that is working well, and we need to let it continue its positive work for the beef industry.

Thank you again for the opportunity to provide testimony today on behalf of NCBA and the beef industry. We look forward to working with this Committee and a wide range of interested stakeholders to help craft a bill that helps agriculture move forward in the best possible way. Working towards conservation program improvements, protecting research funding, keeping the government out of cattle marketing, and allowing producers to manage decisions regarding the check-off, are issues of critical importance. On behalf of all cattle producers, thank you and we look forward to working with each one of you on the development of the 2018 Farm Bill.

The CHAIRMAN. Thank you, Mr. Uden.

Mr. Wittenburg.

STATEMENT OF CARL WITTENBURG, CHAIRMAN, NATIONAL TURKEY FEDERATION, ALEXANDRIA, MN

Mr. WITTENBURG. Good afternoon, Chairman Rouzer, Ranking Member Costa, and Members of the Subcommittee.

My name is Carl Wittenburg, and I am the current Chairman of the National Turkey Federation, as well as President of the Protein Alliance in Alexandria, Minnesota. My wife, Sharlene, and I raise 100,000 turkeys annually for Northern Pride on our family farm in Wyndmere, North Dakota.

I appreciate the opportunity to testify before you today on the turkey industry's priorities for the upcoming farm bill, and we look forward to working with this Committee.

After suffering through the worst animal disease outbreak in U.S. history in 2015, the turkey industry has made significant strides in recovering from Highly Pathogenic Avian Influenza. As an industry, we learned many lessons from the outbreak; however,

the road ahead remains long, and as an industry, we will need continued support from Congress to assist APHIS to reduce the long-term impacts. High-Path AI is not going away overnight, it is a global problem, and the time is now to start an international discussion on limiting trade impacts when using vaccination as an eradication strategy.

While we fully understand and respect the implications, we cannot shy away from this timely discussion. Recent High-Path AI outbreaks in Tennessee and Alabama remind us all this disease is still a danger and can strike at any time.

As the Committee begins writing the farm bill, NTF is asking for the addition of a forward-looking, mandatory animal pest and disease prevention program, and a foot-and-mouth vaccine bank designed to limit the impacts of foreign diseases on American livestock and poultry producers.

As partners in the Animal Ag Coalition, we hope to further the concept that an ounce of prevention is worth a pound of cure, and focus Federal dollars on targeted efforts that reduce foreign diseases' ability to gain a foothold here in the United States.

There are 4 key areas of focus for our proposal. First, the Animal Pest and Disease Disaster Prevention Program, administered by APHIS, would build upon the 2014 Farm Bill's authorization of NAHLN Network. This aims to provide crucial resources to prepare and prevent a crisis, bringing together the Federal Government, states, industry, and universities to provide rapid detection and response capabilities, develop mitigation technologies including vaccines, identify and support critical research needs. Second, it would establish a long-needed foot-and-mouth vaccine bank strategy. Third, it would provide for the development of a block grant system that allows states to strategically target areas of concern. Fourth and final, this program would be structured to take full advantage of science generated by the National Institute of Food and Agricultural program in order to protect our investment in this vital sector of the economy. We will be asking Congress to support our request for this new program.

International trade is a major engine in the U.S. growth, therefore, it is critically important to the economic health of the U.S. agriculture and food industry to continue to support the North American Free Trade Agreement. As an industry, our trade relationships with Mexico and Canada are extremely important.

The turkey industry continues to support the establishment of an Under Secretary for Trade and Foreign Agricultural Affairs at USDA, a provision which was contained in the 2014 Farm Bill. Such a position will bring unified, high-level representation to key trade negotiations with senior officials and within the Executive Branch.

Finally, over 6 years ago, USDA proposed sweeping rule changes on farmer contracting. With the expiration of a Congressional prohibition on implementing those changes, USDA pressed forward in the final months of the Obama Administration to reattempt a fundamental change to the rules by which our members operate. Congress should reaffirm its opposition to this rulemaking, and USDA should withdraw the rule.

Thank you for the opportunity to testify today on the turkey industry's key farm bill priorities, and the issues impacting our business. I will be happy to answer any questions.

[The prepared statement of Mr. Wittenburg follows:]

PREPARED STATEMENT OF CARL WITTENBURG, CHAIRMAN, NATIONAL TURKEY FEDERATION, ALEXANDRIA, MN

Good afternoon, Chairman Rouzer, Ranking Member Costa, and Members of the Subcommittee. My name is Carl Wittenburg, and I am the current Chairman of the National Turkey Federation, as well as President of Protein Alliance in Alexandria, Minnesota. My wife Sharlene and I raise 100,000 turkeys annually for Northern Pride on our family farm in Wyndmere, North Dakota. Protein Alliance is the exclusive sales representative for Northern Pride, a 27 farmer-owned cooperative that processes 3 million turkeys annually in Thief River Falls, MN, located in Congressman Peterson's district. I appreciate the opportunity to testify before you today on the turkey industry's priorities for the upcoming farm bill. The turkey industry raises approximately 238 million turkeys annually, and provides employment to over 63,000 people nationwide, directly associated with breeding, hatching, raising and processing turkeys. 2017 turkey production is forecast at 6.4 billion pounds, up 7.3% from 2016. Those of us in the turkey business continue to be challenged with a multitude of issues, and we look forward to working with this Committee to address some of our concerns through the 2018 Farm Bill.

Animal Disease and Disaster Prevention Program

Since 2015, the turkey industry has made significant strides in recovering from Highly Pathogenic Avian Influenza (HPAI), after suffering through the worst animal disease outbreak in U.S. history. The losses from HPAI were personal and weighed heavily upon farmers, rural communities, and companies from the West coast to the Midwest. As an industry, we learned many lessons from the outbreak, and the way we quickly contained a similar case of HPAI in Indiana last year indicates the industry is applying those lessons to reduce the chances of a future outbreak. However, the road ahead remains long and as an industry we will need continued support from Congress to assist USDA/Animal Plant Health Inspection Service (APHIS) to reduce the long-term impacts. HPAI is not going away overnight; it is a global problem and the time is now to start an international discussion on limiting trade impacts when using vaccination as an eradication strategy for HPAI. While we fully understand and respect the implications of the U.S. using this tool without first getting agreement from our trading partners, we cannot shy away from this timely discussion. In the past year alone, we have seen large poultry producing countries in Europe, Asia, Africa, North and South America all have to deal with devastating bouts of the disease. The global spread of HPAI illustrates that no country is immune and the U.S. must be a leader to begin this difficult discussion—there is technology that can ensure that we safeguard our exports to trade partners. Additionally, we are reminded by the recent HPAI outbreak in Tennessee that this disease is still very much a danger and can strike at any time. This is why; NTF is still concerned with the ill-advised Organic Rule's outdoor access requirements as it simply mandates more un-necessary risk of contact with other animals carrying the disease that could have far reaching impacts. We just do not need to take this risk.

As the Committee embarks on the reauthorization of the farm bill, NTF is asking for the addition of a forward-looking, mandatory Animal Pest and Disease Prevention Program and Foot and Mouth Vaccine Bank designed to limit the impacts of foreign diseases on American livestock and poultry producers. As partners in the Animal Ag Coalition, which represents all facets of animal ag production, we hope to build upon the concept that "an ounce of prevention is worth a pound of cure" mantra and focus Federal dollars on targeted efforts that reduces foreign diseases ability to gain a foothold here in the first place.

Animal agriculture is a major economic driver for our nation and this program will have a huge impact on protecting the industry from foreign diseases. According to the Farm Income Atlas administered by USDA's Economic Research Service, total cash receipts for animals and animal products was over $212.2 billion in 2014. This represents over fifty percent of all farm cash receipts. In addition, a recent study commissioned by the United Soybean Board found that the total economic impact of the livestock and poultry industry in the United States was $440.7 billion in 2014. In order to protect our investment in the vital sector of the economy, we will be asking Congress to support our request for this new program.

In recent years, disease outbreaks have cost billions in production losses and response costs. According to APHIS, the 2015 avian influenza outbreak cost taxpayers $1 billion in response, clean up, and indemnity costs. That doesn't include lost export markets, temporary shortages, or price increases for certain poultry products.

There are four key areas of focus of our proposal: First, the Animal Pest and Disease Disaster Prevention Program, administered by APHIS, would build upon the 2014 Farm Bill's authorization of the National Animal Health Laboratory Network (NAHLN) that provide crucial resources to prepare, prevent, and respond before and during times of crisis. This support will bring together the Federal Government, states, industry, universities, as well as other interested groups to reduce the impact of high-consequence animal diseases, provide rapid detection and response capabilities, develop disease prevention and mitigation technologies including vaccines, prevent the entrance and spread of foreign animal diseases into the United States, and identify and support critical research needs.

Second, it would establish a long-needed Foot-and-Mouth Vaccine Bank strategy. Third, it would provide for the development of a block grant system that allows states and other key players to strategically target areas of concern. Finally, it is envisioned that this program would be structured to take full advantage, through support and collaboration, of the science generated by the National Institute of Food and Agriculture (NIFA) program. Federal investments using mandatory funding mechanisms available through the farm bill would play a critical role in building capacity to meet evolving needs in animal disease prevention.

Trade

International trade is critically important to the economic vitality of the U.S. agriculture and food industry, and is a major engine of U.S. economic growth. I should start by restating our support for the North American Free Trade Agreement (NAFTA). Mexico accounts for more than ½ of all turkey exports, and almost 10 percent of all turkey produced in the United States is shipped to Mexico. Ironically, the agreement as originally written was not overly favorable to the industry, but it created a framework by which we were able to negotiate additional shipments to Mexico prior to the agreement's ultimate removal of all tariff and quota barriers. As an industry that relies on healthy and productive trade relationships, we in the turkey business would be severely impacted if access to this market were in any way damaged. The turkey industry is the fourth-largest protein supplier in the United States which plays a critical role in the rural communities and states that rely on a thriving and growing industry and this agreement supports those people directly.

NTF recognizes the need to keep American industry competitive, add jobs, and grow the U.S. economy, but we should do this while keeping in mind areas where we have excelled. Meat and poultry processing is an example of this agreement's success. We look forward to working with Congress and the new Administration in preserving and expanding upon the gains our sector has achieved within the North American market while strengthening our competitiveness around the globe.

To that end, the turkey industry continues to support the establishment of an Under Secretary for Trade and Foreign Agriculture Affairs at USDA, a provision contained in the 2014 Farm Bill. Such a position will bring unified high level representation to key trade negotiations by senior officials within the Executive Branch. It will also allow the Administration to recruit an Under Secretary who has extensive experience in international trade negotiation and policy issues. We believe it is vitally important for U.S. agriculture to fully capitalize on the long-term, increased global demand of U.S. farm and food products in an increasingly competitive world marketplace.

USDA's Grain Inspection, Packers and Stockyards Administration (GIPSA)

Finally, over Six years ago, USDA proposed sweeping rules changes on farmer contracting. With the expiration of a Congressional prohibition on implementing those changes, USDA, under the Obama Administration, pressed forward in the final months of office to once again threaten a fundamental change to the rules by which our members operate and will create a greater legal and regulatory risk. We continue to believe that the changes would increase costs, reduce productivity, and possibly lead to increased live production ownership by integrated poultry companies, to the detriment of independent farmers. Congress should reaffirm its opposition to this rulemaking and USDA should withdraw the rule.

Thank you for the opportunity to testify today on the turkey industry's key farm bill priorities and the issues impacting our business. I will be happy to answer any questions.

The CHAIRMAN. Thank you, Mr. Wittenburg.

Mr. Buchholz.

STATEMENT OF BOB BUCHHOLZ, REPRESENTATIVE, EXECUTIVE BOARD FOR REGION V, AMERICAN SHEEP INDUSTRY ASSOCIATION, ELDORADO, TX

Mr. BUCHHOLZ. Chairman Rouzer, Ranking Member Costa, and Members of the Livestock Subcommittee, thank you for the opportunity to speak with you today.

I am Bob Buchholz, a third-generation sheep and meat goat producer from central Texas, a Member of the Board of Directors of the American Sheep Industry Association, past President of the Texas Sheep and Goat Raisers' Association. I am here today representing the nation's 88,000 sheep producers.

My testimony today will focus on ASI's farm bill priorities. My written testimony will offer a deeper view of the general state of the sheep industry and challenges outside the scope of the farm bill.

American sheep producers support rural communities, the tax base, local businesses, providing both lamb and wool. From the farm and ranch to the retail level, the sheep industry has a total annual economic impact of $2.7 billion, and supports nearly 98,000 sheep industry-related jobs.

First, I would like to talk about the fires in Oklahoma, Texas, Kansas, and New Mexico, which have burned almost 1½ million acres, and forced many farmers and ranchers to move or sell their livestock. I understand the devastation and droughts and wildfires have caused to the livestock producers. During the drought in 2011, I was also a victim of wildfires. My ranch was part of a 252,000 acre fire that burned part of Crockett and Val Verde Counties. Fences and improvements were burned to the ground. Without disaster programs that helped me and my fellow livestock producers, I would not be ranching today. The Emergency and Conservation Program and Wildfire Mitigation Program, funded in part by the USDA EQIP Program, helped in rebuilding miles of burned-out fences for the producers in my area. I did not lose livestock from this fire, but many producers in the recent fire did lose some or all of their animals. The Livestock Indemnity Program will help producers recover part of the value of those lost livestock. The value of these programs to the producers devastated by natural disaster is a financial savior, and will allow many of them to continue ranching. I personally thank all the people involved in creating and implementing the FSA and NRCS programs that saved me and my fellow operators during our trying times.

It is also important that in this farm bill we consider protection from another sort of farm disaster, and that threat posed by the introduction of foot-and-mouth disease, either inadvertently or intentionally. While we must do everything we can to eliminate the risk of reintroduction of foot-and-mouth, we must also be prepared in the event of an outbreak. It is critical that the U.S. producers have immediate access to a viable vaccine bank. We join with other livestock industries to support the creation and maintenance of a foot-and-mouth disease vaccine bank, and continued research to protect the U.S. livestock industry from a foot-and-mouth outbreak.

We support risk management for sheep producers, and pledge our assistance and strong support for the Wool Marketing Assistance Loan Program at an adequate level. The current program is operating on a loan rate that was established in 2002, but has not kept pace with markets and production expenses of the 15 years since. In recent years, actual outlays on this program have been nonexistent, meaning that it has provided very little risk management. It is time to re-evaluate the loan rate and guarantees for this program. ASI looks forward to continuing conversations with the Subcommittee to ensure these programs provide producers effective risk management. We support programs that provide benefits beyond the ranch gate, and the farm bill as well. ASI is a cooperator with USDA for rural exports, and can speak firsthand to the value of the Market Access Program, the Foreign Market Development Program, and Quality Sample Program, and support their reauthorization in this farm bill. The sheep industry benefits greatly from funding provided to the National Sheep Industry Improvement Center through the Sheep Production and Market Grant Program. Established in the 2008 Farm Bill, the NSIIC is instrumental in providing funding that aids in the marketing of both lamb and wool. For example, the NSIIC provides for the development of the LRP Lamb Insurance Product, which is the only risk management tool available to the lamb producers, as neither lamb nor wool are traded in the commodities futures market.

In summary, the nation's sheep producers are eager for the upcoming farm bill discussions. Thank you for your past support of the livestock industry, and for allowing me to visit with you about our priorities.

[The prepared statement of Mr. Buchholz follows:]

PREPARED STATEMENT OF BOB BUCHHOLZ, REPRESENTATIVE, EXECUTIVE BOARD FOR REGION V, AMERICAN SHEEP INDUSTRY ASSOCIATION, ELDORADO, TX

2018 Farm Bill—State of the Sheep Industry

Introduction

Chairman Rouzer, Ranking Member Costa, and Members of the Subcommittee, thank you for the opportunity to speak with you today. I am Bob Buchholz, a third-generation sheep and meat goat rancher from central Texas, a Member of the Board of Directors of the American Sheep Industry Association (ASI), and past President of the Texas Sheep and Goat Raisers' Association. I am here today to represent the nation's 88,000 sheep producers. America's sheep producers continue a strong tradition of supporting wildlife habitat, natural resources, and open space across the country—all enabled by careful resource management while grazing our flocks on private and Federal lands. Our members support rural communities, the tax base, and local businesses providing safe domestic lamb and wool. In fact, the economic impact of sheep and wool production on our nation's economy is immense. From on the farm and ranch to the retail level, the sheep industry has a total retail impact of $2.7 billion and supports nearly 98,000 sheep-industry related jobs.

My operation runs across several counties in central and southwestern Texas. Our operation was hit hard with the drought starting in 2011 and a devastating wild fire that forced us to severely cut back our livestock numbers. We are still working to rebuild our flocks and recover, six years later. Like others testifying today, a strong farm program, including disaster assistance, is critically important to our nation's sheep producers.

Ongoing Challenges and Concerns

Bighorn Sheep in Domestic Sheep Grazing Allotments

Nationally, about ½ of all domestic sheep spend time grazing on Federal lands, including rangelands managed by the U.S. Forest Service (USFS). Over the years,

the USFS has been systematically removing domestic sheep ranchers from Federal lands in the name of bighorn sheep management, despite the fact that there are reasonable, science-based solutions to accommodate domestic sheep grazing while protecting the health of bighorn sheep populations. In mid-2016, the USFS announced that it may close some allotments in the Ashley National Forest and the Uintah-Wasatch-Cache National Forest in Summit County, Utah due to bighorn sheep concerns. This is being done without any offer of alternative allotments. In total, three allotments will be closed and a fourth allotment will be reduced. The ranchers on these allotments have letters from the USFS detailing that when they introduced bighorn sheep to the area, there would not be an impact to the domestic sheep population. There are many examples of these egregious actions.

Mandatory Price Reporting

In September 2015, the President signed into law the Agriculture Reauthorization Act of 2015 which included an extension of the Livestock Mandatory Reporting Act of 1999 (MPR). Unfortunately for sheep, this reauthorization has not lived up to our expectations when it was passed. Of particular concern is the implementation of current confidentiality rules followed by the U.S. Department of Agriculture (USDA) and its chilling effect on price reporting. Further complicating the issue, is the effect on insurance products available to the sheep industry which rely on the USDA price reporting. ASI has reached out numerous times to USDA and is in ongoing discussions with USDA to resolve this issue. Although MPR has not been a farm bill issue in the past, if progress cannot be made administratively on the confidentiality guidelines, ASI will support including language in the farm bill to address this issue legislatively.

FDA Minor Use Animal Drug Program

It is also critical that producers have continued access to key technologies. We strongly support the Food and Drug Administration (FDA) Minor Use Animal Drug Program and its historic collaboration with USDA's National Institute of Food and Agriculture (NIFA). The targeted use of biologics and pharmaceuticals within a veterinary-client-patient relationship is key to our ability to maintain flock health and provide a safe wholesome product. We urge the creation of a mechanism for NIFA funding for minor use animal drug research through the National Research Support Project No. 7 (NRSP–7); NRSP–7 has an established record with Land-grant universities and has demonstrated excellent results for minor use drug research for nearly 40 years.

Wildlife Services Funding

Coyotes, mountain lions, wolves, and bears kill tens of thousands of lambs and calves each year. Livestock losses attributed to these predators cost ranchers and producers more than $137 million annually, according to surveys by the USDA National Agricultural Statistics Service (NASS). For years, ASI has led the aggressive defense of livestock protection by bringing together a diverse coalition of supporters in the areas of aquaculture, aviation, forestry, livestock production, range/forage management, and state departments of agriculture to ensure the programs' survival. Earlier this month, ASI led a coalition of 206 organizations to sign a letter supporting Wildlife Services funding.[1]

Every dollar spent on predation management returns $3 in livestock value saved. This has a tremendous impact on sheep and cattle producers and the rural economies they support. Predator management also supports abundant wildlife, hunting, and recreation activities on private and Federal land. We ask Congress to ensure USDA Wildlife Services is fully funded and has the resources needed to carry out their livestock protection efforts.

H2–A Temporary Agricultural Workers

The American sheep industry has a decades long history of a reliable, consistent, and legal workforce. Sheep ranchers depend on the H–2A sheepherder program to help care for more than ⅓ of the ewes and lambs in the United States. To meet those needs, the industry has largely participated in temporary visa programs (in various forms) since the 1950s. As a result, sheep producers employ a legal labor force with an estimated eight American jobs created/supported by each foreign worker employed.

Increased regulation with ambiguous policies and enforcement have made the H–2A sheepherder program very costly for employers. In the 2015 re-write of the sheepherder provisions, our program now constitutes over half of all pages of regula-

[1] 2017 Wildlife Services Letter: *http://www.sheepusa.org/IssuesPrograms_GovernmentPrograms_WildlifeServices*.

tions governing the entire H–2A program, even though we are only a small percent of total H–2A employees in the United States. A workable temporary foreign labor program is essential for the sheep industry and our nation's ability to produce a secure food supply.

Emergency Conservation Program (ECP)

The Emergency Conservation Program (ECP), administered by the USDA Farm Service Agency (FSA), provides emergency funding and technical assistance to farmers and ranchers to rehabilitate farmland damaged by natural disasters. As determined by FSA county committees, ECP participants may receive cost-share assistance of up to 75 percent of the cost to implement approved emergency conservation practices, such as rebuilding fences.

The recent fires in Oklahoma, Texas, Kansas, and New Mexico have burned more than 2,300[2] miles in the four states, and forced many farmers and ranchers to move their livestock. The fires have also devastated critical infrastructure, including fencing, on farms and ranches in our states. The ECP provides critical financial resources to affected farmers and ranchers to rebuild fences. ASI strongly supports the expedited implementation of the Emergency Conservation program in affected states.

The Livestock Forage and Livestock Indemnity Programs are utilized in some regions by sheep producers each year and are very important to these operations in periods of extreme drought or devastating storms.

U.S. Sheep Experiment Station (USSES)

The domestic sheep industry relies heavily on the work of the U.S. Sheep Experiment Station (USSES) and the Animal Disease Research Unit (ADRU). Both facilities work collaboratively and are critical components of the USDA's Agriculture Research Service. As our nation's only experiment station primarily dedicated to sheep production, the work carried out by these researchers and faculty are critical to our ability to remain productive and push back against flawed science on the range and in the area of animal health. In the past, administrative action has worked to limit the scope of these facilities. Such action not only threatens the viability of this resource for producers, but also threatens the USSES' unparalleled historic sage grouse data. We support the merger of the USSES and ADRU and encourage growth in their roles in food-animal science, rangeland systems, and animal health programs. These stations have a dedicated history of careful use of taxpayer funds to solve issues and challenges for our producers and counter flawed science from those wishing to remove livestock and multiple uses from our nation's public lands.

Scrapie Eradication

Working collaboratively with the USDA APHIS and state partners, the American Sheep Industry has nearly eliminated scrapie from the United States. Official identification, surveillance, and traceability of both sheep and goats are critical to continuing and maintaining these efforts in order to preserve and enhance current and future export markets. Continued and increased funding of the National Scrapie Eradication Program should be a part of the next farm bill.

2018 Farm Bill Priorities

ASI strongly supports the reauthorization of the Agricultural Act of 2014 (2014 Farm Bill). The first and most important national security concern is the ability of a country to clothe and feed its citizens. Given the small investment made in agriculture by the farm bill when compared to the Federal budget and the safe, affordable, and abundant food supply enjoyed by the U.S. illustrates the wise investment farm bills provide. Of particular note and support by ASI are the following:

National Sheep Industry Improvement Center (NSIIC) and the Sheep Production and Marketing Grant Program (SPMGP)

The National Sheep Industry Improvement Center (NSIIC) was originally established in the 2008 Farm Bill. The nine-member board reviews grant proposals, recommends funding, and submit final recommendations to AMS for approval. The purposes of these grants are to—

(1) promote strategic development activities and collaborative efforts by private and state entities to maximize the impact of Federal assistance to strengthen and enhance production and marketing of sheep or goat products in the United States;

(2) optimize the use of available human capital and resources within the sheep or goat industries;

(3) provide assistance to meet the needs of the sheep or goat industry for infrastructure development, business development, production, resource development, and market and environmental research;

(4) advance activities that empower and build the capacity of the United States sheep or goat industry to design unique responses to the special needs of the sheep or goat industries on both a regional and national basis; and

(5) adopt flexible and innovative approaches to solving the long-term needs of the United States sheep or goat industry.

NSIIC is intimately connected to the Sheep Production and Marketing Grant Program (section 209 of the AMA of 1946). The Sheep Production and Marketing Grant Program (SPMGP) was authorized in the 2014 Farm Bill and provided $1.5 M for Fiscal Year 2014 (to remain available until expended) of CCC funding to AMS for the SPMGP. The SPMG provided funds on a competitive basis to national organizations whose mission is to strengthen and enhance the production and marketing of sheep and sheep products in the United States including the improvement of infrastructure business, resource development, and the development of innovative approaches to solve long-term needs. Only national organizations with similar missions were eligible to apply. The NSIIC was awarded funding by the SPMG which has allowed it to identify and fund industry improvements.

NSIIC is considered instrumental in the development of the LRP Lamb Insurance product and the wool superwash capability in the United States. Superwash or shrink proofing of American wool which is critical for washable wool socks was not available in the United States until 2011 when NSIIC funds significantly contributed to the presence of equipment stateside. LRP lamb insurance is the only risk management tool for lamb producers as neither lamb nor wool are traded in the commodity futures market.

ASI strongly supports providing mandatory funding for the SPMGP.

Wool Marketing Assistance Loan and Loan Deficiency Payment Program

The 2014 Farm Bill authorizes nonrecourse marketing assistance loans (MALs) and loan deficiency payments (LDPs) for wool to eligible producers who produce and shear wool for the 2014 through 2018 crop years. The LDP program is available to eligible producers of nongraded and graded wool.

The national loan rate for graded wool is $1.15/pound. Nongraded wool is $0.40 per pound. When the 2014 Farm Bill was enacted, CBO estimated that the cost of the MAL/LDP was $4 million for wool annually. Recent actual outlays have been nonexistent. With the recent low levels of producer income, ASI supports a re-examination of the wool loan rate and supports an adjustment to a more appropriate level. ASI looks forward to continuing conversations with this Subcommittee to ensure these programs provide producers the safety net needed.

Foot-and-Mouth Disease (FMD) Vaccine Bank

An outbreak of a foreign animal disease has the ability to cripple the entire agricultural sector and would have long-lasting ramifications for the economic viability of the livestock industry. It is critical that USDA Animal and Plant Health Inspection Service (APHIS) work collaboratively with state animal health officials to be able to rapidly respond to any such outbreak. Of particular concern is the threat posed by the reintroduction of FMD, either inadvertently or intentionally. While we must do everything we can to eliminate the risk of reintroduction of FMD, we must also be prepared in the event of an outbreak. It is critical that U.S. producers have immediate access to a viable vaccine bank. We join with others in the livestock industry in supporting the creation and maintenance of an FMD vaccine bank and continued research. We also urge Congress to provide the authority and $150 million a year in mandatory funding for USDA APHIS to protect the U.S. livestock industry from an FMD outbreak.

Trade

Continued strength in the international marketing of lamb and wool requires a commitment to the promotion and export of U.S. wool to export markets through strong USDA Foreign Agricultural Service (FAS) Program funding.

ASI is the cooperator with the FAS for wool and finds success every year in securing customers with the Market Access Program, the Foreign Market Development Program, and the Quality Samples Program. In 2001, ASI relaunched an export program for wool and significant improved the competition of American wool. We now export 50 percent of American wool, on average, and have at least doubled the number of U.S. firms that offer wool to overseas markets

Conclusion

In summary, the nation's sheep producers are eager for the upcoming farm bill discussions. Thank you for your past support of the livestock industry and for allowing me to visit with you about our priorities.

Sincerely,



BOB BUCHHOLZ,
American Sheep Industry Association.

The CHAIRMAN. Thank you very much.

Mr. Herring.

STATEMENT OF DAVID D. HERRING, VICE PRESIDENT AND BOARD MEMBER, NATIONAL PORK PRODUCERS COUNCIL; VICE PRESIDENT, TDM FARMS/HOG SLAT, INC., NEWTON GROVE, NC

Mr. HERRING. Good afternoon, Chairman Rouzer, Ranking Member Costa, and Members of the Subcommittee.

I am David Herring, a hog farmer from North Carolina, Vice President of the National Pork Producers Council, and Vice President of Hog Slat, Incorporated, which supplies equipment to pork operations globally.

Like all pork producers, in the next farm bill I would like to see provisions that help strengthen my industry's competitiveness, and I would hope it doesn't contain provisions that would restrict my ability to raise and sell animals or to compete in the global marketplace.

The U.S. pork industry's top priority for the next farm bill is establishing a foot-and-mouth disease vaccine bank. If this country ever had an FMD outbreak, it not only could devastate my farm and the whole livestock industry, but the entire U.S. economy.

An Iowa State University study estimated that an outbreak, which would immediately shut off our meat exports, would cost the U.S. pork, beef, corn, and soybean sectors $200 billion over 10 years. We need the capacity to produce enough FMD vaccine to quickly control, then eradicate the disease, and we need the funds to make that happen. Specifically, we want the farm bill to direct the USDA to contract for an offshore vendor-maintained vaccine bank that would have antigen concentrate to protect against the 23 most common FMD strains currently circulating in the world; a vendor-managed inventory of 10 million doses, which is the estimated need for the first 2 weeks of an outbreak; and an international vaccine manufacturer with the capacity to produce at least 40 million doses. This does not exist currently.

An important element of combating FMD or any foreign animal disease is the ability to monitor and detect disease. That is why we need mandatory increased funding for the National Animal Health Laboratory Network.

While an FMD vaccine bank would protect the U.S. pork industry from a future FMD outbreak, a current issue are efforts to regulate the buying, selling, and raising of animals. Chief among those efforts, which was pushed by the last Administration, is the Farmer Fair Practice Rules, specifically, an interim final rule that is set

to take effect in about a month. We also have issues with the pending Organic Livestock and Poultry Practice Rules. The Farmer Fair Practice's interim final rule would make it easier to sue and win Packers and Stockyards Act cases which carry triple damages. Livestock industry experts have said this will lead to an increase in lawsuits and an increase in legal risks for the meat industry which, no doubt, will take steps to reduce that risk. That likely would mean consolidation of the livestock industry, which would reduce, not increase, competition.

Actually, the market is working today. We see it working now in our industry. Five new producer-owned packing plants will be coming online over the next 2 years, and no doubt, those plants will be looking for hogs, meaning producers like me should be getting some good prices for our animals.

Another important issue for pork producers is trade. While farm bills don't address this subject directly, Members of this Subcommittee no doubt know the importance of trade to all of U.S. agriculture. Most of the U.S. pork industry's export to other countries with which the United States has a free trade agreement. In fact, we export more pork to our 20 FTA partner countries than to the rest of the world combined. Last year, we exported almost $6 billion of U.S. pork. That was 26 percent of our total production, and added more than $50 to the price producers received for each hog marketed. All of that should be kept in mind as Congress and the Trump Administration consider any modernized trade agreement with Mexico and Canada.

U.S. pork producers cannot afford any disruptions in trade with our number 2 and our number 4 export markets, and that means any new deal must maintain the zero tariff on pork trade among the United States, Canada, and Mexico.

The bottom line on this farm bill, Congress should craft legislation that helps farmers like me remain competitive, and should avoid provisions that would make it difficult for us to compete in the global marketplace.

Thank you for this opportunity to testify, Mr. Chairman, and I will be happy to answer any questions.

[The prepared statement of Mr. Herring follows:]

PREPARED STATEMENT OF DAVID D. HERRING, VICE PRESIDENT AND BOARD MEMBER, NATIONAL PORK PRODUCERS COUNCIL; VICE PRESIDENT, TDM FARMS/HOG SLAT, INC., NEWTON GROVE, NC

Introduction

The National Pork Producers Council (NPPC) is an association of 43 state pork producer organizations that serves as the global voice for the nation's pork producers. The U.S. pork industry represents a significant value-added activity in the agricultural economy and the overall U.S. economy. Nationwide, more than 60,000 pork producers marketed more than 118 million hogs in 2016, and those animals provided total cash receipts of nearly $240 billion. Overall, an estimated $23 billion of personal income and $39 billion of gross national product are supported by the U.S. pork industry.

Iowa State University economists Daniel Otto, Lee Schulz and Mark Imerman estimate that the U.S. pork industry is directly responsible for the creation of more than 37,000 full-time equivalent pork producing jobs and generates about 128,000 jobs in the rest of agriculture. It is responsible for approximately 102,000 jobs in the manufacturing sector, mostly in the packing industry, and 65,000 jobs in professional services such as veterinarians, real estate agents and bankers. All told, the

U.S. pork industry is responsible for nearly 550,000 mostly rural jobs in the United States.

U.S. pork producers today provide 25 billion pounds of safe, wholesome and nutritious meat protein to consumers worldwide, and exports add significantly to the bottom line of each U.S. pork producer. U.S. exports of pork and pork products totaled 2.3 million metric tons—a record—valued at $5.94 billion in 2016. That represented almost 26 percent of U.S. production, and those exports added more than $50 to the value of each hog marketed. Exports supported approximately 110,000 jobs in the U.S. pork and allied industries.

Next Farm Bill

Obviously, pork producers have a strong interest in the next farm bill. NPPC has formed a Farm Bill Policy Task Force to gather input from producers from around the country. The task force will hold several meetings to review and evaluate many of the farm bill issues that will affect the U.S. pork industry. NPPC is committed to working with Congress to help craft the 2018 Farm Bill.

As it has requested in every farm bill on which it has weighed in, the U.S. pork industry asks that Congress in the next farm bill maintain the U.S. pork industry's competitive advantage, strengthen its competitiveness and defend the industry's competitiveness by supporting provisions that would be beneficial to agriculture and by opposing unwarranted and costly provisions and regulations that would negatively affect America's farmers and ranchers.

There are several issues pork producers would like Congress to address in the next farm bill that could help U.S. pork producers.

Foot-and-Mouth Disease Vaccine Bank

Foot-and-Mouth Disease (FMD) is one of the most economically devastating foreign animal diseases affecting animal agriculture. It is an infectious and sometimes fatal viral disease that affects cloven-hooved animals, including pigs and cattle. It is easily spread through a number of ways, including through the air, contact with contaminated equipment and by predators. An outbreak today of the disease, which last was detected in the United States in 1929, likely would cripple the entire livestock sector. In addition to causing harm to production animal agriculture, the economic consequences undoubtedly would ripple throughout the entire rural economy, from input suppliers to packers and from processors to consumers.

FMD is endemic in Africa, Asia, some South American countries and the Middle East. The FMD virus has seven viral serotypes and more than 60 subtypes, with wide strain variability. Sporadic outbreaks with different types continue to pop up in countries around the world.

Increased travel and trade between affected countries make the United States increasingly vulnerable to introduction of the disease. Now, the country must confront the possibility of terrorists using FMD as a weapon to inflict significant damage to the U.S. economy and affect food availability.

In the U.S. Department of Agriculture's Foreign Animal Disease preparation strategy document on the phases and types of an FMD outbreak, Dr. James Roth, professor and researcher at Iowa State University, identified four phases of the disease: (1) confirmation of an outbreak (typically three days); (2) surveillance and epidemiological work necessary to provide timely evidence of the extent of an outbreak to support decision making by government officials; (3) recovery from the disease; and (4) freedom from the disease (possibly with vaccination).

He categorized FMD outbreaks as having six types: Small Focal, Moderate Regional, Large Regional, Widespread or National, Catastrophic U.S. and Catastrophic North American, which includes Canada and Mexico.

Given the structure of the U.S. livestock industry, the likelihood of having a Small Focal or Moderate Regional outbreak is remote. The livestock industry estimates there are approximately 1 million pigs and 400,000 cattle moved daily in the United States, some over long distances. In addition, there are numerous auctions, fairs and exhibits that concentrate large numbers of animals in a single location, providing the opportunity for one infected or exposed animal to spread the disease to many animals. Thus, it seems unlikely that, if the United States had an outbreak, it would be on the smaller end of Roth's scale.

The World Organisation for Animal Health (OIE) sets standards for managing and determining a country's disease status. Those standards range from "stamping out" (killing all infected and exposed animals) to being free of FMD, or "free with vaccination."

After watching countries such as the United Kingdom, Korea and Japan, whose livestock populations pale in comparison to the United States, struggle to manage FMD outbreaks by killing large numbers of animals, USDA's Animal and Plant

Health Inspection Service (APHIS) changed its policy on managing the disease from "stamping out" to using vaccine to limit the spread.

This policy change was endorsed by the U.S. livestock industry as a cheaper and more practical alternative given the enormous size of the U.S. livestock herd and the movement of livestock around the country. The United States simply cannot "kill" its way out of an FMD outbreak.

The problem, though, is the United States does not have enough FMD vaccine available nor could a sufficient quantity be obtained in time to implement an effective control program.

U.S. law prohibits storing live FMD virus on the U.S. mainland, so foreign production companies are the only source of finished vaccines. The United States is the only country in the world that maintains its own vaccine antigen bank, which is maintained at the Plum Island Animal Disease Center on Plum Island, N.Y., and which has a limited number of antigens.

Currently, if there were an FMD outbreak in the United States, antigen would be shipped to a vaccine manufacturer in either Pirbright, England, or Lyon, France, to be turned into finished vaccine and shipped back to the United States. After three weeks, the process would produce only 2.5 million doses of vaccine.

Iowa State's Roth estimates that at least 10 million doses would be needed during the first 2 weeks of an outbreak. Currently, there is no surge capacity to produce additional doses of vaccine; all the vaccine production capacity in the world currently is in use by other countries.

Additionally, it must be noted that the vaccine antigen bank serves as the North American Bank and thus includes Canada and Mexico.

Over the past several years, the United States has made significant progress in FMD preparedness through the development of secure supply plans for milk, pork and beef, and APHIS continues to work with the livestock industry to improve its preparedness capability. Fixing the antigen bank capacity and improving vaccine availability must be a priority in future preparedness efforts.

Establishing a more robust FMD vaccine bank will require a significant increase in budget outlays. (The current FMD efforts are funded at just $1.9 million.) But the cost pales in comparison to the economic cost of an FMD outbreak in the United States.

Because North America is free of FMD, an outbreak of the disease in the United States would immediately shut off all exports of U.S. livestock, meat and dairy products, creating a precipitous drop in livestock markets. Since U.S. consumers have little knowledge of the disease, which **cannot** affect people, there also likely would be serious disruptions in the domestic market because of decreased demand for those products. According to one recent study, prevention of FMD is estimated to be worth $137 million a year to the U.S. pork industry.

Iowa State University economist Dermot Hayes estimates the cumulative impact of an FMD outbreak on the beef and pork industries over a 10 year period would be $128.23 billion. The annual jobs impact of such a reduction in revenue would be 58,066 in direct employment and 153,876 in total employment. Corn and soybean farmers over a decade would lose $44 billion and nearly $25 billion, respectively, making the impact on those four industries alone almost $200 billion.

The history of government involvement in disasters like an FMD outbreak is that, once a problem occurs, unlimited resources are committed to getting control of the situation. In the case of FMD, there is a clear opportunity to invest in a robust vaccine bank that would limit the economic impact on producers, feed suppliers and consumers and reduce the government's cost for control and eradication of the disease.

A recent study by Kansas State University estimated the cost to the U.S. Government of eradicating FMD would be $11 billion if vaccination is **not** employed. But costs could be cut significantly if vaccination is used, and, the study estimated—depending on the strategy—losses to consumers and producers could be cut by 48 percent.

Congress should work with the Trump Administration to address the alarming gap in the government's preparedness for an FMD outbreak. Whether the disease introduction is the result of terrorism, careless travelers or carried on traded commodities, the calamitous result would be the same: devastation to the U.S. livestock industry and a significant hit to the U.S. economy.

NPPC urges Congress to provide the authority and $150 million a year in mandatory funding for USDA APHIS to protect the U.S. livestock industry from an FMD outbreak. Specifically, the farm bill should direct APHIS to:

- Contract for an offshore, vendor-maintained vaccine antigen bank that would have available antigen concentrate to protect against all 23 of the most common FMD strains currently circulating in the world.
- Contract for a vendor-managed inventory of 10 million doses—the estimated need for the first two weeks of an outbreak.
- Contract with an international manufacturer(s) for the surge capacity to produce at least 40 million doses.

Disease Surveillance

An adjunct to a robust FMD vaccine bank is a world-class disease surveillance system. Being able to detect and identify any disease that could affect the U.S. food supply is vital to the continued viability of the U.S. pork industry.

The United States faces an increasing threat from the introduction of a foreign animal disease (FAD) into the U.S. livestock herd, but there is evidence that the safety net in place to prevent such an introduction needs to be improved.

Late last year, the House Agriculture Committee held a hearing on American agriculture and national security, which highlighted the vulnerability of the U.S. food supply to the potential for FAD introduction by terrorists or by accident.

Additionally, in October 2015, the bipartisan Blue Ribbon Study Panel on Biodefense, co-chaired by former Department of Homeland Security Secretary Tom Ridge and former Sen. Joe Lieberman, released a report that highlighted the need for improving the U.S. system for protecting the U.S. livestock herd and the nation's food supply from FADs.

Disease surveillance is the foundation of disease prevention and preparedness. The threat of new and emerging diseases continues to grow, with scientists continually warning the public and animal health authorities about the increasing risks. In May 2013, for example, the first case in the United States of Porcine Endemic Diarrhea virus was identified on an Ohio hog farm. That disease, which USDA determined likely came from China, spread quickly throughout the Midwest and killed between 8 million to 10 million mostly young pigs over an 18 month period.

Other bacterial and viral diseases are lurking around the world, and that is the reason the U.S. pork industry has devoted significant resources to endemic and foreign animal diseases, funding more than 120 research projects and spending more than $5 million for studying, monitoring and addressing swine diseases over the past 10 years.

The outbreak of H1N1 influenza in 2009 demonstrated the interrelationship of human and animal health when combating new and emerging diseases. From that experience, the U.S. pork industry learned that a Comprehensive and Integrated Surveillance System (CISS) is needed to ensure the capture of data about a broader range of diseases.

The industry has been working with USDA APHIS and the Centers for Disease Control and Prevention (CDC) to develop a CISS, including continuation and expansion of ongoing swine influenza surveillance. Completion of this is critical to maintaining the pork industry's known disease status, which, in turn, is vital to maintaining and expanding U.S. pork exports. The CISS is designed to provide an "early warning system" and to allow for development of response plans ahead of an epidemic.

The U.S. pork industry is collaborating with APHIS to test implementation of a CISS and to determine how it can be connected to an animal traceability system. Currently, the most significant shortcoming is funds to build the infrastructure to accommodate a more robust system of surveillance.

The ability to expand and strengthen surveillance to include other diseases will help increase exports. Reducing surveillance, however, would give other countries justification to restrict U.S. exports because of inadequate surveillance data.

U.S. pork producers also support USDA's animal traceability system. An effective traceability system is critical to the national animal health infrastructure and is required for certification by the OIE. The ability to quickly trace diseased and exposed animals during a foreign animal disease outbreak would save millions of animals, lessen the financial burden on the industry and save the American taxpayer millions of dollars.

With support from all sectors of the pork industry, approximately 95 percent of U.S. pork producers' premises already are registered under the USDA livestock identification program. Premises identification is the key to meeting a goal of tracing an animal back to its farm of origin within 48 hours, which would allow animal health officials to more quickly identify, control and eradicate a disease; prevent the spread of a disease; and make certifications to trading partners about diseases in the United States.

NPPC requests that Congress include in the farm bill authority for $30 million a year for the National Animal Health Laboratory Network, which conducts diagnostics on animal diseases, and $70 million a year for block grants to the states for disease surveillance and other support.

Agricultural Research

NPPC supports expanding Federal funding for research, education and extension programs by improving the quantity and quality of USDA research through the agency's Agriculture and Food Research Initiative (AFRI). Basic, competitive agricultural research allows America's farmers to remain globally competitive in the face of a growing world population, improves public health and strengthens national security.

AFRI is the USDA's premier competitive research program and makes peer-reviewed, competitively-awarded research grants. The grants fund basic and applied research, education and extension to colleges and universities, agricultural experiment stations and other organizations conducting research in priority areas that are established partially in every farm bill.

The 2008 Farm Bill required AFRI to make available 60 percent of grant funds for basic research and 40 percent for applied research. Despite being authorized for $700 million in the 2008 Farm Bill and reauthorized in the 2014 Farm Bill, the program never has received anywhere near full funding in the appropriations process. In fact, USDA's overall research funding has decreased by 30 percent since 2009.

While other Federal research and development budgets have grown over time, agricultural research funding has stagnated. This stagnation has occurred despite studies consistently reporting high social rates of return—between 20 percent and 60 percent annually. The United States is falling behind developing nations in its commitment to funding agricultural research, which has created rapid increases in the country's productivity. Amid growing challenges, such as the threat of new diseases, maintaining the position as the world leader in agricultural research and technology should be an overarching goal.

NPPC supports increasing the funding for agricultural research to ensure that the U.S. livestock industry maintains its competitiveness in the global marketplace.

Production and Marketing Regulations

NPPC works on behalf of America's pork producers to ensure that laws and rules don't impose unnecessary costs on the U.S. pork industry, restrict it from meeting consumer demands in an economical manner or prevent market-based solutions to issues. The structure of the pork production and packing sectors should be allowed to change with the demands of the growing global marketplace. This includes allowing producers and packers to adopt new technologies and pricing and marketing mechanisms that enable the former to reduce their risks and the latter to capture economies of scale.

The U.S. pork-packing sector is the envy of the world in terms of efficiency and food safety, and legislation and regulation should not take away or hamper that source of international advantage. Allowing producers and packers the freedom to develop new ways of doing business will enhance the value of U.S. pork products at home and abroad and reduce costs and risks.

The U.S. pork industry, which has developed a wide variety of marketing and pricing methods, including contracts, to meet the changing needs of a diverse marketplace, strongly opposes any provision that would eliminate or restrict such mechanisms. Limiting producers' options could force the livestock markets to revert to an inefficient system used more than half a century ago in which animals were traded in small lots and at prices determined in an open-market bid system.

Dictating how U.S. pork producers sell and raise their animals and how packing companies buy livestock would severely cripple the competitiveness of the U.S. pork industry. Mandates—whether pushed by lawmakers or activists—must not stand in the way of the free market.

Of particular and immediate concern to the U.S. pork industry is the Farmer Fair Practices Rules, specifically an Interim Final Rule, which was issued in the final weeks of the Obama Administration.

Written by USDA's Grain Inspection, Packers and Stockyards Administration (GIPSA), the Interim Final Rule broadens the scope of the Packers and Stockyards Act (PSA) of 1921 related to the use of "unfair, unjustly discriminatory or deceptive practices" and "undue or unreasonable preferences or advantages."

USDA in 2010 proposed a number of PSA provisions—collectively known as the GIPSA Rule—which Congress mandated in the 2008 Farm Bill. But the agency was blocked by Congress through amendments to annual agricultural appropriations

bills from implementing a provision that would eliminate the need to prove a competitive injury to win a PSA lawsuit.

Protecting competition is the heart of the PSA. In fact, eight Federal appeals courts have held that harm to competition must be proved for an action to be a violation of the PSA. But the Interim Final Rule would eliminate the need to prove injury to competition, which would prompt an explosion in PSA lawsuits by turning nearly every contract dispute into a Federal case subject to triple damages.

The inevitable costs associated with increased lawsuits and the legal uncertainty they would create likely would lead to further vertical integration of the pork industry and drive packers to own more of their own hogs—reducing competition for producers of all sizes, stifling innovation and providing no benefits to anyone other than trial lawyers and activist groups that will use the rule to attack the livestock industry.

(An Informa Economics study found the GIPSA Rule, including the Interim Final Rule, now would cost the pork industry more than $420 million annually, with most of the costs related to PSA lawsuits brought under the "no competitive injury" provision.)

The U.S. pork industry recently endured its fair share of headwinds. It does not need more of them in the form of the Interim Final Rule of the Farmer Fair Practices Rules.

NPPC urges Congress to work with the Trump Administration to rescind the Interim Final Rule and to ensure that any USDA rule to amend the Packers and Stockyards Act not restrict producers' ability to sell or packers' ability to buy animals and not limit their ability to use technologies and pricing and marketing mechanisms that work for their mutual benefit.

Likewise, Federal mandates on production practices, including ones that would dictate animal housing systems, would add to producers' costs and weaken the U.S. pork industry's competitiveness *vis-à-vis* foreign competitors.

Nearly 3 decades ago, the U.S. pork industry developed and implemented strict standards for animal care and judicious use guidelines for use of animal drugs. These standards and guidelines are part of the industry's Pork Quality Assurance Plus and Transport Quality Assurance programs, which require producers and handlers to be trained and certified in caring for and transporting animals.

Pork producers do not support Congress including animal care and handling provisions in the farm bill—a piece of legislation that has been aimed for more than 80 years at maintaining the competitiveness of the U.S. agriculture and livestock sectors.

Trade and USDA Export Programs

Expanding foreign markets for U.S. pork products increases producers' bottom line and contributes significantly to the U.S. economy, fostering job growth and increasing the U.S. gross domestic product.

Pork represents 37 percent of global meat protein intake, more than beef and poultry, and world pork trade has grown significantly over the past decade or so. The extent of the increase in global pork trade in the future will hinge heavily on continued efforts to increase agricultural trade liberalization.

For the U.S. pork industry, free trade agreements (FTAs) have increased exports by 1,550 percent in value and nearly 1,300 percent in volume since 1989—the year the United States began using bilateral and regional trade agreements to open foreign markets.

The importance of FTAs to U.S. pork producers is underscored by one fact: The U.S. pork industry now export more pork to the 20 countries with which the United States has FTAs than to the rest of the world combined.

Last year, the U.S. pork industry exported nearly $6 billion of product, which represented 26 percent of total production and supported more than 50,000 jobs. It is estimated that the price U.S. pork producers received on each hog marketed was $50.20 higher last year than it would have been in the absence of exports.

It is important to strengthen the ability of U.S. agriculture to compete in the global marketplace. But the downside of growing exports is, of course, the larger economic impact on producers and the U.S. economy should there be any disruption in trade. Pork producers understand this dynamic and recognize that it would be devastating for the U.S. pork sector.

And while interruption in any one market would be troublesome, it would be catastrophic if there were a disruption in trade with Mexico and/or Canada, the U.S. pork industry's No. 1 and No. 4 markets by volume, respectively and No. 2 and No. 4 by value. This should be kept in mind when considering "modernization" of the North American Free Trade Agreement (NAFTA).

NPPC strongly urges the Trump Administration and Congress to maintain NAFTA's zero tariff on pork trade among the United States, Canada and Mexico.

While the best way to increase U.S. pork exports is through FTAs that eliminate all tariff and non-tariff barriers on pork, programs run by USDA's Foreign Agricultural Service and authorized under the farm bill also are important to U.S. agricultural exports.

The Market Access Program (MAP) uses funds from the Commodity Credit Corporation to help producers, exporters, private companies and other trade organizations finance promotional activities for agricultural products of the United States. The Foreign Market Development Program, also known as the Cooperator Program, helps create, expand and maintain long-term export markets for U.S. agricultural products.

NPPC supports funding levels that will sustain those important programs.

Environment

Protecting the environment is a top priority of the U.S. pork industry. Pork producers are committed to running productive pork operations while protecting the environment and meeting or exceeding environmental standards. Pork producers have fought hard for science-based, affordable and effective regulatory policies that meet the goals of today's environmental standards. To meet strict environmental criteria while maintaining production, they support the Federal Government providing through conservation programs within the farm bill cost-share support to help defray some of the costs of compliance.

For many farmers, USDA conservation financial assistance funds through the Environmental Quality Incentives Program (EQIP), the Conservation Stewardship Program (CSP) and the Conservation Reserve Program (CRP) are integral to making investments in environmental protection practices and technologies possible. Certainly, there will be advances made by many farmers without Federal funding assistance, but conservation financial assistance is critical for many, and it will help build a foundation of practices that can sustain conservation improvements for the long term.

Under the EQIP program, however, pork producers have not received enough support to meet all the challenges they face related to conservation and the environment. Producers who use EQIP would like to see the scope of projects covered by the program widened.

NPPC wants in the next farm bill funding maintained for EQIP and the other critical working lands conservation programs, and on CRP, it supports the current limit on acreage that may be enrolled in the program.

Conclusion

The U.S. pork industry is the lowest-cost producer and No. 1 exporter of pork in the world, and U.S. pork producers continue to produce the most abundant, safest, most nutritious pork in the world. Pork producers have proved very resilient over the past years, weathering financial crises and diseases as well as the vagaries of a supposedly free-market economy pushed and pulled in various directions by government intervention and regulation. All the while, they have invested in and adopted new technologies that have promoted animal health, protected the environment and added thousands of jobs and billions in national income to the American economy.

For America's pork producers to continue as leaders in the international and domestic economies, for them to take advantage of the opportunities and meet the challenges presented to them, Congress and the Administration, through the next farm bill, should pursue policies and regulations that support the U.S. pork industry rather than hinder its ability to continue producing safe, lean and nutritious pork and pork products for the global marketplace.

The CHAIRMAN. Thank you, Mr. Herring.

The chair would like to remind Members that they will be recognized for questioning in order of seniority for Members who were here at the start of the hearing. After that, Members will be recognized in order of arrival. I appreciate Members' understanding.

I now recognize myself for 5 minutes.

Mr. Wittenburg, you mentioned the need for an Animal Pest and Disease Disaster Prevention Program in the next farm bill. Can you give a brief overview of how that would be structured and

funded, and I am particularly interested in having a better understanding of how that state block grant would actually be utilized?

Mr. WITTENBURG. The funds would come through the USDA. And in particular you are looking for the vaccine, is the question?

The CHAIRMAN. Yes. You referred to the Animal Pest and Disease Disaster Prevention Program and a block grant to the states, and I am just curious what you are envisioning in terms of that block grant, how that block grant would be utilized, the particulars of that.

Mr. WITTENBURG. Yes. One idea would be to critically expand upon the great work done as many of the labs around the country, such as the NVSL Lab in Ames, Iowa, or the Southeast Poultry Lab in Athens, Georgia. They are understaffed and ultimately cannot get all the areas they need as to be proactive, as they might want to due to their funding restraints.

When it comes to prevention techniques, interventions and control vectors, there is still a lot of information about how the disease spreads, what methods worked in lowering the severity of an outbreak, all legitimate questions that need research and the smart minds to help limit economic impacts to the poultry sector of our economy, which many people depend for their livelihoods.

The CHAIRMAN. Mr. Herring, I want to focus in on this FMD vaccine bank, which I am very much in support of. The majority of the Subcommittee, if not all the Subcommittee, is very interested in this particular topic. You mention the idea of having a vendor-maintained offshore vaccine bank, enlighten us as to why we couldn't just increase capacity at Plum Island.

Mr. HERRING. Well, Mr. Chairman, currently, as most of us know, Plum Island is set to be closed down in the next few years, and the facility that is going to take its place, NBAF, there are no provisions for a vaccine bank in their plans currently. We also think it would be more economical to have an offshore vendor vaccine bank, would be a lot faster turnaround if we had an outbreak because the vendor that would produce the vaccine would already have the antigen available. And currently, the way we understand at, at Plum Island we only have about 10 of the 23 strains that circulate through the globe, and we are asking to have all 23 available.

The CHAIRMAN. The $150 million per year, how was that figure settled upon?

Mr. HERRING. Well, Professor James Roth at Iowa State University put the numbers together, and basically it breaks down to provide at least 10 million doses of each of the 23 strains circulating currently, as well as estimates for the needs for surge capacity in the case of an outbreak. The main difference we think between our estimate or Mr. Roth's estimate is we are saying we need 10 million doses of all 23 strains, instead of 10 million doses of 10 strains. As well as this Committee, last year we talked about agroterrorism, some of the most virulent strains of foot-and-mouth is possessed in some of these countries that don't like us very much today. But the overall cost, and the one thing I would like this Committee to hear today, the overall cost of this program is because this program does not exist today. When USDA made the decision that we would not euthanize animals in case of an outbreak,

that we would vaccinate, and we concur with that decision, they did not put any appropriations or anything in place for vaccinations.

The CHAIRMAN. I see my time is just about to expire, so let me transition over to Mr. Costa, if he has any questions.

Mr. COSTA. Thank you very much, Mr. Chairman.

Mr. Uden, you said in your testimony about the importance of the farm bill, and clearly a Market Access Program that we initiated about two farm bills ago with the Foreign Market Development Program, could you describe what the benefits have been for the beef industry in those two areas?

Mr. UDEN. Yes. As we look to our future and the growth of our industry, we have to have access, and we have to have ways and means of working with these other countries to get our product abroad. And what they have done is the industry has contributed a lot of dollars towards like the U.S. Meat Export Federation, those MAP dollars, those matching dollars have bolstered that and actually given us access to a lot of foreign markets to where we have increased our sales abroad. It is vitally important that we have those funds to keep opening markets because that is the future.

And as we look to the future of our business, we have to have export growth because there are only so many people that live within our borders. Ninety-six percent of all people live outside of our borders. And as we grow our industry and preserve it, and have all these young people that are entering, we must have access to move our product.

Mr. COSTA. Right. Mr. Uden, I work very closely with some of your colleagues or friends, I believe Mr. Wood and Mr. Harris out there in our part of the cattle country in California, and they worked very hard to penetrate markets in Asia and Japan and South Korea, and they tell me of the benefits of these efforts, and clearly, you underline that importance.

Mr. Wittenburg, I want to add you have some very fine representation behind you there who come to our offices all the time to advise us of challenges facing the turkey industry. Outbreaks of various diseases, the avian flu and other things, have been challenging out in the West. A lot of these contaminations occur not so much even necessarily within your flocks, as I understand it, but as a result of migratory patterns of wildlife. Are there ways in which we can provide additional support for you in the farm bill?

Mr. WITTENBURG. Thank you for that question. First, it is important that Congress signal support for this concept as it could have a huge economic impact in limiting trade restrictions in the future. It does not hurt to begin an in-depth conversation about how the world will operate should the need to use vaccines arise for High-Path AI. The fact that the rest of the world has High-Path AI should be a big factor in bringing them to the table to see if there is a more logical policy that we can be agreed upon.

Mr. COSTA. I appreciate that. And I want to all get some head-nodding among you here, because I talked about trade in my opening comments and all of you referenced it. Did all of your associations support the TPP agreement that we had been working on? I see head nods.

Mr. UDEN. We did.

Mr. COSTA. Yes. As I said, it was unfortunate that they met last week and we weren't there. Do any of you have concerns that I have, I know the California agricultural industry does, on the potential retaliatory effects by either Mexico or Canada? We saw that with the COOL issue last year with Canada and Mexico, and I am wondering whether or not—what people don't understand is, a trade agreement, to be effective, has to be fair both sides. If it is I win and you lose, then you are not going to be a part of the deal. Right? And we saw this occur back in 2010 in Mexico with a host of retaliatory tariffs that were put in place on table grapes and cheese and other products. Any of you want to share those concerns or fears? Mr. Uden?

Mr. UDEN. Yes, I would address that. Going back to country-of-origin labeling, if that was to be circulated again, we would still have that retaliatory trade with those 2 countries. Canada and Mexico represent 31 percent of our exports.

Mr. COSTA. It is big.

Mr. UDEN. It is huge.

Mr. COSTA. Nebraska provides 42 percent of Mexico's——

Mr. UDEN. Right. As you commented on TPP it would have added $378 million automatically to Nebraska's trade in general.

Mr. COSTA. Yes. All right, well, we are going to need your continued efforts and support. Thank you, Mr. Chairman.

The CHAIRMAN. Mr. DesJarlais.

Mr. DESJARLAIS. Thank you, Mr. Chairman. I appreciate the witnesses for being here today.

Mr. Uden, you mentioned in your testimony the possible reinstatement of mandatory country-of-origin labeling. Considering its failure last time around, and its negative impact on cattlemen, is there a real possibility of implementing this program again, perhaps with new criteria, and how would we ensure this program does not incur more regulatory costs and burdens on producers?

Mr. UDEN. Do not bring it back. We, as producers, are better equipped to market our product, and we have shown time and time again that adding value through a mandatory program that has a generic label absolutely does no benefit to the producer. Voluntary labels that have certain attributes for certain qualities of the product, going back to value-based marketing, has a lot more reach.

Also the other thing when you look at the COOL legislation, it only addresses the retail counter. I know a lot of people think it has some issues when we address imports, but it has no bearing, usually because those would go into the food service sector. It is an outdated law, and I would really like to continue to focus on things that will benefit the industry *versus* hashing old tried ideas that do nothing for the producer other than add costs and confuse the consumer.

Mr. DESJARLAIS. I thank you for your perspective on that.

Mr. Wittenburg, I represent Tennessee's Fourth District, which encompasses Lincoln County, the location of two outbreaks of the Highly Pathogenic Avian Influenza this month which resulted in the depopulation of over 73,000 birds. I am concerned, we don't know a whole lot about exactly how High-Path AI is transmitted. What steps can poultry producers take to protect their flocks more adequately, and are there steps that we can take to protect flocks

from wild carriers and ensure that a low pathogenic virus doesn't mutate into a highly pathogenic case?

Mr. WITTENBURG. Yes, thank you for the question. High-path AI is something we are all getting educated to here domestically in the United States, but we must admit it has become a global issue, so it is spreading throughout the U.S., and it seems to be connected to the flyway system. I think that is the first and foremost is that the carriers—we live by a simple motto, and that is: "If it moves it can carry." And so when you really think about that, there are a lot of moving parts to animal production. *Biosecurity* is a simple word. It is like quality. What does it mean? And at the end of the day, we have really got to get a hold on the immunity system of the birds and build on that, and minimize the impact of these High-Path AI outbreaks.

Mr. DESJARLAIS. Okay. We have about a minute and a half left. I am also concerned with how the Organic Livestock and Poultry Practices rule could affect organic markets. The outdoor access requirement for egg producers would create a barrier to entry for our producers, and potentially eliminate current suppliers from the marketplace who can't afford to build outdoor facilities. Do you think that organic production standards are beginning to favor animal welfare to an extent that harms our producers' ability to compete in the marketplace?

Mr. WITTENBURG. Yes. Again, it is, commonsense. Having access to outdoors, you are exposing those animals to the wild, and if there is a common denominator that the migratory birds are a potential carrier of a High-Path AI, then you should be careful on what the rules state for organic production and birds having access to the outdoors.

Mr. DESJARLAIS. Thank you. And, Mr. Chairman, I yield back the balance of my time.

The CHAIRMAN. The distinguished Ranking Member of the full Committee is here with us, and so I recognize Mr. Peterson.

OPENING STATEMENT OF HON. COLLIN C. PETERSON, A REPRESENTATIVE IN CONGRESS FROM MINNESOTA

Mr. PETERSON. Well, thank you, Mr. Chairman.

Mr. Wittenburg, sorry I wasn't here earlier, I have been running around in meetings. Your testimony, you referenced the need to start a conversation with our trade partners regarding the use of vaccines and to minimize the impacts of High-Path AI. When we were ground zero of the problem in Minnesota. I had many, many of my friends and producers who were impacted by this. And you acknowledge that the trade impacts associated with the decision to look at vaccines has made it almost impossible. Since this is a global disease, and I am convinced it is being spread by ducks and geese and that was our experience in Minnesota, what do you think we can do to move the discussion forward. My guys would like to see a vaccine, what do you think we can do to help make that happen?

Mr. WITTENBURG. Well, I think the time is now. We had the initial onset in 2015 here domestically. We continue to watch the globe endure High-Path AI. Globally, we are at a perfect time to sit down and have a discussion in what vaccine ramification might

look like for keeping poultry in a healthy and marketable status. I believe the time is now. To continue to indemnify and euthanize poultry globally is not a good long-term approach. I would suggest it probably starts with APHIS and that division, and we bring the world together and use the WTO as a potential standard, but it is time to just have the discussion and bring them to the table.

Mr. PETERSON. Are there other countries that are willing to look at this?

Mr. WITTENBURG. I believe so. There was a time back in 2015 when Dr. Clifford went to China and it appeared China was real——

Mr. PETERSON. Yes, I remember that.

I thought he had had positive meetings over there. But we have people within the poultry business in the United States that are not in favor of this, right?

Mr. WITTENBURG. Correct. And it is the trade ramifications that go with it is that is the issue.

Mr. PETERSON. Yes. Well, there are people that are concerned about that, but it just seems to me, I think is what you said that this is not going to be just confined to Minnesota, for example, this is going to be something that is going to be impacted all over the world. If anybody has had to deal with this up-close and personal, I don't know how you could be against vaccinating. It is just something that makes sense.

Mr. WITTENBURG. Correct. It is commonsense.

Mr. PETERSON. I am going to a trade meeting now at 3 o'clock with Wilbur Ross and the new acting trade rep, talking to us about what they are going to be doing with trade agreements, going forward, if they know. Have you had any discussions with any of these folks that are coming in as to what their position is or what their idea would be?

Mr. WITTENBURG. Yes. Yes, Congressman Peterson, I haven't personally. We did meet with the FAS director this morning and he had some comments, our staff would probably have better insight to that, but me personally, no.

Mr. PETERSON. Well, I hope we can figure out a way to make progress on this issue. And if I get a chance at the meeting, here in another 15 minutes, I will try to bring it up.

Mr. WITTENBURG. Yes. Please do.

Mr. PETERSON. Yes.

Mr. WITTENBURG. Thank you.

Mr. PETERSON. I yield back.

The CHAIRMAN. Mr. Marshall.

Mr. MARSHALL. Thank you, Mr. Chairman.

My first question is for Mr. Herring. Mr. Herring, Kansas alone has 12 million hogs, 8 million cattle, on a given day. Do you feel that APHIS would have sufficient quantities of vaccine to deal with a situation, and kind of talk me through that timeline of going from the 10 million to the 40 million vaccinations that we would build up to perhaps.

Mr. HERRING. Well, in short, there is no current bank that is totally adequate, the current bank is inadequate to respond to an FMD outbreak, other than a very small focal outbreak. In today's industry, we have anywhere from a million pigs a day with wheels

under them, and for cattle, almost ½ that many cattle with wheels under them, and it is likely by the time we detected that we have an outbreak, it would be a major outbreak.

So given that scenario, we need a vaccine bank with a minimum of 10 million doses from the get-go, from the start, and then we need the surge capacity that it would depend on the outbreak, but we think as many animals that are on the road within a couple of weeks, that we would be looking at 30 to 40 million doses.

If we back up and look at, in 2014 on what happened with PEDv, I would give that analogy to the old map on *Bonanza,* the way it just burned.

Mr. MARSHALL. Yes.

Mr. HERRING. I mean we couldn't have spread it faster if we would have tried.

Mr. MARSHALL. Okay. My next question is for Mr. Buchholz. Mr. Buchholz, like your state, my state has been devastated by the wildfires, 650,000 acres, what does 650,000 acres looks like, it is about an area of 50 by 10 miles, it is bigger than the size of Rhode Island. Over 5,000 head of cattle died. We are very grateful for the many, many people that have contributed hay and fence supplies. But there are some challenges, going forward, for these people, which I am sure you have experienced. One is the limit is $125,000 per person. That doesn't take many cattle or many miles of fence to add up plus that. And the other concerns as I have been out there on the ground dealing with the situation, is some of the fencing issues. The NRCS has a 15 page fencing document, and one of the concerns is 2⅞″ inch pipe *versus* 3″ pipe. I am not sure in Texas, but in Kansas we have been building fences for 5 generations or 6 generations, and these men and women know how to build fence.

Did you run into any problems with some of your past experience with wildfires and trying to help people get back on their feet?

Mr. BUCHHOLZ. The payment limit is certainly an issue, especially when you reach that level of devastation. I haven't done the math, but it doesn't take much livestock now to hit that cap. And when you add fencing and other things, it quickly adds up.

I am not sure on the NRCS recommendations on fencing and such as that. In our area, it depends on if you build pipe fencing or wood fencing, but the recommendations on spacing, on H-braces and such as that is fairly accepted throughout the agricultural community of anyone that builds fence. I don't know that that would be that big of an issue.

The personnel in our counties were very timely. NRCS and FSA, it did not take them long to assess the total devastation and get on that. And there were—interesting enough, there were some special funds that were available. We were lucky enough there were several fires in Texas at that time; ours of 252,000, another one of 400,000, still does not reach the size and scope of what we have experienced recently.

I am sorry that I can't answer that more. And I was impressed with our personnel in our local offices, and how they responded and how quick we were able to start getting boots-on-the-ground and getting things recovered. But again, the payment limitation is a big, big deal, especially the level of those fires. There are fairly

large western operations and it doesn't take long to hit that cap. I don't know if there is some way that the Committee or a group of individuals could look at that and because in my incident, it is a very life-changing experience. One day we were good, the next day literally we were just trying to prop up the fence to hold the livestock to get them shipped out of there. We had trailer truck after trailer truck of hay coming before the embers even stopped falling. You are good one day and the next day you are burned out. You don't even have fences to hold them.

So I am sorry I can't address that to a greater level.

Mr. MARSHALL. I yield back.

The CHAIRMAN. Mrs. Bustos.

Mrs. BUSTOS. Thank you, Mr. Chairman.

This question will be addressed to the entire panel, but I know it was specifically Mr. Uden and Mr. Herring who had pointed out the need for more dollars for research, in your opening comments, and I could not agree more with you.

My question to each of you, and maybe we will start from my left to the right, in this proposed budget that was just released within the last several days by President Trump, it called for drastic cuts to the U.S. Department of Agriculture to the tune of 21 percent. That concerns me a great deal. That equates to almost $5 billion in cuts. This will, no doubt, have an impact on what we can and cannot research, going forward. And what I would like you to address, I mean you are the folks on the ground, we are Members of Congress, and you are in a position where you can drill down a little bit. But, I was wondering if you would share those concerns about cuts to that level, and how specifically if those cuts were to go through, how you would see that impacting research and the end result of that. Mr. Uden, do you want to start?

Mr. UDEN. Okay. I will start. Research is vitally important to move these industries forward. Every day we have more and more to deal with, more and more challenges, and without viable research, we can look at beef safety research and all the issues that we deal with as far as *E. coli, Salmonella,* and some of these, we constantly need better techniques to find some of our challenges, we have to find more robust research to deal with those challenges as an industry. And a lot of what we have done with those dollars in the past has furthered the industry along, whether it be technology or different methods of production, from all facets of the beef industry. It is vitally important that we—we have shrank those dollars over the last several years. We don't need to shrink those any more, because research is what we deal with to face our challenges and improve our product. Consequently, we continue to advance the industry. And the research that we have conducted throughout is why we are the global leader in livestock production, in my opinion.

Mrs. BUSTOS. Thank you.

Mr. WITTENBURG. I concur that the research is extremely important to our animal livestock and poultry industry. And what I would suggest is, like anything, is balance your budget. You might have to shift dollars from one department to the other, but in the end it is critical with the two various things we are talking about

here today in foot-and-mouth disease and High-Path AI. I would suggest we try to find the dollars.

Mr. BUCHHOLZ. In the sheep industry in the last number of years there has not been a whole lot of money spent on research to begin with. We have one station in Idaho that is totally devoted to research, and we would hate to see that closed. Our research throughout the livestock industry is probably, to me, one of the most important places that the nation can spend money. Anybody would hate to give up programs that they are used to, but I would hate to see us as a nation cut research on livestock.

Mr. HERRING. Well, I am sitting in kind of an awkward situation today because usually when the pork industry comes to this meeting, we are not asking for anything, but just get out of our way and let us do our business. But we have a global challenge. By 2050 they were saying the world population is going to be almost—the food needs are going—we will have to double the food production in this country. Research plays a vital part for doubling the food production in the world, research plays a vital part of that. The pork industry has done some amazing things in the last 25 years. We have reduced our carbon footprint, we have reduced water consumption raising a pound of pork by 40 percent. All that has come through research. The ARS Division of USDA is just about the only entity able to do long-term, large-scale production research, and without Federal support it just won't happen.

So we have to keep getting better at what we do, and research is a part of that. Thank you.

Mrs. BUSTOS. Thank you, gentlemen.

And I yield back the non balance of my time.

The CHAIRMAN. Mr. Evans.

Mr. EVANS. Thank you, Mr. Chairman.

There has been a lot of discussion about trade agreements, and you hear a lot of conversation and particularly about NAFTA. However, some say that agriculture was the big winner in that agreement. Can you discuss how renegotiating NAFTA would have an impact on your industry?

Mr. BUCHHOLZ. I am sorry——

Mr. EVANS. The question is how would renegotiating NAFTA have an impact on your industry? Go down the line, each one of you. Give us some perspective of that.

Mr. BUCHHOLZ. In particular——

Mr. EVANS. Yes.

Mr. BUCHHOLZ. Well, thank you. In the past, we have had an unusual relationship with Mexico and our sheep imports/exports, exports. Mexico is an interesting individual to deal with in the sheep industry, as they can open permits and close permits, it doesn't matter whether we have NAFTA or not. One day we are able to export all our cull ewes into Mexico at a good price to the producers, and the next day they are somewhat fickle, and they close that market.

NAFTA, as far as the wool industry and such as that, right now, a question that I would just have to glean a little more information and get back to the Committee on some of that. My expertise does not lie how NAFTA would affect the whole industry. I am well aware how Mexico can be very fickle with some of our older ewes

going into there. I appreciate the question, and I will try to get that better answered.

Mr. EVANS. Okay.

Mr. HERRING. Mexico is a tremendous trade partner with the pork industry. Actually, it is our number two market. We are very nervous over the rhetoric coming out of Washington over NAFTA. I actually spent last week in Mexico City on a trade mission. I would tell you that I had several people ask me what did I learn, and I would tell you that our trading partners down there are cautiously optimistic. They are not against modernizing NAFTA, but the product that we send to Mexico is very important to them.

Now, on the flipside of it, my company does a lot of work in Mexico. We build farms. Their domestic production in Mexico is growing. It is going to grow, their sow numbers are going to grow over 30 percent over the next 4 years. They have a growing pork industry, and they are importing about 30 percent of the pork that they are consuming. It has been a very, very good deal not only for their country, but also for the United States.

Mr. UDEN. The beef industry would agree with a lot of these comments. Again, we are shipping 31 percent of our product as far as our exports. Exports represent about 12 percent of beef throughout the world, so this is a great concern with us when we go to having this rhetoric out there.

The one thing I might point out, every country is different, and one real benefit with Mexico is the types of products that they take that we normally wouldn't consume in the U.S. so they are very vital to the bottom line of our producers. It is a huge impact on the U.S. beef supply if we lost almost ⅓ of our export markets or jeopardized them.

Mr. WITTENBURG. I would concur with all three of the colleagues here at the table. The turkey industry exports 8 percent of its total product outside the United States, and of that 8 percent in total volume, 65 percent of it goes to Mexico. Mexico is a very important trading partner. I would concur that we don't screw up NAFTA.

Mr. EVANS. I yield back the balance of my time. Thank you, Mr. Chairman.

The CHAIRMAN. Thank you all very much. I really, really appreciate the benefit of your testimony here today. I will invite the Ranking Member, if he wants, or I guess you are on your way.

Mr. COSTA. No, no, I concur.

The CHAIRMAN. If the Ranking Member would like to make a closing comment or so, he is welcome to, but if he needs to move on his way, that is good too.

Mr. COSTA. I just want to say thank you. Thank you. Thank you all.

The CHAIRMAN. Yes, thank you all very, very much. This has been very, very helpful. We have a tremendous amount of work ahead of us, and this is very instructive and going to go a long way, I believe, to helping us make the right decisions as we move forward.

Under the Rules of the Committee, the record of today's hearing will remain open for 10 calendar days to receive additional material and supplementary written responses from the witnesses to any question posed by a Member.

This hearing of the Subcommittee on Livestock and Foreign Agriculture is adjourned.

[Whereupon, at 3:10 p.m., the Subcommittee was adjourned.]

[Material submitted for inclusion in the record follows:]

SUBMITTED STATEMENT BY BARB P. GLENN, PH.D., CHIEF EXECUTIVE OFFICER, NATIONAL ASSOCIATION OF STATE DEPARTMENTS OF AGRICULTURE

Statement of Interest

Chairman Rouzer, Ranking Member Costa, and distinguished Members of the Subcommittee on Livestock and Foreign Agriculture, the National Association of State Departments of Agriculture (NASDA) applauds the Committee's work to reauthorize the farm bill prior to its expiration in 2018, and NASDA appreciates the Subcommittee holding a hearing on "The Next Farm Bill: Livestock Producer Perspective" on March 21st. NASDA stands ready to assist Congress in developing a robust and comprehensive farm bill prior to the expiration of the Agricultural Act of 2014 to ensure our farmers, ranchers, and rural communities have the tools and infrastructure necessary to continue to produce the world's food, fiber, and fuel.

About NASDA

NASDA represents the Commissioners, Secretaries, and Directors of the state departments of agriculture in all fifty states and four territories. As elected and appointed officials, our members serve as strong advocates for American agriculture and are partners with a number of Federal agencies in regulating, marketing, and providing services to the agricultural community. As the chief agriculture officials in their states, NASDA members are keenly aware of the changing dynamics, increasing challenges, and new opportunities in agricultural production across the country and have a deep appreciation for the important contribution agriculture makes to our nation's security and economy.

NASDA Farm Bill Perspective & Animal Diseases

Agricultural producers, the rural economy, and communities of every size rely upon a forward looking and fully funded farm bill. NASDA calls for enhanced investment in American agriculture that provides producers the tools they need to succeed. The farm bill is also vital to providing consumers access to the safest, highest quality and affordable food supply, which is essential for our nation's economy and security.

One of NASDA's 2018 Farm Bill priorities is to implement a proactive, multi-faceted animal disease program, which is needed to safeguard animal agriculture, promote sustainable economic development and prevent catastrophic events that could threaten our nation's food supply. An outbreak of a foreign animal disease has the ability to cripple the entire agricultural sector and have long-lasting ramifications for the economic viability of U.S. livestock production. It is essential that the U.S. Department of Agriculture's Animal and Plant Health Inspection Service (APHIS) working cooperatively with state animal health officials have a robust response capability in the form of a rapidly deployable animal vaccine bank, sufficient laboratory capacity for disease surveillance and rapid response capability at the state level.

NASDA calls on Congress, in the 2018 Farm Bill, to establish a multi-tiered program to deliver the sufficient development and timely deployment of all measures necessary to prevent, identify and mitigate the potentially catastrophic impacts an animal disease outbreak would have on our country's food security, export markets, and overall economic stability.

Modeled after the highly successful plant pest and disease management and disaster prevention programs, a new **Animal Pest and Disease Disaster Prevention Program,** administered by APHIS, would provide a proactive and concerted preventative "boots-on-the-ground" effort focusing on early detection and rapid response to protect the nation's animal agriculture industry. It is envisioned that this program would be structured to take full advantage, through support and collaboration, of the science generated by the National Institute of Food and Agriculture (NIFA) program established under section 1433 of the National Agricultural Research, Extension and Teaching Policy Act of 1977, the Continuing Animal Health and Disease Research Program.

Building upon the 2014 Farm Bill's authorization of the **National Animal Health Laboratory Network (NAHLN),** the Animal Disease and Disaster Prevention Program will help support NAHLN and bring together the Federal Government with states, industry, universities, and other interested groups to reduce the impact of high-consequence animal diseases, provide rapid detection and response capabilities to respond to animal diseases, develop disease prevention and mitigation technologies including vaccines, prevent the entrance and spread of foreign animal diseases into the United States, and identify and support critical research needs.

Additional investments are requested to **establish and maintain a rapidly deployable vaccine bank for high consequence animal diseases.** The ability

to rapidly vaccinate against diseases, such as Foot & Mouth Disease (FMD), is central to the U.S. disease control strategy should an outbreak occur. Currently, the U.S. does not have access to enough FMD vaccine, and the current vaccine bank arrangement has several problems in addition to insufficient funding. U.S. livestock groups have requested that APHIS contract for an offshore FMD vaccine bank and capacity for domestic stockpiling of other animal disease vaccines. Such an arrangement would, at minimum, provide vaccine antigen concentrate for all FMD strains currently circulating in the world. Additionally, it would ensure resources are in place for production capacity (including surge capacity) that would produce in the shortest amount of time sufficient vaccine to meet needs in the early stages of an outbreak.

Conclusion

NASDA requests the Committee carefully consider the immediate needs and challenges with addressing animal diseases. NASDA stands ready to work with the Committee to expand on the authorization for the National Animal Health Laboratory Network (modeled after the aforementioned invasive species programs) to help bring together the Federal Government with states, industry, universities, and other agricultural stakeholders to reduce the impact of high-consequence animal diseases, provide rapid detection and response capabilities, develop disease prevention and mitigation technologies, support a vaccine bank infrastructure, prevent the entrance and spread of foreign animal diseases into the U.S., and identify and support critical research needs.

Thank you for your consideration of this testimony, and please contact Dudley Hoskins ([**Redacted**]) if you have any questions.

ATTACHMENT

We Need A Farm Bill.

Good Food. **More Jobs.** ***Conservation.*** *Thriving communities.*

These are all things we can get behind.

As the chief agriculture officials in their states, members of the National Association of State Departments of Agriculture (NASDA) are keenly aware of the changing dynamics, increasing challenges, and new opportunities in agricultural production across the country and have a deep appreciation for the important contribution agriculture makes to our nation's security and economy.

The farm bill impacts everyone.

Agricultural producers, the rural economy, and communities of every size rely upon a forward looking, and fully funded farm bill. NASDA calls for enhanced investment in American agriculture that provides producers the tools they need to succeed. The farm bill is also vital to providing consumers access to the safest, highest quality and affordable food supply, which is essential for our nation's economy and security.

Priorities

- Conservation.
- Trade Promotion.
- Specialty Crops.
- Invasive Species.
- Animal Diseases.
- Research.
- Food Safety.

Our Priorities for the Next Farm Bill

Trade Promotion

The Market Access Program (MAP) promotes American-grown and produced food and ag products that are in competition with heavily subsidized foreign products. For every $1 invested in export market development programs, $24 is returned in export revenue. This means significant positive effects for farmers & ranchers like increased income and more American jobs in the farm and food sector. Funding for the Market Access Program (MAP) should be increased from $200M to $400M to better promote America's food and ag products in demand across the globe.

Conservation

Conservation programs provide financial and technical assistance needed to conserve our nation's natural resources and meet increasing regulatory demands. The

next farm bill must make substantial investments in voluntary locally-driven, flexible, and efficient conservation programs. Additional investments are needed to continue targeted conservation, address water quality challenges and face regulatory pressures.

Specialty Crop Block Grants

The Specialty Crop Block Grant (SCBG) Program provides important tools to enhance specialty crop production, while also advancing foods with critical health benefits to the American people. To the extent additional funding is available, funding for the SCBG Program should be increased and Congress should ensure a flexible, locally responsive, and state-led program.

Invasive Species

Invasive plants and pests are an often catastrophic threat to farmers and ranchers. To address this increasing threat, bold action is required. Building on the successes of the invasive species programs created by the 2014 Farm Bill, Congress should bring additional tools to bear on this serious economic threat. Funding for the highly successful "Plant Pest and Disease Management & Disaster Prevention" and the "National Clean Plant Network" should be increased to in order to provide additional tools for domestic invasive species issues. Enhanced funding and coordination of invasive species under the direction of the USDA Office of Pest Management Policy and involving other departments and agencies of the Federal and state governments should be considered to strengthen programs and maximize the value of the Federal funding.

Animal Diseases

A proactive, multi-faceted animal disease program is needed to safeguard animal agriculture, promote sustainable economic development and prevent catastrophic events that could threaten our nation's food supply. Expanding on the authorization for the National Animal Health Laboratory Network, and modeled after the aforementioned invasive species programs, this program will bring together the Federal Government with states, industry, universities, and other agricultural stakeholders to reduce the impact of high-consequence animal diseases, provide rapid detection and response capabilities, develop disease prevention and mitigation technologies, support a vaccine bank infrastructure, prevent the entrance and spread of foreign animal diseases into the U.S., and identify & support critical research needs.

Research, Education, and Economics

Robust funding for agricultural research and extension programs, and infrastructure, particularly within our nation's many outstanding agricultural colleges and universities, is vital to ensuring producers remain competitive domestically and globally. The farm bill must also ensure adequate funding for research focusing on the safety and security of the food system and improving and protecting our natural resources.

Food Safety

The Food Safety Modernization Act (FSMA) is a landmark bill which has overhauled American food safety regulation from response-driven to preventive and farm-focused. Congress should address the variety of implementation challenges with the final FSMA rules. The next farm bill should provide resources to assist producers in complying with FSMA, especially via low-cost loans for infrastructure upgrades.

Contact Us: Nathan Bowen | *nathan@nasda.org* | (202) 296–9680 | 4350 N. Fairfax Drive, Suite 910, Arlington, VA 22203
www.nasda.org @NASDANews @NASDADC

SUBMITTED STATEMENT BY ROGER JOHNSON, PRESIDENT, NATIONAL FARMERS UNION

On behalf of the family farmer, rancher, and rural members of National Farmers Union (NFU), thank you for holding this hearing examining the livestock and poultry sector as we head into deliberation and consideration of the next farm bill.

NFU is a grassroots general farm organization with nearly 200,000 family farmer, rancher, and fishermen members nationwide. Since 1902, NFU has supported family agriculture and rural communities through advocacy, education, and cooperative development. Delegates to NFU's annual convention, through a vigorously debated and democratic process establish NFU's policies. NFU policy states support of "Clarification of the Packers and Stockyards Act to allow individual producers to seek recourse for abuse of market power without having to prove competitive injury to the

entire marketplace."[1] The interim final rule on the scope of 202(a) and (b) directly addresses NFU's concerns. Additionally, NFU policy supports, "Modifications to regulations under the Packers and Stockyards Act that govern integrator fair-trade practices and strengthen the enforcement mechanisms therein."[2]

The Packers and Stockyards Act of 1921 was passed in response to the 1919 Report of the Federal Trade Commission on the Meat-Packing Industry, that stated, "The power of the Big Five in the United States has been and is being unfairly and illegally used to manipulate livestock markets; restrict interstate and international supplies of foods; control the prices of dressed meats and other foods; defraud both the producers of food and consumers; crush effective competition; secure special privileges from railroads, stockyard companies, and municipalities; and profiteer." In 1916, the "Big Five's" percentage of interstate slaughter was 82.2 percent for cattle and 61.2 percent for hogs. The passage of the Packers and Stockyards Act in 1921 followed the Sherman Antitrust Act of 1890, the Federal Trade Commission Act of 1914, and the Clayton Act of 1914. The basic premise of the core antitrust laws was to protect competition for the benefit of consumers.

The P&S Act was passed in order "to regulate the sale of livestock by farmers to the more economically powerful livestock buyers."[3] Congress passed the Act with recognition that the previous antitrust [A]cts did not adequately protect farmers and consumers from the monopolistic practices of the meatpacking industry. The Act set out to regulate meatpackers engaging in unfair or deceptive practices that harm individual farmers.[4] While the P&S Act has some typical antitrust components (Sections 202(c) through (f)), the law is broader than just antitrust in that it also establishes statutory trusts for the benefit of all unpaid cash sellers and delivery of full amount due, for example. These are not antitrust components of the P&S Act and were designed for the benefit of individual farmers and ranchers.

One hundred years after passage of the P&S Act, the concentration ratio among the top four meatpacking companies is 85 percent for beef, 74 percent for pork, and 54 percent for poultry.[5] Farmers and ranchers are subject to both monopolistic practices in the agricultural inputs sector and monopsonistic practices in the agricultural production sector. Due to a lack of competition across the agricultural sector, farmers are subject to both the bargaining power of sellers of agricultural inputs and the bargaining power of buyers of the products farmers grow.

The development of contract farming as the model in the poultry and hog sector has institutionalized the "monopsony/monopoly relations between farm and agribusiness and the ability of the latter to capture value by the producer through price manipulation."[6] The two parties that negotiate the contract are not equal. This asymmetrical power results in undue influence over contract farmers.

Contract poultry growers are often required to invest hundreds of thousands of dollars for poultry houses and equipment that have a single purpose—raising birds. Farmers often invest with loans amortized over decades. Because of the lack of competition in the meatpacking sector, farmers may only have access to one to two processors in their immediate area. The poultry houses and equipment are sunk costs, which puts farmers at a tremendous disadvantage when negotiating contracts. As one farmer stated at the U.S. Department of Justice and USDA Public Workshops Exploring Competition in Agriculture: Poultry Workshop, "And when you have that kind of debt load over you, of course you're going to choose to sign the contract. You feel that there's no other option when you owe $½ million or $1 million."[7]

For years, USDA has attempted to address the anti-competitive behaviors of the meatpacking industry by promulgating rules that would help clarify the P&S Act and its scope. Blocked by Congressional riders fueled by outrage from the meatpacking companies, USDA has, thus far, been unable to promulgate rules. The status quo system of indentured servitude by contract growers who are subject to increasingly offensive demands by integrators is simply unacceptable. NFU strongly supports the interim final rule on Scope of Sections 202(a) and (b) of the Packers

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[1] National Farmers Union, *Policy of the National Farmers Union,* (March 2016), *henceforth* "NFU Policy".

[2] NFU Policy.

[3] See *Van Wyk* v. *Bergland,* 570 F.2d 701, 704 (8th Cir. 1978).

[4] Stumo, Michael J., and Douglas J. O'Brien. "Antitrust Unfairness *vs.* Equitable Unfairness in Farmer/Meat Packer Relationships." Antitrust Unfairness *vs.* Equitable Unfairness (2003): n. pag. The National Agricultural Law Center.

[5] *Scope of Sections 202(a) and (b) of the Packers and Stockyards Act,* 81 FED. REG. 92565, (December 20, 2016).

[6] Jyotishi, Amalendu. "Monopsonistic Exploitation in Contract Farming: Articulating a Strategy for Grower Cooperation." *Journal of International Development.*

[7] *USDOJ & USDA Public Workshops Exploring Competition in Agriculture* (2010), Normal, Alabama. Print.

and Stockyards Act and the proposed rules on Unfair Practices and Undue Preferences in Violation of the Packers and Stockyards Act and Poultry Grower Ranking Systems.

Thank you for the opportunity to submit a statement for the record on the state of the livestock sector. The Farmer Fair Practices Rules are long overdue. Family farmers and ranchers operating in an extremely consolidated marketplace should have the full protection of the Packers and Stockyards Act of 1921. Over the last few decades, judicial decisions have weakened the original Act, providing farmers and ranchers with less protection in a more challenging marketplace. These rules will go a long way to make sure that farmers and ranchers can continue to operate with basic protections under the law.

Sincerely,

ROGER JOHNSON,
President.

SUBMITTED STATEMENT BY LIVESTOCK MARKETING ASSOCIATION

Subcommittee Chairman Rouzer and Members of the House Committee on Agriculture Subcommittee on Livestock and Foreign Agriculture:

These comments are provided on behalf of the Livestock Marketing Association (LMA), which is the leading national trade organization for more than 800 livestock marketing businesses located throughout the United States. LMA represents more than 75 percent of the regularly selling local livestock auction markets in the U.S. Livestock auction markets serve two important purposes: (1) they sell livestock for producers in a competitive bidding environment and (2) they stimulate the economies in local communities.

A primary concern of livestock markets is the amount of devastating risk sellers of livestock and markets are exposed to when a buyer fails to pay.

In 2010, Eastern Livestock, the largest livestock dealer in the U.S., defaulted on payment and was forced into bankruptcy owing approximately $112 million to creditors, including hundreds of livestock producers, other dealers, and markets. The Eastern Livestock default is not a one-time, isolated occurrence in the industry. Since 2010, there have been several instances of dealer defaults. In the fall of 2015, a major dealer failed to pay two livestock markets (owing $980,000 to a market in Kansas and $2.9 million to a market in Nebraska), as well as several producers who sold to the dealer directly.

Producers who sell through a livestock auction market are protected by both the market's surety bond and by the market's custodial account (trust account). Producers who sell directly to packers are protected by both the packer's surety bond and by the Packer Statutory Trust under 7 U.S.C. 196. Producers who sell directly to dealers are provided little protection. Under the current law, dealers do not have a custodial account or a trust.

Markets are placed in a highly vulnerable position when it comes to payment. Pursuant to 7 U.S.C. 228b, markets are required to pay sellers of livestock by no later than the close of the next business day after the sale, even if the markets are not paid by the buyer of those livestock. When livestock markets are not paid, they are usually left with no feasible way to collect. If the dealer has resold the livestock to a good faith purchaser, that second purchaser has clear title to the livestock, even if the dealer has not paid for them. In addition, a dealer's bank usually will have a blanket security interest on all of the dealer's livestock inventory, which, under current law, will give the bank a perfected security interest in the livestock even though the dealer never paid for them and the bank never loaned the dealer any money for those specific livestock. A producer selling directly to a dealer is in a similar poor position when the dealer fails to pay.

When a dealer mails a check, as the law allows, it may be several days before the seller (whether livestock market or producer) even gets the check or discovers that a check is not coming. In many parts of the country, mail has slowed down significantly, further stretching this critical time period. In some cases, a buyer may buy multiple times before a payment problem is discovered.

Although the P&S law attempts to provide financial protection for sellers of livestock by requiring dealers to maintain surety bonds, bond claims rarely make up for any significant loss. P&S dealer bond claims return, on average, about 15¢ for every dollar claimed (1999–2013 data). This does not include Eastern Livestock claims where payout was 4.37¢ on the dollar.

Additional protection is needed for producers and markets who sell to dealers. Financial protection already exists for those dealing with packers (Packer Statutory

Trust), markets (custodial account), and in other agriculture sectors (statutory trust under the Perishable Agricultural Commodities Act).

Simply raising bond amounts is not an acceptable alternative because it would push legitimate buyers, particularly young and beginning market participants, out of the marketplace due to the significant assets needed to obtain this type of bond.

Instead, a possible solution to this problem with the least amount of disruption to the industry would be amending the Packers and Stockyards Act to establish a dealer statutory trust. A dealer trust would provide livestock producers and markets financial protection in the event of a dealer default by giving unpaid sellers of livestock (producers or markets) first priority to receive livestock and accounts receivable.

A dealer statutory trust could be modeled after the existing Packer Statutory Trust that Congress added in 1976 to address packer defaults. The trust requires packers to hold all livestock purchased from cash sellers, and all inventories of, or receivables or proceeds from meat, meat food products or livestock products derived from such livestock, in a trust fund for the benefit of unpaid sellers.

By adding a Dealer Statutory Trust to the P&S Act, business would continue as usual until a dealer defaults on payment for livestock. In the event of a default, the priority would help ensure the producers and markets that have sold to the defaulting dealer are paid first. After all, it is their livestock that was sold for compensation. A Dealer Statutory Trust would not change how the dealer conducts business or any other requirement of the P&S Act. For example:

- A dealer trust would not require dealers to maintain a separate bank account.
- A dealer trust would not affect any of the dealer's other assets.
- A dealer trust would not require a government account be set up for payment of claims.
- A dealer trust would not change a dealer's bonding requirements.

We appreciate this opportunity to provide written testimony and thank the Committee for its ongoing interest in helping the livestock industry succeed. The need for protection against livestock payment defaults is more important than ever with slowing mail service delivering checks, increased value of livestock at times, and volatility within the market. We look forward to working together to face the challenge of dealer payment default within the livestock industry.

THE NEXT FARM BILL
(DAIRY POLICY)

WEDNESDAY, MARCH 22, 2017

HOUSE OF REPRESENTATIVES,
COMMITTEE ON AGRICULTURE,
Washington, D.C.

The Committee met, pursuant to call, at 10:00 a.m., in Room 1300 of the Longworth House Office Building, Hon. K. Michael Conaway [Chairman of the Committee] presiding.

Members present: Representatives Conaway, Thompson, Goodlatte, Lucas, Gibbs, Crawford, Hartzler, LaMalfa, Davis, Allen, Bost, Rouzer, Abraham, Kelly, Comer, Marshall, Bacon, Faso, Dunn, Arrington, Peterson, David Scott of Georgia, Costa, Fudge, Vela, Kuster, Nolan, Plaskett, Adams, Evans, Lawson, O'Halleran, Panetta, and Blunt Rochester.

Staff present: Bart Fischer, Callie McAdams, Emily Wong, Matthew S. Schertz, Mykel Wedig, Stephanie Addison, Anne Simmons, Lisa Shelton, Liz Friedlander, Mary Knigge, Matthew MacKenzie, Troy Phillips, John Konya, Nicole Scott, and Carly Reedholm.

OPENING STATEMENT OF HON. K. MICHAEL CONAWAY, A REPRESENTATIVE IN CONGRESS FROM TEXAS

The CHAIRMAN. Good morning. This hearing of the Committee on Agriculture entitled, *The Next Farm Bill: Dairy Policy,* will come to order. Please join me in a quick prayer.

Dear Heavenly Father, thank you, Lord, for the privilege of living in this country, and all the blessings that that bestows upon us. Be with us this morning during our deliberations. Please grant us the wisdom and discernment that we need to be able to make hard decisions in the area we work with. We are asking you this in Jesus' name, Amen.

Good morning. Welcome to today's hearing. You may have noticed something a little different about the room. There is a different portrait in the back, at the behest of our Ranking Member. While we are gathered here today to talk about dairy policy, I would be remiss if we did not take a moment to reflect on the fact that we lost a great friend of American agriculture last week. Congressman Kika de la Garza served every year of his distinguished 37 year career in Congress on this Committee, and he spent 14 years, from 1981 to 1994, as the Chairman. As I noted in our release last week, Chairman de la Garza was a true public servant in every sense of the word. From serving our country in the military, to representing his constituents back home in Texas, and here

in the nation's capital, to advocating for farmers and ranchers across the country, he had a significant and lasting impact. I have long admired his commitment to bringing various groups together, all in an effort to build broader support for American agriculture, and, frankly, his approach is one that we strive to emulate today.

Today, we take a small tip to honor the man, and remember his contributions to this great country, and the industry that we all love. And before I turn it over to Ranking Member Peterson, I would note that Mr. Goodlatte and Mr. Lucas, will be offering comments as well, and I would ask that any other Member wishing to offer tribute to Chairman de la Garza to please submit their comments for the record.

And, with that, I turn to the Ranking Member, Mr. Peterson, for any remarks about Kika that he has.

OPENING STATEMENT OF HON. COLLIN C. PETERSON, A REPRESENTATIVE IN CONGRESS FROM MINNESOTA

Mr. PETERSON. Well, thank you, Mr. Chairman, when I came to this Committee in 1991, Kika had already been Chairman for 10 years, and he was the second longest serving Chairman of the Agriculture Committee in history. He was elected in 1981. When Tom Foley, who had been Chairman, moved up to Majority Leader, and then eventually Speaker, Kika ran against Ed Jones. This is all ancient history. You may not even know these guys, and was elected Chairman.

The thing I appreciated about Kika was that he was a bottom-up guy. And the Subcommittee Chairman, back in the days under Kika, had the power of the Committee Chairman, and they ran the show. And he let them do their thing, and it worked pretty well. The people on the Subcommittee had a lot to say about what happened, and they wrote some good farm bills during a time that was very challenging. The 1980s, if you remember, was not a good time to be Chairman of the Agriculture Committee, or to be Secretary of Agriculture, or to be a farmer.

Kika had a lot of things that he did, and I am going to let Frank Lucas talk about the submarine story when he gets to his turn, and I won't go into that now, but the other thing is Chip Connelly was the economist for many, many years, and they had this chart. And this was before Kent Conrad made charts famous over in the Senate. Kika had this chart that Chip had made up that showed how much the ag budget was in relation to the rest of the budget. He would print that line on there, and you couldn't even see it. He would show that chart all over the place, all over the Hill, when he traveled to other countries he would show it to people. That was one of the things I remember a lot about Kika. Yes, I would say it was a good chart.

And he, as I said, went through some tough times, and he fought off people that were out to get production agriculture, including your good friend, Mr. Dick Armey from Texas, and others. But the bottom line, he was a consummate gentleman. He treated everybody with respect, and he ran the Committee in a very judicious way. And, bottom line, what Kika cared about was the producers. He listened to everybody, that is who he really cared about. You could see that in the work that he did.

He started the Hispanic Caucus. He did all kinds of great things while he was here in the House, and he was a pioneer before his time, and he will be much missed by myself, I think by anybody that knew him, and he will be greatly missed by American agriculture, and the people of south Texas. Thank you for giving us a chance to talk about him a little bit today.

The CHAIRMAN. Well, that portrait in the back is Kika, and he was from south Texas. Mr. Goodlatte, you are recognized for comments.

OPENING STATEMENT OF HON. BOB GOODLATTE, A REPRESENTATIVE IN CONGRESS FROM VIRGINIA

Mr. GOODLATTE. Well, thank you, Mr. Chairman. I want to thank you and the Ranking Member for being inspired to remember former Chairman de la Garza. His final 2 years as Chairman of this Committee were my first 2 years in the Congress. And I remember early on in my experience here, in the dead of winter, taking us all up to Newport, Rhode Island, an unusual place for an agriculture retreat in the middle of the winter, for an ag retreat that was beneficial. It got us all together, and we discussed a number of issues.

And the Ranking Member is correct when he says that he gave his Subcommittee Chairmen some latitude. Sometimes they exceeded the authority that he gave them. In one case, in that first 2 years, when he was the Chairman, and we were in the Minority, a hearing was held on a bill that I had, my very first bill in the Congress, and not many people showed up for the hearing that was held on the bill. And the Chairman had to leave, and I was the only other Subcommittee Chairman, it was Harold Volcker, had to leave, so he asked me to take the Chair. The word got back to Chairman de la Garza that this was taking place, and he soon appeared to take over.

His portrait, that you noted, hung in that spot the entire 4 years that I had the honor to serve as Chairman of the Committee, and I always loved what former Chairman, and now Senator, Pat Roberts had to say about that painting. Congressman de la Garza was not as tall as that painting might appear. That is right, Pat Roberts referred to that as the shortest fence post in Texas. But Congressman de la Garza was a great champion for American agriculture, and I enjoyed serving with him, and I am glad we are remembering him here today. Thank you, and I yield back.

The CHAIRMAN. Mr. Lucas, you are recognized.

OPENING STATEMENT OF HON. FRANK D. LUCAS, A REPRESENTATIVE IN CONGRESS FROM OKLAHOMA

Mr. LUCAS. Thank you, Mr. Chairman, and I too appreciate you and the Ranking Member for taking time to honor our colleague. There are three of us left on the Committee who served with him. Mr. de la Garza was strictly old school. He ran the Committee with authority. He conducted himself in a very dignified fashion. And in those days, prior to 1995, we still operated under the proxy system. Remember that, gentlemen? And when I was elected in a special election on May of 1994, Ranking Member Roberts took me in to see the Chairman. He said, "Now, it is a very important, and you

will be respectful, and you will be understanding, and you will agree to whatever he says." Thank you, Pat.

So we go in, and Mr. de la Garza quizzes me a little bit about the district, and was I indeed taking my predecessor's place. And he looks me in the eye and says, "Have you signed my proxy form yet?" And I looked at Pat, and Pat went, "Absolutely, Mr. Chairman. The proxies went to the party Member on each side that was in leadership." But the thing that de la Garza may well be remembered the most for, and you can always tell a Member, or a staffer, or a person who has been in this crowd for any period of time, that Mr. de la Garza had something that we all referred to as the submarine story.

Kika had been in the Navy years earlier, and Kika liked to tell the story that, when he became Chairman of the Agriculture Committee, he had an opportunity to go and tour a nuclear submarine out at sea. And that, as an old, I believe, ensign, he was quizzing the captain of the boat about all the things that it would do, and all the incredible stuff. And the captain kept saying, "Congressman, that is classified. Congressman, that is classified. We can't discuss all of these various things."

And finally Kika, in his story, and I am paraphrasing rather loosely, Kika looked him in the eye and said, "So, let me see now, you have an atomic submarine, so you have unlimited power. You can make your water, and you can make your air, and you can stay underwater for years and years at a time." And the captain smiled. And he said, "Well, it would seem to me, therefore, captain, the one thing that limits this massive weapon's ability to defend the United States of America, the only thing that you can't make on board, is your food supply. Obviously, captain, the limiting factor on the ability of this powerful nuclear submarine to defend the country, and the world's freedom, is its ability to feed itself, the food supply. Therefore, what is the most important element in the defense of freedom, and the United States, in the world? It is the food supply." And if you were in Mr. de la Garza's presence, you would cheer. That was an automatic given. But he was right. And the Agriculture Committee does defend the freedom of the entire world.

With that, Mr. Chairman, I thank you for the opportunity to reminisce about the Chairman, they don't make them quite like that anymore.

The CHAIRMAN. I understand. I appreciate that. Other Members are requested, if they want to make comments in reference to Mr. de la Garza for the official record, to put it in.

Today's hearing continues our marathon series of hearings examining all aspects of the next farm bill. As I noted earlier, dairy policy is the focus of today's hearing. Dairy is a unique industry. It is present in all 50 states. Harvest comes 7 days a week, 365 days a year, milk is highly perishable, and it is processed into a range of products. These factors, combined with the fact that dairy markets are increasingly globally integrated, make crafting an effective dairy policy particularly challenging.

While the entire agriculture industry has been experiencing low prices, leading to a 50 percent drop in net farm income over the past 4 years, the dairy industry is in an unenviable position. After hitting $24 per hundredweight in 2014, the price of milk fell to $16

per hundredweight in 2016. While we often say that the farm safety net is designed for times like these, the Margin Protection Program in the 2014 Farm Bill has provided virtually no assistance. Under-performance by the MPP has resulted in very few producers purchasing buy-up coverage levels in 2017, leaving producers even more exposed to market volatility. While the industry is to be commended for making the fundamental shift away from farm support to margin protection, that will only be sustainable if MPP actually provides sufficient risk management, going forward.

In addition to an inadequate safety net, the dairy industry is facing other headwinds here and abroad. While many of our customers are now oversea, with Mexico being the most significant outlet for U.S. dairy exports, the industry has been consistently hampered by barriers to entry into the Canadian markets, including the latest example designed to keep U.S. ultra-filtered milk out of Canadian processing facilities, and that is just scratching the surface.

While our nation works to tackle nearly $20 trillion in debt, we must remind folks that America's farmers and ranchers have repeatedly answered the call for deficit reduction. In fact, latest estimates put 2014 Farm Bill savings at just over $100 billion, four times the savings estimated at passage. Now, while we don't yet know the resources that we will have available to craft the next farm bill, we do know that America's farmers and ranchers feel like they have given at the office, as they say. As we work through the tough decisions of how to allocate available resources, it is important that we have a very clear picture of what is and is not working.

To that end, I look forward to hearing from our witnesses today about their vision for the next farm bill, and discussing other issues of importance to the dairy industry.

[The prepared statement of Mr. Conaway follows:]

PREPARED STATEMENT OF HON. K. MICHAEL CONAWAY, A REPRESENTATIVE IN CONGRESS FROM TEXAS

Good morning and welcome to today's hearing. This hearing continues our marathon series of hearings examining all aspects of the next farm bill.

The focus of today's hearing is on dairy policy. Dairy is a unique industry. It is present in all 50 states. Harvest occurs 7 days a week and 365 days a year. Milk is highly perishable. And, it's processed into a range of products. These factors—combined with the fact that dairy markets are increasingly globally integrated—make crafting an effective dairy policy particularly challenging.

While the entire agricultural industry has been experiencing low prices—leading to a 50% drop in net farm income over the past 4 years—the dairy industry has been in an unenviable position. After hitting $24 per hundredweight in 2014, milk prices fell to around $16 per hundredweight in 2016.

While we often say that the farm safety net is designed for times like these, the Margin Protection Program in the 2014 Farm Bill has provided virtually no assistance. Under-performance of MPP has resulted in very few producers purchasing buy-up coverage levels in 2017, leaving producers even more exposed to market volatility. While the industry is to be commended for making the fundamental shift away from price support to margin protection, that will only be sustainable if MPP actually provides sufficient risk management, going forward.

In addition to an inadequate safety net, the dairy industry is facing other headwinds here and abroad. While many of our customers are now overseas—with Mexico being the most significant outlet for U.S. dairy exports—the industry has been consistently hampered by barriers to entry in the Canadian market, including the latest example designed to keep U.S. ultra-filtered milk out of Canadian processing facilities. And that's just scratching the surface.

While our nation works to tackle nearly $20 trillion in debt, we must remind folks that America's farmers and ranchers have repeatedly answered the call for deficit reduction. In fact, latest estimates put 2014 Farm Bill savings at just over $100 billion—four times the savings estimated at passage. While we don't yet know the resources that we will have available to craft the next farm bill, we do know that America's farmers and ranchers feel like they have given at the office. As we work through the tough decisions of how to allocate available resources, it is important that we have a very clear picture of what is and isn't working.

To that end, I look forward to hearing from our witnesses today about their vision for the next farm bill and discussing other issues of importance to the dairy industry.

With that, I turn to Mr. Peterson for any comments he would like to make.

The CHAIRMAN. With that, I turn to Mr. Peterson for any comments he would like to make.

Mr. PETERSON. Thank you, Mr. Chairman, and thanks for holding this hearing. The Margin Protection Program, we spent a lot of time on in the last farm bill, working with the National Milk Producers and others to come up with a new system. The MILC Program had been around for a while, and it paid out some payments to producers, but it wasn't really a safety net. And then we were clobbered in 2009, we got payments, but it did not go anywhere near what we needed to do to alleviate the problem. And we had a lot of producers go out of business, and it was a terrible situation.

Because of that, we went to work, and came up with a new idea, and that was the Margin Protection Program, that we would have an insurance program that would float off of feed cost. The USDA has been calculating feed cost for years, and so it would be a margin above that feed cost that we would allow people to buy protection against that margin. And so we put it together with long meetings with National Milk, and Jerry Kozak hardly had any hair left by the time it was done, but they finally came to a resolution, and that was introduced, and became part of the bill. We did have a fight over this stabilization fund, and myself and the Speaker got into it over that, and it was quite a fight that went on there for a year. And, at the end, the Speaker won, surprise, surprise.

And we were concerned at the time that we had set the sweet spot at $6.50 above feed cost, so that the most affordable rate was that amount. When you went above that, you could buy up to $8. That is pretty expensive. We were concerned that this might be too good, and that we would take too much risk out of the system, and there would be over-production, and so we wanted the stabilization fund. Well, that disappeared. And it turned out we shouldn't have had a fight over that, because it wasn't even remotely necessary, because it was not needed at all.

In fact, what happened is CBO, who still is having a very difficult time, in my opinion, scoring dairy, they came in with a score that I didn't agree with, and they forced us to take a reduction in the feed cost. And, because of that, there was only one bi-monthly since the bill has been in effect, there was only 1 month that actually paid out, because of this new feed cost calculation. If we would have had the original feed cost, we might have four or five times it might have paid out, depending on what your level of coverage was.

What happened is hardly anybody has signed up for this, because they signed up the first year, they got burned, and didn't get any-

thing out of it. As you look at the future price, and look at what you have to pay, and look at what the situation is with this feed cost, they are not buying it. Basically, we have people sitting out there with no protection when things collapse, and they will collapse at some point.

One of the things that you will hear from the industry today is that they want to go back to the original feed cost calculation which was in there at the start, which would have solved a lot of this problem. We also have to look at what we charge the small guys for buy-up so that they have better protection. And the problem is that this is going to cost money. We have had the CBO score this, these are not the overall package, but the feed cost change, the original score they gave us is over $2 billion, which I don't know where we are going to find that. If we would have had it in the original bill, we would have it in the baseline. They wouldn't have forced us to take it out.

The point is I don't see how they can come with a score of $2.2 billion, when I have sheets here that show that that is not going to be even remotely close to what it is going to be. This year there are not going to be any payments at all. They are already showing $17+ milk, so I don't know how the heck they are doing this. We are going to have to do some work with them to try to get this back into reality. But the bottom line is it is the right idea. The Margin Protection Program is the right idea. We just have to get it tweaked so that it works, especially for the small guys. I am not sure the big guys want it and need it that much. As long as they have catastrophic, that is the main thing that they want.

We need to tweak this thing, and hopefully we can come up with a way to get this done, and we can get CBO within the range of reality, and be successful soon. Thank you.

The CHAIRMAN. I thank the gentleman. The chair requests other Members to submit their opening statements for the record so the witnesses may begin their testimony, and to ensure there is ample time for questions.

[The prepared statement of Ms. Lujan Grisham follows:]

PREPARED STATEMENT OF HON. MICHELLE LUJAN GRISHAM, A REPRESENTATIVE IN CONGRESS FROM NEW MEXICO

Thank you, Mr. Chairman, for holding this hearing. Dairy is a particularly important industry for my state, New Mexico, which is the ninth largest dairy producer in the country. We are home to roughly 150 dairies, our average herd size of 2,357 milk cows is largest in the country, and we are second in United States in milk production per cow. Therefore, it should come as no surprise that New Mexico is ranked fifth in the nation for cheese production. In fact, Clovis, New Mexico, is home to the largest cheddar cheese plant in the world!

The economic impact of dairy on New Mexico cannot be understated. Dairy farms and processing plants are responsible for $26 billion of the state's economy, provide 25,000 jobs, and in 2012 dairy was the state's top agricultural export worth $195 million. Maintaining the strength of the dairy industry is especially important to the rural and frontier areas of my state, which are still struggling with the highest unemployment rate in the nation at 6.8%.

Unfortunately, it is no secret that dairy farmers both in my state and across the country are facing significant financial challenges. Since 2014, milk prices have fallen 40% causing dairy farmers to see their incomes cut in half. A reduction in export values of U.S. dairy from $9.5 billion in 2014 to $7.1 billion last year hit particularly hard. This was compounded by the strengthening of the U.S. dollar and an uptick in global milk supply. Furthermore, the Margin Protection Program (MPP) did not work as well as expected to protect dairy farmers from low milk prices.

That is why holding this hearing to address issues facing this critical job-supporting industry is so important. As we begin to write the next farm bill, we need to ensure that dairy farmers have the resources and support they need to thrive. Whether they are large or small, these farms make up the backbone of the rural economy. I look forward to working with my colleagues to fix the MPP and address the difficulties facing American dairy farmers in accessing international markets like Canada. I am confident that we will make it through these difficult times and ensure that the dairy industry is strong for generations to come.

The CHAIRMAN. I would like to welcome to our witness table today Jim Mulhern, President and CEO, National Milk Producers Federation here in Arlington, Virginia, and Dr. Michael Dykes, President and CEO, International Dairy Foods Association, Washington, D.C.

Mr. Mulhern, you are recognized for 5 minutes when you are ready.

STATEMENT OF JAMES MULHERN, PRESIDENT AND CHIEF EXECUTIVE OFFICER, NATIONAL MILK PRODUCERS FEDERATION, ARLINGTON, VA

Mr. MULHERN. Let me start by commending both your opening comments. Frankly, the statements you have laid out well capture the point of view expressed in my written statement. I have submitted a written statement for the record that goes into a number of issues. I will confine my comments this morning to our views on the Margin Protection Program.

If I could take just a second to mention that it is poignant for me to be here this morning as you honor Chairman de la Garza. My first farm bill goes back to 1985. Working on dairy policy back then, it was a very troubling time, and the comments from the Chairman, Mr. Peterson, Mr. Goodlatte, Mr. Lucas honoring the Chairman are quite apt. He was a great leader, he leaves a great legacy for American agriculture, and we are all better with our farm policy because of the leadership that he provided.

In terms of where we are at with the situation facing dairy producers today, we continue to be on the challenging roller coaster ride that we have faced for the last more than 15 years. And we are once again in a downward slump in our industry. While 2014, as you said, Mr. Chairman, was a very good year for dairy, the 2 years since then have been very challenging for many, many dairy farmers across the country. And in just the past 2 weeks, the outlook for milk prices and margins has deteriorated again at an unusually rapid pace.

Looking to future policy needs, I want to commend the comments, Mr. Chairman, you and Mr. Peterson, in your letter earlier this month to the Budget Committee, where you laid it out clearly that the challenge before the Committee, and before the Congress, is first establishing what policies are required to effectively address the conditions in farm and ranch country, and then establish what resources will be required to achieve them. Mr. Peterson, your comments on the CBO situation is apt. That is the situation we face. The reality is we have a dairy program today that is an ineffective safety net. And I will talk a little bit about that in my comments, but the bottom line is we have a program today that is a program in name, but not in effect, and we need to address that in this upcoming farm bill.

It is because the opposite approach to what you have outlined in your letter was what we ended up pursuing in the 2014 Farm Bill that we find ourselves today with a program that is not working. It has really been one that, as I said, doesn't provide an effective safety net for our dairy industry. Over the course of the last 18 months we have been examining potential improvements in the program, and I am pleased to present to the Committee today our recommendations for changes in MPP that will make it the effective safety net that we have been looking for.

The first area we must address to make MPP effective is to address the feed cost calculation in that margin formula. And, Mr. Peterson, you spoke to that in your comments. The current formula is failing because of changes that were made during the deliberations in the 2014 Farm Bill, and the issue is that we developed the original formula to capture accurate feed costs on dairy farms, working with dairy science experts on the types of feed, the volumes of feed, needed to produce a hundredweight of milk. And in the course of the discussions in the farm bill, due to deficit reduction reasons, that formula that we had proposed, and, Mr. Peterson, that you had in your original legislation, that formula was changed. You got the calculation right the first time, Mr. Peterson. The major change we have to do is go back to that. If we do that, we will have an effective program.

The second aspect of MPP in need of revision are the payment rates. And I am specifically talking about the rates for supplemental coverage. While the feed cost reforms that are outlined in my testimony are essential to reflecting true producer costs, in order to have an effective program, farmers must be able to afford the coverage. And adjusting those premium rates, especially the rates at the lower levels of milk production, will help ensure that MPP provides the safety net coverage that we need for our industry.

A third area of improvement that we are recommending relates to some technical changes designed to make the program more responsive to producers. The first one would be to change from this 2 month *tranche* that we have currently for calculation of the margin. Right now it is a January/February, March/April, May/June, June/July 2 months averaging, which doesn't really reflect what is happening on a monthly basis on dairy operations. We need to go back to an annual monthly calculation of that. And the other change in this area would be to move the sign-up date for the program back toward the end of the calendar year preceding the year for which you are signing up. In the law it is set up a little bit earlier. We have asked USDA the past 3 years to move that date back. They have done so, and that has been helpful in getting producers making more informed decisions for the program.

Finally, we urge the Committee to make changes on the Livestock Gross Margin Program. More risk management is better for farmers than less, and my testimony goes into some detail on changes in LGM. In the interest of time, I will not go into that in my oral statement, but I am happy to discuss it in questions.

In sum, Mr. Chairman, if we make these changes, four broad areas in the MPP Program, we think those changes will have the desired effect, and make MPP the effective dairy program for the

future that was envisioned in 2014. We are not quite there, but it is not a lot to do to make it work for us in the future. Thank you.

[The prepared statement of Mr. Mulhern follows:]

PREPARED STATEMENT OF JAMES MULHERN, PRESIDENT AND CHIEF EXECUTIVE OFFICER, NATIONAL MILK PRODUCERS FEDERATION, ARLINGTON, VA

Introduction

Chairman Conaway, Ranking Member Peterson, Members of the Committee, my name is Jim Mulhern and I serve as President and Chief Executive Officer of the National Milk Producers Federation (NMPF), the voice of America's dairy cooperatives and their farmer-members for over 100 years. I appreciate the opportunity to testify before you today as the Committee begins work on the 2018 Farm Bill.

Economic Situation

Mr. Chairman, as you have noted in recent weeks, we are beginning work on this farm bill in the midst of a very challenging farm economy. This certainly includes America's dairy community. The past decade has generally been a roller coaster for our producers. World dairy markets collapsed in the worldwide recession of 2008–2009, taking U.S. farm milk prices with them. At the time, the milk price-feed cost margin for dairy farmers fell to a truly catastrophic level of $2.25 per hundredweight of milk. Three years later, in 2012, widespread drought sent feed prices skyrocketing to historic highs, once again dropping dairy margins to catastrophic levels.

Many dairy farmers were unable to survive this period, and many of those that did are still struggling to recover fully. While 2014 was a record year for milk prices, it generated no significant gains in milk production, as would typically follow periods of high prices. In fact, production at the national level grew by an average of just 0.8 percent annually between June 2015, when milk prices had just returned back down to average levels, and May 2016. This was almost a full percentage point below the 1.7 percent average production growth from 2010 through 2016. Dairy farmers have explained to us that even the record prices of 2014 did not fully restore their financial condition from the battering it suffered in 2009 and 2012. In particular, they still needed to make replacement purchases of vehicles and equipment that were delayed since 2009 and were therefore not able to invest in growing their operations and recover financially at the same time.

Then global markets collapsed once again in 2015 and 2016, negatively impacting U.S. milk prices and gross dairy farm income in the process. The global collapse was due to a combination of China discontinuing the massive dairy purchases that caused the 2014 world price spike, together with the extremely large volumes of dairy products which the European Union (EU) added to world markets in the aftermath of that price spike. In the year following the removal of its milk production quotas in April 2015, the EU expanded milk production by 14 billion pounds, equal to nearly seven percent of total U.S. milk production that year. Almost all of this additional milk production came into world markets as demand was contracting, on top of the large volumes of EU dairy exports that were earlier displaced from Russia following the import embargo it imposed in August 2014.

All told, the value of the fresh milk produced by America's dairy farmers in 2016 was down fully 32 percent from its 2014 high, and 19 percent less than what it averaged over the previous 5 years. In all, these difficult economic conditions facing our industry over the last decade have resulted in the loss of more than 20,250 family dairy farms across the United States, or nearly ⅓ of our total farms since 2006.

While the U.S. Department of Agriculture (USDA) projects small gains in milk prices for this year relative to last year, recently those small gains are being challenged by large and growing levels of dairy product inventories. USDA recently projected that milk production for all of 2017 will increase at an annual rate of 2.4 percent. By contrast, during 2015 and 2016, total commercial use of milk in domestic and export markets grew at an annual rate of only 1.8 percent. This expansion in production has the potential to outpace demand, which will weigh heavily on milk prices yet again. In just the past few weeks, the outlook for milk prices and margins has deteriorated at an unusually rapid pace. Domestic cheese prices, which play a critical role in establishing milk prices received by U.S. dairy farmers, have dropped in the daily cash market in recent weeks and are currently lower than they have been during all but three percent of the time since the beginning of 2010. World prices for skim milk powder have also shown significant weakness. These prices directly determine U.S. prices for nonfat dry milk, which also play a critical role in establishing farm milk prices. Nonfat dry milk prices in the domestic cash market are now lower than they have been during all but four percent of the time since

the beginning of the year 2000. This deterioration has been reflected in the dairy futures market as well. Under the changes that NMPF is proposing to make the MPP a more effective safety net program, as I detail below, the program would now be projected to make payments to participating producers in the coming months. It is amidst this challenging economic climate that work is beginning on the upcoming farm bill.

Dairy Policy Overview

As we begin this process, Mr. Chairman, Ranking Member Mr. Peterson, I want to voice my strong support of your well-articulated position that getting the *policy* right must be the focus of the farm bill deliberations process, not starting with arbitrary, and often inaccurate, budget projections and trying to shoe-horn policy into those numbers. As you pointed out in your March 1, 2017 Budget Views & Estimates letter to the House Budget Committee, it is critical that this Committee take the approach of "first establishing what policies are required to effectively address the conditions in farm and ranch country and then by establishing what resources will be required to achieve them."

In fact, it is precisely because the opposite of this approach drove the deliberations on dairy in the 2014 Farm Bill that I am here today to tell you what we all know—the Dairy Margin Protection Program is not working. While MPP was, and is, the right approach for the future of Federal dairy policy, the program today, in its current form, does not provide meaningful safety net support to the nation's dairy farmers. And it cannot become the effective safety net policy it was envisioned to be without action by this Congress to move it closer to the program it was originally proposed to be by this Committee's Ranking Member, Rep. Peterson, in 2011. The current program is not working because of changes that were made to Mr. Peterson's original proposal in response to cost projections of that proposal by the Congressional Budget Office—projections that have since proven to be incorrect.

As the Chairman and Ranking Member further noted in your letter to the House Budget Committee, the shortcomings in the dairy program (as well as cotton and others) "must be addressed if the Committee is to craft a farm bill that can be successfully enacted into law and effectively respond to current conditions. America's farmers and ranchers can hardly be expected to rally around a farm bill that will fail them in hard times, nor can this Committee in good conscience advance such legislation."

Members of the Committee, the nation's dairy farmers wholeheartedly agree with you. We appreciate this clear and unequivocal message, and we look forward to working with you to craft policy changes that will provide the effective dairy safety net that was originally envisioned in the previous farm bill debate.

Our organization has been working continuously since the MPP was first established in 2014 to monitor its implementation and seek changes to improve its operations. During 2015 and 2016 we urged the U.S. Department of Agriculture to address a number of program provisions that needed attention—from providing dairy farmers more time to make decisions on annual sign-up to flexibility in premium payment schedules and clarifying the interaction between catastrophic and supplemental coverage levels. We were pleased that USDA worked closely with us and took appropriate and necessary administrative steps to address our concerns.

As helpful and important as the Department's actions were, MPP still is not providing effective safety net protection to dairy farmers because of the problems with the program's feed cost calculations and premium structure—problems that can only be addressed by Congress through legislation.

We have identified a series of steps that Congress can take that will address these problems and make the MPP the effective dairy safety that we—and many on the Committee—were seeking in the current farm bill. In order to better understand the need for the changes we propose, it is important to recall the context in which the Margin Protection Program was originally proposed, and to review its functioning to date.

Following the worldwide economic collapse of 2008–2009 that led to the disastrous milk prices that dairy farmers endured in 2009, NMPF proposed to Congress a new risk management tool that would offer protection against catastrophic income-over-feed-cost margin declines. In the 2014 Farm Bill, Congress authorized the Margin Protection Program for Dairy. MPP is a voluntary program run by the Farm Service Agency (FSA) designed to provide support when the difference between farm milk prices and feed costs fall below certain levels. The program enables dairy farmers to annually decide the level of margin coverage they want for their operations, ranging from a so-called catastrophic floor coverage level of $4.00 per hundredweight of milk, up to a maximum level of $8.00/cwt. The $4.00/cwt. basic catastrophic level is available for a $100 administrative fee paid annually to USDA. Coverage above

that level is available in $.50/cwt. increments (up to the $8.00/cwt. maximum), with escalating premiums for each higher level of coverage.

Approximately 23,000 dairy producers, slightly more than ½ the nation's dairy farmers, are currently participating in MPP. The participating producers represent 80 percent of the overall U.S. milk supply. During the program's first full year of operation in 2015 farmers paid roughly $70 million in premiums and fees to USDA for the basic and supplemental coverage. But during that same year, USDA paid out to participating dairy farmers *only* $730,000 under the program. Due to the program's meager supplemental coverage performance in 2015, many producers reduced their coverage for 2016, choosing to only purchase coverage at the catastrophic ($4.00/cwt.) coverage level, which in turn further reduced MPP payments to producers from USDA when margins shrunk last year. As a result, last year farmers paid in $20 million while USDA paid out only $13 million. In total, MPP has generated a significant profit to the Federal Government and provided no meaningful support to dairy farmers since its inception—greatly harming farmer support and trust in the program as an effective safety net.

The reason that MPP has not performed as an effective safety net for our nation's dairy farmers, as I noted earlier, is because of the arbitrary changes in the formula used to calculate dairy farm feed costs that were deemed necessary to meet the Congressional Budget Office (CBO) score.

While we strongly believe the MPP is, as NMPF Chairman Randy Mooney told this Committee last year, the right program for the future, that will only be the case if Congress improves the program so that it offers the effective risk management for our dairy producers that it was originally envisioned to provide. We are not seeking, and do not want, a program designed to make the good times even better, nor one that would incentivize production. We simply want, and need, an effective Federal safety that will protect dairy farmers from margin losses that could put them out of business. We advocate targeted and specific changes in MPP so that it better reflects the true feed costs that dairy producers face, and that will enable farmers to purchase the level of coverage needed for their individual operations. In other words, we believe that MPP must be improved so that it functions as it was originally intended during the tough times.

Proposed MPP Changes

Over the course of the last 18 months, NMPF has been working to examine potential improvements in the program. NMPF Chairman Randy Mooney appointed an Economic Policy Committee consisting of NMPF producer members from around the country to discuss a wide range of possible changes that could be made to improve MPP. The Committee deliberated in multiple meetings since last fall, and unanimously developed a series of recommended improvements in MPP that were presented to our full Board of Directors earlier this month. In turn, our Board unanimously voted to support the Committee's recommendations. I am excited to come before you today to discuss our proposal that has broad consensus support within the dairy cooperative and producer community nationwide.

Our review encompassed every aspect of the Margin Protection Program. After examining all the issues that were raised throughout our discussions, the Board adopted recommendations that encompass four areas. I'd like to briefly review each of these areas with the Committee.

The first area that must be addressed in order to make MPP a functioning risk management safety net relates to the feed cost calculation in the margin formula. It is this feed cost formula that is the central reason the program is currently failing. The current formula reflects harmful changes from the one we initially proposed, again changes that were made at the behest of an incorrect CBO score.

In developing MPP, NMPF worked closely with dairy economists, veterinarians, nutritionists, and farmers to develop a model for calculating the cost of feeding dairy cows. We worked to develop an approach that would calculate feed costs on a per hundredweight of milk basis, and reflect the nutritional needs of a lactating cow that produces the U.S. average quantity of milk per year. The index accounts for changes in the cost of key feed ingredients like corn, soybean meal, and alfalfa as well as changes in the cost of feeding an entire dairy herd, including all lactating cows, dry cows, and replacement heifers. This careful process took nearly a year and the end result closely aligned with monthly feed cost data reported by USDA since 2005.

However, during the farm bill deliberations process, Congress reduced the originally proposed MPP feed ration by ten percent due to the aforementioned CBO scores. This one change had major, outsized and significant negative financial implications for the monthly Margin Protection Program calculations, and for all dairy farmers who participated in MPP. Specifically, the change had the effect of arbi-

trarily raising the reported MPP margins under the formula by approximately $1 per hundredweight. For one illustrative example, in May and June of last year, the MPP margin was calculated under the existing formula to be $5.76 per hundredweight. But under the more accurate, real-world formula from our original proposal, the true national average margin was really $4.77 per hundredweight. This nearly $1.00 difference in the calculation demonstrates why the current program is ineffective—using the true feed costs calculations would have provided coverage to a larger group of producers suffering through a difficult year.

The ten percent reduction to the feed cost calculation has not only skewed the program arbitrarily, it also severely damaged farmers' perception of the program. Producers understood that MPP would not pay out when margins were relatively average, but they did expect the program would provide support at specific levels when margins were compressed. Unfortunately, because of the arbitrary change made to the feed formula in the 2014 Farm Bill process, the expected level of safety net support didn't happen in 2015 or 2016. As a result, most of the farms and the milk enrolled in the program today are only covered at the catastrophic $4 coverage level.

To remedy this problem, NMPF is seeking restoration of the original feed cost formula that we put forward several years ago. Mr. Peterson, your proposed legislation from 2011 got this calculation right the first time and we implore the Committee to restore that original formula to make MPP more effective and improve program integrity—these steps will improve producer confidence in the program and, in turn, encourage greater participation in the program moving forward.

This fix is fundamentally necessary to repair the program. In addition, there are a few other changes to the particular data series that USDA has chosen to use for calculating the MPP feed cost formula, which will better reflect the true costs of feed for the nation's dairy farmers. Specifically, we support the use of the corn price series compiled by USDA's Agricultural Marketing Service (AMS), which calculates the prices paid by farmers to purchase corn, as opposed to the series compiled by USDA's National Agricultural Statistics Service (NASS) that is currently used in MPP, which uses the price received by farmers for corn they sell. AMS reports this price at a large number of specific locations throughout the United States, and NMPF will work with that agency to select a representative sample of those pricing points to develop an accurate U.S. average price for corn purchased by farmers throughout the country. We also support changing the source of the MPP soybean meal price from the current single Decatur-Central Illinois price point to the average of all pricing points also reported by AMS. The impact of this change would increase average soybean meal prices in the MPP feed cost calculation by about $9 per ton, and is more consistent with the national average calculations that are reflected in the MPP feed and milk price formulas. Finally, we request that Congress direct USDA to develop a more detailed U.S. average price for dairy quality alfalfa hay. The current U.S. average price for alfalfa hay reported by NASS is an average of all grades and qualities of hay. Our members have consistently indicated to us that the single NASS price is well below that of the price for minimum quality alfalfa hay required to productively feed dairy cows. Taken together, these formula changes will help MPP more realistically reflect the feed costs borne by dairy farmers.

The second aspect of MPP in need of revision relates to the producer rates for buy-up supplemental coverage While the feed cost reforms I have outlined are essential to having a program that reflects true producer costs, in order to make MPP an effective safety net program that farmers can afford to participate in, we believes that Congress must adjust the premium rates, especially the rates at the lower level of milk production. Today, commercial programs like the Livestock Gross Management (LGM) run by the Risk Management Agency (RMA) are more attractive than MPP, a title I program. In order to provide an effective dairy safety net, it is important to incentivize participation in MPP. That will require affordable premium rates that offer adequate levels of needed coverage for producers without stimulating additional milk production. Higher levels of supplemental coverage are especially important for small and medium-sized producers, and can be provided with less risk of increasing production.

We look forward to working with the Committee to determine appropriate supplemental coverage rates in a manner that balances producer needs and program costs. Given the disappointment and frustration that many dairy farmers have felt regarding the program's initial performance, there will be work to do in reintroducing dairy farmers to a reformed MPP. Adjusting premium rates in a balanced manner will be an important part of our effort to maintain a working program for dairy producers of all sizes and in all regions.

A third area for improvement in the operation of MPP relates to technical changes designed to make the program more responsive to producers on a functional level.

First, the program can be strengthened by calculating the MPP margin on a monthly basis, rather than using a bi-monthly average basis. Using a bi-monthly calculation dilutes the timeliness and level of safety net support of the program for dairy farmers, so moving to a monthly calculation would be more accurate for risk management support purposes. In addition, we urge Congress to maintain the level of flexibility shown by USDA for coverage sign up each year so that producers have adequate time and ability to make informed coverage decisions. Each year since enactment, USDA has moved the sign-up period to a date late in the year prior to the start of the next coverage period.

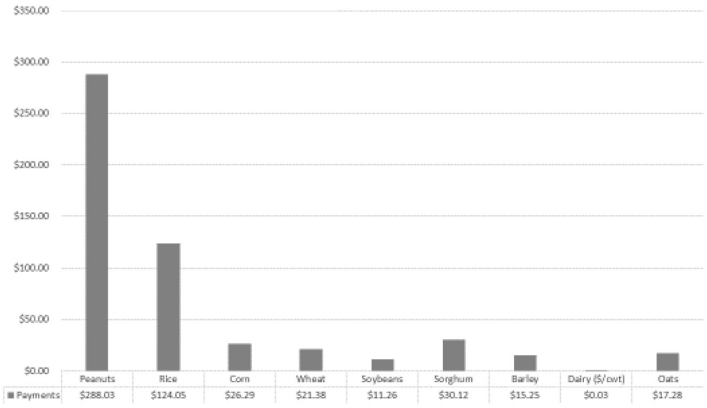
Finally, NMPF urges the Committee to enact policy changes that permit the Livestock Gross Margin-Dairy (LGM) insurance program, run by the Risk Management Agency (RMA), to work in a complementary manner with MPP. Almost every title I commodity has the ability to participate in both base programs and title XI insurance programs. Prohibiting dairy from having that ability not only discourages participation in the program, it further exposes milk, our nation's third largest commodity by cash receipts, to unwarranted levels of risk.

Specifically, the LGM cap for dairy should be expanded so that more producers can participate. LGM is a sophisticated tool that works very well for specific producers during specific times, in particular when futures prices are high enough to allow farmers to protect a high margin, well above MPP levels. Unlike MPP's fixed premiums, LGM's premiums change as futures markets change, and producers have the ability to make numerous decisions to help customize their risk management for their farm.

Even though the two programs offer fundamentally different kinds of protection, the 2014 Farm Bill required producers to make a one-time choice at the start of the farm bill between MPP and LGM. This put dairy farmers at a disadvantage within agriculture, as producers of other commodities are not required to choose between title I farm programs run by FSA and crop insurance programs run by RMA. Moreover, an analysis of 2014 Farm Bill outlays under title I demonstrates that dairy program costs are min[u]scule when compared to other major commodities.

Average Farm Program Payments per Base Acre

ARC, PLC, MPP



Source: Congressional Budget Office, January 2017.

The above chart demonstrates the importance of not only improving MPP, but also of ensuring that dairy producers have the ability to use a variety of different risk management tools to weather challenging financial times like the ones experienced during the last decade.

Collectively, NMPF has proposed four areas for reform in the upcoming farm bill that we believe will strengthen MPP for the future and give producers the flexibility enjoyed by farmers of other major commodities. We look forward to working with this Committee to enact these changes in the next farm bill.

Immigration Reform

While the need to improve the MPP economic safety net remains top of mind, we are heading into this farm bill process against a backdrop of other very significant

challenges confronting the dairy community. Our current immigration system is failing America's dairy farmers.

The importance of immigrant workers to the United States dairy industry cannot be overstated. Independent estimates indicate that at least fifty percent of the U.S. dairy farm workforce is comprised of foreign-born workers. Simply put, the dairy industry today cannot operate without immigrant workers.

As our economy has become more services-oriented, our dairy farmers have found it harder to hire Americans to work on their farms. Even in times of high unemployment, our producers universally report an inability to find enough American workers to fill dairy jobs even if they pay more than other local jobs. Dairies all around this country consistently seek American workers from their local communities, at highly competitive wages, but sufficient numbers of local workers are simply not available or not interested in working on dairy farms.

According to a study NMPF commissioned with Texas A&M University that was released in August 2015, 51 percent of all dairy farm workers are immigrants, and the farms that employ them account for 79 percent of the milk produced in the U.S.

The dairy industry has some unique qualities that set it apart from other sectors of the agricultural industry. Dairy production is a 7 day a week, year-round endeavor. Our cows require constant, daily care and handling. Unlike most other agricultural production, there is no "season" in dairy production. Unfortunately, this nation's single agricultural visa program, the H–2A program, focuses on a seasonal or temporary need for workers, and generally excludes dairy farms from participation. Although the Department of Labor has made exceptions to this seasonal requirement for others in agriculture, such as sheepherders, the Department refuses to provide a similar accommodation for dairy.

Therefore, the dairy industry is facing the same shortage of domestic workers that is faced by the rest of agriculture, but with one glaring difference: we are unable to utilize the H–2A agricultural worker visa program to hire legal foreign workers. While we believe the current H–2A program is deeply flawed, our exclusion from the only option for hiring foreign workers under a visa program, brings heightened business and legal risks for our member farms. The fact that an agency of the U.S. Government consciously treats one sector of agriculture differently is simply, fundamentally unfair.

As the President enacts his new Executive Orders, new enforcement mechanisms have come with a great deal of uncertainty and confusion about the scope of the enforcement actions, and how broad the impact will be. The uncertainty is creating a significant level of anxiety and distress in farm country.

Without access to a steady and reliable workforce, our industry will not be able to survive, let alone thrive, in the future. It is imperative for Congress to act soon to address the needs of American agriculture and, in particular, the dairy industry. It is critical that we maintain our current workforce, and create a sensible, workable means of filling farm jobs in the future.

We recognize the need for secure borders and enforcement efforts to remove criminal aliens, but such steps must be accompanied by the establishment of a system providing dairy and other agricultural enterprises with access to a stable, legal workforce. If Congress is going to enact a nationwide E-Verify requirement, then it also needs to provide agriculture with a workable guest worker program to meet our future needs and a means to allow those who are currently working in undocumented status to be eligible for such a guest worker program. Failure to do so risks severely damaging the economic vitality of the nation's entire agriculture sector.

We will be working closely with the Judiciary Committee and the leadership in the House and Senate as well as Members of the House and Senate Agriculture Committees to address the inability of the dairy industry to participate in the H–2A temporary agricultural worker program, and the need to address current workers with improper documentation.

Trade

The dairy industry also has made great strides on trade since the turn of the century. Our nation has gone from exporting dairy products valued at less than $1 billion in 2000 to exporting a record $7.1 billion in 2014, an increase of 625 percent. Although the depressed world markets I spoke of earlier reduced that number closer to $5 billion last year, we remain the largest exporter of skim milk powder, whey products, and, depending on the month, the number one exporter of cheese in the world. This is a tremendous increase not simply on a value basis, but also in the percentage of U.S. milk production that finds a home overseas. Fifteen years ago, we exported roughly five percent of our production, while today we export three times that level even as overall U.S. milk production has continued to grow. Put

simply, today, the equivalent of 1 day's domestic milk production each week ultimately ends up overseas.

It is not coincidental that the enormous growth in dairy exports I mentioned earlier occurred during a period when the U.S. began negotiating market-opening free trade agreements (FTAs) and the Uruguay Round Agreement reduced export subsidies and created the first Sanitary and Phytosanitary Agreement (SPS Agreement). The FTAs implemented since the early 1990's lowered and in the vast majority of cases ultimately remove tariffs on our exports and in many cases they gave our products a preferential advantage over other supplying countries. They also helped remove technical and regulatory barriers to trade. Over this period, exports of dairy products to FTA partners grew by 685 percent as compared to 338 percent to non-FTA countries. But it is important to note that, while our exports to non-FTA countries contracted by 32 percent, they fell by only 20 percent to our FTA partner countries.

FTAs have created important new market access opportunities for us and we have worked very hard through our market development efforts to ensure that we are taking full advantage of them. Two to 3 decades ago our industry feared trade agreements. Now, we embrace the benefits that trade agreements can offer as a vehicle for tearing down foreign barriers to our products and effectively enforcing the terms of U.S. agreements. Well-negotiated trade agreements are essential to ensuring that we do not lose out to competitors who are themselves cutting FTA deals around the world. Poorly negotiated agreements risk forsaking critical opportunities to level the playing field for U.S. exporters. It is evident that the United States has fallen behind in expanding trade agreements compared to our competitors who are negotiating trade agreements all over the globe. When it comes to trade, those who stand still lose market share.

We are encouraged by the President's call for greater enforcement of our existing trade agreements. Unfair import barriers remain in place and new ones are erected all the time. A good example is the relatively recent and extremely protectionist effort by the European Union (EU) to prevent the use of common cheese names around the world—by misusing Geographical Indications to give their producers a lock on international markets. If we aren't in the game actively negotiating on these issues, we are ceding ground to our competitors and those looking to make it tougher for us to do business in their markets. We thank this Committee and Congress for strongly rejecting the EU's blatant protectionist efforts to claw back common food names like parmesan and feta, which belong to everyone, not just a handful of producers in Italy and Greece.

Another major enforcement challenge is Canada—a country that has consistently erected barriers to U.S. dairy products. Canada has been actively pursuing every available opportunity to constrain dairy imports that begin to gain ground into its market, thereby repeatedly nullifying and impairing the value of dairy market access concessions. There has been case after case of Canada altering its regulations and policies to erect barriers to dairy trade.

A few examples have been actions by Canada to prevent imports of milk ingredients, ultra-filtered milk, pizza preparations and even simple products like mozzarella sticks. In addition to its use of regulatory and policy tools to impair dairy trade, in the course of its FTA negotiations with the EU, Canada completely disregarded its own intellectual property laws in order to bow to EU pressure to impose restrictions on several generic cheese names. This decision was not only counter to Canadian IP policies and principles, but also existing international obligations.

Finally, the most recent Canadian policy shift, which has already led to a drop in U.S. dairy exports, is another under-handed milk pricing policy maneuver. The first version of this policy was implemented in Ontario last spring, but as of last month is reportedly being implemented nationally. This new program has been developed to discourage the use of imported dairy ingredients and milk, while specifically encouraging use by Canadian processors of domestic dairy inputs. Collectively, these recent milk pricing programs aimed at displacing imports have already led to tens of millions of dollars in U.S. dairy export losses, an impact that comes at a particularly bad time for U.S. dairy farmers given the current depressed dairy market situation.

Actions of this sort that unjustly attack the investments U.S. companies have made in servicing export markets cannot be tolerated and must be met with clear consequences. In the case of ultra-filtered milk in particular, U.S. companies—supplied by American dairy farmers—have made significant investments to seize the targeted opportunities in the Canadian market that were granted by the North American Free Trade Agreement (NAFTA) and the Uruguay Round.

For Canada to now put in place policies designed to directly undermine and impair those investments harms employment in rural U.S. communities, impacts the supplying dairy farms and risks undermining support for the value of trade agreements. This is a significant blow to many companies in the United States, but it is not the worst consequence that this program will impose on our members.

As part of this new policy, Canada will be disposing of significant quantities of milk protein in the form of skim milk powder into the world markets, lowering U.S. producer prices even more while at the same time maintaining its supply management system. The U.S. dairy industry has jointly urged this Administration, as well as the previous one, to clearly and publicly reject Canadian actions at both the provincial and Federal levels as inconsistent with their trade obligations. NMPF is also asking U.S. Governors of border states that have been affected by Canadian actions to begin taking immediate action in response to Canada's new barriers to dairy trade.

We urge Congress to put Canada on notice for its continued violation of trade agreements and for offloading dairy products into the world market despite its supply management system. We urge the Administration to begin evaluating a potential WTO or NAFTA case with respect to not only the new special Class VII, but also the EU-Canada FTA agreement on GIs, as both are blatant violations of Canada's commitments to the U.S. and to its other trading partners.

By contrast, the other NAFTA party, Mexico, has been a steadfast and reliable partner to the U.S. dairy industry. Where problems have arisen, both governments have, in general, been willing to work together to find ways to resolve them. As a result of this partnership, trade in dairy products to Mexico is now operating fairly smoothly. We consider Mexico not only to be our best foreign market but also a very good trading partner. Today we sell over $1.2 billion in a variety of dairy products to Mexico, making it our number one foreign market.

The U.S. dairy industry has communicated in a united voice, as recently as last week on a trip we took to speak before Mexican producers, processors and government officials, where we expressed our desire to remain a reliable partner and supplier of dairy products, ensuring that there are no disruptions to our trade relationship. National Milk cannot stress enough the importance of the Mexican market to rural economies. Trade with Mexico means good-paying manufacturing jobs for tens of thousands of Americans. To that end, it is critical that Congress protects the progress we have made as the Administration updates existing trade agreements with Mexico.

Finally, I would like to stress that when it comes to trade, our industry has built markets both close to home and overseas. We need to protect those markets and increase sales in regions as diverse as Asia, Latin America, and the Middle East. To make that possible, we need well-negotiated trade agreements and the necessary tools to implement them. As such, we urge the Administration to begin negotiations in the near term with Japan and Vietnam to ensure that we maintain our global competitiveness in years to come. What was achieved in TPP should be the starting point for negotiations with those partners, particularly with Japan in light of the reality that TPP all but excluded new access for two of the largest dairy commodities into Japan: milk powder and butterfat.

As the Administration evaluates potential FTA partners, we urge it to keep in mind which countries would prove to be good candidates for an investment of U.S. negotiating resources. Not all trading partners will meet this benchmark and we will look forward to consulting with Congress and the Administration on helping to select those partners best positioned to yield net positive dairy and agricultural results in an FTA.

In addition, we encourage increased funding for two tools under this Committee's jurisdiction that are designed to help encourage trade: the Market Access Program and the Foreign Market Development program. The value of the investment in these programs has eroded over time and must be significantly bolstered in light of our trading partners' aggressive investments in similar promotional programs. However, we strongly urge the Committee to ensure that USDA reviews the present distribution of new funds, so that those sectors such as dairy that have expanded exports significantly in the last decade, and are matching funds with their marketing efforts, are awarded with enough resources to continue this critical work.

Child Nutrition

Another major issue for our industry is nutrition. This issue should be of concern to all of us given its impact on dairy farmers and, more importantly, our nation's children. In recent years, fluid milk consumption has continued to decline in schools due in part to restrictions on the types of milk that can be provided. Since these

restrictions were put in place, food waste and reduced consumption of milk has only worsened.

Let me remind you that milk is the primary source of nine essential nutrients in children's diets, and studies have shown that if children are not getting those nutrients at school, they may not be getting them at all. It is vital that Congress expand fluid milk options for school meal programs to ensure that our children are getting the nutrients they need. These changes are consistent with the *2015 Dietary Guidelines for Americans* that determine school food options and have received bipartisan, bicameral support in Congress.

Environmental Sustainability

Farmers are the original environmentalists. Our dairy farmers care deeply about the land, air and water that helps sustain their cows and their farm operations. Our farms are our homes; it's where we raise our families. In recent years, Federal and state regulators have applied significant pressure to improve water quality with a focus on reducing nutrient output in dairy-producing regions across the country. We, as an industry, have invested significant resources to proactively respond to this challenge, and we continue to work to embrace the best environmental practices.

In a demonstration of continued leadership, the dairy industry is seeking proactive policy solutions that will help turn what can sometimes be a potential environmental liability, such as manure, into a valuable asset. To that end, NMPF supports the bipartisan Agriculture Environmental Stewardship Act which was introduced in both houses of Congress last year. This legislation creates an Investment Tax Credit to aid farmers with the up-front capital costs of nutrient recovery and biogas systems. These systems can play an important role in reducing the environmental impacts of dairy farming, and the ITC will incentivize voluntary action to address this rather than add additional regulatory burdens and higher costs onto the backs of already financially-strapped farm operations. We look forward to working with many of you to enact this legislation in this Congress as part of a broader tax package.

DAIRY PRIDE Act

Another issue of great importance to dairy farmers as well as to consumers is the accurate and appropriate labeling of foods in accordance with established Federal standards of identity. Unfortunately, the U.S. Food and Drug Administration has been negligent in its enforcement of dairy food standards that clearly stipulate, in the *Code of Federal Regulations,* that a product labeled as "milk" comes from a cow, and that other similar products, including cheese, ice cream and yogurt, are likewise made from the milk from animals—not from beans, seeds, nuts and grains.

Yet our grocery store shelves today are filled with all manner of copycat "milk" products that ignore government standards of identity—and mislead consumers about the nutritional equivalence, or lack thereof, to real milk. Milk has numerous vitamins, minerals and nutrients essential to human health, and it is the number one source of nine nutrients in children's diets. The *2015 Dietary Guidelines for Americans* found that most Americans are not meeting the recommended intake for the dairy foods group.

Plant foods processors go to great lengths to take a handful of seeds or grains, grind them into a powder, add whiteners and emulsifiers, blend in some vitamins, and then package the resulting concoction to resemble milk. Perhaps this imitation is meant as a form of flattery, because calling these products "milk" is clearly a subtle effort to trade on the healthy halo of real milk. Yet these imitators are engaged in misleading marketing because their products don't have the same consistent nutritional offerings as real milk, certainly not across the many types of imitation beverages on the market. Most will fortify their offerings to an extent, but they still do not offer the same extensive nutrition package that real milk does. You would never know this from the marketing claims of dairy imitators, which can mislead people into thinking these products are comparable *replacements* for milk, when in fact most are nutritionally inferior and thus not suitable substitutes.

NMPF has repeatedly raised concerns with FDA that the agency is failing to enforce this long-standing, clearly-defined law when non-dairy products co-opt terms like "milk" and "cheese." We are greatly encouraged now that members of Congress are also becoming aware of this problem, and have introduced legislation to prompt FDA into taking action. H.R. 778, the DAIRY PRIDE Act, was introduced in January by Reps. Peter Welch, Mike Simpson and Sean Duffy. A companion Senate measure, S. 130, has been introduced by Sen. Tammy Baldwin. This legislation doesn't create a new law, but rather lays out explicit conditions by which FDA must explain how and when it will enforce dairy food standards of identity. I encourage members of this Committee to support this legislation.

Let me be clear: we do not oppose the sale of imitation dairy products, but we do oppose their use of dairy terms specified in the *Code of Federal Regulations.* Dairy farmers are not seeking to eliminate competition from these products, they just want the enforcement of regulations that exist to prevent the marketing of inferior copies of established food products. Most other countries take this same approach, which is why you will not find a product labeled as "almond milk" in Canada, the United Kingdom, or the 28 nation European Union, although almond-based beverages are still sold in those nations.

The promoters of dairy alternatives claim that the DAIRY PRIDE Act, as well as an overall increase in the enforcement of existing dairy labeling standards, will interfere with the marketing of other common foods such as coconut milk, milk of magnesia, and peanut butter. But these are nothing more than absurd straw man arguments meant to deter any enforcement of the current regulations.

The difference is that these other products do not market themselves as replacements for real dairy foods. Peanut butter, and other nut butters, are not functional replacements for butter made with real cream. In fact, butter makers first dealt with this issue 80 years ago, when plant-based spreads began appearing. They were not then called, nor are they today labeled, "soy butter" or "vegetable butter." They're called margarine, precisely because government standards dictate that butter comes from milk, not plant sources.

In fact, peanut butter, like real milk, has a Federal standard of identity, specifying its composition. The imitation milks do not have standards of identity—that's the major problem.

This line of argument is just another attempt to blur the issue, which is that a growing number of plant-based products are positioning themselves as alternatives to milk, even though they are not suitable substitutes from a nutritional standpoint. It is past time for this deception to end.

Closing

Mr. Chairman, I want to once again thank you and the Ranking Member for holding this hearing today. NMPF is grateful for your emphasis and focus on policy in the upcoming farm bill process, and we look forward to working closely with you to see that MPP reforms become a reality.

The CHAIRMAN. Thank you, Mr. Mulhern. Dr. Dykes, 5 minutes.

STATEMENT OF MICHAEL D. DYKES, D.V.M., PRESIDENT AND CHIEF EXECUTIVE OFFICER, INTERNATIONAL DAIRY FOODS ASSOCIATION, WASHINGTON, D.C.

Dr. DYKES. Thank you, Mr. Chairman, Ranking Member Peterson, and Members of the Committee. I am pleased to be here today. The recognition for Chairman de la Garza brings back memories for me as well. I wasn't here in Washington, D.C. in the 1980s. I was a practicing dairy veterinarian during the time, and we experienced some gut wrenching financial times during that era. The late 1980s were tough for everyone, and I remember those very vividly today. We saw foreclosures, we saw strife in agriculture that was quite significant. Those are vivid memories for me of the late 1980s as well.

Thank you all for holding this hearing today. I am honored to be here. I appreciate the challenges facing this Committee as you begin to draft a new farm bill, and you are doing that under very different economic circumstances than you did for the last farm bill.

I grew up on a dairy farm, having been a practicing dairy veterinarian, I have always had a special interest in dairy policy. IDFA is a national trade organization representing a $125 billion a year manufacturing and marketing industry, with 525 members. We are part of the U.S. food and grocery manufacturing industry, which employs nearly two million people. Two million American jobs. Our

companies market and retail milk, dairy products, yogurt, cheese, ice cream, infant formula, and many other products.

As this Committee begins to consider the next farm bill, the dairy industry needs better mechanisms for risk management. And that is on both the farmer side, as you just heard Jim explain, and on the processor side as well. Farmers are now looking to improve the Margin Protection Program and the Livestock Gross Margin insurance program to provide them with some access to effective risk management tools in this farm bill. We are looking at those proposals. We are studying those proposals, and we are supportive of fine tuning the farmer safety net so that it functions effectively for farmers, and it is not market distorting.

At the same time, we would ask that the 2018 Farm Bill provide better risk management tools for processors to manage price volatility through the extension and expansion of the current forward contracting program, which includes all dairy products, except fluid milk, at this time. Forward contracting has provided an important mechanism for manufacturers to directly contract with individual farmers, or their cooperatives, at a fixed price to reduce price volatility. We believe this program should now be made permanent, and the same opportunity should be afforded to fluid milk manufacturers so that they too can help manage price volatility in the marketplace. We intend to work with National Milk to develop a consensus proposal, and my hope is that we can work collaboratively to find a solution. We pledge to keep this Committee apprised of our progress.

I would also like to briefly mention five additional policy areas that we are looking to you for support. First, we watch closely the success of the SNAP pilots authorized in the 2008 and the 2014 Farm Bill to increase fruit and vegetable purchases. We believe adding voluntary incentives to SNAP participants to increase their consumption of milk and dairy foods would be nutritionally sound, and a wise use of taxpayer dollars. We request that the Food Insecurity Nutrition Incentive Program be reauthorized and expanded to include milk and dairy foods in the next farm bill.

Second, milk is not only under-consumed in all U.S. households, but also in schools. We have seen 6 straight years of declining school milk consumption, even as overall school enrollment has increased. We are actively working with National Milk, and the Subcommittee Chairman Thompson, to lift the restrictions and expand the options on the types of milk offered in school cafeterias. We believe these changes to SNAP and school milk programs are important, given that nine out of every ten Americans are not consuming the recommended three servings of dairy a day, according to the *2015 Dietary Guidelines.*

Third, IDFA, and the entire food and beverage industry, recently asked Secretary Price to extend the compliance deadline from July 2018 to May of 2021 for FDA's new nutrition facts and serving size rules. Without the extension from FDA, our companies may redesign all product labels by next year, only to learn they must do it all over again to comply with USDA's GMO labeling requirements, which are on a different compliance schedule.

Fourth, dairy foods represent the second largest, and fastest growing, category of organic foods, totaling $6 billion, or 15 percent

of all organic sales. We believe maintaining the National Organic Program as it is currently managed will ensure that consumers have access to organic dairy products, and accommodates continued growth over the organic dairy industry.

Fifth, exports are driving growth and demand for U.S. farm milk, and we are well positioned to achieve even more growth. We have industry and regulatory standards to assure consumers that our products are safe. We have the technology to innovate, and we have the infrastructure to deliver the products to our consumers. Mexico is the number one export market for U.S. dairy, accounting for ¼ of our total dairy exports. We need to ensure that re-negotiation of NAFTA preserves this important market. Recent Canadian efforts to prevent U.S. exports of ultra-filtered milk from Wisconsin and New York will cost our industry approximately $150 million. We need to address this issue immediately, and obtain increased market access for dairy in Canada.

Finally, the Asia-Pacific region is the world's largest market for food and agriculture, and is expected to double by 2050. Reducing and eliminating tariffs and other restrictive agriculture policies in this region will allow our dairy industry to compete.

Mr. Chairman, there is a common thread to all the issues that I raised here today, and that is enhancing the demand for U.S. dairy products. With the proper tools, and proper policies, such as expanding the options for the type of milk offered in school cafeterias, obtaining greater market access in Canada, and opening new markets in Asia, maintaining our top export market in Mexico, offering more dairy foods through SNAP, and providing better mechanisms for risk management for both farmers and processors, I am confident our industry will meet and increase the demand for milk and dairy products, and provide economic prosperity and stability to American dairy companies, American dairy farmers, and their communities throughout the country.

Thank you, Mr. Chairman, and the Members of the Committee, for the opportunity to testify today. I look forward to answering your questions.

[The prepared statement of Dr. Dykes follows:]

PREPARED STATEMENT OF MICHAEL D. DYKES, D.V.M., PRESIDENT AND CHIEF EXECUTIVE OFFICER, INTERNATIONAL DAIRY FOODS ASSOCIATION, WASHINGTON, D.C.

Chairman Conaway, Ranking Member Peterson, Members of the Committee,

Thank you for holding this important hearing today and for inviting me to testify about dairy policy.

My name is Michael Dykes and I am the President and CEO of the International Dairy Foods Association. As the new leader of this great organization, I am following two distinguished individuals, Tip and Connie Tipton, both of whom I have had the pleasure of knowing and working with for nearly 20 years. I plan to continue building this great organization by working collaboratively on shared interests with all stakeholders to realize a bright future for the U.S. dairy industry.

Let me begin by sharing a brief bit of personal background: I grew up on a small dairy and tobacco farm in the great Commonwealth of Kentucky. I milked my first cow at age 5—and kept milking until age 17 when I became the first member of my family to attend college. After studying animal science and ag economics at the University of Kentucky, I attended veterinary school at Auburn University. I was an owner in a six-person veterinary practice for a number of years in Illinois and am still a licensed veterinarian.

I left the veterinary practice and joined the grain and feed industry, where I worked with farmers in the United States and all over the world—especially Eu-

rope, South America and China—during my career at Continental Grain and Monsanto. During those years, I saw firsthand just how important international trade and competitive global markets are for U.S. agriculture and our dairy industry. Although the U.S. dairy sector entered the global marketplace later, the development of exports over the last 10 years has been a primary contributor to several periods of prosperity and represents the single most significant demand-growth opportunity for our members and the dairy farmers who supply them.

I've worked in the world of agricultural policy and regulation for the past 2 decades, and during my time in Washington, I've seen and learned a lot—about politics, about the value of collaboration, about policy and about the industry that we all so dearly love, American agriculture. Before I joined IDFA, I thought I had a pretty good understanding of what this association does—and who it represents. But in my short tenure I've learned that IDFA is so much more.

I'd like to share briefly what I've learned since joining IDFA so there is a broader context to my testimony—one that I hope will help guide your perspective on what our industry has to say about the upcoming farm bill.

IDFA is a national trade association representing a $125 billion a year dairy manufacturing and marketing industry with 525 member companies. We are part of the U.S. food and grocery manufacturing industries which directly employ over two million Americans.

IDFA members are manufacturers, marketers and retailers of milk and dairy products, including beverage milk (Class I), yogurt (Class II), ice cream (Class II), cheese (Class III), and butter and dry products (Class IV). Our members range from the nation's largest farmer-owned dairy coops to multinational corporations to family-owned, single-plant operations. We also have member companies that supply the dairy industry with everything from ingredients to packaging to equipment.

IDFA members include national and regional grocery retailers that make their own dairy products; international food service chains; and innovative processors that produce ultra-filtered, high-protein, lactose free, fat free and low-sugar milks with extended shelf life. We represent every kind of ice cream company you can imagine; yogurt companies; infant formula companies; and cheese makers—all supplying customers around the globe. Other members are pioneers in providing innovative dairy ingredients that offer health and nutritional functions in foods, which are increasingly in demand. And speaking of increasing demand, we also have members in the rapidly growing organic dairy sector.

IDFA is governed by board members who represent leaders across the spectrum of the dairy industry. We are fortunate that this diversity provides our organization with a very broad view of the overall dairy industry. We know that to continue our success, we must innovate to keep up with the market, and to innovate, we must collaborate along every stage of the supply chain, from farmer to processor to retailer to consumer.

Consumers Crave New Products

Listening to consumers is a good place to start, and we know they crave new products. That's why American consumers today have far more choices in the dairy aisle and on grocery shelves than ever before. Greek-style yogurt, string cheese, shelf-stable milks and high-protein beverages and snacks have become consumer favorites in the past few years. But these products are just the tip of the iceberg.

When you think of traditional dairy, the terms "wholesome," "good for you," "most perfect food," "does a body good," "reliable," "affordable" and "tasty" all come to mind. But we're far more than a gallon of milk today. In fact, milk contains protein, as well as eight other essential nutrients, lactose, and calcium. These milk components can be used to make an ever-increasing range of specialized dairy products and ingredients for infant formula, protein drinks and many other specialty products.

How did we move from a gallon of milk to powerful protein beverages and more? Let's take a quick look at the U.S. dairy industry and its evolution over the years.

Evolution of U.S. Dairy Industry

Before World War II, the dairy industry was dominated by more than 4.5 million small, widely scattered farms and 22,000 processing plants. With the growing use of refrigeration and cross-country transportation, the U.S. agricultural sector realized that local production wasn't a necessity and economies of scale were a good thing. Today the dairy industry has approximately 47,000 dairy farms and slightly more than 1,500 processing plants that are much larger and serve a broader market.

Where does all this farm milk go? More than 40% is used to make cheese and just over 20% is used for beverage milk and cultured products like yogurt. That is

a significant change from 1960, when just 10% went into cheese production and almost half was used for fluid milk products. As U.S. cheese production has increased, so has production of dairy ingredients from whey, (which is a protein-packed cheese byproduct), and other milk components.

Cheese production reached a record high in 2016, as per capita consumption of cheese kept growing. Americans, on average, are eating 35 pounds of cheese annually, which is twice the amount we ate in 1980. Per capita consumption of yogurt has increased even more dramatically during this time period, growing from 2.5 pounds in 1980 to almost 15 pounds in 2015.

Overall, domestic demand for dairy products is growing, but the growth is not where it should be when you consider that the *2015 Dietary Guidelines for Americans* state that "intakes of dairy foods are far below recommendations." Per capita consumption of fluid milk products has been on a downward trend for decades as Americans have shifted to other beverages. USDA estimates that Americans, on average, drink 37% less milk today than they did in 1970. Forty years ago, per capita consumption was nearly 1½ cups per day; now it's closer to ¾ of a cup. Per capita production of frozen dairy products has also trended downward for more than 20 years.

While our companies will continue to innovate and provide new products, new packaging and a variety of portions to gain the attention of American consumers, we're increasingly looking to the global market for additional growth opportunities. Here's why.

The United States is the single largest cow's milk producer in the world. U.S. farm milk production has grown from 170 billion pounds in 2003 to 212 billion pounds in 2016, and more than 52% of that additional farm milk is exported to other countries in the form of various finished products. Indeed, exports are driving growth in demand for U.S. farm milk, and the potential for further global demand is huge.

As the world population grows by another two billion people by 2050 and continues to develop economically, the demand for protein and improved diets will increase the demand for dairy products. Dairy foods are uniquely positioned to meet the nutritional needs of a growing world with more disposable income and an appetite for higher-protein products. This will mean increased opportunities for global trade in dairy.

The International Dairy Federation estimates that world demand for milk and dairy products would double by 2030 if dairy consumption grew to match the actual nutritional needs of all global diets. That number would triple by 2050. The Australian Bureau of Agricultural and Resource Economics (ABARE) estimates that dairy consumption in the Asia-Pacific region alone—driven by China, India and Japan—should double by 2050.

Those estimates represent an amazing opportunity for American dairy processors, American dairy farmers and members of Congress to collaborate to bring enhanced nutrition to a growing world and new opportunities and prosperity to our industry. Ensuring that the U.S. dairy industry is globally competitive to capture this growing demand is imperative.

We are well positioned to achieve export growth: We have industry and regulatory standards to assure consumers that our products are safe, we have the technology to innovate and we have the infrastructure to deliver to our customers. Most importantly, we are blessed with the natural resources to expand milk production. On the milk supply side, we know the United States is incredibly competitive. To cite USDA, milk production in pounds per cow has increased by more than 20% since 2004. To emphasize this point, I would like to point out that the average cow in 1950 produced 5,500 pounds per year, and today it is nearly 23,000 pounds per year. American agriculture has a tremendous capacity to produce!

As these facts demonstrate, globalization provides important opportunities for the U.S. dairy industry. At the same time, global demand has also increased volatility in dairy markets. The question is: What do we do about it?

First and foremost, the dairy industry needs better mechanisms for risk management—and that's on both the farmer and processor side. The 2014 Farm Bill overhauled the farmer safety net, replacing the dairy product purchase program with the Margin Protection Program, a margin insurance program, in recognition of this new global environment. Farmers are now looking to improve the Margin Protection Program and the Livestock Gross Margin insurance program to provide them with access to effective risk management tools in this farm bill. We are looking forward to reviewing the details of their proposal but are supportive of fine-tuning the farmer safety net so that it functions effectively and is not market distorting.

At the same time, the 2018 Farm Bill should provide better mechanisms for processors to manage price volatility through the extension and expansion of the current

forward contracting program. Both domestic and international demand is negatively impacted by price volatility. Global customers are accustomed to buying dairy products at fixed prices that cover multiple months of deliveries and are reluctant to take on the price volatility generally associated with the U.S. dairy industry. Domestic buyers, whether food formulators for consumer packaged goods or food service or restaurant menu designers, also prefer to use ingredients for which prices are less volatile or for which they can better manage the price risk. If dairy cannot meet that need, the industry loses that demand. And we risk permanently losing retail consumers who migrate away from fluid milk and dairy products during high price cycles.

The minimum regulated milk price provisions of the Federal Milk Marketing Orders (FMMO) translate the price volatility of the dairy commodities directly into the regulated milk prices. The establishment of the forward contracting program for manufacturers of dairy products other than fluid milk has provided an important mechanism for manufacturers to directly contract with individual farmers or their cooperatives at a fixed price, but the finite timeframe allowed in the program challenges its use as we approach each farm bill. This program should be made permanent and the same opportunity should be afforded to fluid milk processors so that they, too, can curb the negative demand impacts of price volatility.

The current forward contracting program allows farmers and cooperatives to voluntarily enter into forward price contracts with handlers for milk that is used to make ice cream, yogurt, cheese, butter and powder (Class II, III or IV milk). The program allows handlers regulated under the FMMO and farmers to agree on the terms of the contract, without having to pay the minimum Federal Order blend price. However, regulated handlers are still required to make payments or distributions from the farmer settlement fund into the Federal Order pool. To ensure that the program is voluntary, the farmer or cooperative is required to file a disclosure agreement with the FMMO market administrator.

In addition to proposing that all milk (Class I, II, III, IV), be eligible to establish forward price contracts, many other aspects of the current milk pricing regulatory system should be reviewed in the context of today's consumer trends and global marketplace. The system's underlying assumption that beverage milk can bear a significantly higher price burden may no longer be accurate in today's highly competitive beverage market in which fluid milk sales continue to decline.

Many of the milk pricing issues that are negatively impacting my members flow through in the form of decreased demand which negatively impacts farmers as well. We intend to start a dialog with NMPF and other farmer stakeholders about these concerns in an attempt to develop a consensus proposal. Although my hope is that we can work constructively through that process, I would be remiss not to highlight to the Committee that these issues are important to address on a timely basis. We pledge to keep this Committee apprised of our progress to develop a comprehensive solution to these issues that advances the interest of the entire dairy industry.

Mr. Chairman and Members of the Committee, I'd also like to briefly mention some additional policy areas that we are looking to you for support.

SNAP and USDA Nutrition Programs

I congratulate the Chairman and the members of this Committee for your thorough, top-to-bottom review of the Supplemental Nutrition Assistance Program (SNAP). This was an important undertaking from both a fiscal and nutrition policy perspective. We have watched closely the success of the SNAP pilots authorized in the 2008 and the 2014 Farm Bills to increase fruit and vegetable purchases. The 2008 Farm Bill authorized $20 million for the "Healthy Incentives Pilot"; and the 2014 Farm Bill authorized $90 million for the "Food Insecurity Nutrition Incentive (FINI)" grant program to test incentives at the point of sale.

Given that only one out of ten Americans consumes the recommended three servings of dairy a day, according to the *2015 Dietary Guidelines,* we believe adding voluntary incentives to encourage SNAP participants to increase their consumption of milk and dairy foods would be nutritionally sound and a wise use of taxpayer dollars. We'd like the FINI program to be reauthorized and expanded to include milk and dairy foods in the next farm bill so SNAP participants would have even more incentives to purchase milk and dairy products.

Milk is not only under consumed in all U.S. households but also in schools. We've seen a disturbing decrease in school milk consumption over the past few years, and we are actively working with NMPF and Subcommittee Chairman Thompson on solutions that will help move the needle in the right direction. The same approach holds for other programs as well, including the Women, Infants and Children (WIC) program. Currently, USDA regulations limit milk options—and we'd like to see these regulations changed to expand milk options to encourage increased consump-

tion, which addresses the *2015 Dietary Guidelines* recommendations that point to significant under consumption of milk and dairy.

Product Labeling Changes

Product labeling for the entire food and beverage category is currently undergoing enormous change, and multiple compliance deadlines are placing a massive regulatory burden on the industry. Approximately 400,000 new products have been introduced since the original Nutrition Labeling and Education Act rules were established more than 20 years ago. To change essentially every food package in the United States requires adequate time, careful planning, significant resources, testing and analyzing of products, entering of ingredient information into databases, new label and packaging designs, new printing plates and queuing up with printing companies. The process requires coordination among software vendors, ingredient suppliers, graphic designers, printing companies and others on a magnitude of scale never before executed.

IDFA and the entire food and beverage industry recently asked Health and Human Services Secretary Price to extend the compliance deadline to May 2021 for FDA's new Nutrition Facts and Serving Size rules. Additional time will help companies avoid wasting billions of dollars on duplicative relabeling schemes. FDA's own Regulatory Impact Analysis found that the cost associated with a 2 year compliance deadline could be as high as $4.6 billion, and the cost of a 4 year compliance deadline could reach $2.8 billion. Unfortunately, FDA chose the option that is 39% more expensive, providing only 2 years for all but the smallest companies. The current compliance deadline is July 26, 2018.

Our request for more time to comply will also allow USDA to complete its work on the GMO labeling rule, which requires a standard format for disclosing ingredients produced with biotechnology. Without the extension from FDA, companies may redesign all product labels by next year only to learn they must do it again to comply with USDA's requirements.

Given the lead times required to comply with the Nutrition Facts label and the opportunity for complying with both FDA and USDA regulations with one set of label changes, we need immediate action on this request.

Organic Dairy Products

Dairy foods represent the second-largest and fastest-growing category of organic foods sales, totaling about $6 billion, or 15% of all organic sales, according to the Organic Trade Association. The National Organic Program (NOP) at USDA has provided a consistent and reliable platform for the organic industry to grow and thrive. We believe maintaining the NOP program as it is currently managed will ensure that consumers have access to organic dairy products that meet their expectations. We also support the current structure and functions of the NOP and the resources to ensure that the program accommodates continued growth of the U.S. organic dairy industry.

Trade

IDFA and our member companies look forward to working with the new Administration and Congress to achieve trade policy goals that will preserve and grow dairy exports. As I said previously, global trade represents the single most significant demand growth opportunity for our members and the dairy farmers who supply them.

Mexico is the number one export market for U.S. dairy, accounting for ¼ of our total dairy exports. The United States has a 73% market share of Mexico's dairy imports, and we need to ensure that a renegotiation of the North American Free Trade Agreement preserves this important market.

I recently traveled to Mexico City with Jim Mulhern and former Secretary Vilsack to meet with Mexican dairy farmers, processors and government officials. NAFTA is very successful for both the United States and Mexican dairy industry; it provides exactly the type of "win-win" business opportunities that each country needs. We found support to preserve the current market relationship from the dairy farmers, processors and the Government of Mexico.

Unfortunately, we haven't had the same success with our trading partner to the north. The Canadian Government is violating its trade commitments with the United States under NAFTA and the World Trade Organization with respect to dairy. Recent Canadian efforts to create a new Class of milk effectively prevents U.S. exports of ultra-filtered milk from Wisconsin and New York and will cost the industry at least $150 million, while threatening U.S. jobs on farms, in processing plants and throughout the supply chain. Canada recently expanded this new pricing initiative, and we need to address this issue immediately before further damage is done.

Finally, the Asia-Pacific region is the world's largest market for food and agriculture and is expected to grow rapidly in the years ahead. Reducing and eliminating tariffs and other restrictive agricultural policies in this region will allow our dairy industry to compete, creating an opportunity to supply Asian markets with high-quality dairy products. With more than 95% of our potential customers living outside our borders, expanded access to the Asia-Pacific region is critical if we are to attain our future export potential.

Conclusion

In summary, IDFA represents a broad cross section of the U.S. dairy industry. Our views are based on what is good for all our members and our entire dairy industry, from farmer to processor to input provider to wholesaler to retailer to the consumer. With our policy goals, we aim to ensure that our industry remains competitive and strongly positioned for growth, both domestically and internationally, to meet the demand for our nutrient-rich products in a way that benefits *all* our stakeholders and contributes so importantly to the health of Americans and our nation's economy.

Mr. Chairman, there is a common thread to all the issues I have outlined: enhancing demand for U.S. dairy products. The opportunities are clearly out there, and the U.S. dairy industry is poised to take full advantage.

With the proper policies and tools—such as lifting restrictions on the types of milk offered in school cafeterias, obtaining greater market access in Canada and opening new markets in Asia, maintaining our top export market in Mexico, offering incentives to purchase more dairy foods through SNAP or providing better mechanisms for risk management for both farmers and processors—I'm confident our industry will meet and increase the demand for milk and dairy products and provide economic prosperity and stability to American dairy companies, American dairy farmers and their communities throughout the country.

IDFA's board members will be meeting next month to take official policy positions on a number of the issues I've just outlined, and we will work collaboratively with NMPF on our many issues of mutual interest as we approach the upcoming farm bill. We look forward to working with the Committee on the various programs and policy recommendations under the purview of the farm bill.

Thank you, Mr. Chairman and Members of the Committee, for the opportunity to testify at today's hearing. I look forward to answering your questions.

The CHAIRMAN. Well, I thank the gentleman. The chair would remind Members they will be recognized for questioning in order of seniority for Members who were here at the start of the hearing. After that, Members will be recognized in order of arrival. I appreciate Members' understanding, and I recognize myself for 5 minutes.

Thank you both for being here, I appreciate it. It is pretty clear that the MPP Program didn't work as intended, and we are going to work to try to fix that. I am hard pressed to understand how the ten percent increase in the feed cost would trigger a $2 billion score. Maybe the math is fuzzy, but that would seem to say the overall program would cost $20 billion, and I don't think that is the case either, so we are continuing to work with the CBO.

I am concerned that expectations within the dairy industry, looking at that number, will be hurt if we don't come in near that, and that is not rational, to be able to add those kind of resources to the program. Collin and I are committed to finding the solution, but I don't want your members, and the producers out there, to feel like we didn't do our job because we couldn't deliver on that number. I don't think that number is right, but we are going to work to get this fixed. But I don't want misplaced expectations among your teams that that is the fix. And we are going to work on it, and we are committed to making that happen.

Jim, with that, talk to us a little bit about the differential between the MPP as it applies to small herds *versus* larger producers. In your testimony you said we have had a significant drop in

dairies since 2006. Can you walk us through how you think MPP could be used to slow that down, or stop it, or should we slow that down and stop it? Walk me through the differential between the two; size of farm *versus* MPP.

Mr. MULHERN. Sure, Mr. Chairman. One of the beauties of MPP is the differential rates that were set up, in terms of the coverage below the first 4 million pounds of production, which is about 175, 180 cow herd, and production above 4 million pounds. And all farms get that rate on the first 4 million, and a higher rate for higher levels of coverage. MPP can be especially effective in protecting smaller farms because of the rate differential, and the ability, if it is affordable, to get higher levels of coverage.

And that really is the key. The rates for $7.50, $8 coverage, which, frankly, some of our small farms probably need coverage at that level, today it is too expensive, so we need to address those rates so they can buy up higher levels of coverage. Mr. Peterson was right in his comments. It is the same feedback we have gotten from our members, our larger members. They want to make sure they have the MPP as a catastrophic safety net. If we go through another 2009 situation, those situations that are completely out of our control, they want to know that we have a floor under that price. It was devastating to go through that in 2009, and 2012 was another bad year for our industry.

But the beauty of MPP is it does have the ability to provide safety net support for all size operations. And by having the ability to have higher rates of coverage for the smaller operations, that will actually provide budget protection, Mr. Chairman. It won't be as high a cost if we do that.

The CHAIRMAN. All right. Is the 4 million pounds an appropriate cut between the two? Should we raise that, lower that? Is the industry really okay with economics associated with herds smaller than that?

Mr. MULHERN. Yes, it is an issue that we have looked at and had discussion, but our members are satisfied with the current 4 million pound threshold level. There have been discussion, and there were some back in the last farm bill debate, of having three levels of coverage. We think we netted out pretty well on the 4 million pound above and below. That has worked well. We have not had a lot of concern from our membership about raising that. And, of course, that goes to the point, Mr. Chairman, if you adjust that, it does have budget implications, and we were trying to guard against that.

I want to be clear in our presentation, the dairy industry, dairy producers of America, do not want a costly program. We have been back in the days when Kika de la Garza was Chairman of this Committee, back in 1985, we had not a $2 billion cost to the program over a 10 year score, we had a $2 billion cost to the dairy program in 1 year, and that is not helpful. We have gotten away from that. We want this program to be a safety net, and not to generate excess production. That was one of the reasons we had the battle we had in the last farm bill. There was concern and the whole battle over market stabilization was our industry's desire not to have too much milk coming out. The lesson we have seen is this

program is not going to do that. It can be an effective safety net, if it is adjusted.

The CHAIRMAN. Yes. Quickly, Michael, what is the scientific reason why Canada would refuse to take ultra-filtered milk?

Dr. DYKES. I don't think they have given a scientific reason, sir. They are advantaging their own in-country processors to use their skim milk products for cheese production there, rather than taking our ultra-filtered milk from the U.S.

The CHAIRMAN. Okay. With that, I will yield to Mr. Peterson for 5 minutes.

Mr. PETERSON. Thank you, Mr. Chairman. Mr. Mulhern, have you had discussions with CBO about these scores at all?

Mr. MULHERN. No, I have not had discussions with CBO about them.

Mr. PETERSON. Well, I have, and I have put together a chart here that has a month by month breakdown of what the margin was, and I have done it based on what the current law is, and what it was originally. And there is only one bi-monthly period since the bill has gone into effect that we have had a payment, and is part of the reason we don't have participation.

[The information referred to is located on p. 773.]

Mr. PETERSON. So this year we are not going to need it, $17+ they are projecting for milk. I just don't get it, how they are coming up with this score. One of the things that I have done is I have asked Langley, over at CBO, to give me a month by month printout of how he came up with this, and I would like to see what months he is saying it is going to cost this much money that we are going to come up to $2 billion. Whatever you guys can do to help him, I have Scott Brown working with him, and we are making some progress, but this thing is way out of line. And, having dealt with CBO in 2008, when I was Chairman, it is a big problem. And if you don't get them to move, I don't see how we are going to be able to do what needs to be done on the feed cost, unless we get them to bring it into reality.

On the other hand, we have had this scored on the small producers of the 4 million pounds, and that is in the range, it will go to $7.50 at current 9¢, which is what it is for $6.50. To go to that level, we are talking $150 million over 10 years. It is not a huge amount of money to get the small producers better coverage which we need to do if we are going to get participation. And what I have been concerned about all along is that we will allow them to sign up month by month, and year by year we are going to have a situation one year where they are projected to have some kind of a price, and it turns out wrong, and we have a collapse, and they don't have any coverage, because they are not responding to the system. At a minimum, we have to get that done and go to the monthly coverages. It is only $21 million over 10 years to go to monthly coverage, but the feed cost, you guys are right, and what we had in the bill originally was right. But, we have some education to do. I don't know if you have any other ideas about what we can do to get them to the right numbers here.

Mr. MULHERN. Well, I would say, Mr. Peterson, having some now white hair, remember the days back in the 1985 Farm Bill, when it was blonde? I have been dealing with CBO budget scores on

dairy for a long, long time, and I have often seen them be inaccurate. And, frankly, it is a challenge. The score, these programs, this industry, because of the dynamic nature of it, it has been challenging. That stochastic model that they use in this scoring is a bit of a problem. It is a probability model, so they take all kinds of permutations, my understanding, and weigh those, and come up with a best guess, if you will. I have rarely seen them be very accurate in their scoring, and the experience we have had these last 2 years, where what the MPP was scored at when it came out of the Congress, scored for Fiscal Year 2016 and 2017 and what we have experienced, they were far off. And the fact is, in the first year of operation, first full year, the Federal Government made money on the MPP.

Mr. PETERSON. Right.

Mr. MULHERN. Dairy farmers paid $70 million into the Federal Treasury for coverage, and the program paid out less than a million dollars: $730,000 was the payment out. Last year, because people had that bad experience the first year, a lot of people dropped down just to the catastrophic coverage, paid the $100 administrative fee, did not buy supplemental coverage. The fees collected dropped from $70 million to $20 million. And, as you pointed out in your comments, there was a 2 month period last year where USDA paid only to those producers who bought the higher level of coverage, which wasn't very many producers. It is a problem. The scoring is a challenge. It is one thing that we would like to continue working with you and the Committee to come up with more realistic and accurate budget projections.

Mr. PETERSON. Thank you, and as we said earlier, we do have parts of the country that have too much milk right now, as you know. But, Dr. Dykes, I just want to say, for my constituents and myself, that we want whole milk in the school.

Dr. DYKES. We would appreciate that.

Mr. PETERSON. All right. We are right there with you.

Dr. DYKES. And Jim would as well.

Mr. PETERSON. We are right there with you.

The CHAIRMAN. The gentleman's time has expired. Mr. Goodlatte, 5 minutes.

Mr. GOODLATTE. Thank you, Mr. Chairman, and I want to second that motion from the Ranking Member with regard to the options that should be available in our schools.

Mr. PETERSON. Is that unanimous?

Mr. GOODLATTE. Mr. Mulhern, I would like to follow up on the gentleman from Minnesota's questions about the MPP premium rates. In your testimony you discuss adjustment to those rates, and your concerns regarding feed factor calculations. If feed factors were set at the original level that you mention in your testimony, I am curious about your opinion as to whether the cost of the program's premiums would be viewed as affordable or manageable by dairy farmers?

Mr. MULHERN. It is a very good question, Mr. Goodlatte. I would say that the rates under 4 million pounds clearly need to be adjusted, because even if we fix the feed calculation, it is going to be difficult for them to buy coverage on that first 4 million pounds at the current rates. Our experience the first 2 years has been that

small operations have a higher cost of production. They need a little bit higher level of coverage there. Adjusting those rates would be prudent to encourage more producer participation in the program to provide the safety net that it was designed to do.

Above 4 million pounds, we want to look at those rates. We didn't propose specific rates because it is something we want to keep looking at. But, again, the feedback we have gotten from most of the larger producers is they view the importance of MPP as that catastrophic floor, the $4. Some will buy up some coverage, but are not looking to have higher levels of coverage under the program. Yes, rates need to be adjusted, especially on that first 4 million pounds.

Mr. GOODLATTE. Thank you. Dr. Dykes, you mentioned forward contracting in your testimony for Class II, III, and IV milk. Can you provide insight as to the logic of excluding fluid milk from forward pricing, and forward contracting? And why was this done, and should we change that?

Dr. DYKES. This was done in the last farm bill, was excluding fluid milk from the ability to forward contract. I think it should be changed. We should look at that. We want to work with the National Milk Producers Federation to come up with a solution to that issue, and we think it should be afforded to——

Mr. GOODLATTE. It is a voluntary program, right? People can decide whether they want to forward contract or not?

Dr. DYKES. It is a voluntary program. It takes two to make it work. It takes both the buyer and a seller. And it is not an effort to reduce the price, it is an effort to stabilize the price, or bring predictability to the price and reduce the volatility. That is why we are advocating it be extended to all four classes of milk, sir.

Mr. GOODLATTE. And farmers who forward contracted might have been helped through some of the fluctuations that we have been talking about here in recent times.

Dr. DYKES. We believe that has been the case across agriculture. It helps bring predictability to a price at some point in time in the future.

Mr. GOODLATTE. And you would like to see Class II, III, and IV. Is that program working, in your opinion?

Dr. DYKES. We think it is, and we also think that if it was made permanent, therefore, we take some additional uncertainty out of that, because when you are contracting, as you get near the end of the farm bill, then you have to have it renewed again before you know if it is going to be around or not.

Mr. GOODLATTE. Thank you. Mr. Mulhern, does the National Milk Producers Federation agree that forward pricing should be available for fluid milk, or are you looking at it? What is your position on that?

Mr. MULHERN. Mr. Goodlatte, we think that forward contracting has worked well, in terms of Class II, III, and IV. There are some issues with Class I. There are some challenges there. However, Michael and I, this is an issue that we have discussed, and our groups are going to sit down and discuss this. One of the challenges, just to your initial question, is Class III and IV are competitively determined prices. They are determined in the marketplace for prices paid for milk going into cheese, butter, powder. Class I is cal-

culated as a differential, added to the higher of Class III or IV price on a monthly basis.

Mr. GOODLATTE. Let me cut you off, because I only have 30 seconds left. I just want to make two points.

Mr. MULHERN. Sorry.

Mr. GOODLATTE. First, I know there is concern on the part of many dairy producers with regard to labor, and I just want you to know that I have, and continue to work on, as Chairman of the Judiciary Committee, an agricultural guest worker program, an H–2A program, that would include taking into account that dairy producers need workers throughout the year, and there are ways to help address that.

And, second, going back to our first comment about schools, I just want to say that one of the issues with the decrease of milk consumption is the issue of taste, and that we ought to allow dairy producers and dairy processors to offer products in schools that meet that demand of young people who still like the taste of milk.

Mr. MULHERN. We agree.

Mr. GOODLATTE. Whole milk.

Mr. MULHERN. Thank you, sir.

The CHAIRMAN. The gentleman's time has expired. Mr. Scott, 5 minutes.

Mr. DAVID SCOTT of Georgia. Thank you very much. It is very important for us to continue this line of discussion about our children not getting whole milk, the fatty part of milk, that clearly is very helpful for them. I have a study here that was published in the medical journal *Circulation,* and here is what it says. It says that children who have a higher intake of whole milk, or two percent milk, gain less weight. I mean, that alone right there ought to Amen everything that my Chairman and Democratic leader said. Here is something else it said, that the research shows that the dairy fats found in milk, yogurt, and cheese help protect against Type 2 diabetes.

So here we have this dilemma. One of the biggest issues facing us right now is obesity of our children, and especially because of how our society has changed. I often say they no longer go to the playground, we no longer have physical education as a requirement in schools, and we are getting fat. And here we have the golden product of milk, with all these blessings.

Mr. MULHERN. Yes.

Mr. DAVID SCOTT of Georgia. What can we do to get this message out, and to come up with a procedure to do it? I love milk, and I got other people to enjoy milk, young people, because, as I would give my younger cousins, and brothers, and sisters milk, I would just dip into the sugar jar and put a little sugar in it.

Mr. MULHERN. Yes.

Mr. DAVID SCOTT of Georgia. They loved it. If we did that, we would be doing a great blessing for our children. What do you guys say about that? I mean, you are out there in it. What can we do to get our young people to drinking more whole milk?

Dr. DYKES. Can I start, Michael?

Mr. MULHERN. Yes.

Dr. DYKES. Thank you, sir. We would agree, and I believe that the reason so many of us drink milk today is we drank milk in school.

Mr. DAVID SCOTT of Georgia. That is right.

Dr. DYKES. And we believe in that setting it is the right thing to do. Also, if we have milk in school that doesn't taste good, as has been mentioned in this Committee, we are not likely to drink it as we become adults.

Mr. DAVID SCOTT of Georgia. Yes. Like I say, put a little sugar in it.

Dr. DYKES. We totally agree with you. One of the things that we are doing on the processor side is we have an education program that we are running, and we are going to target it, it is called Kids First.

Mr. DAVID SCOTT of Georgia. Great.

Dr. DYKES. We are going to explain, and try to educate to both moms and kids, and school nutrition folks, the value of milk, and the value of getting milk that tastes good, that the kids will actually drink, back into the school systems.

Mr. DAVID SCOTT of Georgia. Are there any rules, both of you can comment on that, that need to be changed from our perspective here? We are rule makers. We are legislators. That is what we do. Is there something we can do?

Mr. MULHERN. Well, the major rule to be addressed is the regulations with the school meal program, where, under the Healthy, Hunger-Free Kids School Act, Congress passed legislation directing the milk served in school to be low fat or non-fat. When those regulations were put into effect, for unflavored milk, schools can serve one percent or non-fat. On flavored milk, which is about 70 percent of the milk consumed in schools, because of the very point you mentioned, Congressman, kids like the taste, of chocolate milk, it can only be non-fat. And that is not a good tasting product for many people, especially if you drink two percent or whole milk at home. Two percent is the leading milk consumed in the family home. You are getting a different milk served at school. No wonder kids don't quite like it. Turning that around, which the Child Nutrition Act had the provision in it to raise it to one percent, we would like to get it to two percent.

This has been a 50 year demonization of dairy fat, going back to the 1960s, to 1950s and 1960s, actually more than 50 years if I do the math, and it is starting to turn around. The *Circulation* article you mentioned is one of many, many research articles out there demonstrating the importance of dairy fat in the diet and its impact on things like Type 2 diabetes, satiety. It is beginning to turn. I am heartened to hear this mentioned from the Committee, we need to do more, and the Child Nutrition Act would be one place to start with that.

Mr. DAVID SCOTT of Georgia. Thank you.

The CHAIRMAN. The gentleman's time has expired. Mr. Gibbs, 5 minutes.

Mr. GIBBS. Thank you, Mr. Chairman. I want to talk a little more about the small *versus* the large producers. And you talk about the 175 cow dairies, which included the 4 million pound production, I have been searching my brain, thinking in my neighbor-

hood, we don't have any herds that size anymore. They are all 500, and they are still family farms.

Mr. MULHERN. Yes.

Mr. GIBBS. Okay? And they are still producing their own feed, okay? Now, I guess one of my questions is, obviously, when you talk about the larger farms, and I don't count the 500 cow dairies as the larger farms anymore. They are the norm. We are on the same page there. You talk about the larger farms only wanting catastrophic coverage, and that goes to what I am going to try to say here, is the larger farms, the big farms that are way over 500 cows, is it true that probably most of them buy their feed, they don't produce their feed? Is that kind of the norm?

Mr. MULHERN. You are talking about the largest farms, 1,000 and more?

Mr. GIBBS. Yes.

Mr. MULHERN. Yes, you would find that most of the large farms buy a large percentage of their feed. Grow some, but probably buy more than——

Mr. GIBBS. Yes. Here is my contention: When you are talking this margin price difference for the MPP, the larger farms, since we have seen a drop in commodity prices overall, so their feed cost has actually come down, because the price of corn and all that has come down, where the smaller farms, that produce their own feed, they have those fixed costs in land and equipment and so they are really losing money on that side of the operation, but their cost hasn't come down.

Mr. MULHERN. Right.

Mr. GIBBS. I just wanted to get this out; because, when you are talking about a differential here for a margin, you have two things going on here. And that is evident why you see the larger farms only wanting catastrophic coverage, because their costs, their bottom line, is actually lower, obviously, you pick up some deficiencies too.

Mr. MULHERN. Right.

Mr. GIBBS. Now, if we were in a different dynamic, where price of milk was in the basement, but price of corn and beans didn't drop, a different phenomenon would be happening.

Mr. MULHERN. And that was 2009. That was the situation in 2009.

Mr. GIBBS. Okay. Would you agree, whatever we are trying to do to figure this out, because it really triggered my mind here when the Ranking Member was talking about this. That is really critical when we are developing this program, because you have two things happening, depending on the size of the farm.

Mr. MULHERN. Right.

Mr. GIBBS. It is important to keep in mind that 500 cow dairy farm is your norm now, at least in the Midwest.

Mr. MULHERN. Yes.

Mr. GIBBS. Maybe up there, I don't know, Collin, in Minnesota and Wisconsin maybe you still have the 1,500 cow dairies. I don't know. But, I mean, all my 1,500 cow dairies, they either went out of business, or they are actually raising heifers for the bigger dairies now, and the bigger dairies are milking their 500+, every

one. And I just think in my area my 10 mile radius where I live, and I live in agricultural country.

Mr. MULHERN. Yes.

Mr. GIBBS. When you guys are developing this, I think that is important to keep in mind what is really happening there. I have another question, I just heard, I don't know if I heard it right, on the school lunch program with milk, and I totally agree with you that, in the family, at home, it is two percent milk, okay, and you said that. What are we serving in the schools?

Mr. MULHERN. In schools, for unflavored milk, schools can serve one percent or non-fat. For flavored milk, which is the majority of milk served in schools today, it has to be non-fat only.

Mr. GIBBS. Is that, like, skim milk? I am kind of——

Mr. MULHERN. I am sorry?

Mr. GIBBS. That would be skim milk?

Mr. MULHERN. Skim milk, yes. Exactly.

Mr. GIBBS. Yes?

Mr. MULHERN. And that is the problem. We had urged USDA to provide one percent flavored. And, actually, our position in the rule making process was to have one percent, and put a cap on the sugar amount, 22 grams of sugar. Put that cap in, but keep it at one percent, because kids like the taste of milk when it is——

Mr. GIBBS. Yes.

Well, that is just common sense. If you are drinking two percent at home—and we used to drink regular milk, 3.5, I guess, and now it is two percent. I am used to that. I like it. But I would probably have a problem going down to skim milk, so the kids for sure, so that is an important point. You can't serve them something in school and it is like, this doesn't taste like what I am drinking at home.

Mr. MULHERN. Right.

Mr. GIBBS. Anyway. Well, thanks for being here. Thanks, Mr. Chairman. I yield back.

The CHAIRMAN. The gentleman yields back. Ms. Adams, 5 minutes.

Ms. ADAMS. Thank you, Mr. Chairman, and thank you to the witnesses for your testimony. Mr. Mulhern, in the last farm bill, dairy producers and processors were significantly split on dairy policy. At the time, there was a proposal to manage milk supply, and many in the industry had concerns with that as well. I know that this time around we are not talking about that kind of approach, but can you discuss what you have done to build support across the industry for changes to the dairy program?

Mr. MULHERN. Sure, that is a great question. And the proposal presented to the Committee today is one that has come through an 18 month process of engagement on our part with our members across the country, talking to them about what is not working with the Margin Protection Program. We looked at every single issue that we heard from the countryside on issues that were not working, and we tried to reflect as many of those as we could into a proposal that balances the needs of the industry across the country.

So what we are presenting to the Committee does reflect the input and the views of dairy farmers from across the country, and

our membership, and we think will go a long ways to address the problems that we are seeing in the program today.

Ms. ADAMS. Okay. Thank you. As you know, we have to operate within certain budget constraints as we begin to write the farm bill. Our districts and states have multiple priorities that need to be funded in this bill. For example, my district in North Carolina, the 12th District, is in desperate need of a strong nutrition title and the SNAP program remaining intact. What are your thoughts about how to address the budget challenges as we move forward?

Mr. MULHERN. Well, the budget challenges are real, and I again want to commend the position of this Committee, and the Chairman and Ranking Member, in their communication to the House Budget Committee earlier this month, that the focus for agriculture, and for the next farm bill, has to be let us get the policy right, and then address the cost of it. I can say for dairy, we are not looking to have an expensive program. We just want an effective safety net for those down times.

In terms of the nutrition programs, those are very important to all of us in agriculture. There is a strong consensus view that this package of farm programs and nutritional programs together is critically important. I will say, for the dairy industry, for dairy farmers and dairy processors, we are well aware that folks utilizing the SNAP program spend a lot of those dollars on dairy products. Estimates that we have seen for Fiscal Year 2015, the latest numbers I have seen, were about $8.4 billion of the total SNAP expenditures went for dairy products. These programs are important. They have a need, and we want to see a balanced package, but we think the Committee has it right. Let us get the program needs set, and then have the budget to address those.

Ms. ADAMS. Right. Thank you very much. Mr. Chairman, I am going to yield the rest of my time back.

The CHAIRMAN. The gentlelady yields back. Let's go now to Roger Marshall, Mr. Marshall.

Mr. MARSHALL. Thank you, Mr. Chairman. Let me add, with everyone else's conclusions here, my grandfather would deliver milk twice a week to my family in great big containers like this. We would take the cream for the cereal, and my dad would use it for the coffee. I didn't even know that there was anything but whole milk until decades later. Is it just that simple? Why is consumption going down in schools? When I went to school, we got two cartons of milk at 10:00 a.m., we got two milks at lunch, come home and had two glasses of milk for supper. Dr. Dykes, is it just that simple? It is just taste, or are schools just not offering it, or what else is going on?

Dr. DYKES. We think a lot of it is the options aren't offered in school. Some of it is taste as well. But we have an educational effort, and Jim mentioned it as well, dairy products have been demonized for a long time on the fat side. There are concerns about the obesity epidemic. However, if we think about the difference between 1 cup of two percent milk and 1 cup of one percent milk, we are talking 20 calories. We just think we have an educational effort, and we also have to expand the options. Our research says kids will drink the milk if it tastes good, and we make it available

to them. We think that is the next first step, is to change the rules, and expand the options.

Mr. MARSHALL. I am a physician. I am supposed to know something about nutrition. Is there anything more nutritious for a drink than milk? You could talk about juices having different qualities. What is in second place?

Mr. MULHERN. I don't know what is in second, but I will say your premise is spot on. There is no more nutritious drink you can have than milk. Milk is the number one source of nine nutrients in the diets of children, number one source, so kids who aren't drinking milk are getting a shortfall in terms of their consumption of calcium potassium, phosphorus, magnesium, Vitamin A, Vitamin D, and on. It is critically important, and it is an issue. It is a challenge that we are dealing with. I don't know what would come in number two, but it is going to drop off a long ways from milk.

Mr. MARSHALL. Yes. Kansas has the fastest grown dairy herd in the country, and I don't understand how we could have food insecurity issues in Kansas, and I can't imagine what it would be like in other states, where they don't have the abundance of grains and milk that we have.

I just finished 2 weeks of town halls, nine town halls, and I was a little bit surprised, as I went to the southwest Kansas, that health care was not the number one topic. It was the labor force.

Mr. MULHERN. Yes.

Mr. MARSHALL. And it is not unique to the dairy industry. The feedlots, and slaughterhouses, all those types of things, packing plants. Sorry, we don't say slaughterhouses anymore, packing plants, it is a big issue, and we have 20,000 open jobs in Kansas right now. And even when there has been unemployment, we still have problems. And I am just wondering is this unique to Kansas? Jim, you want to go first and just kind of describe what you are seeing from workforce issues in your industry?

Mr. MULHERN. No, unfortunately, Congressman, it is not unique to Kansas. It is a critical issue facing dairy farmers, and, frankly, all of agriculture all across the country. I will tell you, from my conversations with our members, the single biggest limiting factor on their ability to grow is an adequate workforce. They can't find enough workers. And it is not a question of finding workers in the local community, people who have grown up there. Our industry does rely upon an immigrant workforce. Fully 51 percent of the employees on America's dairy farms are immigrant workers. Those farms are producing almost 80 percent of our total milk supply. Many of the workers we know are undocumented, so this is a critical issue, getting immigration reform right. I was heartened to hear the comments from Mr. Goodlatte. We have been working with him and his staff for some time on this issue, and are hopeful that we can get a workable system.

Our members understand the importance of border security, and enforcement, and support that, but along with that has to come a system of legal status for workers on our farms so that they have an ability to have a legal permit to do work, and to be able to move back and forth, and a system for the future as well, so we have a pathway to future workers.

Mr. MARSHALL. And how is dairy different than some of the other agriculture? I am stating the obvious here.

Mr. MULHERN. Well, it is a huge issue. H–2A, the program that exists for agricultural workers, is a program focused on seasonal temporary workers. Our jobs are anything but. Our jobs are, as the Chairman said in his opening comments, 365. We are milking these herds two and three times a day. On many farms, it is an around the clock labor force. It is anything but seasonal, temporary. H–2A does not work for us. We don't have a program for dairy workers in this country, and never have had one.

Mr. MARSHALL. And I would just add, these are good jobs. These jobs are paying $40,000, $60,000 a year that are going unfilled. Thank you, Mr. Chairman, I yield back.

The CHAIRMAN. The gentleman yields back. Mr. Costa is recognized for 5 minutes.

Mr. COSTA. Thank you very much, Mr. Chairman, and it is appropriate that you and the Ranking Member paid tribute to Kika de la Garza, who was a real force not only in American agriculture, but spent a lot of time in California, where I got to know him. And certainly our thoughts, and prayers, and condolences go to his family.

It is nice to see the two of you at the same table. I remember times when that was not always the case. Maybe this bodes well for the farm bill. Both the Ranking Member and I have worked with all of you in the past, and through a lot of variations in the last two farm bills, and so maybe this is a *Kum bay ya* moment.

I might take issue with my friend from the Midwest about feed prices and differentials there. While we have the larger dairies in California, clearly we have to compete with feed prices all around the country, and California has about a 60 day feed supply out of 12 months. In other words, we are importing about 10 months of our feed supply, if you want to average it that way. And so feed comes in from all over the country, the Midwest and everywhere else, and we have to compete on those margins, which is one of the criticisms I have had, and I am glad to hear you agree, the Margin Protection Program just hasn't worked, in my view, and it is one of the things we have to look at.

We were talking about prices of fluid milk, and I would like to kind of drill down a little bit. What changes in milk pricing regulations would be needed to allow for contracting for fluid milk?

Dr. DYKES. What I propose is we need to sit down and talk to both the farmers and the processors, decide to see if we could work that out. As Jim mentioned earlier, fluid milk prices—it is a complicated formula, but it basically is a price predicated on what the higher of Class III or Class IV milk, with some differentials added to it. In my view, if we get people that buy and sell milk from each other every day sitting around the table, we could find a way to make that happen, to bring some stability and predictability into pricing, remove some of the volatility.

Mr. COSTA. Well, the predictability, the whole dairy industry has been so volatile over the last 15 years, and the amount of equity that we have lost out of dairy farms across American has been significant.

Dr. DYKES. Yes.

Mr. COSTA. Mr. Mulhern, do you want to comment on how that might work?

Mr. MULHERN. Certainly, Congressman. I would agree with Michael, and we, frankly, support efforts to reduce volatility on both the producer and processor side, and recognize that partially in the past, through the agreement on forward contracting on Class II, III, and IV. There are some issues around Class I. Forward contracting, because of that settlement obligation of Class I handlers into the producer payment pool, the issue becomes would forward contracting reduce pay prices to producers?

Mr. COSTA. Would there need to be changes in the FMMO pricing system?

Mr. MULHERN. That is something we have to look at.

I don't think it would. It would require monitoring by the Federal Milk Market Administrator's Office to make sure that there is information on those forward contracts. But, as you noted, we do have forward contracting approved, currently in place in the farm bill, and it does expire at the end of the current farm bill. At this point we support extending that. We are going to talk with IDFA about this issue of forward contracting on Class I.

Mr. COSTA. What recommended changes do you think we ought to be looking at with the new farm bill? I mean both the Ranking Member and I have worked with you folks for a long time, and other Members of the Committee on some version of a supply side management. We know the problems with Canada, as they have become very predatory. It is not a level playing field, in my view.

Mr. MULHERN. Right.

Mr. COSTA. I only have 54 seconds left. Be quick.

Mr. MULHERN. In terms of supply management, if that is the tone of the question, Congressman, we are not proposing any supply management features in our farm bill proposal for the 2018 discussions. Our focus is on improving Margin Protection Program. Frankly, as Mr. Peterson mentioned, had we the Market Stabilization Program put in place in the 2014 Farm Bill, we have come nowhere near even needing that over the last few years because of where we are, in terms of the markets. Our focus really is having that producer safety net on MPP.

Mr. COSTA. Yes. Dr. Dykes, I want to shift the question, because you and I spoke about your trip last week to Mexico, and I am very concerned about the proposed conversation with the Administration on restructuring NAFTA. Could you tell us the potential implications to the American dairy industry about one of our big trading partners?

Dr. DYKES. Mexico is our number one export market, taking about ¼ of our exports, which is a little over $1 billion. We have developed an excellent partnership with Mexico. It is free market access. It is seen as a win-win situation in both Mexico and the U.S. We had quite positive conversations last week with the Secretary of Agriculture, with the Minister of Economy, and with the Under Secretary for the Minister of Foreign Affairs, the former Mexican Ambassador to the U.S. They want to see this program continue, and we will be working with—hopefully Secretary Purdue, and Ambassador Lighthizer, and this Administration to make

sure that we preserve that market access with Mexico during the NAFTA——

Mr. COSTA. Well, that is critical. And, Mr. Chairman, my time has expired, but it is important to note that, depending on how we approach that, retaliatory issues could take place by Mexico and Canada if we go down the wrong road on this thing. And the repercussions to American agriculture, let alone California agriculture, will be big.

Dr. DYKES. That is why we wanted to make the trip to Mexico, to visit with our number one customer.

Mr. COSTA. Thank you.

The CHAIRMAN. The gentleman's time has expired. I now recognize the gentleman from California, Mr. LaMalfa, for 5 minutes of questioning.

Mr. LAMALFA. Thank you, Mr. Chairman. Welcome, gentlemen. We love our dairy. I did want to drill down, though, on the pending legislation, the DAIRY PRIDE Act a little bit with you. I love the acronyms, the way they get named around here. Defending Against Imitations and Replacements of Yogurt, Milk, and Cheese To Promote Regular Intake of Dairy Everyday Act. That is a heck of an acronym. It is very creative. Again, we know some of the conditions that dairy has been going through here, with good prices a couple years ago, and then international factors on pushing down price, and exports, and all that. And at the same time, we are seeing pretty much a record production in that window as well.

I am wondering if the effort to crack down on products that are in the labeling process that are not directly from a cow, from dairy, such as soy milk, almond milk. Perhaps as a consumer protection. I am a little mystified at the direction the DAIRY PRIDE Act is going, because when we are talking about the non-dairy alternatives that people are looking at, they are using the word milk. We are talking about less than ten percent of the entire market share, or a little under $2 billion in sales. It really comes down to consumers in the market looking at what type of a product they are going to be using to fill that desire, that consumer choice.

To me it seems pretty clear, and easily differentiated by what you are buying in the dairy case as a milk product from a cow, or something like almond milk, or one of the other alternatives too. I will throw it to Dr. Dykes first on this. Is that where consumers do bother to read labels, do you think there really is a problem with differentiating between dairy milk and the other alternatives out there, almond milk, and other types?

Dr. DYKES. This is a very difficult issue for our membership. We have members on both sides of this issue. We have members that are bottling milk, alternative milks, juice, water, tea, so it is a difficult issue. I go back to FDA labeling policy, and FDA labeling policy says that foods need to be labeled to be both truthful and not misleading. So far, the FDA has not concluded these are misleading, and there have been court challenges, and the courts have not concluded that they have been misleading. It has been going on for quite some time, as you have pointed out. It kind of tends to pit farmer against farmer, when we think about almond farmers *versus* a dairy farmer, or a soybean farmer *versus* a dairy farmer.

So it is a very difficult issue for our membership. The beverage case is very competitive, as you note, so we think this is probably an issue that needs to be resolved in the marketplace, is our position.

Mr. LAMALFA. Yes. Okay. I understand. Would you look at that as a consumer protection issue? Do you think that is what is being pursued here, or is it more of a marketing deal?

Dr. DYKES. Well, it is trying to market to the consumers to what they want, and what they will drink, offering choice, innovation, and products. Adding milk proteins to water so we increase the protein content is a new innovative product for the beverage case. It has some dairy stuff in it. It is not totally milk. It is a competitive space. Offering choice is the bedrock of what we are, and competing in the marketplace.

Mr. LAMALFA. Yes. Certainly. Okay. Again, it seems like you have people that have different needs too. If there is a lactose intolerance by some consumers——

Dr. DYKES. Or they may be vegans, and may not want to——

Mr. LAMALFA. Or vegans, yes. I guess just the intervention with a piece of legislation, taking that word away from the alternatives of using the word *milk* just seems like a step beyond, especially since you talk about the legal issues. It has been held up in court. It is pretty obvious on a container it says almond milk, or the other types, I don't know. Your organization isn't really one way or the other on the DAIRY PRIDE bill, then?

Dr. DYKES. We have made some comments on it, but, as I said, this is a very difficult issue for our members, and we, at this point in time, think this is probably best resolved in the marketplace, yes. I know the producers have a different view of that, and Jim has a different view, but it is a tough issue for our membership.

Mr. LAMALFA. Yes, certainly. Okay. Well, I appreciate the sincerity on that, and I yield back. Thank you.

The CHAIRMAN. The gentleman's time has expired. Mr. Panetta, 5 minutes.

Mr. PANETTA. Thank you, Mr. Chairman. Gentlemen, thank you for being here. I appreciate your preparation, your expertise, as well as your testimony. I apologize for being late. In regards to your testimony, it seems that you want to incentivize dairy consumption through the FINI Program. With FINI, though, it seems that that was designed with fruits and vegetables in mind, and I highlight that based on where I am from, the Salinas Valley, that has a lot of fruits and vegetables, known as the salad bowl of the world, and it has one dairy farm, the Scope Family Farms.

And so my question to you is, by incorporating dairy into FINI, what would the impact be on purchasing fruits and vegetables through FINI?

Dr. DYKES. I will take that one. We have not looked at that aspect of it. Where we are coming from is that, for Americans, only one out of ten are consuming the recommended three servings a day of dairy products. That has been our comment about school cafeterias. That is our comment on SNAP. That is our comment on all these other programs, is the increased consumption, because milk is the most nutritious product we have, nine essential nutrients. We are trying to get nutrient rich products to consumers.

So our thought is, and what we have observed is, that FINI has worked well on fruits and vegetables. We think that could be expanded to include dairy, to make the same offerings available, and the same incentive programs available, to increase that number above one.

Mr. PANETTA. Understood. Mr. Mulhern, anything on that?

Mr. MULHERN. Mr. Panetta, I would just add, our goal would be to grow these programs, not to have them in competition.

Mr. PANETTA. Fair enough. Thank you.

Mr. MULHERN. Yes.

Mr. PANETTA. I appreciate that. The dairy farm that I do have, the Scope Family Farm, they have taken a hit with the falling milk prices, when I know of them, but they have also done, which a lot of people do in agriculture, and that is they have pivoted. They pivoted to organic, and that has actually helped them out quite a bit. And actually, I saw them the other day at a farmers' market, and they were selling not just milk, but cheeses as well, is what they have pivoted to, and organic cheeses. And I know that right now organic is about ten percent of dairy sales. Do you see that growing as well? Do you see more people pivoting, more dairy farmers pivoting to organic?

Mr. MULHERN. There hasn't been as much growth in dairy farmers moving toward organic as one might think. Certainly those who have made the shift are growing their production. It is a difficult shift because of the 3 year transition rules, it does present a barrier. And a lot of the members that I talk to consider it. Some have made the shift, mainly for economic reasons, because the price of organic milk is so much higher than conventional milk. A lot of farmers are disinterested in making that shift because they believe in what they are doing. They believe in the conventional production they are engaged in. It is a mixed bag overall.

Mr. PANETTA. Fair enough.

Mr. COSTA. Would the gentleman yield?

Mr. PANETTA. Sure.

Mr. COSTA. Part of the problem is not only the issue of the 3 year conversion, but also of being able to obtain a secure feed supply for your dairy cows.

Mr. MULHERN. Yes.

Mr. COSTA. Because, once you convert, you have to get organic feed, and you have to be able to have that reliable over 12 months a year. Those cows have to be fed twice a day. And therein lies the other problem.

Mr. PANETTA. Understood. Thank you. The third question I have, Mr. Mulhern, I completely appreciate very much your discussion about immigration, and immigration reform, and how it affects not just the dairy producers, but especially my growers in the Central Coast, when it comes to picking their fruits and vegetables, so it is huge. It is a big issue. And I believe that we can have a two track approach to this. First, as Mr. Goodlatte said, in regards to helping out the H–2A program; and second, my focus will also be making sure that there is enough room there to mechanize. And I was wondering if you could elaborate, if possible, on the efforts when it comes to mechanization, any sort of research and development in that area when it comes to the dairy field?

Mr. MULHERN. Well, my own personal view is that if we don't resolve this issue pretty soon, you are going to see increased mechanization in dairy. Robots are moving into dairy production now, robotic milking, they are expensive. But as you get more of them into the marketplace the price point comes down. It is really an issue of cost balance, and farmers are going to make the rational decision, like any other business person. But if we don't resolve this pretty soon, we are going to increase, you are going to see the increased mechanization, increased use of robotics. It is going to happen anyway, but the failure to have a stable labor supply is going to likely increase that. At higher cost, though, in some respects.

Mr. PANETTA. Understood. Gentlemen, thank you. I yield back my time.

The CHAIRMAN. The gentleman's time has expired. Mr. Dunn, 5 minutes.

Mr. DUNN. For Mr. Mulhern, I have question. We know that the actual dairy production margin fails to reflect the actual farm profitability. It is a misnomer as we use it there, because it excludes a lot of the overhead costs of producing milk, the labor capital, veterinary services, depreciation. And I know that some of these factors are very difficult to nail down. They are not readily available numbers at a national level. Can Congress help the dairy farmers by including some of these production costs in that formula simply so that we would more accurately reflect to profitability, or lack of profitability, on the farms?

Mr. MULHERN. Well, it is a good question, Mr. Dunn. I would say that historically, looking back to the formation of this Margin Protection Program, what we have focused on was trying to address those variable costs, which is feed. It is the largest component for most dairy farmers. In fact, in some areas of the country, 75 percent of your total costs are with feed. It really is a focus, in that program, on the variable costs, because they kind of go up and down. You don't have much control over what happens on feed costs. *Fixed costs* tend to be relatively, using the term, fixed over time.

There is the issue, which you mentioned, of adequate data. If you are going to try to put some of these things into a formula, the factors we have in MPP are the ones we use because there is a price series that USA reports on a monthly basis nationally for those figures. It is something we could look at, in terms of looking at other variables, but our focus has been on feed because it is the largest variable cost of production.

Mr. DUNN. The margin, however, we are ending up with a number that says, and here is the margin that this farm makes, and that is in no way, shape, or form reflective of the margin that the actual farmer has?

Mr. MULHERN. And it is not an indication of profitability, because to your point, that margin is to cover all the fixed costs that you have. When the margin is $5 per hundredweight, that is not much money to cover land, rents, labor, and all the other capital costs you have in running the dairy operation.

Mr. DUNN. It is not. Yes. That is when a dairy operation becomes a beef cattle operation.

Mr. MULHERN. Good point.

Mr. DUNN. Thank you very much, Mr. Chairman. I yield back.

The CHAIRMAN. The gentleman yields back. Al Lawson, 5 minutes.

Mr. LAWSON. Thank you, Mr. Chairman, and I apologize for being late, and this question might have already been answered, but my concern is that Canadian dairy has enjoyed a supply management system that prevents the U.S. from exporting any meaningful amount of dairy products into Canada. They are using new tools to restrict imports from the U.S. What is U.S. dairy industry doing to respond to these actions?

Mr. MULHERN. Mr. Lawson, this is a real issue, and a real challenge for us. As we look at renegotiation of NAFTA, which is on the agenda now, to Michael's comments earlier, we think things are working great, in terms of the U.S. relationship with Mexico when it comes to dairy, and, frankly, for much of agriculture. We do have real problems, to your question, with our relationship with Canada, where access is granted in one agreement, and then they find a way to work around it. The ultra-filtered milk issue that Michael mentioned earlier, and is in my testimony, is one of the problems, where they are blocking our access to the market. We have been selling $150 million into Canada. They change the system to prevent that from coming in.

The newest thing they are doing on this Class VII, special ingredient Class, is going to price their skim milk powder, because they have a surplus of it as a result of their program, they have a surplus, they are going to price it at the world level. Which, frankly, is in contravention to their WTO obligations, in our view, and this is an issue that we are going to ask the Administration to focus on in the NAFTA negotiations. We need enforcement. We need the U.S. to raise concerns with Canada with respect to dairy. I am very pleased that Speaker Ryan did raise those concerns when he met with Prime Minister Trudeau about 6 weeks ago, a month ago, whenever that was. We do need this to be a focus of any discussions with Canada to stop the dairy industry there from taking these steps that have negative impacts not only on us, but this special ingredient Class VII will hurt dairy exporters all around the world.

Dr. DYKES. I would add to that as well, I agree with everything Jim said, and we have also written letters, both my organization and Jim's organization, to all of the national associations, State Departments of Agriculture, U.S. Dairy Export Council. We have written letters to this Administration expressing our concern with this program. Also, letters have gone in from the EU, Australia, New Zealand, the U.S., and Mexico, expressing concerns over what Canada is doing. In addition, I have also done two TV interviews with Canadian TV expressing our concern over what is happening in Canada. We are working jointly to try to address that issue.

Mr. MULHERN. If I could add, we are also reaching out to governors along the border states to encourage them to engage in this issue as well.

The CHAIRMAN. The gentleman yields back. Mr. Allen, 5 minutes.

Mr. ALLEN. Yes, sir. Thank you, Mr. Chairman, and thank you for being here today. As far as the supply and demand issue that

we are faced with, obviously farm income is down some 55 percent over the last 3 years, dairy included, and we have talked about the pricing, and how that relates—and, of course, we are involved in a world trade situation. It looks like, from what I am hearing, that in Mexico that we are doing fine there. Canada is a problem. Where else in the world are we, down in my region, we grew a lot of peanuts and pecans, and we are sending those to China. What are some of the other markets that we are dealing with that are maybe a problem that we need to address, as far as the trade situation goes.

Mr. MULHERN. I will take that first. We have a great focus on developing markets in Asia. While we were reluctant supporters because of TPP because we didn't think the market access openings in dairy were as much as we wanted to see, the agreement had very strong improvements in other areas, which led us to support it. But Japan is one of those markets where we would like to see increased access. It is a very good market, but it could be better for us with more access.

Asia, obviously, because of the growth in middle class, what we find is a growing middle class, increase for demand for protein is very good for increased milk consumption. I would say Asia is probably the number one target for us, but South America, Middle East, North Africa, are all areas that we are looking at. But we are not doing so without competition.

Mr. ALLEN. Yes.

Mr. MULHERN. We are competing with the European Union, and New Zealand, Australia, when we pursue those markets. That is why trade agreements are important for us, and it is why, frankly, it is one of the reasons we need the MPP program, because the competition we are facing, they have some ability to influence milk price, within the EU for example, that we simply don't have. They can sell their exports at a lower price. We have to compete with that in the world market. It is a challenge for us.

Mr. ALLEN. Yes. Go ahead.

Dr. DYKES. I was just going to add, the Asia Pacific region, as Jim mentioned, the countries that were involved in TPP, that is a tremendous growth area for us. China, India, Japan, that market is expected to double between now and 2050.

Mr. ALLEN. Okay.

Dr. DYKES. We need to get our policies in place so that U.S. dairy is able to compete in that marketplace.

Mr. ALLEN. Right, and that is obviously one way that we can help you, as far as dealing with consumption, because, as I read here, production is down, like, 32 percent, as far as from its 2014 high. And, of course, we talked about the Margin Protection Program, in its current structure paid out very little, as far as that is concerned.

And, again, on the MPP, producers seem dissatisfied in its current state, and you are certain that the MPP adjustments you suggest can make this program into an effective safety net for our dairy producers?

Mr. MULHERN. Yes, we are confident of that, Mr. Allen. We have taken feedback from producers across the country, and the recommendations we are making to the Committee for improvement

in the program will address those problems. The problem with the program is one of integrity and cost for a producer. Integrity because the bi-monthly margin reported under the program today does not accurately reflect the cost that dairy farmers are facing. And the cost issue is was one of making those rates a little bit more affordable to encourage higher levels of supplemental coverage.

We address those issues, and the other more technical aspects of our proposal, and we think we will have a program that will meet the needs for the dairy industry, the dairy community, for the long-term.

Mr. ALLEN. Okay, good. Thank you. And I am just about out of time. I yield back.

The CHAIRMAN. The gentleman yields back. Ms. Kuster, 5 minutes.

Ms. KUSTER. Thank you, Mr. Chairman, and thank you for holding this hearing. It is an important issue in my district in New Hampshire, where we lost almost ten percent of our dairy farms this past year. We saw 19 dairy farms go out of commercial business in 2016 alone. We had sort of a perfect storm between the low milk prices, the international market instability, and then a severe drought that hit my district last year, causing a record number of dairies to close their barn doors.

But part of the problem was that the Margin Protection Program, as we are discussing today, simply was not helpful. We held an emergency meeting with our New Hampshire dairy farmers, and learned that it just hadn't worked for virtually any of them. They had paid in with premiums, but had not received the benefits. Our dairy industry generates $141 million in economic activity, which is a lot for our state, and 3,500 jobs, which is significant. Just to give you the scale, I only have one or two employers in my district of that size, and so this is the equivalent of really a major international company coming to our district. $10 million in labor income, I am sorry, $19 million.

So my fear is that if we don't make significant policy changes, we are going to risk losing all of the dairy farms. And I want to direct my first question for Mr. Mulhern. You have discussed this during this hearing, I apologize I had to come late, but I am wondering, what do we say to the farmers, and how do we fix the program to convince them to try it again, to come into it again next time around? I am concerned that they will simply walk away from it. First, how can we help; and second, how can we convince them that it will work the next time around?

Mr. MULHERN. It is a great question, and it is one we are focused on. I would say first that the concerns that you expressed, both from your constituents, and the situation in New Hampshire is not unlike the same message I hear from dairy farmers across the country. The program hasn't worked as intended. The fixes that we are proposing will do that. But it is going to take time to get people back into the program. It is the combination of things.

First, we need to get the feed cost adjustment right, demonstrate that we understand the current formula is not working, it is not working because of cuts that were made arbitrarily in the budget cutting process while the Committee was deliberating on the pre-

vious farm bill. We get that right, but that is another reason to look at those rates. The other concern I have heard from producers is the cost of coverage is not affordable. And so adjusting those premium rates to make it more affordable, to encourage higher levels of buy-up coverage, would go a long ways to convincing producers that these changes are real, and that they will be helpful.

Frankly, all it is going to take is 1 year of the program working for people to realize it is the safety net that we wanted and needed. And we hope it doesn't come to that, but once we get people back in, they will see that these changes will make the program the safety net that we have all wanted.

Ms. KUSTER. Thank you. And my focus is on higher feed costs. We are literally at the end of the road here, in terms of the U.S., and the transportation and labor costs associated with bringing the feed to New Hampshire is very high. How can the MPP better incorporate these increased costs. Do you have a formula in mind that would take into account those regional differences? And how would you help New England farmers?

Mr. MULHERN. Yes, that is one of the changes, the adjustments in the feed formula that we are recommending will help address. For example, right now the soybean meal formula, which is a big part of the index, soybean meal is a large cost, and a major component of a dairy ration. We use one central basing point, in Decatur, Illinois, reported by the Agricultural Marketing Service of the USDA. There are, frankly, a number of basing points around the country that have reported, so it would be more accurate to take all those basing points and average those into the index, because it is a national index. And by doing that, adjusting on the corn price as well as on to an average, both of those changes will help reflect the true cost, the actual cost, that producers are paying.

I will say, in terms of this regional issue, which your question gets at, we looked at it very, very closely. And in the analysis that we have done, the reality is that while the cost of production, and the margin is different in every part of the country, keep in mind that the MPP is a national index. It is the average U.S. milk price, the average feed cost, and we have looked at regional feed cost, regional milk prices, and what you find is they move in tandem. There is a spread, but they move in tandem, and so the correlation between the MPP index and any regional index is almost perfect. It is .98, which is almost perfect correlation. This index does reflect the true cost that farmers are facing, and we don't need to have a regional program because of the accuracy of the formula that goes into MPP.

Ms. KUSTER. That is very helpful. Thank you very much. I yield back.

The CHAIRMAN. The gentlelady's time has expired. John Faso, 5 minutes.

Mr. FASO. Thank you, Mr. Chairman, and I would associate myself with the questions of Ms. Kuster just now. Being in the Northeast as well, my dairy farmers in the Hudson Valley, and Catskills, and central New York, are feeling this very acutely, and they believe that some type of regional variation might be useful for them, and I would like to explore that further with you after this hearing.

Dr. Dykes, you had mentioned the letters that you had sent, you and Mr. Mulhern jointly, relating to the Canada issue, and that is one that also has raised concern for dairy farmers in New York State.

Dr. DYKES. Yes.

Mr. FASO. And I would appreciate if you could make that available to members of the Committee, and to me those correspondence.

Dr. DYKES. We will do that, sir.

[The letters referred to are located on p. 777.]

Mr. FASO. What is the precise regulatory change or device that the Canadians are using to exclude certain U.S. products from that nation? Can you explain that in more detail?

Mr. MULHERN. There are two changes that are underway. One has to do with ultra-filtered milk. For the last several years quite a bit of ultra-filtered milk, which is basically farm milk that is put through a filtering process to concentrate it some, it is a higher protein, higher solids product, shipped into Canada, and used in cheese manufacturing. Canada has changed the pricing structure to discourage cheese makers in Canada from purchasing ultra-filtered milk from the U.S. That is one problem.

Mr. FASO. How do they——

Mr. MULHERN. That is the loss——

Mr. FASO. How precisely do they do that, when you say they change the pricing mechanism?

Mr. MULHERN. Canada has a very highly regulated milk pricing system. If you think U.S. milk prices are highly regulated, you have seen nothing until you have seen Canada's, and a supply management system. With that supply management, farmers are limited in the amount of milk they can produce for the market. It is pretty much a closed market. Under WTO obligations there has been some opening. Ultra-filtered milk we have been able to ship in there as a result of WTO agreements. The change being made is within the pricing structure. They will sell milk to cheese makers at a lower price, which will make the milk they have been buying from the U.S., this ultra-filtered milk, non-competitive, uneconomic.

A similar change, different, but similar in concept, with this new special ingredient Class VII, which is a provincial change, now was put in place, I believe in Ontario first, and maybe adopted across Canada, will price skim milk powder at the world price, which really is not consistent with Canada's overall supply management system.

Mr. FASO. On that point, how does a change effectuated by a province within Canada comply with WTO and NAFTA obligations, since we have made these agreements with the Nation of Canada, not with a Province of Canada. And wouldn't those type of changes done at the regional level within Canada run afoul of NAFTA and WTO standards?

Mr. MULHERN. We think it does, and we think it is in contravention to Canada's NAFTA obligations, and that is the case that we are discussing with the Administration, and hope that they will push that issue.

Dr. DYKES. And they are also expanding that from the one province across all the provinces as well. It is going to become a nationwide issue, if it isn't already.

Mr. FASO. Yes. It would seem quite troublesome if a state government in the United States were acting similarly, it would seem to be against international agreements that we have signed. I would like to explore those issues further with you. And for the members, the benefit of the Committee, it is important that we address it. Thank you, Mr. Chairman. I yield back.

Mr. MULHERN. Right.

The CHAIRMAN. The gentleman yields back. I would also like to get on the record the fact that Canada mis-grades our wheat going north. They automatically downgrade the quality of our wheat just arbitrarily and capriciously, and we have raised that issue with them often. Mr. Davis, 5 minutes.

Mr. DAVIS. Thank you. I don't have nothing to yell at the Canadians about. As a matter of fact, some Canadians just walked in the door. You missed some great debate on trade. Dr. Dykes, I am glad you have a lid on that water.

Dr. DYKES. Yes, so I don't spill it this time.

Mr. DAVIS. It was a great first meeting a few years ago.

Dr. DYKES. Yes, it was, sir.

Mr. DAVIS. I actually have a question for you, sir. Your group has asked the FDA to extend the new nutrition facts and serving size deadline from July of next year until July of 2021, which would save the industry billions by synchronizing those changes with the USDA's GMO labeling scheme. Why has FDA not agreed to extend that deadline yet?

Dr. DYKES. We are not exactly clear on why they haven't done that yet. It is a significant issue for the entire food and beverage industry, when you think about 700,000 products to be labeled. If we look at where we are currently, one would be required July 26, 2018, and then the GMO disclosure would target to be completed July 29, 2018. We would have 3 days, we turn around, do it all again. We think we need more time. We are not opposed to doing it. We just need more time.

We have asked for that to be extended to May 2021, thinking then by the time the GMO disclosure rule is finalized, and there is an implementation phase of that, we will be able to sync the two up so that the industry can only label once. I have members that have estimated that this will cost them individually, as one company, $35 million. I have another one that is estimated it at $17 to $18 million. To think about doing that twice is just totally cost prohibitive.

Mr. DAVIS. Well, thank you, and let us know how we can—or let me know how I can advocate on your behalf with the FDA. That is just too cost prohibitive for many of our companies, and many of your producers, that will eventually be a cost to our consumers.

Dr. DYKES. In fairness to Secretary Price, we just sent the letter to him, so we will ask for a meeting, and ask for a deeper understanding of where they are, and hopefully they will see the compelling argument we are making.

Mr. DAVIS. Well, I will text him, tell him to speed it up when we are done here, okay?

Dr. DYKES. Thank you.

Mr. DAVIS. No, I appreciate your comments, they are very timely. And I actually appreciate the comments on the school nutrition program. This is an issue that I have talked about in this Committee for the 4 years that I have been here. We want to increase the amounts of healthy foods that are served in our school cafeterias. We want more fruits, and we want more vegetables. But I also agree that we have to serve products that not only taste good, where sometimes we have seen limitations, and the debate has shown here clearly today that, when we were growing up, the two percent chocolate milk was much preferred to a non-fat chocolate milk, and I would call it chocolate water.

Dr. DYKES. Yes.

Mr. DAVIS. I may like the taste of it; but, and the cafeteria workers know, when those go in the trash, that is not a good use of funds for the school district, or for the program, and it is not achieving the goals that we need. But it is cost. Cost of the main driver for so many of my school districts who are under-funded in Central Illinois right now to where they are spending so much more on their school nutrition program, and we can have more new innovative products. But until the Federal Government allows them the flexibility to be able to serve what is healthy, and what is going to be consumed by their students, I feel that we have a long way to go.

One question for you, Mr. Mulhern, is yogurt treated the same way as milk in the school nutrition program?

Mr. MULHERN. Yogurt is not treated the same way as milk.

Mr. DAVIS. Why not?

Mr. MULHERN. Well, milk is one of the required components on the list of foods, offer *versus* serve. It used to be milk was required at each meal.

Mr. DAVIS. Yes.

Mr. MULHERN. Offer *versus* serve, it is offered with each meal. We have worked to increase yogurt offerings in school. Expansion of the school breakfast program has been very good for increasing yogurt consumption. We have tried to work with the local school food officials to get more smoothie bars into schools, not just salad bars, but smoothie machines. In fact, the check-off program has worked to even provide some machines to schools. It is an area we are working on. There has been some improvement in yogurt positioned as a protein component, but more could be done there.

Mr. DAVIS. Well, thank you. And I just want to commend both of you. I know during the last farm bill it seemed that your two organizations may not have had such an amicable relationship, and it seems to me that you are all working well together here as we move into the next one. Mr. Chairman, I yield back. Thank you.

The CHAIRMAN. The gentleman yields back. Mr. Thompson, 5 minutes.

Mr. THOMPSON. Thank you, Mr. Chairman. Thank you, both of you gentlemen, too, for your organizations and your leadership. I greatly appreciate it. I want to thank you both for being here today and testifying before the Committee. Additionally, I would like to thank you both for working with me, and your organizations, on my School Milk Nutrition Act, in an effort to get nutrition and fla-

vor introduced back into the school. Sounds like I have a bunch of cosponsors in this Committee. The way they were all talking, the need to take action on that, and the only thing I could think of is I could drink to that, as long as it is a good glass of cold milk.

Mr. Mulhern, as you mentioned in your testimony, dairy farmers are struggling. We have heard a lot of questioning on that, in terms of Margin Protection Program, that needs some reform. And I appreciate all the work that you have done to develop recommendations to make the MPP a more effective risk management tool for dairy farmers. And while we don't know yet what the budget situation is going to be, I am very interested in focusing our efforts on the areas that will best improve the program.

One idea I frequently hear about is the need to reform the feed side of the program. We have heard that today commented on. With that in mind, can you talk a bit more about the feed formula that you all developed, and additionally, can you walk us through the proposed changes to corn and soybean price points?

Mr. MULHERN. Sure. First of all, Congressman, let me commend you for your leadership on the school nutrition issue. Your leadership, with the language to change the provisions in the child nutrition bill on school milk have been very, very important, and I was remiss in not indicating that in my earlier comments. We very much appreciate all your work on that.

In terms of the changes we are recommending in the feed formula, in some they are designed to reflect the true cost of feed that dairy farmers experience on the farm. I have talked about the ten percent cut that was made to the overall formula as part of the deficit reduction process in the last farm bill. That needs to be restored. The other changes really are designed to make sure that we are getting accurate pricing on the components, there are really three components to the feed calculator. It is corn price, soybean meal, and alfalfa.

On the soybean meal price, as I had mentioned in earlier comments, rather than use one basing point, because there are transportation differentials around the country, so different costs, we should be averaging the cost of soybean meal at different points in the country. That will get a more accurate reflection of the national cost to dairy farmers for soybean meal.

On corn, a similar change is to move, the current index uses the prices received by a corn farmer for sale of corn. That is not always the price paid by a dairy farmer. We want to move from prices received and mass index to the AMS prices paid index, which really is going to be more accurate of what dairy farmers are actually paying for corn, because the prices received could be shipment of large amount of corn to a grain elevator, may not reflect what a dairy farmer is having to pay for feed.

On the alfalfa side, it is a little bit more complicated, because there are a lot of ranges in quality of alfalfa hay. Dairy farmers do feed higher quality alfalfa, which costs more than some of the lower grades. We are trying to capture that, if we can, so that this index really does truly accurately reflect the cost to a dairy farmer of feeding a dairy cow.

In sum, we make those changes, and we will have a much more accurate index, going forward.

Mr. THOMPSON. Thank you. And when it comes to dairy policy, obviously there are so many different approaches to make sure that we maintain dairy security, which is good for Americans, and nutritious; but, obviously, making sure we are taking care of our farm families, who are working so hard. And part of that is in this Committee. Part of it, like the school nutrition program, where I am a senior Member on the Education and the Workforce Committee there. But another one, Dr. Dykes, that falls under that jurisdiction is with the WIC program, and so I just wanted to touch base. Your testimony says that USDA regulations limit milk purchasing options under the WIC program, or Women, Infant, and Children, which is very important program.

Dr. DYKES. Yes.

Mr. THOMPSON. When we were first married, my wife and I, we had our first child, we were WIC eligible. We used those opportunities to be able to purchase nutritional food for my wife, and for our newborn son, 30 years ago. What are the limitations with WIC?

Dr. DYKES. Thank you, sir. The latest changes were eliminating the two percent milk option out of the WIC program. And what we are hearing anecdotally is that some of the WIC directors are saying in public meetings that WIC participants are now using SNAP dollars to purchase their two percent milks, because they are accustomed to drinking two percent milk. I also think there was, in Texas, the change from two percent to only one percent resulted in a 17 percent drop in milk consumption. Mr. Conaway may have heard more on that during some of his extensive hearings on SNAP.

But it comes back, Mr. Thompson, to the overall conversation we have had here today. Whether it be school lunch program, whether it be SNAP, whether it be WIC, we need to think about the nutritional value of milk, and endeavoring to make sure that we move that number from only one out of ten Americans consuming the recommended three servings a day, and we need to work to increase that.

Mr. THOMPSON. Yes, we certainly need a policy that is driven by science, specifically food and ag science, and not by what seems like political correctness.

Dr. DYKES. Yes, sir.

Mr. THOMPSON. Thank you, Mr. Chairman.

The CHAIRMAN. The gentleman's time has expired. Mr. Arrington, 5 minutes.

Mr. ARRINGTON. Thank you, Mr. Chairman, and thank you, Mr. Mulhern, and Dr. Dykes, for being here. We love our dairy farmers in west Texas, and they are a big part of our economy. In fact, over the last, I don't know if it is a decade or 2 decades, there has been a tremendous migration of dairy operations from around the country to west Texas. I don't know, something about west Texas is the greatest place in the world to live. Something like that. I am sure the Chairman could give me a big Amen on that.

We want to make sure, and it is not just our economy. I grew up in Plainview, and the Bowma family, and other families that are producers, they contribute a lot to our communities, and invest a lot in our communities. These God-fearing, freedom loving Americans, we need to make sure that they have the same risk manage-

ment tools as every other farm, and that there is a responsible and effective safety net. I join my colleagues, and our fearless leader and Chairman, in making sure that that is the outcome.

A couple of more controversial issues when I am talking about agriculture, and dairy farmers, is immigration, and then the Renewable Fuel Standard, because I also represent a lot of corn producers. Let us start with immigration. I don't think there is tension here. I think that our dairy producers support legal immigration, and they want to stop illegal immigration, like most Americans.

Mr. MULHERN. Right.

Mr. ARRINGTON. But we know that there is a shortage in labor force, and so they need this mechanism of work visas. Help me be very specific on what we can do to fix the problems of legal immigration to supply labor where Americans won't do the jobs.

Mr. MULHERN. Mr. Arrington, I will take that question, and I agree completely with your assessment of the situation with respect to our members, and the need for a stable, reliable workforce. The key, in our view, is while policy proceeds along with a focus on border security and enforcement, that we have to have a system providing legal status for farmworkers. We would support providing a program where farmworkers have a permit that is for an extended period of time, 3 years, 5 years. And we are going to need a system for the future as well, because it isn't enough to fix the problem for today if you don't want to be back in the same problem in 10 or 15 years.

So the types of jobs in agriculture that immigrant labor is filling are very good jobs. They are challenging jobs, and we have had a hard time getting employees for those jobs on dairy farms, make no bones about that. We do need the system, and we need to have a legal status for those workers. It can be, along with an e-Verify system, as long as we have some legal status for those workers, that can all be worked out.

We are working with the Judiciary Committee, and that would be with Mr. Goodlatte as Chairman of that, and he has been a great leader on the issue. We are hoping that, through this process, that we can have not only secure borders, and enforcement of existing immigration laws, but legal status for workers who are here.

Mr. ARRINGTON. Yes, see, I don't see the two as mutually exclusive. I am for border security, I am for preventing illegal immigration, I am for rule of law, and staunchly so, but there has to be a way to fix a legal process to support our dairy farmers, and our producers across the board.

Mr. MULHERN. I agree.

Mr. ARRINGTON. What are some reasonable ways that producers could help prevent illegal immigration? I am just throwing that out there. I don't want them to be *de facto* immigration enforcement officers, but what are some ways they can help in that process?

Mr. MULHERN. It comes back to having options. You have to have options to have a legal workforce, and that really is the problem. I will tell you that farmers today, some know that they have workers with either undocumented or questionable papers, and there is concern about what may happen with that workforce. Those cows need to be milked at least twice a day, 7 days a week, so this is

a real and pressing issue for our members. We hope it can be resolved as quickly as possible.

Mr. ARRINGTON. I won't get to RFS, so I am going to yield back to the Chairman. Thank you.

The CHAIRMAN. The gentleman's time has expired. Mr. Comer, 5 minutes.

Mr. COMER. Thank you, Mr. Chairman, and, Dr. Dykes, it is an honor to have you here today. I have to say this about Dr. Dykes, he was born and raised in my Congressional district from a very good family.

Dr. DYKES. Thank you, sir.

Mr. COMER. In fact, I took a picture of you sitting here and texted it to your brother, and he told me to drill you hard when it got to my turn.

Dr. DYKES. Don't listen to those guys.

Mr. COMER. But both those guys are good, hard workers there in Adair County, and I appreciate them. And I appreciate all that you do, and will continue to do, to help rural dairy farmers in Kentucky. I know you are passionate about that, and I appreciate your work with that.

Dr. DYKES. I am, sir.

Mr. COMER. What is the current status of the dairy export market? And the reason I ask, we have a big dairy processor around home that drives milk, and sells it to Kraft, all these food processors all across the world, but they constantly have trouble getting in the China market. And I was just curious, what is the status of the dairy export market right now?

Dr. DYKES. Exports for dairy have been a relatively recent thing the last 10, 12 years or so. We have gone from exporting about five percent of our milk production to about 15 percent of our milk production in a few years. That is roughly about 1 day a week of milking is exported. Mexico is the number one market, we are the fourth. But if we look at the increase in milk production in the last few years, about ½ of our increased milk production has gone to exports. I give you those kind of numbers for context. Exports are a big part of where we are with U.S. dairy production today, and it will be a bigger part of where we go with U.S. dairy production in the future.

Mr. COMER. Yes.

Dr. DYKES. We think our dairy farmers have everything they need to compete. We have the natural resources, we have the standards, we have the distribution. We can do those kinds of things. And we have to work to make sure we have a level playing field. And that is why these trade agreements become so important for dairy.

Mr. COMER. Yes.

Dr. DYKES. And that is why fixing Canada, as a part of the NAFTA re-negotiation, is important. That is why preserving what we have currently with Mexico, where ¼ of production, $1.2 billion of dairy goes to Mexico every year. That is why preserving Mexico, fixing Canada, gaining market access in Asia Pacific, around the world, is extremely important.

Mr. COMER. All right. Kentucky is no different than any other state. Listening to my colleagues ask questions about the status of the dairy industry, we have lost a lot of dairies.

Dr. DYKES. Yes, we did.

Mr. COMER. And when I talk to dairy farmers, they are always unhappy with the formula. And I am always thinking in the back of my mind, would dairy not be better off without a formula, without price support, without the government involvement, like beef, and pork, and poultry? I know that is a tough question to——

Mr. MULHERN. You may get different answers from the two of us.

Mr. COMER. Right.

Dr. DYKES. That is a tough question, and Jim will want to talk about that. It is a very tough one. How do we think about that, and how do we think about the future of dairy.

Mr. COMER. Yes.

Dr. DYKES. When I was a kid growing up in Adair County, every single neighbor milked cows.

Mr. COMER. That is right.

Dr. DYKES. And the last couple times I went home, the last neighbor sold their dairy cows.

Mr. COMER. There is one listed in the *Farmer's Pride* seems like every month, another dairy going out of business in Adair County, which is the second biggest dairy county in the state.

Dr. DYKES. Yes. And it just, it hurts when you see that happen.

Mr. COMER. Yes.

Dr. DYKES. Having been a practicing veterinarian, I watched them sell herd as well, and it hurts. It also hurts, though, when you see them just work so hard, I used to tell my clients, when you are selling cows to pay the feed bill, you and I could calculate how much longer you are going to be milking here. You have to think about what your other options are out there for you. It is a very tough question. That is why I am pleased to work collaborative with Jim. I have known Jim for 20 years, worked with the National Milk Producers Federation, to think about, where are we going to be in the out-years with this thing called dairy, and what are the things we could do today that will maybe make it better for some of the younger people that are coming in, and trying to make a living, and make a business out of milking cows and processing milk.

Mr. MULHERN. If I could, Mr. Comer, I would point out that we have made tremendous progress in evolving dairy programs in this country over the last 10, 15 years, and it has been an evolution. We don't have the kind of intervention in the marketplace that we used to have. What dairy farmers today need is a safety net to deal with those situations we can't control.

We couldn't control Russia invading Crimea, and then the U.S. and the EU responding to that, and Russia stopping importing dairy products from the EU, so the EU has to move those products into the world markets. We couldn't control China over-buying in 2014, and then pulling out of the world market in 2015, and having prices collapse. We now are exposed to these world markets, and they are difficult. It is a challenging time.

The MPP is a safety net program. We don't want intervention in the marketplace, but we do need support because, unlike beef and pork, we are harvesting every single day.

Mr. COMER. Yes.

Mr. MULHERN. Dairy farmers are price takers. We get what the market provides. And so that kind of situation we face does mandate the need for some sort of safety net to help deal with those highs and lows.

Dr. DYKES. That is one of the other reasons another part of that answer is: what is one of the incremental ways that we do that? That is one of the reasons we are asking to expand forward contracting for Class II, III, and IV, make that permanent, and expand it to include Class I milk, and we will work with Jim and National Milk on that. But it is to help take some of the volatility out of that, and to put some predictability around a price at a future point in time. I think back to my brothers in Adair County. Our beef cattle are sold before they ever leave the farm, and they have been sold for several months before.

Mr. COMER. Yes.

Dr. DYKES. Sometimes we are on the good side of that, and sometimes we are not, but at least we know where we are going to be down the road, and we can lock in a profit on those things.

Mr. COMER. Thank you.

The CHAIRMAN. The gentleman's time has expired. I thank our witnesses for being here today. It has been a very productive hearing. I too want to add my thanks for the emerging partnership between some competing folks that in the past have maybe not seen eye to eye. I hope the rest of production agriculture can see your example as we walk this hard path. This Committee is deeply committed to trying to address and fix the problem that has emerged out of the 2014 Farm Bill with the Margin Protection Program. How we go about that, we want you at the table. I know you want to be at the table. You will be.

As I mentioned in my comments earlier, I don't want expectations to outrun what we can actually get done, but Collin and I, and the rest of this Committee, as you have heard from our comments today, are deeply committed to make that happen, and I appreciate you working together to work on risk management tools. These aren't revenue sources, these are risk management tools, whether crop insurance or this one, allow the farmers to know where their risks are, and to hedge, in effect, against that. We want this tool to work. It has not worked. I am deeply troubled by CBO's scoring of what appears to be a relatively straightforward change to the program that was originally intended to be there, and we will continue to work on all this.

Under the Rules of the Committee, today's hearing will remain open for 10 calendar days to receive additional material, supplementary written responses from the witnesses to any question posed by a Member. This hearing of the Committee on Agriculture is adjourned. Thank you.

[Whereupon, at 12:08 p.m., the Committee was adjourned.]

[Material submitted for inclusion in the record follows:]

SUBMITTED CHART BY HON. COLLIN C. PETERSON, A REPRESENTATIVE IN CONGRESS FROM MINNESOTA

Mr. PETERSON. Well, I have, and I have put together a chart here that has a month by month breakdown of what the margin was, and I have done it based on what the current law is, and what it was originally. And there is only one bi-monthly period since the bill has gone into effect that we have had a payment, and is part of the reason we don't have participation.

MPP Payments for Margin Coverage Levels

Year	Month	MPP-Dairy Margin	$8.00	$7.50	$7.00	$6.50	$6.00	$5.50	$5.00	$4.50	$4.00	MILC Payments
2000	Jan.	$7.04	$0.96	$0.46	$0.00	$0.00	$0.00	$0.00	$0.00	$0.00	$0.00	
2000	Feb.	$6.66	$1.34	$0.84	$0.34	$0.00	$0.00	$0.00	$0.00	$0.00	$0.00	
2000	Mar.	$6.54	$1.46	$0.96	$0.46	$0.00	$0.00	$0.00	$0.00	$0.00	$0.00	
2000	Apr.	$6.56	$1.44	$0.94	$0.44	$0.00	$0.00	$0.00	$0.00	$0.00	$0.00	
2000	May	$6.41	$1.59	$1.09	$0.59	$0.09	$0.00	$0.00	$0.00	$0.00	$0.00	
2000	Jun.	$7.15	$0.85	$0.35	$0.00	$0.00	$0.00	$0.00	$0.00	$0.00	$0.00	
2000	Jul.	$7.98	$0.02	$0.00	$0.00	$0.00	$0.00	$0.00	$0.00	$0.00	$0.00	
2000	Aug.	$7.96	$0.04	$0.00	$0.00	$0.00	$0.00	$0.00	$0.00	$0.00	$0.00	
2000	Sep.	$8.09	$0.00	$0.00	$0.00	$0.00	$0.00	$0.00	$0.00	$0.00	$0.00	
2000	Oct.	$7.32	$0.68	$0.18	$0.00	$0.00	$0.00	$0.00	$0.00	$0.00	$0.00	
2000	Nov.	$7.14	$0.86	$0.36	$0.00	$0.00	$0.00	$0.00	$0.00	$0.00	$0.00	
2000	Dec.	$7.46	$0.54	$0.04	$0.00	$0.00	$0.00	$0.00	$0.00	$0.00	$0.00	
2001	Jan.	$7.54	$0.46	$0.00	$0.00	$0.00	$0.00	$0.00	$0.00	$0.00	$0.00	
2001	Feb.	$7.82	$0.18	$0.00	$0.00	$0.00	$0.00	$0.00	$0.00	$0.00	$0.00	
2001	Mar.	$8.66	$0.00	$0.00	$0.00	$0.00	$0.00	$0.00	$0.00	$0.00	$0.00	
2001	Apr.	$9.27	$0.00	$0.00	$0.00	$0.00	$0.00	$0.00	$0.00	$0.00	$0.00	
2001	May	$10.16	$0.00	$0.00	$0.00	$0.00	$0.00	$0.00	$0.00	$0.00	$0.00	
2001	Jun.	$10.90	$0.00	$0.00	$0.00	$0.00	$0.00	$0.00	$0.00	$0.00	$0.00	
2001	Jul.	$10.61	$0.00	$0.00	$0.00	$0.00	$0.00	$0.00	$0.00	$0.00	$0.00	
2001	Aug.	$10.82	$0.00	$0.00	$0.00	$0.00	$0.00	$0.00	$0.00	$0.00	$0.00	
2001	Sep.	$11.45	$0.00	$0.00	$0.00	$0.00	$0.00	$0.00	$0.00	$0.00	$0.00	
2001	Oct.	$10.21	$0.00	$0.00	$0.00	$0.00	$0.00	$0.00	$0.00	$0.00	$0.00	
2001	Nov.	$8.91	$0.00	$0.00	$0.00	$0.00	$0.00	$0.00	$0.00	$0.00	$0.00	
2001	Dec.	$8.04	$0.00	$0.00	$0.00	$0.00	$0.00	$0.00	$0.00	$0.00	$0.00	$0.77
2002	Jan.	$8.22	$0.00	$0.00	$0.00	$0.00	$0.00	$0.00	$0.00	$0.00	$0.00	$0.78
2002	Feb.	$7.82	$0.18	$0.00	$0.00	$0.00	$0.00	$0.00	$0.00	$0.00	$0.00	$0.78
2002	Mar.	$7.25	$0.75	$0.25	$0.00	$0.00	$0.00	$0.00	$0.00	$0.00	$0.00	$0.93
2002	Apr.	$7.12	$0.88	$0.38	$0.00	$0.00	$0.00	$0.00	$0.00	$0.00	$0.00	$1.00
2002	May	$6.56	$1.44	$0.94	$0.44	$0.00	$0.00	$0.00	$0.00	$0.00	$0.00	$1.09
2002	Jun.	$5.97	$2.03	$1.53	$1.03	$0.53	$0.03	$0.00	$0.00	$0.00	$0.00	$1.20
2002	Jul.	$5.18	$2.82	$2.32	$1.82	$1.32	$0.82	$0.32	$0.00	$0.00	$0.00	$1.38
2002	Aug.	$5.04	$2.96	$2.46	$1.96	$1.46	$0.96	$0.46	$0.00	$0.00	$0.00	$1.44
2002	Sep.	$5.24	$2.76	$2.26	$1.76	$1.26	$0.76	$0.26	$0.00	$0.00	$0.00	$1.45
2002	Oct.	$6.05	$1.95	$1.45	$0.95	$0.45	$0.00	$0.00	$0.00	$0.00	$0.00	$1.59
2002	Nov.	$6.01	$1.99	$1.49	$0.99	$0.49	$0.00	$0.00	$0.00	$0.00	$0.00	$1.39
2002	Dec.	$6.09	$1.91	$1.41	$0.91	$0.41	$0.00	$0.00	$0.00	$0.00	$0.00	$1.43
2003	Jan.	$5.99	$2.01	$1.51	$1.01	$0.51	$0.01	$0.00	$0.00	$0.00	$0.00	$1.41
2003	Feb.	$5.40	$2.60	$2.10	$1.60	$1.10	$0.60	$0.10	$0.00	$0.00	$0.00	$1.56
2003	Mar.	$5.11	$2.89	$2.39	$1.89	$1.39	$0.89	$0.39	$0.00	$0.00	$0.00	$1.75
2003	Apr.	$5.00	$3.00	$2.50	$2.00	$1.50	$1.00	$0.50	$0.00	$0.00	$0.00	$1.82
2003	May	$4.77	$3.23	$2.73	$2.23	$1.73	$1.23	$0.73	$0.23	$0.00	$0.00	$1.79
2003	Jun.	$4.86	$3.14	$2.64	$2.14	$1.64	$1.14	$0.64	$0.14	$0.00	$0.00	$1.78
2003	Jul.	$6.36	$1.64	$1.14	$0.64	$0.14	$0.00	$0.00	$0.00	$0.00	$0.00	$1.76
2003	Aug.	$7.56	$0.44	$0.00	$0.00	$0.00	$0.00	$0.00	$0.00	$0.00	$0.00	$1.22
2003	Sep.	$8.59	$0.00	$0.00	$0.00	$0.00	$0.00	$0.00	$0.00	$0.00	$0.00	$0.00
2003	Oct.	$9.04	$0.00	$0.00	$0.00	$0.00	$0.00	$0.00	$0.00	$0.00	$0.00	$0.00
2003	Nov.	$8.17	$0.00	$0.00	$0.00	$0.00	$0.00	$0.00	$0.00	$0.00	$0.00	$0.00
2003	Dec.	$7.57	$0.43	$0.00	$0.00	$0.00	$0.00	$0.00	$0.00	$0.00	$0.00	$0.00
2004	Jan.	$6.65	$1.35	$0.85	$0.35	$0.00	$0.00	$0.00	$0.00	$0.00	$0.00	$0.83
2004	Feb.	$6.76	$1.24	$0.74	$0.24	$0.00	$0.00	$0.00	$0.00	$0.00	$0.00	$0.95
2004	Mar.	$8.08	$0.00	$0.00	$0.00	$0.00	$0.00	$0.00	$0.00	$0.00	$0.00	$0.79
2004	Apr.	$10.36	$0.00	$0.00	$0.00	$0.00	$0.00	$0.00	$0.00	$0.00	$0.00	$0.02
2004	May	$11.50	$0.00	$0.00	$0.00	$0.00	$0.00	$0.00	$0.00	$0.00	$0.00	$0.00
2004	Jun.	$10.80	$0.00	$0.00	$0.00	$0.00	$0.00	$0.00	$0.00	$0.00	$0.00	$0.00
2004	Jul.	$9.37	$0.00	$0.00	$0.00	$0.00	$0.00	$0.00	$0.00	$0.00	$0.00	$0.00
2004	Aug.	$8.87	$0.00	$0.00	$0.00	$0.00	$0.00	$0.00	$0.00	$0.00	$0.00	$0.00
2004	Sep.	$9.97	$0.00	$0.00	$0.00	$0.00	$0.00	$0.00	$0.00	$0.00	$0.00	$0.00
2004	Oct.	$10.53	$0.00	$0.00	$0.00	$0.00	$0.00	$0.00	$0.00	$0.00	$0.00	$0.00
2004	Nov.	$11.15	$0.00	$0.00	$0.00	$0.00	$0.00	$0.00	$0.00	$0.00	$0.00	$0.00
2004	Dec.	$11.18	$0.00	$0.00	$0.00	$0.00	$0.00	$0.00	$0.00	$0.00	$0.00	$0.00
2005	Jan.	$10.83	$0.00	$0.00	$0.00	$0.00	$0.00	$0.00	$0.00	$0.00	$0.00	$0.00
2005	Feb.	$10.09	$0.00	$0.00	$0.00	$0.00	$0.00	$0.00	$0.00	$0.00	$0.00	$0.00
2005	Mar.	$9.89	$0.00	$0.00	$0.00	$0.00	$0.00	$0.00	$0.00	$0.00	$0.00	$0.00
2005	Apr.	$9.47	$0.00	$0.00	$0.00	$0.00	$0.00	$0.00	$0.00	$0.00	$0.00	$0.00
2005	May	$8.79	$0.00	$0.00	$0.00	$0.00	$0.00	$0.00	$0.00	$0.00	$0.00	$0.00
2005	Jun.	$8.36	$0.00	$0.00	$0.00	$0.00	$0.00	$0.00	$0.00	$0.00	$0.00	$0.03
2005	Jul.	$8.53	$0.00	$0.00	$0.00	$0.00	$0.00	$0.00	$0.00	$0.00	$0.00	$0.00
2005	Aug.	$8.92	$0.00	$0.00	$0.00	$0.00	$0.00	$0.00	$0.00	$0.00	$0.00	$0.00
2005	Sep.	$9.96	$0.00	$0.00	$0.00	$0.00	$0.00	$0.00	$0.00	$0.00	$0.00	$0.00
2005	Oct.	$10.29	$0.00	$0.00	$0.00	$0.00	$0.00	$0.00	$0.00	$0.00	$0.00	$0.00
2005	Nov.	$9.83	$0.00	$0.00	$0.00	$0.00	$0.00	$0.00	$0.00	$0.00	$0.00	$0.00
2005	Dec.	$9.22	$0.00	$0.00	$0.00	$0.00	$0.00	$0.00	$0.00	$0.00	$0.00	$0.04
2006	Jan.	$8.84	$0.00	$0.00	$0.00	$0.00	$0.00	$0.00	$0.00	$0.00	$0.00	$0.11

MPP Payments for Margin Coverage Levels—Continued

Year	Month	MPP-Dairy Margin	$8.00	$7.50	$7.00	$6.50	$6.00	$5.50	$5.00	$4.50	$4.00	MILC Payments
2006	Feb.	$7.87	$0.13	$0.00	$0.00	$0.00	$0.00	$0.00	$0.00	$0.00	$0.00	$0.11
2006	Mar.	$6.97	$1.03	$0.53	$0.03	$0.00	$0.00	$0.00	$0.00	$0.00	$0.00	$0.41
2006	Apr.	$6.07	$1.93	$1.43	$0.93	$0.43	$0.00	$0.00	$0.00	$0.00	$0.00	$0.84
2006	May	$5.86	$2.14	$1.64	$1.14	$0.64	$0.14	$0.00	$0.00	$0.00	$0.00	$0.92
2006	Jun.	$5.96	$2.04	$1.54	$1.04	$0.54	$0.04	$0.00	$0.00	$0.00	$0.00	$1.00
2006	Jul.	$5.77	$2.23	$1.73	$1.23	$0.73	$0.23	$0.00	$0.00	$0.00	$0.00	$0.80
2006	Aug.	$6.36	$1.64	$1.14	$0.64	$0.14	$0.00	$0.00	$0.00	$0.00	$0.00	$0.92
2006	Sep.	$7.05	$0.95	$0.45	$0.00	$0.00	$0.00	$0.00	$0.00	$0.00	$0.00	$0.97
2006	Oct.	$6.67	$1.33	$0.83	$0.33	$0.00	$0.00	$0.00	$0.00	$0.00	$0.00	$0.43
2006	Nov.	$6.27	$1.73	$1.23	$0.73	$0.23	$0.00	$0.00	$0.00	$0.00	$0.00	$0.44
2006	Dec.	$6.56	$1.44	$0.94	$0.44	$0.00	$0.00	$0.00	$0.00	$0.00	$0.00	$0.43
2007	Jan.	$6.59	$1.41	$0.91	$0.41	$0.00	$0.00	$0.00	$0.00	$0.00	$0.00	$0.03
2007	Feb.	$6.50	$1.50	$1.00	$0.50	$0.00	$0.00	$0.00	$0.00	$0.00	$0.00	$0.10
2007	Mar.	$7.28	$0.72	$0.22	$0.00	$0.00	$0.00	$0.00	$0.00	$0.00	$0.00	$0.00
2007	Apr.	$8.70	$0.00	$0.00	$0.00	$0.00	$0.00	$0.00	$0.00	$0.00	$0.00	$0.00
2007	May	$9.73	$0.00	$0.00	$0.00	$0.00	$0.00	$0.00	$0.00	$0.00	$0.00	$0.00
2007	Jun.	$11.67	$0.00	$0.00	$0.00	$0.00	$0.00	$0.00	$0.00	$0.00	$0.00	$0.00
2007	Jul.	$13.90	$0.00	$0.00	$0.00	$0.00	$0.00	$0.00	$0.00	$0.00	$0.00	$0.00
2007	Aug.	$13.85	$0.00	$0.00	$0.00	$0.00	$0.00	$0.00	$0.00	$0.00	$0.00	$0.00
2007	Sep.	$13.70	$0.00	$0.00	$0.00	$0.00	$0.00	$0.00	$0.00	$0.00	$0.00	$0.00
2007	Oct.	$13.00	$0.00	$0.00	$0.00	$0.00	$0.00	$0.00	$0.00	$0.00	$0.00	$0.00
2007	Nov.	$12.85	$0.00	$0.00	$0.00	$0.00	$0.00	$0.00	$0.00	$0.00	$0.00	$0.00
2007	Dec.	$11.82	$0.00	$0.00	$0.00	$0.00	$0.00	$0.00	$0.00	$0.00	$0.00	$0.00
2008	Jan.	$9.97	$0.00	$0.00	$0.00	$0.00	$0.00	$0.00	$0.00	$0.00	$0.00	$0.00
2008	Feb.	$8.02	$0.00	$0.00	$0.00	$0.00	$0.00	$0.00	$0.00	$0.00	$0.00	$0.00
2008	Mar.	$6.69	$1.31	$0.81	$0.31	$0.00	$0.00	$0.00	$0.00	$0.00	$0.00	$0.00
2008	Apr.	$6.17	$1.83	$1.33	$0.83	$0.33	$0.00	$0.00	$0.00	$0.00	$0.00	$0.00
2008	May	$6.04	$1.96	$1.46	$0.96	$0.46	$0.00	$0.00	$0.00	$0.00	$0.00	$0.00
2008	Jun.	$5.40	$2.60	$2.10	$1.60	$1.10	$0.60	$0.10	$0.00	$0.00	$0.00	$0.00
2008	Jul.	$5.89	$2.11	$1.61	$1.11	$0.61	$0.11	$0.00	$0.00	$0.00	$0.00	$0.00
2008	Aug.	$6.42	$1.58	$1.08	$0.58	$0.08	$0.00	$0.00	$0.00	$0.00	$0.00	$0.00
2008	Sep.	$6.30	$1.70	$1.20	$0.70	$0.20	$0.00	$0.00	$0.00	$0.00	$0.00	$0.00
2008	Oct.	$8.34	$0.00	$0.00	$0.00	$0.00	$0.00	$0.00	$0.00	$0.00	$0.00	$0.00
2008	Nov.	$8.00	$0.00	$0.00	$0.00	$0.00	$0.00	$0.00	$0.00	$0.00	$0.00	$0.00
2008	Dec.	$6.71	$1.29	$0.79	$0.29	$0.00	$0.00	$0.00	$0.00	$0.00	$0.00	$0.00
2009	Jan.	$3.91	$4.09	$3.59	$3.09	$2.59	$2.09	$1.59	$1.09	$0.59	$0.09	$0.00
2009	Feb.	$2.55	$5.45	$4.95	$4.45	$3.95	$3.45	$2.95	$2.45	$1.95	$1.45	$1.49
2009	Mar.	$2.60	$5.40	$4.90	$4.40	$3.90	$3.40	$2.90	$2.40	$1.90	$1.40	$2.01
2009	Apr.	$2.53	$5.47	$4.97	$4.47	$3.97	$3.47	$2.97	$2.47	$1.97	$1.47	$1.58
2009	May	$1.42	$6.58	$6.08	$5.58	$5.08	$4.58	$4.08	$3.58	$3.08	$2.58	$1.42
2009	Jun.	$1.00	$7.00	$6.50	$6.00	$5.50	$5.00	$4.50	$4.00	$3.50	$3.00	$1.78
2009	Jul.	$2.37	$5.63	$5.13	$4.63	$4.13	$3.63	$3.13	$2.63	$2.13	$1.63	$1.43
2009	Aug.	$3.03	$4.97	$4.47	$3.97	$3.47	$2.97	$2.47	$1.97	$1.47	$0.97	$1.34
2009	Sep.	$4.31	$3.69	$3.19	$2.69	$2.19	$1.69	$1.19	$0.69	$0.19	$0.00	$0.84
2009	Oct.	$5.47	$2.53	$2.03	$1.53	$1.03	$0.53	$0.03	$0.00	$0.00	$0.00	$0.60
2009	Nov.	$6.38	$1.62	$1.12	$0.62	$0.12	$0.00	$0.00	$0.00	$0.00	$0.00	$0.37
2009	Dec.	$7.52	$0.48	$0.00	$0.00	$0.00	$0.00	$0.00	$0.00	$0.00	$0.00	$0.00
2010	Jan.	$7.28	$0.72	$0.22	$0.00	$0.00	$0.00	$0.00	$0.00	$0.00	$0.00	$0.00
2010	Feb.	$7.32	$0.68	$0.18	$0.00	$0.00	$0.00	$0.00	$0.00	$0.00	$0.00	$0.00
2010	Mar.	$6.41	$1.59	$1.09	$0.59	$0.09	$0.00	$0.00	$0.00	$0.00	$0.00	$0.00
2010	Apr.	$6.25	$1.75	$1.25	$0.75	$0.25	$0.00	$0.00	$0.00	$0.00	$0.00	$0.21
2010	May	$6.46	$1.54	$1.04	$0.54	$0.04	$0.00	$0.00	$0.00	$0.00	$0.00	$0.00
2010	Jun.	$6.96	$1.04	$0.54	$0.04	$0.00	$0.00	$0.00	$0.00	$0.00	$0.00	$0.00
2010	Jul.	$7.05	$0.95	$0.45	$0.00	$0.00	$0.00	$0.00	$0.00	$0.00	$0.00	$0.00
2010	Aug.	$7.43	$0.57	$0.07	$0.00	$0.00	$0.00	$0.00	$0.00	$0.00	$0.00	$0.00
2010	Sep.	$7.60	$0.40	$0.00	$0.00	$0.00	$0.00	$0.00	$0.00	$0.00	$0.00	$0.00
2010	Oct.	$7.57	$0.43	$0.00	$0.00	$0.00	$0.00	$0.00	$0.00	$0.00	$0.00	$0.00
2010	Nov.	$6.69	$1.31	$0.81	$0.31	$0.00	$0.00	$0.00	$0.00	$0.00	$0.00	$0.00
2010	Dec.	$4.92	$3.08	$2.58	$2.08	$1.58	$1.08	$0.58	$0.08	$0.00	$0.00	$0.00
2011	Jan.	$4.31	$3.69	$3.19	$2.69	$2.19	$1.69	$1.19	$0.69	$0.19	$0.00	$0.00
2011	Feb.	$5.98	$2.02	$1.52	$1.02	$0.52	$0.02	$0.00	$0.00	$0.00	$0.00	$0.01
2011	Mar.	$6.81	$1.19	$0.69	$0.19	$0.00	$0.00	$0.00	$0.00	$0.00	$0.00	$0.00
2011	Apr.	$5.48	$2.52	$2.02	$1.52	$1.02	$0.52	$0.02	$0.00	$0.00	$0.00	$0.00
2011	May	$5.06	$2.94	$2.44	$1.94	$1.44	$0.94	$0.44	$0.00	$0.00	$0.00	$0.00
2011	Jun.	$6.74	$1.26	$0.76	$0.26	$0.00	$0.00	$0.00	$0.00	$0.00	$0.00	$0.00
2011	Jul.	$7.22	$0.78	$0.28	$0.00	$0.00	$0.00	$0.00	$0.00	$0.00	$0.00	$0.00
2011	Aug.	$7.57	$0.43	$0.00	$0.00	$0.00	$0.00	$0.00	$0.00	$0.00	$0.00	$0.00
2011	Sep.	$7.21	$0.79	$0.29	$0.00	$0.00	$0.00	$0.00	$0.00	$0.00	$0.00	$0.00
2011	Oct.	$6.66	$1.34	$0.84	$0.34	$0.00	$0.00	$0.00	$0.00	$0.00	$0.00	$0.00
2011	Nov.	$7.61	$0.39	$0.00	$0.00	$0.00	$0.00	$0.00	$0.00	$0.00	$0.00	$0.00
2011	Dec.	$6.86	$1.14	$0.64	$0.14	$0.00	$0.00	$0.00	$0.00	$0.00	$0.00	$0.00
2012	Jan.	$5.59	$2.41	$1.91	$1.41	$0.91	$0.41	$0.00	$0.00	$0.00	$0.00	$0.00
2012	Feb.	$4.02	$3.98	$3.48	$2.98	$2.48	$1.98	$1.48	$0.98	$0.48	$0.00	$0.35
2012	Mar.	$3.29	$4.71	$4.21	$3.71	$3.21	$2.71	$2.21	$1.71	$1.21	$0.71	$0.82
2012	Apr.	$2.58	$5.42	$4.92	$4.42	$3.92	$3.42	$2.92	$2.42	$1.92	$1.42	$1.25
2012	May	$1.71	$6.29	$5.79	$5.29	$4.79	$4.29	$3.79	$3.29	$2.79	$2.29	$1.22
2012	Jun.	$0.89	$7.11	$6.61	$6.11	$5.61	$5.11	$4.61	$4.11	$3.61	$3.11	$1.41
2012	Jul.	−$0.17	$8.17	$7.67	$7.17	$6.67	$6.17	$5.67	$5.17	$4.67	$4.17	$1.69
2012	Aug.	$0.82	$7.18	$6.68	$6.18	$5.68	$5.18	$4.68	$4.18	$3.68	$3.18	$1.48
2012	Sep.	$2.99	$5.01	$4.51	$4.01	$3.51	$3.01	$2.51	$2.01	$1.51	$1.01	$0.60
2012	Oct.	$5.38	$2.62	$2.12	$1.62	$1.12	$0.62	$0.12	$0.00	$0.00	$0.00	$0.03
2012	Nov.	$6.18	$1.82	$1.32	$0.82	$0.32	$0.00	$0.00	$0.00	$0.00	$0.00	$0.00
2012	Dec.	$4.98	$3.02	$2.52	$2.02	$1.52	$1.02	$0.52	$0.02	$0.00	$0.00	$0.00
2013	Jan.	$4.38	$3.62	$3.12	$2.62	$2.12	$1.62	$1.12	$0.62	$0.12	$0.00	$0.12

MPP Payments for Margin Coverage Levels—Continued

Year	Month	MPP-Dairy Margin	$8.00	$7.50	$7.00	$6.50	$6.00	$5.50	$5.00	$4.50	$4.00	MILC Payments
2013	Feb.	$3.79	$4.21	$3.71	$3.21	$2.71	$2.21	$1.71	$1.21	$0.71	$0.21	$0.52
2013	Mar.	$3.19	$4.81	$4.31	$3.81	$3.31	$2.81	$2.31	$1.81	$1.31	$0.81	$0.75
2013	Apr.	$4.69	$3.31	$2.81	$2.31	$1.81	$1.31	$0.81	$0.31	$0.00	$0.00	$0.68
2013	May	$4.12	$3.88	$3.38	$2.88	$2.38	$1.88	$1.38	$0.88	$0.38	$0.00	$0.72
2013	Jun.	$3.60	$4.40	$3.90	$3.40	$2.90	$2.40	$1.90	$1.40	$0.90	$0.40	$0.20
2013	Jul.	$3.38	$4.62	$4.12	$3.62	$3.12	$2.62	$2.12	$1.62	$1.12	$0.62	$0.03
2013	Aug.	$5.36	$2.64	$2.14	$1.64	$1.14	$0.64	$0.14	$0.00	$0.00	$0.00	$0.00
2013	Sep.	$7.11	$0.89	$0.39	$0.00	$0.00	$0.00	$0.00	$0.00	$0.00	$0.00	$0.00
2013	Oct.	$9.05	$0.00	$0.00	$0.00	$0.00	$0.00	$0.00	$0.00	$0.00	$0.00	$0.00
2013	Nov.	$9.85	$0.00	$0.00	$0.00	$0.00	$0.00	$0.00	$0.00	$0.00	$0.00	$0.00
2013	Dec.	$9.97	$0.00	$0.00	$0.00	$0.00	$0.00	$0.00	$0.00	$0.00	$0.00	$0.00
2014	Jan.	$11.60	$0.00	$0.00	$0.00	$0.00	$0.00	$0.00	$0.00	$0.00	$0.00	$0.00
2014	Feb.	$12.44	$0.00	$0.00	$0.00	$0.00	$0.00	$0.00	$0.00	$0.00	$0.00	$0.00
2014	Mar.	$12.52	$0.00	$0.00	$0.00	$0.00	$0.00	$0.00	$0.00	$0.00	$0.00	$0.00
2014	Apr.	$11.89	$0.00	$0.00	$0.00	$0.00	$0.00	$0.00	$0.00	$0.00	$0.00	$0.00
2014	May	$10.63	$0.00	$0.00	$0.00	$0.00	$0.00	$0.00	$0.00	$0.00	$0.00	$0.00
2014	Jun.	$10.25	$0.00	$0.00	$0.00	$0.00	$0.00	$0.00	$0.00	$0.00	$0.00	$0.00
2014	Jul.	$11.53	$0.00	$0.00	$0.00	$0.00	$0.00	$0.00	$0.00	$0.00	$0.00	$0.00
2014	Aug.	$12.26	$0.00	$0.00	$0.00	$0.00	$0.00	$0.00	$0.00	$0.00	$0.00	$0.00
2014	Sep.	$14.28	$0.00	$0.00	$0.00	$0.00	$0.00	$0.00	$0.00	$0.00	$0.00	$0.00
2014	Oct.	$15.01	$0.00	$0.00	$0.00	$0.00	$0.00	$0.00	$0.00	$0.00	$0.00	$0.00
2014	Nov.	$12.15	$0.00	$0.00	$0.00	$0.00	$0.00	$0.00	$0.00	$0.00	$0.00	$0.00
2014	Dec.	$9.31	$0.00	$0.00	$0.00	$0.00	$0.00	$0.00	$0.00	$0.00	$0.00	$0.00
2015	Jan.	$7.18	$0.82	$0.32	$0.00	$0.00	$0.00	$0.00	$0.00	$0.00	$0.00	$0.00
2015	Feb.	$6.48	$1.52	$1.02	$0.52	$0.02	$0.00	$0.00	$0.00	$0.00	$0.00	$0.00
2015	Mar.	$6.39	$1.61	$1.11	$0.61	$0.11	$0.00	$0.00	$0.00	$0.00	$0.00	$0.00
2015	Apr.	$6.35	$1.65	$1.15	$0.65	$0.15	$0.00	$0.00	$0.00	$0.00	$0.00	$0.00
2015	May	$6.68	$1.32	$0.82	$0.32	$0.00	$0.00	$0.00	$0.00	$0.00	$0.00	$0.00
2015	Jun.	$6.91	$1.09	$0.59	$0.09	$0.00	$0.00	$0.00	$0.00	$0.00	$0.00	$0.00
2015	Jul.	$6.13	$1.87	$1.37	$0.87	$0.37	$0.00	$0.00	$0.00	$0.00	$0.00	$0.00
2015	Aug.	$6.88	$1.12	$0.62	$0.12	$0.00	$0.00	$0.00	$0.00	$0.00	$0.00	$0.00
2015	Sep.	$7.85	$0.15	$0.00	$0.00	$0.00	$0.00	$0.00	$0.00	$0.00	$0.00	$0.00
2015	Oct.	$8.17	$0.00	$0.00	$0.00	$0.00	$0.00	$0.00	$0.00	$0.00	$0.00	$0.00
2015	Nov.	$8.84	$0.00	$0.00	$0.00	$0.00	$0.00	$0.00	$0.00	$0.00	$0.00	$0.00
2015	Dec.	$8.00	$0.00	$0.00	$0.00	$0.00	$0.00	$0.00	$0.00	$0.00	$0.00	$0.00
2016	Jan.	$7.09	$0.91	$0.41	$0.00	$0.00	$0.00	$0.00	$0.00	$0.00	$0.00	$0.00
2016	Feb.	$6.76	$1.24	$0.74	$0.24	$0.00	$0.00	$0.00	$0.00	$0.00	$0.00	$0.00
2016	Mar.	$6.34	$1.66	$1.16	$0.66	$0.16	$0.00	$0.00	$0.00	$0.00	$0.00	$0.00
2016	Apr.	$5.66	$2.34	$1.84	$1.34	$0.84	$0.34	$0.00	$0.00	$0.00	$0.00	$0.09
2016	May	$4.48	$3.52	$3.02	$2.52	$2.02	$1.52	$1.02	$0.52	$0.02	$0.00	$0.14
2016	Jun.	$4.36	$3.64	$3.14	$2.64	$2.14	$1.64	$1.14	$0.64	$0.14	$0.00	$0.43
2016	Jul.	$6.72	$1.28	$0.78	$0.28	$0.00	$0.00	$0.00	$0.00	$0.00	$0.00	$0.07
2016	Aug.	$8.26	$0.00	$0.00	$0.00	$0.00	$0.00	$0.00	$0.00	$0.00	$0.00	$0.00
2016	Sep.	$8.54	$0.00	$0.00	$0.00	$0.00	$0.00	$0.00	$0.00	$0.00	$0.00	$0.00
2016	Oct.	$7.79	$0.21	$0.00	$0.00	$0.00	$0.00	$0.00	$0.00	$0.00	$0.00	$0.00
2016	Nov.	$8.82	$0.00	$0.00	$0.00	$0.00	$0.00	$0.00	$0.00	$0.00	$0.00	$0.00
2016	Dec.	$10.01	$0.00	$0.00	$0.00	$0.00	$0.00	$0.00	$0.00	$0.00	$0.00	$0.00
2017	Jan.	$9.90	$0.00	$0.00	$0.00	$0.00	$0.00	$0.00	$0.00	$0.00	$0.00	$0.00

SUBMITTED LETTER BY HON. JAMES P. MCGOVERN, A REPRESENTATIVE IN CONGRESS FROM MASSACHUSETTS; ON BEHALF OF BEN BURKETT, BOARD PRESIDENT; LISA GRIFFITH, ACTING EXECUTIVE DIRECTOR, NATIONAL FAMILY FARM COALITION

March 22, 2017

Hon. K. MICHAEL CONAWAY,
Chairman,
House Committee on Agriculture,
Washington, D.C.;

Hon. COLLIN C. PETERSON,
Ranking Minority Member,
House Committee on Agriculture,
Washington, D.C.

Dear Chairman Conaway and Ranking Member Peterson:

Thank you for convening a hearing into the vital issues facing American dairy farmers today. As Chairman Conaway said in his opening statement to the Agriculture Committee on February 1, 2017: "Over the past 3 years, we've seen a 46 percent decrease in net farm income, the largest 3 year percentage drop since the Great Depression."

Certainly one of the sectors to have experienced that drop in income is the dairy sector. Last June, the price paid to dairy farmers averaged about $15 per 100 pounds (CWT)—a drop in price of more than 40 percent from 2014—but the estimated cost to produce that milk was $22 per CWT. Is it surprising that the U.S. has lost more than 90 percent of its dairy farms since 1970, from 640,000 to fewer than 50,000 today?

Unfortunately, it appears that legislation passed by various sessions of Congress has contributed to this situation. In 1981, Congress froze the dairy support price

at $13.10 per CWT, and continued to lower the milk support price to its last level of $9.90 per CWT. In 1991, Congress consolidated the Federal Milk Marketing Orders and eliminated some of the important provisions found in various Orders that provided a necessary safety net to the often perilous volatility in farmgate milk prices. The 2014 Farm Bill eliminated the MILC (milk price support) program and established the Milk Margin Insurance Program, one that has cost taxpayers as well as dairy farmers money instead of ensuring a fair milk price.

NFFC dairy farmers have long promoted (1) a new pricing formula and (2) a milk supply management program funded by dairy farmers. The Federal Milk Marketing Improvement Act, introduced several times in the Senate by Senators Arlen Specter and Bob Casey since 2007, included both provisions.

As Congress prepares to develop the 2018 Farm Bill, the National Family Farm Coalition urges the House Agriculture Committee to correct some of the inequities facing dairy farmers today by including the Federal Milk Marketing Improvement Act in the upcoming farm bill. As Senator Casey outlined in his 18 point summary (below), the inventory supply management program would be farmer-funded, costing USDA no additional monies, and prevent foreign milk products from destroying dairy farmer prices. A dairy farmer's reward for funding the program would be a fair and stable milk price, the first in many decades. Thank you for your consideration.

Sincerely,

BEN BURKETT,
Board President;

LISA GRIFFITH,
Acting Executive Director.

ATTACHMENT

The Following Is a Summary of: "The Federal Milk Marketing Improvement Act Of 2011"—The Casey Bill: S. 1640

(1) **All** milk produced in the United States will be priced on the national average cost of producing milk on the dairy farms.

(2) **All** milk used for fluid purposes will be classified as Class I.

(3) **All** milk used for manufacturing purposes will be classified as Class II.

(4) The Class II price will be the national average cost of production. This price will be uniform in all Federal and state Orders as well as unregulated areas. The Class I price will be determined by using the Class II price plus the existing Class I differentials that are currently in place in each Federal Order. The State of California and other unregulated areas will be assigned a Class I differential by the U.S. Secretary of Agriculture.

(5) **All** Federal and State Milk Marketing Orders will remain intact. Each Milk Marketing Order will be responsible for determining the component value of milk.

(6) This Proposal prohibits any cost of operating milk manufacturing plants (commonly called "Make Allowance") to be levied on dairy farmers.

(7) The U.S. Secretary of Agriculture will adjust the value of milk four times a year.

(8) This Proposal calls for an inventory supply management program. The program is aimed at preventing a build-up of domestic milk products and prevents foreign milk products from destroying dairy farmer prices.

(9) The inventory management program cannot be implemented unless the exports of dairy products exceed the imports of dairy products.

(10) **All** dairy farmers will fund the inventory management program. If and only if the program is necessary, then all dairy farmers will receive a lower price on up to 5% of their production. This price will be ½ of the value of manufactured milk. However, the dairy farmers will receive the correct price on 95% of their milk. Please remember if the inventory management program is not implemented, then the dairy farmers will receive the full price. Also, the U.S. Secretary of Agriculture may decide that only a reduction of one or two percent of total production may be sufficient.

(11) If this reduction is insufficient to reduce excess production, the Secretary shall reduce the price for producers who have increased production over the average production of the three (3) previous years. This reduction only applies to the volume of increased production.

(12) A new producer may produce milk up to 3 million pounds in the Milk Marketing Order he is regulated under before he is subject to the provisions of the in-

ventory management program described in point (11) This relates only to his first year.

(13) The intent of this Proposal is not to tell dairy farmers how much milk they can produce. However, over-production will be addressed in the inventory management program.

(14) An inventory management program is necessary to prevent a small amount of milk from forcing $20.00 per hundredweight milk down to $12.00 per cwt.

(15) The beauty of this Proposal is that this program will be farmer-funded and will **not** cost the USDA any direct cost. The dairy farmer's reward for funding the program (if necessary) is for the first time the dairy farmers will receive fair/stable prices for his/her efforts.

(16) Rejection of proposed FMMO amendments will not result in the elimination of the FMMO.

(17) This Proposal allows milk hauling charges to be levied on dairy farmers. The cost of production figures by the USDA pick up the hauling charges. Again, the dairy farmers' hauling costs are in the cost of production figures.

(18) This Proposal mandates that the Secretary of Agriculture must notify both the Senate and the House Agriculture Committees before he can implement the supply management provision and/or before he can make any adjustment to the milk price paid to dairy farmers.

SUPPLEMENTARY MATERIAL SUBMITTED BY MICHAEL D. DYKES, D.V.M., PRESIDENT AND CHIEF EXECUTIVE OFFICER, INTERNATIONAL DAIRY FOODS ASSOCIATION

Insert

Mr. FASO. . . .

Dr. Dykes, you had mentioned the letters that you had sent, you and Mr. Mulhern jointly, relating to the Canada issue, and that is one that also has raised concern for dairy farmers in New York State.

Dr. DYKES. Yes.

Mr. FASO. And I would appreciate if you could make that available to members of the Committee, and to me those correspondence.

Dr. DYKES. We will do that, sir.

September 12, 2016

Hon. STEVEN CIOBO,
Minister for Trade, Tourism and Investment,
Parliament House,
Canberra ACT;

Hon. ILDEFONSO GUAJARDO,
Mexico Secretary of Economy,
Col. Juárez, Del. Cuauhtémoc, Ciudad de,
México. C.P.;

Hon. MICHAEL FROMAN,
United States Trade Representative,
Washington, D.C.;

Mrs. CECILIA MALMSTRÖM,
EU Commissioner for Trade,
European Commission,
Belgium;

Hon. TODD MCCLAY,
Minister of Trade,
Parliament Buildings,
Wellington.

Dear Minister Ciobo, Commissioner Malmström, Secretary Guajardo, Minister McClay, and Ambassador Froman:

Canada: Access for Dairy Products

The dairy industries of Australia, the EU, Mexico, New Zealand and the USA wish to express our deep concern with the Agreement in Principle ("Agreement") recently concluded between Canada's dairy producers and processors.[1] By adopting this Agreement, Canada is contravening both its WTO and NAFTA trade obligations and undermining the intent of the pending TPP and CETA trade agreements. The Agreement both favors the substitution of Canadian domestic origin dairy ingredients for dairy ingredients imported from our countries, and subsidizes the export of Canadian dairy products to unfairly compete with our products in third country

[1] Dairy Farmers of Canada, Dairy Processors of Canada and provincial processor trade associations , the Canadian Milk Supply Management Committee including the Canadian Dairy Commission, and provincial Agriculture Ministries.

markets. We ask the authorities in Australia, the EU, Mexico, New Zealand and the USA to initiate a WTO dispute settlement proceeding to challenge this Agreement, once its details are announced, given its intended erosion of trading conditions in place at the time Canada negotiated prior trade commitments.

Background

Canada operates a supply management system, regulated by Canada's Federal and Provincial governments, that restricts dairy imports via quotas and a set of prohibitive out-of-quota tariffs. In addition, in spite of trade agreement obligations, the supply management system has embarked on import replacement programs since the 1990s, with two related goals. First, to reduce the yearly structural surpluses of protein solids which could no longer be exported at subsidized prices as a result of Canada's obligations under the Uruguay Round Agreement on Agriculture (URAA) and subsequent Appellate Body rulings. And second, to limit imports and subsidize exports of further processed foods at competitive prices by employing the Special Class program to reduce the price of Canadian domestic dairy ingredients.

Numerous programs have imposed trade limitations over the past few years. Some examples of that deeply problematic policy approach by Canada include the following:

- Canada's compositional standards for cheese, implemented in 2008, which have intentionally limited imports of ingredients including casein, powdered Milk Protein Concentrate (MPC), Milk Protein Isolate (MPI) and Whey Protein Concentrate (WPC) as inputs into cheese making.
- Targeting imported products, such as cheese used on foodservice pizza and chocolate milk, by allowing access to lower-priced Canadian milk for use in processing into such products.
- Ostensibly temporary special classes of milk pricing, such as class [VI] in Ontario which offers Canadian processors non-fat milk solids, at subsidized prices well below the domestic cost of production, for ingredient applications like skim milk powder, MPC and ultra-filtered milk. Broadly speaking the Agreement adopts this concept and nationalizes it.

In addition to these examples, several other programs and policy tools have also been instituted in Canada in recent years specifically in order to undermine market access secured in previous trade agreements.

The Agreement in Principle ("Agreement")

The Agreement reached by Canada's dairy producers and processors on July 7, 2016 will, among other things, establish a new ingredient milk class to be priced at the lowest of the US, EU and Oceania price for solids-not-fat (SNF) for 7 years. This below cost pricing will apply to the manufacture of skim milk powder, liquid skim milk, liquid MPC (any liquid form of milk protein concentrate or milk protein isolate), whole milk powder, and similar products approved jointly by the producers and processors, dry MPC, casein, sodium caseinate, calcium caseinate, blended dairy powders and infant formula at a maximum of 4% of butterfat.

This newly introduced provision of below market price milk for the production of the listed dairy ingredients provides both an incentive to substitute those ingredients for their imported counterparts and a subsidy on the production of the end products containing those ingredients. Both of these elements violate Canada's obligations under a number of WTO and NAFTA agreement provisions.

Even more concerning is the prospect that new measures to enable the export of Canada's structural surplus of Skim Milk Powder (SMP) at below the cost of production reflect an attempt to circumvent the WTO Nairobi Ministerial Decision on Export Competition undertaking to terminate all export subsidises by the end of 2020, including Canada's standstill agreement in the Decision to hold export subsidy quantities to the levels achieved in the 2003-05 base period.

Canada's International Trade Agreement Obligations

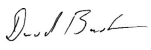
The Agreement will undermine the value of our respective TRQ access negotiated under WTO, NAFTA, TPP and CETA agreements and otherwise impede our dairy trade. Further, our initial analysis of Canada's trade obligations against the measures in place and the Agreement lead us to conclude that there is ample justification for undertaking a legal challenge. In this regard we appreciate the efforts of our respective Governments to address the issue in WTO forums. Accordingly, we would welcome the opportunity to work with our governments to pursue the most effective methods possible to dissuade Canada from its course, including the utilization of dispute settlement under existing trade agreements. We are determined to seek redress to overturn the use of these measures.

Conclusion

The dairy industries of Australia, the EU, New Zealand and the USA believe that the Agreement contravenes Canada's WTO and NAFTA obligations and similarly undermines the intent of CETA and TPP commitments. Furthermore, we are very concerned that Canada will continue to seek out measures to circumvent the Nairobi Export Competition Ministerial Decision to terminate all exports subsidises by the end of 2020. Canada's increasingly protectionist policies violate their international trade obligations, hold out the prospect of trade diversion with attendant global price-depressing impacts, and are in conflict with the principles of free markets and fair and transparent trade.

We therefore request the authorities of Australia, New Zealand, Mexico, the U.S. and the EU Commission to initiate a WTO dispute settlement proceeding against Canada, once the Agreement details are announced, given its intended erosion of trading conditions in place at the time Canada negotiated prior trade commitments.

With best regards,



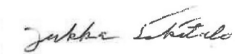
Acting President,
Australian Dairy Industry Council (ADIC);



Secretary General,
European Dairy Association (EDA);



Secretary General,
European Whey Products Association (EWPA);



Secretary General,
European Association of Dairy Trade (Eucolait);



Executive Director,
Dairy Companies Association of New Zealand (DCANZ);



President,
U.S. Dairy Export Council (USDEC);



President & CEO,
International Dairy Foods Association (IDFA);



President & CEO,
National Milk Producers Federation (NMPF);



General Director
Camara Nacional De Industriales de la Leche (Canilec)
Mexico National Chamber of Industrial Milk.

CC:

Hon. BARNABY JOYCE MP, *Deputy Prime Minister, Minister for Agriculture and Water Resources,* Australia;
PHIL HOGAN, *EU Commissioner for Agriculture & Rural Development,* European Commission;
JEAN-LUC DEMARTY, *Director-General for Trade,* European Commission;
JERZY BOGDAN PLEWA, *Director-General for Agriculture & Rural Development,* European Commission;
Hon. NATHAN GUY, *Minister of Primary Industries,* New Zealand;
MARTYN DUNNE, *Director General, Ministry for Primary Industries,* New Zealand;

Dr. DAVID WALKER, *Deputy Secretary Trade and Economic,* Ministry of Foreign Affairs & Trade, New Zealand;
Hon. THOMAS J. VILSACK, *Secretary,* U.S. Department of Agriculture;
Hon. JUAN CARLOS BAKER, *Deputy Secretary of Trade,* Mexico.

January 11, 2017

Canada's Protectionist Policies Will Harm U.S. Economy, Dairy Groups Tell President-Elect Trump

News Release

Contacts:

Marti Hogan, IDFA: (202) 220–3535
Christopher Galen, NMPF: (703) 243–6111
Mark O'Keefe, USDEC: (703) 528–3049
Amanda Culp, NASDA: (202) 296–9680

(Washington, D.C.) U.S. dairy organizations and the State Departments of Agriculture across the country today told President-elect Donald Trump that Canada's existing and soon-to-be-expanded protectionist policies are intentionally designed to block imports from the United States. These policies are in direct violation of Canada's trade commitments under the North American Free Trade Act (NAFTA) and the World Trade Organization, said IDFA, NMPF, NASDA and USDEC in a letter urging the president-elect and his key cabinet members to take immediate action.

The letter to Trump outlined estimates from the U.S. Department of Agriculture that show each $1 billion of U.S. dairy exports generates more than 20,000 jobs for Americans and almost $3 billion of economic output. U.S. dairy suppliers are reporting that they are already losing business because of these programs, demonstrating that Canada's actions are resulting in lost revenues and jobs for dairy farmers and processors across the United States.

"This negative impact is conservatively estimated at $150 million worth of ultra-filtered milk exports being lost by companies in Wisconsin and New York, which are highly reliant on their trade with Canada. In fact, the entire U.S. dairy industry is being hurt, as milk prices are being driven down nationally by Canada's trade actions," the groups said. "Having an even wider impact on America's dairy farmers and processors, additional large volumes of skim milk powder will be forced onto the thinly traded global market resulting in a further depression of prices that will negatively impact the revenues of dairy farmers around the world."

The letter sent to Trump was signed by the International Dairy Foods Association (IDFA), the National Milk Producers Federation (NMPF), the U.S. Dairy Export Council (USDEC) and the National Association of State Departments of Agriculture (NASDA).

Canada is Flouting Trade Obligations

The U.S. dairy industry is already restricted by Canada's exorbitant tariffs, they said, and only limited market access is granted under NAFTA. Canada is one of America's top trading partners, yet the country is clearly flouting its trade obligations by implementing and enforcing these policies.

"The U.S. dairy industry is highly competitive internationally, and overseas markets represent a vital source of future growth opportunities including thousands of new American jobs," the groups said. "Not long ago, the United States was a net importer of dairy products, but now our nation benefits from a dairy trade surplus of over $2 billion. Enforcement of current trade agreements, whether bilateral or multilateral in nature, is central to strengthening the U.S. economy."

Copied on the letter were several Cabinet nominees, including Robert Lighthizer, the Trump Administration's nominee for U.S. Trade Representative, along with the leaders and members of the House and Senate agricultural committees. Read the letter *here*.*

* * * * *

About IDFA

The International Dairy Foods Association (IDFA), Washington, D.C., represents the nation's dairy manufacturing and marketing industries and their suppliers, with a membership of 550 companies within a $125-billion a year industry. IDFA is composed of three constituent organizations: the Milk Industry Foundation (MIF), the National Cheese Institute (NCI) and the International Ice Cream Association (IICA).

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* **Editor's note:** the letter follows as *Attachment,* and is available at *http://www.idfa.org/docs/default-source/2017/idfa-nasda-usdec-nmpf-canada-letter-january-2017-final.pdf*.

IDFA's nearly 200 dairy processing members run nearly 600 plant operations, and range from large multi-national organizations to single-plant companies. Together they represent more than 85 percent of the milk, cultured products, cheese, ice cream and frozen desserts produced and marketed in the United States. IDFA can be found online at *www.idfa.org*.

About USDEC

The U.S. Dairy Export Council (USDEC) is a nonprofit, independent membership organization that represents the global trade interests of U.S. dairy producers, proprietary processors and cooperatives, ingredient suppliers and export traders. Its mission is to enhance U.S. global competitiveness and assist the U.S. industry to increase its global dairy ingredient sales and exports of U.S. dairy products. USDEC accomplishes this through programs in market development that build global demand for U.S. dairy products, resolve market access barriers and advance industry trade policy goals. USDEC is supported by staff across the United States and overseas in Mexico, South America, Asia, Middle East and Europe.

About NMPF

The National Milk Producers Federation, based in Arlington, VA, develops and carries out policies that advance the wellbeing of dairy producers and the cooperatives they own. The members of NMPF's cooperatives produce the majority of the U.S. milk supply, making NMPF the voice of dairy producers on Capitol Hill and with government agencies. Visit *www.nmpf.org* for more information.

About NASDA

NASDA is a nonpartisan, nonprofit association which represents the elected and appointed commissioners, secretaries, and directors of the departments of agriculture in all fifty states and four U.S. territories. NASDA grows and enhances agriculture by forging partnerships and creating consensus to achieve sound policy outcomes between state departments of agriculture, the federal government, and stakeholders.

ATTACHMENT

January 11, 2017
Hon. DONALD J. TRUMP,
Office of the Presidential Transition,
Washington, D.C.

Dear President-elect Trump:

Congratulations on your election to serve as the 45th President of the United States. We look forward to working with you and your administration on issues important to the U.S. dairy industry.

We are writing today to highlight Canada's latest actions taken in direct violation of its trade commitments with the United States with respect to dairy. Provincial policies for ingredient class milk pricing, adopted last April, are displacing U.S. exports into Canada and costing the U.S. thousands of jobs on farms, in processing plants and throughout the supply chain. This negative impact is conservatively estimated at $150 million worth of ultra-filtered milk exports being lost by companies in Wisconsin and New York, who are highly reliant on their trade with Canada. In fact, the entire U.S. dairy industry is being hurt, as milk prices are being driven down nationally by Canada's trade actions. Further, these displaced U.S. dairy exports are also depressing global skim milk prices. Moreover, USDA estimates that each $1 billion of U.S. dairy exports generates over 20,000 U.S. jobs and almost $3 billion of economic output, and U.S. dairy suppliers are reporting that they are already losing business because of these programs. Thus, Canada's current actions are resulting in lost revenues and jobs for dairy farmers and processors across the United States.

To add insult to injury the Canadian industry has put forward a National Ingredients Strategy that in broad terms would take the provincial programs and nationalize them, putting further pressure on the economies of the American communities that export ultra-filtered milk and other dairy products to Canada. Having an even wider impact on America's dairy farmers and processors, additional large volumes of skim milk powder will be forced onto the thinly traded global market resulting in a further depression of prices that will negatively impact the revenues of dairy farmers around the world.

The U.S. dairy industry is already restricted by Canada's exorbitant tariffs and the limited market access granted under the North American Free Trade Agreement (NAFTA). As one of our top trading partners, Canada's flouting of its trade obliga-

tions is unacceptable. It is clear that these policies were implemented to intentionally block imports from the United States and are therefore in direct violation of Canada's trade commitments under NAFTA and the World Trade Organization.

The U.S. dairy industry is highly competitive internationally, and overseas markets represent a vital source of future growth opportunities including thousands of new American jobs. Not long ago, the United States was a net importer of dairy products, but now our nation benefits from a dairy trade surplus of over $2 billion. Enforcement of current trade agreements, whether bilateral or multilateral in nature, is central to strengthening the U.S. economy.

We welcome the opportunity to work closely with your nominees for the U.S. Trade Representative Mr. Robert Lighthizer, and for Secretary of the Department of Commerce Wilbur Ross, as well as White House Advisor Peter Navarro and other key members of your Cabinet. We appreciate your consideration of this issue, as resolving it is a matter of urgency.

Sincerely,



MICHAEL DYKES, D.V.M.
President & CEO,
International Dairy Foods Association

JAMES MULHERN,
President & CEO,
National Milk Producers Federation

MATT MCKNIGHT,
Acting Chief of Staff,
U.S. Dairy Export Council

BARBARA P. GLENN, PH.D.,
Chief Executive Officer,
National Association of State Departments of Agriculture

CC:

ROBERT LIGHTHIZER, *Nominee,* U.S. Trade Representative.
WILBUR ROSS, *Nominee,* Department of Commerce.
PETER NAVARRO, *Advisor,* White House National Trade Council.
Hon. ORRIN HATCH, *Chairman,* Senate Committee on Finance.
Hon. RON WYDEN, *Ranking Minority Member,* Senate Committee on Finance Committee.
Hon. KEVIN BRADY, *Chairman,* House Committee on Ways and Means.
Hon. RICHARD NEAL, *Ranking Minority Member,* House Committee on Ways and Means.
Hon. PAT ROBERTS, *Chairman,* Senate Committee on Agriculture, Nutrition, and Forestry.
Hon. DEBBIE STABENOW, *Ranking Minority Member,* Senate Committee on Agriculture, Nutrition, and Forestry.
Hon. K. MICHAEL CONAWAY, *Chairman,* House Committee on Agriculture.
Hon. COLLIN C. PETERSON, *Ranking Minority Member,* House Committee on Agriculture.

January 30, 2017

U.S. Dairy Companies Push Back Against Canada's Protectionist Policies

Group Urges U.S. Governors to Aid in Preserving Export Markets and 'Consider All Tools at Their Disposal'

News Release

Contacts:

Marti Hogan, IDFA: (202) 220–3535
Christopher Galen, NMPF: (703) 243–6111
Mark O'Keefe, USDEC: (703) 528–3049

(Washington, D.C.) The U.S. dairy industry this week continued to push back against Canada's protectionist policies that are effectively blocking American dairy imports into the country in violation of international agreements. A group of 17 dairy companies representing dairy farmers and processors from coast to coast asked governors in 25 states to urge Canadian policymakers to uphold existing trade commitments with the United States and halt the imminent implementation of a national strategy that would unfairly subsidize Canadian dairy products in its domestic and global markets.

"[U.S.-Canada] trade cannot be a one-way street with Canada expecting to enjoy the benefits of exporting its products of interest to our market while denying a sector accounting for hundreds of thousands of jobs in rural America reliable access to the Canadian market," the group said in its letter to the governors. "[An existing

provincial] program has already cost U.S. companies tens of millions of dollars in exports, thereby harming the dairy farmers, dairy plant employees and rural communities that depend on the benefits those foreign sales bring."

Beginning Feb. 1, Canada is poised to expand the product scope of that provincial program while instituting it nationally. It also intends to disrupt skim milk powder markets around the world by using the new program to dump excess milk powder on global markets.

The 17 dairy companies sent the letter to governors in states with significant numbers of dairy farms and dairy processing companies because of the damage Canada's policies have had already or are poised to have on these farms and companies, as well as their employees and many communities. The letter urges state officials to "consider all tools at their disposal to ensure Canada understands the seriousness of this issue." The states are Arizona, California, Colorado, Idaho, Iowa, Indiana, Kansas, Maryland, Massachusetts, Michigan, Minnesota, Missouri, Montana, Nebraska, New Mexico, New York, North Dakota, Ohio, Pennsylvania, South Dakota, Texas, Vermont, Virginia, Washington and Wisconsin.

Read the letter *here*.*

Earlier this month, U.S. dairy organizations and state departments of agriculture across the country sent a similar *letter to President Donald Trump*** that said Canada's protectionist policies are in direct violation of its trade commitments under the North American Free Trade Agreement (NAFTA) and the World Trade Organization (WTO). The organizations urged the president and his key cabinet members to take immediate action. The letter to Trump was signed by the International Dairy Foods Association (IDFA), the National Milk Producers Federation (NMPF), the U.S. Dairy Export Council (USDEC) and the National Association of State Departments of Agriculture (NASDA).

"In the current trade climate across North America, it is foolhardy for Canada to continue provoking the United States with a course of action that so blatantly violates our trade agreements," said Jim Mulhern, president and CEO of NMPF. "We need our nation's governors to join in our call for Canada to step back from the brink of what it is about to do and take steps to remind Canada how critical trade is to its own interests, as well."

"Despite Canada's efforts to distance itself from the administration's focus on enforcement and improving how NAFTA functions, it is Canada—not Mexico—that has time and again chosen to disregard its dairy trade commitments to the United States and intentionally dismiss serious concerns from the United States about the impact its dairy policies are having on trade," said Matt McKnight, acting Chief Operating Officer of USDEC. "Canada should take a page out of Mexico's book and hold up its end of the bargain to us on dairy trade."

"The U.S. dairy industry is united on this issue because these policies and incentives severely hinder U.S. exports to Canada and threaten our ability to remain competitive in markets around the world," said Michael Dykes, D.V.M., president and CEO of IDFA. "IDFA will continue to speak out against Canada's protectionist policies on Capitol Hill, with members of the Trump Administration and among state governors and legislators, while asking for changes that will force Canada to honor its trade commitments and allow more access for U.S. dairy products."

* * * * *

About NMPF

The National Milk Producers Federation, based in Arlington, VA, develops and carries out policies that advance the wellbeing of dairy producers and the cooperatives they own. The members of NMPF's cooperatives produce the majority of the U.S. milk supply, making NMPF the voice of dairy producers on Capitol Hill and with government agencies. Visit *www.nmpf.org* for more information.

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The U.S. Dairy Export Council (USDEC) is a nonprofit, independent membership organization that represents the global trade interests of U.S. dairy producers, proprietary processors and cooperatives, ingredient suppliers and export traders. Its mission is to enhance U.S. global competitiveness and assist the U.S. industry to increase its global dairy ingredient sales and exports of U.S. dairy products. USDEC accomplishes this through programs in market development that build global de-

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* **Editor's note:** the letter follows as *Attachment,* and is available at *http://www.nmpf.org/files/Letter%20to%20Governors%20re_Canada%20Dairy%20Trade_013017.pdf*.

** **Editor's note:** the letter follows the January 11, 2017 *News Release* as *Attachment,* and is available at *http://www.idfa.org/docs/default-source/2017/idfa-nasda-usdec-nmpf-canada-letter-january-2017-final.pdf*.

mand for U.S. dairy products, resolve market access barriers and advance industry trade policy goals. USDEC is supported by staff across the United States and overseas in Mexico, South America, Asia, Middle East and Europe.

About IDFA

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ATTACHMENT

January 30, 2017

This letter has also been sent to the governors of Arizona, California, Colorado, Idaho, Iowa, Indiana, Kansas, Maryland, Massachusetts, Michigan, Minnesota, Missouri, Montana, Nebraska, New Mexico, New York, North Dakota, Ohio, Pennsylvania, South Dakota, Texas, Vermont, Virginia, Washington and Wisconsin.

Dear Governor:

We write to you regarding a serious trade concern with a country that should be our most reliable trading partner: Canada. Our companies appreciate the actions multiple governors and state departments of agriculture took last year to express concern over Canada's erection of barriers to U.S. dairy exports.

Reports now indicate that despite numerous U.S. exhortations to Canada that it should abide by its dairy trade commitments to us, Canada plans to proceed with expanding its harmful use of dairy policies to impede trade by implementing a new national ingredients strategy pricing program next month. We urge you to prepare to take direct action at the state level to underscore to Canada that deliberately and systematically damaging U.S. exports in this way will not be tolerated.

Every day Canada relies on smooth access for its products to our market, access that comes through our northern border states which are being forced to bear the brunt of Canada's flagrant disregard for its dairy trade obligations to us. However, this trade cannot be a one-way street with Canada expecting to enjoy the benefits of exporting its products of interest to our market while denying a sector accounting for hundreds of thousands of jobs in rural America reliable access to the Canadian market.

Canada's expected approval of a new national ingredients strategy pricing program next month will expand an already harmful program piloted last year in Ontario that was created specifically to discourage Canadian companies from using imported U.S. ultra-filtered milk in the production of Canadian dairy products. That Ontario program has already cost U.S. companies tens of millions of dollars in exports, thereby harming the dairy farmers, dairy plant employees and rural communities that depend on the benefits those foreign sales bring.

Beginning February 1, Canada is now poised to expand the product scope of that program while instituting it nationally and in addition to disrupt skim milk powder markets around the world by using the new program to dump excess skim milk powder on global markets.

Over the course of the past year, our industry has urged state officials to consider all the tools at their disposal to ensure Canada understands the seriousness of this issue and the value it derives on a daily basis for the numerous Canadian exports that come across the borders of northern U.S. states. We now urge you to take action to send that message directly to Canada. Canada needs to hold up its end of the bargain, not leave American companies—and the workers and farm families they support—holding the bag.

Sincerely,

Agri-Mark, Inc., Methuen, MA
Associated Milk Producers, Inc., New Ulm, MN
California Dairies, Inc., Visalia, CA
Cayuga Milk Ingredients, Auburn, NY
Dairy Farmers of America, Kansas City, MO
DairyAmerica, Fresno, CA
Grassland Dairy Products, Inc., Greenwood, WI
Northwest Dairy Association/Darigold, Seattle, WA
O–AT–KA Milk Producers Cooperative, Inc., Batavia, NY
Select Milk Producers, Inc., Artesia, NM
St. Albans Cooperative Creamery, St. Albans City, VT

Land O'Lakes, Inc., Arden Hills, MN
Maryland & Virginia Milk Producers Cooperative Association, Reston, VA
Michigan Milk Producers Association, Novi, MI
TC Jacoby & Co., St. Louis, MO
United Dairymen of Arizona, Tempe, AZ
Upstate Niagara Cooperative, Inc., Buffalo, NY

SUBMITTED LETTER BY ROGER JOHNSON, PRESIDENT, NATIONAL FARMERS UNION

March 22, 2017

Hon. K. MICHAEL CONAWAY,
Chairman,
House Committee on Agriculture,
Washington, D.C.;

Hon. COLLIN C. PETERSON,
Ranking Minority Member,
House Committee on Agriculture,
Washington, D.C.

Dear Chairman Conaway and Ranking Member Peterson:

Thank you for holding today's hearing entitled, *The Next Farm Bill: Dairy Policy.* As you are well aware, the farm economy is continuing to struggle as a result of low commodity prices, record yields, and a strong U.S. dollar. Dairy, in particular, has suffered a great deal, not only as a result of high production and tepid demand, but an ineffective safety net. As past hearings have highlighted, the Dairy Margin Protection Program (DMPP) failed to provide meaningful relief for participants, even as farmers paid millions of dollars in premiums for the program.

Putting dairy farmer's contribution to the agricultural economy into perspective is especially important as congress weighs changes to the safety net. U.S. dairy farms are an important segment of our nation's economy. As one of the world's largest dairy producing nations, the industry provides roughly $140 billion in economic output, $29 billion in household earnings, and more than 900,000 jobs.

Low prices and volatility have dominated dairy economics over the last three years, forcing many producers to shutter dairy farms across the country. Milk prices reached $24 per hundredweight in 2014 but quickly eroded, falling to $16 per hundredweight in 2016. These prices are well below the cost of production. Meanwhile, cash receipts over the last three years demonstrate the volatility. In 2009, cash receipts were $24.3 billion, shooting up to $49.3 billion in 2014, and quickly falling to $34.2 billion in 2016. Despite the unfavorable economic conditions faced by dairy producers, U.S. milk production increased for the seventh consecutive year and the dairy herd continues to expand.

DMPP has provided very little relief to struggling dairy producers. In 2016, about ⅔ of milk production, or 140 billion pounds of production history, enrolled in DMPP did not sign up for buy-up coverage. It is widely recognized that the program has failed dairy producers. There must be an acknowledgement, especially during the budget process, that producers paid millions of dollars into the program and did not receive assistance during troubling economic conditions.

As dairy farmers face such headwinds, congress must develop a comprehensive dairy program to allow dairy producers across the nation to receive a profitable return on their investment. In order to achieve this, the next safety net will certainly have to increase spending. DMPP must have a higher dollar value for catastrophic coverage of at least $5.00. The feed ration used to calculate payments must more accurately reflect cost of production.

NFU sees commonality with other industry proposals which call for a more equitable feed cost formula. Returning to the original feed cost formula in the Dairy Security Act is an important first step in improving DMPP. Better price data for corn, soybean meal, and alfalfa could help improve calculations related to actual feed costs incurred by dairy farmers. Harmonization of data between the National Agricultural Statistics Service and the Agricultural Marketing Service is also important.

Our members voiced support for additional flexibility within DMPP. Dairy farmers should have the ability to enter and exit the program, within reason, as this would prevent producers from leaving a significant amount of milk production uninsured for the entire year. Coverage calculations and payments should be made on a monthly basis to better reflect how producers operate. NFU recognizes that there would have to be a delay between signup and coverage start dates in order to prevent moral hazards.

Additional premium support, directed to family farms, by the federal government is very important from an equity standpoint. Our members, while very supportive of the assistance provided to other commodities, are frustrated that their sector does not receive similar support. Higher premium subsidies for a risk management program are very important to our members. There is a fundamental understanding

that producers have to share in the risk, and our members are prepared to do that, but there must be additional sign up incentives.

NFU dairy members have also expressed interest in the livestock gross margin (LGM) program and whole farm revenue protection (WFRP) policy in conjunction with DMPP. We understand that the same milk cannot be signed up within different programs. We would ask the committee to consider allowing producers to use DMPP and LGM in a complementary fashion. In order for this to work, the current LGM cap would have to be removed for dairy. The removal of the cap would also provide dairy producers who are interested in using both DMPP and WFRP to adequately cover dairy production.

Last, NFU policy recognizes overproduction as one of the many reasons for low prices. We support exploring an incentives-based inventory management program. We also support and encourage voluntary producer assessments for an industry-managed program that will stabilize and increase producer prices. NFU wants to see a more robust effort to reign in overproduction, with wider adoption of practices already being employed by some of our largest dairy cooperatives.

Thank you again for holding this important hearing. NFU stands ready to assist this committee as it advances changes to the next farm bill for the benefit of American dairy producers.

Sincerely,



ROGER JOHNSON,
President, National Farmers Union.

SUBMITTED QUESTIONS

Response from James Mulhern, President and Chief Executive Officer, National Milk Producers Federation

Question Submitted by Hon. Glenn Thompson, a Representative in Congress from Pennsylvania

Question. Mr. Mulhern, you've noted that NASS alfalfa prices don't reflect what dairy farmers pay for the quality that they purchase, and that you would like to see a new price reporting mechanism for alfalfa to be used in the feed cost calculations. Can you suggest what that might look like? What are the flaws in prices that are currently reported?

Answer. Thank you for the question, Congressman. The current U.S. average price for alfalfa hay reported by NASS is an average of all grades and qualities of hay. Our members have indicated that this price does not reflect the price for minimum quality alfalfa hay required for dairy farmers to productively feed their cows. We are urging Congress to direct USDA to develop a more detailed U.S. average price for dairy quality hay.

*Question Submitted by Hon. Stacey E. Plaskett, a Delegate in Congress from Virgin Islands**

Question. Thank you, gentlemen, for taking the time to appear with us today and present your views on dairy policy as we consider the next farm bill. And thank you, Chairman Conaway and Ranking Member Peterson, for holding this important hearing.

As you know well, during consideration of the last farm bill, the previous dairy stabilization program was replaced with an insurance-like margin program, the MPP.

The basic premise behind this was to give farmers more tools to manage risk and provide a safety net without directly interfering in dairy markets and raising prices for consumers.

There was a prevailing view that the previous dairy stabilization program penalized those farmers who wanted to expand. Others argued that the program was voluntary and was not preventative to growth, and stressed more sensitivity to recent challenges facing the dairy sector.

In your testimony, you say that the MPP does not provide meaningful safety net support to dairy producers.

What specific changes would you like to see to MPP provisions in the next Farm Act?

Answer.

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*There was no response from the witness by the time this hearing was published.

THE NEXT FARM BILL
(COMMODITY POLICY—PART 1)

TUESDAY, MARCH 28, 2017

HOUSE OF REPRESENTATIVES,
SUBCOMMITTEE ON GENERAL FARM COMMODITIES AND RISK MANAGEMENT,
COMMITTEE ON AGRICULTURE,
Washington, D.C.

The Subcommittee met, pursuant to call, at 10:00 a.m., in Room 1300 of the Longworth House Office Building, Hon. Eric A. "Rick" Crawford [Chairman of the Subcommittee] presiding.

Members present: Representatives Crawford, Lucas, Gibbs, Allen, Bost, Bacon, Dunn, Arrington, Conaway (*ex officio*), Nolan, Walz, Bustos, Blunt Rochester, David Scott of Georgia, Maloney, Plaskett, Lawson, O'Halleran, and Peterson (*ex officio*).

Staff present: Bart Fischer, Callie McAdams, Haley Graves, Matthew S. Schertz, Stephanie Addison, Trevor White, Anne Simmons, Liz Friedlander, Matthew MacKenzie, Troy Phillips, Mike Stranz, and Nicole Scott.

OPENING STATEMENT OF HON. ERIC A. "RICK" CRAWFORD, A REPRESENTATIVE IN CONGRESS FROM ARKANSAS

The CHAIRMAN. This hearing of the Subcommittee on General Farm Commodities and Risk Management entitled, *The Next Farm Bill: Commodity Policy—Part 1,* will come to order.

This is the first hearing of the General Farm Commodities and Risk Management Subcommittee in preparation for the next farm bill. Over the course of the next year, we will be examining policies under our jurisdiction so we can improve upon the 2014 Farm Bill, and make sure that the needs of not only American farmers and ranchers are being met, but also that consumers will continue to benefit from a stable farm policy.

In agriculture it is often said that the cure for high prices is, high prices. This saying has certainly held true in the past and we are understanding its true meaning right now. When we wrote the legislation that would eventually become the 2014 Farm Bill, farmers were experiencing record prices, net farm income was at all-time highs, and many were led to believe that commodity prices had reached a new plateau. But the old adage rang true yet again, and 4 years later, net farm income has fallen 50 percent, commodity prices are in the tank across the board, and producers, especially beginning farmers, those highly leveraged, and those that were unable to capitalize on high prices, are struggling to get fi-

nancing so they can continue to farm for another year. We are on the verge of a real crisis in rural America.

The current situation in the countryside provides a textbook example for why we have farm bills in the first place. The farm bill is not meant to provide help when times are good; rather, the farm bill helps producers survive the bad times so they can farm another year, raise their families, and one day pass their operations on to the next generation.

Today we will examine how the commodity and crop insurance provisions are faring for barley, corn, sorghum, soybeans, and wheat producers. We will hear many acronyms thrown around like ARC, PLC, SCO, and STAX. But let's not lose sight that amongst the confusion, amongst the technical speak, there are real-life men and women with dirt under their fingernails who are just hoping to make it through these tough times. At the end of each one of these policies are people that are responsible for providing the safest, most abundant, most affordable food supply in the world. And that benefits each and every one of our constituents.

I am glad to see that we have such an outstanding set of panelists here today. Thank you to each one of you for taking the time out of your busy schedules, away from your operations to join us. Your commitment to improving farm policy for all of your fellow producers does not go unnoticed by the Members of this Subcommittee.

Whether you are from Jonesboro, Arkansas, like myself, the Iron Range of Minnesota like the Ranking Member, or even the Virgin Islands like Ms. Plaskett, every Member of this Subcommittee has a vested interest in making sure that we get this policy correct, because we all have people in our districts that need to eat. And we need to make sure that America's farmers and ranchers are equipped to feed them.

I look forward to hearing from this panel.

[The prepared statement of Mr. Crawford follows:]

PREPARED STATEMENT OF HON. ERIC A. "RICK" CRAWFORD, A REPRESENTATIVE IN CONGRESS FROM ARKANSAS

This is the first hearing of the General Farm Commodities and Risk Management Subcommittee in preparation for the next farm bill. Over the course of the next year, we will be examining the policies under our jurisdiction so we can improve upon the 2014 Farm Bill and make sure that the needs of not only American farmers and ranchers are being met, but so that consumers will continue to benefit from a stable farm policy.

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I look forward to hearing from this panel, and I yield to the Ranking Member, Mr. Nolan for any opening comments he would like to make.

The CHAIRMAN. I now yield to the Ranking Member, Mr. Nolan, for any opening comments he would like to make.

STATEMENT OF HON. RICHARD NOLAN, A REPRESENTATIVE IN CONGRESS FROM THE STATE OF MINNESOTA

Mr. NOLAN. Thank you, Chairman Crawford, for holding this hearing today with respect to the commodity price policy in the next farm bill. I want to thank the great panel of witnesses we are about to hear from here. I want to extend a special welcome to my fellow Minnesotan, Mr. Peter Friederichs. Welcome, Peter. I am glad to have you here. Peter, as you may or may not know, is President of the National Barley Growers Association.

In particular, I want to thank all of our witnesses here for taking the time to testify. We have an old saying around the Congress here that, like it or not, most things, or many things in the political world affect your life. I mean the time of day is a political decision. The air we are breathing, the fabric in your clothing, the chemicals that went into your shampoo this morning. We have a saying, if you don't come to town and make your case, one of two things can happen. One is they don't know you exist. That is not good. But worse yet, they know you exist and think you don't care. That is why it is so important for you to be here so that we not only know you care, but to offer your suggestions and your advice on how we can put together the kind of policies that create the kind of economy we want. In this particular instance, the kind of economy we want in rural America.

Mr. Chairman, it is clear from the numbers that we have seen that times in farming country are tough, they are getting tougher, prices are down, the income is down, the debt is going up, the cash rents are going up, loans are harder to get. Mr. Chairman, with the consent of the Committee, I would like to ask unanimous consent that the entirety of my remarks be put into the record, and then I will close so that we can get on with hearing from our witnesses.

[The prepared statement of Mr. Nolan follows:]

PREPARED STATEMENT OF HON. RICHARD M. NOLAN, A REPRESENTATIVE IN CONGRESS FROM MINNESOTA

Thank you, Chairman Crawford, for holding this hearing today with respect to commodity policy and the next farm bill. And thank you to the great panel of witnesses we are about to hear from. Welcome to the Subcommittee.

It's abundantly clear from all the numbers and studies we've seen that economic times in America's farm country are tough and getting tougher. Commodity prices and farm income are down, debt is up, cash rents are high in some places, loans are hard to come by and 2017 promises more of the same.

Moreover, it is profoundly disturbing that due in large part to the collapse in commodity prices, overall net farm income has fallen by 50 percent since 2013—the largest 4 year percentage drop since the Great Depression.

And today, because the current farm bill was written during a time of particularly high commodity prices, our farmers face unique challenges in dealing with the financial pressures of the current downturn.

So it's going to be vitally important for this Subcommittee to work to ensure the new farm bill contains the risk management tools necessary to help our farmers survive these kinds of devastating fluctuations in commodity prices.

The fact of the matter is—we need to do everything we can to put a stop to these boom and bust cycles that threaten our farmers, our rural communities, our rural businesses and the good paying jobs they support all across rural America.

So with that said, I'm looking forward to hearing from today's witnesses and I want to again thank the Chairman for holding this important hearing.

The CHAIRMAN. Without objection. I appreciate the Ranking Member's comments.

The chair would request that other Members submit their opening statements for the record so the witnesses may begin their testimony, and to ensure there is ample time for questions.

We have five witnesses today. I would like to welcome them to the table. Mr. Wesley Spurlock, President, National Corn Growers Association, Stratford, Texas; Mr. Ron Moore, President, American Soybean Association, Roseville, Illinois; Mr. David Schemm, President, National Association of Wheat Growers, Sharon Springs, Kansas; Mr. Peter Friederichs, President, National Barley Growers Association, Foxhome, Minnesota; and Mr. Dan Atkisson, Vice Chairman, National Sorghum Producers, Stockton, Kansas.

Mr. Spurlock, you are recognized for 5 minutes.

STATEMENT OF WESLEY SPURLOCK, PRESIDENT, NATIONAL CORN GROWERS ASSOCIATION, STRATFORD, TX

Mr. SPURLOCK. Good morning, Chairman Crawford, Ranking Member Nolan, and Members of the Subcommittee. My name is Wesley Spurlock and I am a farmer in the Texas Panhandle, where our family has farmed and ranched since the late 1800s. We raise corn, cotton, wheat, sorghum, and cattle. I currently serve as President of the National Corn Growers Association. I appreciate the opportunity to share with you the views of our commodity programs and Federal crop insurance.

The farm economy looks very different today than a decade ago. From 2006 to 2013, corn prices were in the $4.70 per bushel range. Most grain farmers were making a profit. Since 2013, they have averaged below $4, and with this marketing year, at $3.40. At that time, very few corn farmers made a profit over net income. One study in Illinois found that net farm income declined to an average of $500 in 2015.

Today, corn farmers face a lot of uncertainty about Federal policy on renewable fuel and trade, and how they will impact the market access in their bottom lines. Last year, 4.2 billion bushels of corn

produced more than 15 billion gallons of ethanol, and returned more than 1 billion bushels of high-quality feed back to the livestock industry. Keeping the RFS on schedule provides more certainty, which leads to more demand for ethanol and corn. We ask you to consider the negative consequences regarding changes to all parts of the RFS.

Trade is also critical to our bottom lines. NAFTA has been a huge success for us. Twenty-six percent of U.S. corn exports go to Canada and Mexico. In Texas, agricultural exports to Canada and Mexico totaled $3.3 billion in 2016. It is vital these markets remain open and preserve our duty-free access.

Our county provided nearly $3.5 billion in payments on corn-based acres in 2014, and more than $4 billion in 2015. In the same Illinois study, those payments meant making $500 in income instead of losing $30,000 or more. Although the financial position of corn farmers has deteriorated, few farms have had to face liquidating assets or bankruptcy thanks in part to the support of the ARC-County. ARC was designed as a market-based program, and provides support only when needed. And this is the time. By and large, the program is working as intended. There are a few administrative concerns and changes to ARC-County we hope you will consider for the next farm bill. In some situations, the Farm Service Agency switches to crop insurance data when NASS is unable to publish a county yield, resulting in underpayments. Equitable payments depend on using the most accurate, transparent, and consistent data sources. Also the program parameters were developed during a very different price environment than what we face today, and that will need to be reflected in the next farm bill.

As important as commodity programs are to the farm safety net, Federal crop insurance is ranked by NCGA members as their most important risk management tool. Eighty-seven percent of planted acres are covered by some type of crop insurance. Our 2015 risk management survey confirmed that corn farmers are very price sensitive to insurance. Two areas for improvement that we have identified are more consistency in quality loss adjustments for indemnities, and more reasonable preventive planting provisions.

In summary, commodity programs and crop insurance address two distinct but related risks. Crop insurance has replaced the *ad hoc* disaster assistance and provided same-year risk protection, while commodity programs protect against multi-year losses. These two programs have helped many farmers weather the storm of a weak farm economy and avoid bankruptcy. NCGA recognizes the daunting task before you in crafting the next farm bill.

I thank you for your time and your consideration of our views.

[The prepared statement of Mr. Spurlock follows:]

PREPARED STATEMENT OF WESLEY SPURLOCK, PRESIDENT, NATIONAL CORN GROWERS ASSOCIATION, STRATFORD, TX

Chairman Crawford, Ranking Member Nolan, and Members of the House Agriculture Subcommittee on General Commodities and Risk Management, on behalf of the National Corn Growers Association (NCGA), I appreciate the opportunity to share with you our perspectives on the state of the corn industry and views on the performance of our current commodity programs and Federal crop insurance. My name is Wesley Spurlock, and I currently serve as President of the National Corn Growers Association (NCGA). I am a farmer in the Texas Panhandle. Our family

has farmed and ranched there since the late 1800s. We raise corn, cotton, wheat, sorghum and cattle on irrigated farms.

The National Corn Growers Association represents more than 40,000 dues-paying corn farmers nationwide. NCGA also represents more than 300,000 corn growers who contribute through check-off programs and 28 affiliated state corn organizations, for the purpose of creating new opportunities and markets for corn growers.

Before addressing the effectiveness of the 2014 Farm Bill's risk management programs, I first want to provide you an overview of the corn industry and how it is performing during this extended period of low commodity prices. We corn farmers are proud of our ability to sustainably produce an abundant crop that helps to feed and fuel a growing world. In 2016, we harvested 86.7 million acres that produced 15.1 billion bushels of corn, a record many thought unattainable just 10 years ago. To go from an average yield of 127.1 bushels/acre in 1996 to an average yield of 174.6 bushels this past year is a remarkable achievement made possible by advances in seed technologies along with innovations in production and conservation practices. However, this success story does not come without some significant challenges. With the U.S. Department of Agriculture (USDA) estimating 2016 crop year ending stocks at more than 2.3 billion bushels, it is more important than ever to build upon on our current markets and develop new uses to increase demand for our crop.

When I think about risk management, I consider my entire operation and my total risk portfolio. Farmers know we have to look at the demand side of the equation. Trade may seem like an external force to some, but it has a very real impact on my and other farmers' bottom lines. Agricultural exports account for 20 percent [1] of U.S. farm incomes, and for the corn industry that number is closer to 30 percent.[2] The health and growth of those trading relationships, particularly during times when commodity prices are lower (like they are now), can determine whether I make a profit or a loss. The benefits from trade ripple out beyond the farmgate to create economic activity and jobs in our rural communities across the country.

Corn farmers face a lot of uncertainty right now about how changes to our trade policy will impact our market access. U.S. corn counts Mexico and Japan as its top two export markets. The North American Free Trade Agreement (NAFTA) has been a huge success for the corn industry—26 percent of U.S. corn exports go to Canada and Mexico.[3] In 2016 alone, 13.3 million metric tons of corn were exported to Mexico. In my home state of Texas, agricultural export trade to Canada and Mexico totaled more than $3.3 billion in 2016 and supported 18,674 jobs, according to research conducted by the Center for North American Studies at Texas A&M University.

As we work with Mexico and Canada to modernize NAFTA, it is vital we keep these markets open to preserve our duty-free access for corn and corn products, and build on the mutual success realized from this partnership. NCGA has also urged the President to engage early with the Asia-Pacific region to negotiate new or updated free trade agreements that provide U.S. agriculture with greater access to these growing markets and reduce non-tariff barriers to trade. We will continue to prioritize development of new markets through export promotion activities, which increase and diversify demand for our products and build valuable trading relationships. USDA's Market Access Program (MAP) and Foreign Market Development Program (FMD) function as public-private partnerships and deliver $28 in exports for every $1 invested. NCGA is seeking an increase in funding for these programs.

In addition to expanding export markets, a robust, growing livestock industry is extremely important to building new demand for U.S. corn. One of the key benefits from livestock is market consistency. While this market ebbs and flows with definitely pronounced cycles, they are usually over the course of years. Today, feed for livestock accounts for more than 38 percent of corn usage at 5.6 billion bushels. According to the USDA Economic Research Service, U.S. corn feed and residual use is expected to rise to nearly 5.8 billion bushels in 2016–17. With projections of U.S. meat exports forecast to increase in the coming years to meet the rising global demand for protein, NCGA is hopeful that this growth will result in higher incomes for corn farmers and our livestock customers.

The other key sector critical to corn farmers' economic security is a vibrant renewable fuels industry. In the last crop year, nearly ⅓ of U.S. corn production, or 4.2 billion bushels, was used to produce more than 15 billion gallons of ethanol. Moreover, ethanol production returned 1.1 billion bushels of corn to feed livestock and poultry in the form of distiller dried grains (DDGs).

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[1] USDA.
[2] USGC.
[3] USGC—Calculated using USDA's economic activity multiplier.

Even as ethanol production expanded to an all-time high in 2016, corn farmers still produced a large corn surplus. Contrary to conventional wisdom, total cropland acres in the United States have fallen since the Renewable Fuel Standard (RFS) was expanded, and farmer demand for conservation programs remains high. In short, we produce more than enough corn to meet our food, feed, industrial and fuel needs.

After 3 years of delays and uncertainty in issuing the annual renewable fuel volume levels, corn farmers were pleased to see the EPA get administration of the RFS back on track last November with final volume requirements for 2017. Keeping administration of the RFS on schedule and in line with Congressional intent provides stability and certainty, which in turn leads to more investment in the industry and more demand for ethanol and corn, exactly what our producers need right now.

Although not under the jurisdiction of the Agriculture Committee, when corn growers hear some in Congress talk about the need to reform or rewrite the RFS, we ask you to consider the negative consequences of such action. With farmers facing consecutive years of low commodity prices and an ethanol industry emerging from several years of uncertainty caused by EPA actions, we need more stability in the RFS, not less.

Looking forward, corn farmers want to build on the effective volume level of 15 billion gallons that EPA set for 2017, in line with Congressional intent. With stability in the RFS, corn growers can increase demand for home-grown ethanol that saves consumers money at the pump, generates 43 percent lower greenhouse gas emissions than gasoline, and supports thousands of jobs in our rural communities—all while supporting the bottom line of corn farmers nationwide. I cannot overemphasize how important ethanol demand is to our industry. It is crucial to our farmers and beneficial to our nation's energy security. In fact, the renewable fuel industry directly supports nearly 86,000 jobs and displaced 540 million barrels of foreign oil imports in 2016.

The precipitous decline in price from a national marketing year average of $6.22 per bushel for the 2011 crop to an estimated $3.40/bushel for the 2016 crop has resulted in a steep decline in corn farmers' income as well as a very adverse impact on the rural economy. When the annual crop value of corn falls from nearly $77 billion in 2011 to just over an estimated $51 billion 5 years later, increasing financial stress is being experienced from the family farm to the employees laid off by agriculture equipment manufacturers.

Prior to the downturn in commodity markets, according to USDA corn prices averaged $4.70 per bushel between 2006 through 2013, a period of positive net farm incomes for most grain farms in the United States. Since 2013, corn prices have averaged below $4.00 per bushel. In fact, the average U.S. market year corn price fell to $3.70 per bushel in 2014, then slid further to $3.61 in 2015. The 2016 crop market year does not end until September 1, 2017, but the February *World Agriculture Supply and Demand Estimates* Report (WASDE) projection places the price at $3.40. Long-run projections made by USDA now place the 2017 market year price at $3.50 per bushel. Currently, break-even levels for corn production are near $4.00 per bushel. As long as corn prices are below $4.00, we anticipate incomes to be very low or negative.

As a result of these price declines, revenue from selling a crop, hereafter referred to as crop revenue, has significantly decreased. USDA has reported that crop revenue from corn in the United States averaged $837 per acre in 2011 and $801 per acre in 2012. Gross revenues have decreased considerably since that time Crop revenue was $719 per acre in 2013, $602 per acre in 2014, and $611 per acre in 2015. Projections for 2016 place corn revenue at $593 per acre (174.6 national corn yields $\times$ $3.40 price).

Adding to the financial stress on farm operations is an extended lag in expenses declining to the same extent that crop revenues have decreased. According to USDA, costs for corn production reached a high of $690 per acre in 2014 before falling to $675 per acre in 2015, a decrease of only $15 per acre. When we compare this small decrease to a sharp revenue decline of $190 per acre between 2012 and 2015, we can begin to better understand the difficult transition and drain on equity that many corn farmers are experiencing.

With crop revenue decreasing, net incomes on grain farms are, of course, falling. As one example, Illinois Farm Business Farm Management (FBFM), a record-keeping service with about 25 percent of the acres farmed in Illinois enrolled in its services, estimates that net farm income declined to an average of $500 in 2015. The $500 per farm average in 2015 was the lowest farm income since FBFM began keeping records. Not surprisingly, cash reserves on farms are eroding due to successive years of declining income. Although reported incomes for 2016 have yet to be re-

leased, they are expected to be slightly higher than in 2015 due to above-average yields and sizable payments from the Agriculture Risk Coverage program.

It is important to note that for the period of 2014 through 2016, incomes would have been lower had payments from the Agricultural Risk Coverage-county level (ARC–CO) and Price Loss Coverage programs not been made. As I explain later, ARC–CO payments have been substantial, partially offsetting the revenue declines experienced in 2014 and 2015.

Overall, NCGA believes the commodity program reforms authorized in the 2014 Farm Bill program have performed as designed. These more market-oriented policy changes are delivering assistance to producers when the need for financial relief is clearly present. During the enrollment process for the 2014 Farm Bill, 94 percent of the corn base acres were enrolled in ARC–CO with most of the remaining six percent of base acres being enrolled in Price Loss Coverage (PLC). As a result of high enrollment in ARC, corn farmers will evaluate the 2014 Farm Bill based on the performance of ARC–CO.

ARC–CO has made significant payments to corn farmers in 2014 and 2015, and will likely make large payments in 2016. In 2014, ARC–CO payments were $3.479 billion on corn base acres, for an average payment of $39 per base acre. In 2015, ARC–CO made $4.02 billion in payments, or $45 per base acre. These ARC–CO payments have cushioned the sharp decrease in revenues occurring in 2014 and 2015. On a national basis, revenues in 2014 and 2015 were close to $200 per acre below 2011 and 2012 levels.

Obviously, ARC–CO payments have helped to reduce the net income declines sustained during 2014 and 2015. On Illinois farms, for example, net income was $500 per farm in 2015. Without commodity title payments, 2015 incomes would have been more than $30,000 lower, resulting in an average net income that was negative.

Reflecting low producer enrollment and the relationship between the market year price and corn's reference price of $3.70 per bushel, the Price Loss Coverage Program did not make large payments to corn base acres in either 2014 or 2015. PLC payments averaged $0 per base acre in 2014 and $8.07 per base acre in 2015. For most corn farmers, PLC did not reduce their exposure to lower incomes in 2014 and 2015.

Overall, ARC–CO has worked as expected. However, there are several issues regarding the Farm Service Agency's implementation of this program option and changes in commodity markets we hope this Subcommittee will consider as it proceeds with crafting a new farm bill.

- In some counties, there has been a need to switch data sources from National Agricultural Statistical Service (NASS) to the Risk Management Agency (RMA) when there is an insufficient number of producer surveys for NASS to publish a yield. In some cases, source switching leads to concerns of ARC–CO underpayments due to differences in yields.
- In other situations, low or zero payments have occurred in one county while surrounding counties receive large payments. While producers should fully expect differences in payments between counties, concerns regarding equity have been raised, particularly with farms close to county lines. NCGA appreciates the efforts of the Farm Service Agency and the NASS to use the most accurate data available from NASS and RMA as well as their consideration of adjustments in payments to address disparities that occurred with the use of yields from a farm's FSA Administrative County rather than the county where the farm is actually located.
- The 86 percent coverage level and ten percent payment zone were developed during a different price environment than what is occurring today. In particular, the high prices during the 2010 to 2012 period are not expected to repeat themselves. ARC–CO parameters in a lower price environment will be far different from those moving from a high to a low price environment.

As critical as commodity programs are to the farm safety net, Federal crop insurance is consistently ranked by NCGA members as the most important risk management tool provided by USDA. U.S. corn farmers use crop insurance extensively. Comparison of Risk Management Agency (RMA) insured acre data to NASS planted acre data indicate that 87 percent of the acres planted in 2016 were insured with RMA crop insurance products.

Of the variety of crop insurance products available, corn farmers predominately choose to insure with Revenue Protection (RP), a revenue insurance using farm yields in setting guarantees and payments. RP has an increasing guarantee provision that increases crop insurance guarantees if the harvest price is above the projected price. In 2016, RP was purchased on 90 percent of the insured acres.

Moreover, corn farmers typically insure at high coverage levels. For RP insurance, 14 percent of the acres are insured at the 70 percent coverage level, 39 percent at the 75 percent coverage level, 28 percent at the 80% coverage level, and 23 percent at the 85 percent coverage level. These four highest coverage levels account for 95 percent of the use. Use is geographically related. In the heart of the Corn Belt (southern Minnesota, Iowa, northern and central Illinois, northern and central Indiana, many western Ohio counties), more than 90 percent of the acres are insured with 80 and 85 percent coverage level polices. Coverage levels tend to decrease from the heart of the Corn Belt as yield risk increases and crop insurance premium rises. For example, in my home state of Texas, average coverage levels are well below those purchased in Iowa and Illinois. Generally speaking, with higher premiums, farmers are purchasing an average coverage level of 65 percent on smaller optional units.

The previously cited statistics and NCGA's risk management survey conducted in late 2015 indicate that farmers have a strong preference for revenue products using enterprise units that protect against revenue declines across the farm. Policies that provide protection of farm yields are far more popular than those at the county level. Our national survey also confirmed that corn farmers are very price sensitive to insurance. Increases in crop insurance premiums resulting from reduced USDA support for discounts are likely to result in purchases of lower coverage levels, just as in the past decreases in farmer-paid premiums resulted in higher use.

Overall, corn farmers seem satisfied with overall crop insurance performance. Concerns, though, have been raised over the following provisions:

- Price discounts are sometimes difficult to account for in insurance. For example, crop damage due to aflatoxins can result in difficulties in determining indemnity payments.
- Prevented planting payments and related provisions seem to cause concerns in some areas, particularly in areas where flooding is common.
- Producers in areas that are frequently struck by very low yields have expressed concerns with the approved yield setting mechanism. The yield exclusion provision and higher t-yields implemented in past farm bills may have eliminated some of these concerns.

The Need for Farm Policy

As we have stated before, the marked increases in the corn industry's productivity have been achieved in large part by farmers' investments in new technologies and more modern production practices. NCGA believes that for the corn farmer who faces a high level of financial and production risks every year, these investments were made possible by a farm safety net that offers sound risk management tools and a cost-share Federal crop insurance program that serves as the foundation.

The crop insurance and commodity titles provide risk management to corn farmers. Crop insurance provides within-year risk protection against low yields or within-year price declines. The importance of this insurance was illustrated in 2012, when a major drought hit the Midwest and crop insurance provided payments for yield decreases occurring in that year. Moreover, crop insurance has replaced *ad hoc* disaster assistance programs. In 2012, a disaster assistance program was not passed, unlike in previous years when adversity occurred and crop insurance was not as strong or well-used of a program.

Commodity title programs provide protection against revenue or price decreases across years, a set of risks different from those addressed by crop insurance. ARC is designed to provide payments when a current year's revenue falls below a guarantee based on the five previous yields and prices. The importance of this protection is illustrated in 2014 and 2015 when ARC made payments were made in the face of revenue decreases. Without these payments, net incomes and financial deterioration would have been much worse.

In recent years, the financial posit[i]on of farms has deteriorated. However, few farms have faced the need to restructure by liquidating assets or have faced bankruptcy, although the incidence of farm bankruptcy has increased in recent years. Much of this can be attributed to crop insurance payments, particularly those occurring in 2012, and recent ARC–CO payments. Without these payments, the financial posit[i]on of many farms would be more seriously challenged.

The risk management benefits offered by crop insurance and commodity title programs are particularly important to family farms who receive the majority of their incomes from farming. In these cases, off-farm income may be limited, and any changes to the family's financial position is much more directly impacted by farm level performance. Without crop insurance and commodity title payments, the financial wherewithal of these farms would likely face serious erosion.

NCGA recognizes the daunting task now before the House Agriculture Committee to craft the next farm bill given the multiple and diverse needs of U.S. agriculture, particularly at a time of continuing budget constraints and increasing financial challenges confronting U.S. farmers and ranchers. I thank you for your time this morning and your consideration of our views regarding the impacts of the 2014 Farm Bill on corn growers.

The CHAIRMAN. Thank you, Mr. Spurlock.

I would like to yield to the gentlelady from Illinois, Mrs. Bustos, to introduce our next witness.

Mrs. BUSTOS. Thank you, Mr. Chairman. And good morning to all our panelists. It is my pleasure to introduce Ron Moore, who happens to come from my Congressional district, the 17th District of Illinois, but he is also the President of the American Soybean Association. A native of Roseville, Illinois, Ron is also the past Chairman of the Illinois Soybean Association. With his wife, Debra, and son, Mike, Ron has a soybean, corn, alfalfa, and feeder cattle operation. In addition to the Soybean Association, he has been involved with the Illinois Farm Bureau, the Illinois Beef Association, and the Illinois Corn Growers Association, among others.

I would also like to add that it is fitting to have an Illinoisan testify before us at this hearing today. Many of you know Illinois because our world champion Chicago Cubs, and also because of our deep dish pizza. Everybody can applaud now, in addition to Ron. But most of Illinois is rural. And that might be a surprise to some people, but most of Illinois is rural. And agriculture is still our number one economic driver.

So I am pleased to welcome Ron because he knows, and I know, that the number one state in the country for production of soybeans is Illinois. I am pleased to welcome Ron to our hearing, and I look forward to hearing your testimony. Thank you, Ron.

The CHAIRMAN. I thank the gentlelady. And would make note that Cardinal Nation extends well into Illinois, for the record, but we don't have to talk about that right now.

Mrs. BUSTOS. That is true.

The CHAIRMAN. I know you know that, I am just kidding.

Mr. Moore, you are recognized for 5 minutes.

STATEMENT OF RON MOORE, PRESIDENT, AMERICAN SOYBEAN ASSOCIATION, ROSEVILLE, IL

Mr. MOORE. Well, thank you and good morning. Thank you for the introduction, Congresswoman. I appreciate that. Mr. Chairman, thank you, and the Members of the Subcommittee.

As stated, I am Ron Moore, President, and I live in Roseville, Illinois. And we commend you for holding this important hearing, and appreciate the opportunity to testify today.

It has been only 3 years since enactment of the Agricultural Act of 2014, but conditions in the U.S. farm economy couldn't be more different. In view of higher market returns, Congress decided to eliminate the direct payment program to reduce farm bill spending by $23 billion below the CBO baseline. Farm programs received most of this cut, and agriculture was the only sector to contribute to deficit reduction. Today, farm prices are down by 41 percent, and farm income is down by 50 percent. Estimates for 2017 show a further decline of 7.1 percent. Land rents and input costs remain stub-

bornly high, and producers are having increasing difficulty obtaining operating loans.

While a safety net provided by title I programs and crop insurance has cushioned the impact on some farmers, others have not fared as well, and the protection these programs provide is declining as more low prices are factored into revenue formulas.

ASA's voting delegates approved policy resolutions earlier this month to ask Congress to write the 2018 Farm Bill based on a very real need by U.S. producers for a stronger safety net rather than extending existing programs. We appreciate your Committee's recent letter to the Budget Committee, which made a strong case against cuts to the current CBO baseline in the 2018 budget. However, as ASA and 16 other national organizations stated in a March 15 letter to the Senate Budget and Appropriations Committee, correcting shortcomings in the 2014 Act, and funding other important programs whose effectiveness has diminished over time will require additional resources from outside the farm bill.

We know this will be a difficult task for the Members of your Committee as well as your Senate counterparts, but farm groups are united and committed to support your efforts through discussions with House leadership.

ASA's recommendations for the 2018 Farm Bill begin with the need to maintain the current crop insurance program as a core risk management tool for producers of soybeans and other crops. The various sign-up options provided under crop insurance have proven their net worth in recent years, even as the cost of the program is now projected by CBO to decline about $1 billion a year. Crop insurance isn't broken, and it doesn't need to be fixed.

Regarding title I, we encourage the Committee to improve and build upon current programs under the 2014 Act, rather than develop new ones. We believe offering producers a choice between price-based PLC and revenue-based ARC programs appropriately reflects differences between crops and regions, and that another choice should be offered only on a one-time, crop-by-crop and farm-by-farm basis.

ASA strongly supports basing ARC and PLC program benefits on base acres planted to crops in recent years, rather than on acres planted to crops in their current year. This decoupling of payments in the current year planting is critical to encourage farmers to base their planting decisions based on market signals, rather than on the expectation that a particular crop will receive a government payment.

ASA supports giving farmers the choice to keep their existing crop bases, reallocate bases to reflect plantings in more recent years, or update bases to include production of all program crops on a farm. We also support updating program yields to reflect increases since they were last determined.

ASA believes that RMA data should be the default county yield data used when available, as it is generally considered more accurate than data based on voluntary surveys.

These and other title I changes, and the need to increase funding for programs and other titles, will require additional resources. These resources need to be in addition to the farm bill baseline, not redistributed from within the farm bill.

Attached to my written statement is a document from eight national farm organizations identifying issues on which we have been able to reach consensus. These include agreements on a number of commodity and conservation programs, crop insurance, and other provisions. Our organizations will continue to work together, and will work with other groups to develop common positions on these and other issues in order to provide unified input to the Congressional Agriculture Committees as the farm bill process goes forward.

Finally, ASA strongly supports keeping the agriculture and nutrition titles together in the farm bill. The only groups pushing for them to be split into two bills are critics from outside the ag community whose common goal is to defeat rather than pass a new farm bill. However the Committee may decide to proceed, an affirmation that the next farm bill must include programs to support both producers and consumers of food would send a strong message to farm bill critics, as well as to the farm and anti-hunger organizations that support this goal.

Thank you for the opportunity to be here today, Mr. Chairman, and I would be happy to respond to any questions.

[The prepared statement of Mr. Moore follows:]

PREPARED STATEMENT OF RON MOORE, PRESIDENT, AMERICAN SOYBEAN ASSOCIATION, ROSEVILLE, IL

Good morning, Mr. Chairman and Members of the Subcommittee. I am Ron Moore, a soybean and corn farmer from Roseville, Illinois, and President of the American Soybean Association. ASA represents U.S. soybean producers on domestic and international issues. We commend you for holding this important hearing, and appreciate the opportunity to testify today.

Mr. Chairman, it's been only 3 years since enactment of the Agricultural Act of 2014, but conditions in the U.S. farm economy couldn't be more different. In early 2014, farm prices had been at or near historic highs for 5 years. Soybeans peaked at over $14 per bushel in 2013. In view of higher market returns, Congress decided to eliminate the Direct Payment program and to reduce farm bill spending by $23 billion below the CBO baseline. Farm programs received most of this cut, and agriculture was the only sector to contribute to deficit reduction.

Today, farm prices are down by 41 percent and farm income is down by 50 percent. Due to continued low prices, estimates for 2017 show a further decline in income of 7.1 percent. Land rents and input costs remain stubbornly high, and producers are having increasing difficulty obtaining operating loans. While the safety net provided by title [I] programs and crop insurance has cushioned the impact on some farmers, others have not fared as well. And the protection these programs provide is declining as more low prices are factored into their revenue formulas. Many producers are asking that the next farm bill be written now rather than waiting 18 months or even longer.

In view of these circumstances, ASA's Voting Delegates approved policy resolutions early this month that ask Congress to write the 2018 Farm Bill based on the very real need by U.S. producers for a stronger safety net rather than extending existing programs. We appreciate your Committee's recent letter to the Budget Committee, which made a strong case against cuts to the current CBO baseline in the FY 2018 budget. However, as ASA and 16 other national farm organizations stated in a March 15 letter to the Senate Budget and Appropriations Committees, correcting shortcomings in the 2014 Act and funding other important programs whose effectiveness has diminished over time will require additional resources from outside the farm bill. We know this will be a difficult task for Members of your Committee as well as for your Senate counterparts. But farm groups are united and committed to support your efforts through discussions with the House leadership and with your colleagues in the House.

ASA's recommendations for the 2018 Farm Bill begin with the need to maintain the current crop insurance program as the core risk management tool for producers of soybeans and other crops. The various sign-up options provided under crop insur-

ance have proven their worth in recent years, even as the cost of the program is now projected by CBO to decline by about $1.0 billion per year. Crop insurance isn't broken, and it doesn't need to be fixed.

Regarding title [I], we encourage the Committee to improve and build upon current programs under the 2014 Act rather than to develop new ones. We believe offering producers a choice between a price-based PLC program and a revenue-based ARC program appropriately reflects differences between crops and regions, and that another choice should be offered on a one-time, crop-by-crop, and farm-by-farm basis.

Under a new sign-up, CBO expects many farmers who chose county ARC for soybeans and other crops will opt for PLC because of the impact that successive years of lower prices have had on ARC revenue benchmarks. This may happen, but we believe a choice between programs should still be offered, just as it was when 94 percent of soybean producers chose county ARC under the current bill. And a lower estimated participation level in county ARC relative to PLC may allow its revenue benchmarks to be enhanced without incurring significant additional cost. We also support efforts to improve the attractiveness of the individual coverage option under ARC.

Just as we did during debate on the 2014 Farm Bill, ASA strongly supports basing ARC and PLC program benefits on base acres planted to crops in recent years rather than on acres planted to crops in the current year. This "decoupling" of payments from current-year planting is critical to encouraging farmers to base their planting decisions on market signals rather than on an expectation that a particular crop will receive a government payment. Decoupling prevents production distortions that, under past farm bills, resulted in growing surpluses and a spiral of ever-lower prices for certain crops.

ASA supports giving farmers a choice to keep their existing crop acreage bases, reallocate bases to reflect plantings in more recent years, or update bases to include production of all program crops on a farm. We also support updating program yields to reflect increases since they were last determined.

Another improvement needed in title [I] is to change the current cascade policy for selecting yields under the county ARC program. ASA believes that RMA data should be the default county yield data used, when available, as it is generally considered more accurate than data based on voluntary surveys. In the event a county doesn't have RMA yield data, the RMA yield for an adjacent county or counties should be used. In cases where there are no adjacent counties with RMA yields, the county's NASS yield should then be used. While this approach could result in changes in the way benefits are currently distributed, using RMA data as the default county yield would be fairer and more defensible than the current policy.

ASA is aware that other crops have programs that have not provided an effective safety net for their producers. Cotton farmers are asking to replace or supplement the STAX program by making cottonseed an "other oilseed" under title [I]. ASA supports this request, provided funding doesn't come from elsewhere in the farm bill and that the program is WTO-compliant.

These changes and the need to increase funding for farm bill programs outside title [I] will require additional resources. These resources need to be in addition to the farm bill baseline, not redistributed from other farm bill programs. As I stated earlier, ASA and other farm organizations are united in supporting this effort, and are committed to working with your Committee to achieve it.

Finally, ASA strongly supports keeping the agriculture and nutrition titles together in the 2018 Farm Bill. The only groups pushing for them to be split into two bills are critics from outside the agriculture community whose common goal is to defeat rather than to pass a new farm bill. However the Committee may decide to proceed, an affirmation that the next farm bill must include programs that support both producers and consumers of food would send a strong message to farm bill critics, as well as to farm and anti-hunger organizations that support this goal.

Thank you, Mr. Chairman. I'll be happy to respond to any questions.

ATTACHMENT

Farm Bill Issues on Which We Agree

On March 15, 2017, farm and commodity organizations sent a letter to the Senate Budget and Appropriations Committees pointing to the sharp fall in farm prices and income since 2013 and asking Congress to provide additional funding in order to develop an effective farm income safety net in the 2018 Farm Bill. A number of these organizations have met to discuss specific issues that need to be addressed in the next farm bill and will continue to work to develop consensus proposals to share with the Agriculture Committees on potential ways to resolve them. The following

organizations are in agreement on the attached initial list of positions. To be clear, the beginning of this document covers only those issues where there is a consensus on every issue.

As our discussions continue and as guidance from the Committees is provided, we hope to expand this list to cover additional issues expected to be considered during negotiation of the new farm bill.

Overarching Issues:

Increase funding in the 2018 Farm Bill in order to address the significant reductions in farm prices and income incurred since 2013, and to meet other critical needs.

Federal crop insurance and commodity programs are our top funding priorities.

Commodity Programs:

Continue a counter-cyclical program like the Price Loss Coverage (PLC) program and a revenue program like the Agricultural Risk Coverage (ARC) program.

Change the ARC and PLC programs to make them more effective and fairer to all farmers.

If the ARC and PLC programs continue, farmers must be allowed to re-elect and re-enroll on a crop by crop basis.

Commodity program payments should be based on recent historical crop production rather than on current year planting.

Crop Insurance Programs:

Oppose reducing premium discounts.

Conservation Programs:

Maintain strong funding for Federal conservation programs which preserve environmental benefits, while continuing the prioritization of working lands conservation programs.

Maintain strong funding of the Environmental Quality Incentives Program (EQIP) and the Conservation Stewardship Program (CSP).

Examine the rental rates of the Conservation Reserve Program (CRP) and the Conservation Reserve Enhancement Program (CREP) annually at enrollment to ensure they mirror the rental rates of comparable land in the immediate area.

Improve State Technical Committees to make them more ag-friendly by encouraging producers' participation and input.

Other Programs:

Ensure adequate funding for agricultural research and education.

Continue work on simplifying procedures, reducing paperwork requirements and streamlining interactions between the Farm Service Agency (FSA), the Natural Resources Conservation Service (NRCS) and the Risk Management Agency (RMA) via the Acreage Crop Reporting Streamlining Initiative (ACRSI).

Continue and work to improve the Young and Beginning Farmer Programs implemented in the 2014 Farm Bill.

American Farm Bureau Federation;
American Soybean Association;
National Association of Wheat Growers;
National Barley Growers Association;
National Corn Growers Association;
National Farmers Union;
National Sunflower Association;
U.S. Canola Association.

Future Farm Policy Work:

On several other issues, more than a majority of the organizations are in agreement, but one or two have conflicting policy statements. We plan to continue to work towards agreement, but rather than another consensus document, we hope to "negotiate" some of those differences in future meetings and provide additional input to Congress.

Note: The National Cotton Council, Southern Peanut Farmers Federation and USA Rice have also participated in these discussions but do not have sufficient policy yet to support these provisions. All three of those groups, as well as those listed on this statement, intend to continue to work together to see if we can come to further agreements on these and other 2018 Farm Bill issues.

The CHAIRMAN. Thank you.

I now would like to introduce our next witness, President, National Association of Wheat Growers, from Sharon Springs, Kansas, Mr. David Schemm. You are recognized for 5 minutes.

STATEMENT OF DAVID K. SCHEMM, PRESIDENT, NATIONAL ASSOCIATION OF WHEAT GROWERS, SHARON SPRINGS, KS

Mr. SCHEMM. Chairman Crawford, Ranking Member Nolan, and Members of the Subcommittee, thank you for the opportunity to testify today.

I am David Schemm, the President of the National Association of Wheat Growers. I raise wheat and other crops on my farm near Sharon Springs in western Kansas.

A number of factors have caused prices to drop, and are expected to remain low for the foreseeable future. Through my testimony, I will highlight some of the key examples of how the 2014 Farm Bill programs have functioned effectively, and some areas where tweaks would be helpful. You will find more detail in my written testimony.

Let me start by laying out the economic conditions in wheat country. The past couple of years have proven to be particularly challenging for wheat farmers. Prices have dipped to levels we haven't experienced in a long time. Producers of Hard Red Winter wheat in my neck of the woods became eligible for LDPs and marketing loans for several months because prices dropped below loan rates. Farmers have had to deal with a rapidly declining market, and these low prices will make each passing year more difficult to get by, particularly for young and beginning farmers.

The low prices have also contributed to this year's winter wheat plantings decreasing to the lowest level since 1909; a time when farmers were working with a horse and plow. These conditions have made farm support programs absolutely critical. As the Agriculture Committee begins to write the next farm bill, it is important to approach the reauthorization process from the perspective of what farmers and rural America need.

Moving forward, I will lay out a few issues that have arisen for your consideration. I have utilized both ARC and PLC for my wheat crop, and that is why I can speak from personal experience on both of these programs. One issue we encountered during implementation was disparities in payment rates in the ARC-County program between neighboring counties. We have concern about the data that the Farm Service Agency uses to make yield determinations. In using NASS statistical data to establish yields, there is the possibility that different data sources could be used from year to year. To address this issue, our producers believe that using RMA data, where available, as the first data source would provide more assurances of accuracy and subsequently the integrity of the payment rate established for ARC-County.

One additional area where our producers have concern is that the current timing of assistance affects their ability to get credit. I talked to my banker yesterday. He said that he cannot incorporate safety net tools into a producer's cash-flow analysis because of the inconsistency and inaccuracy in these programs, compounded by the fact that assistance won't go out for a year and a half later.

Shifting now to price loss coverage. A large percentage of wheat base acres, 43½ percent, were enrolled in PLC, and we expect more participation if prices remain low, and there is an opportunity to re-elect programs which NAWG would support. We need to ensure the PLC reference price is set at a level that provides a suffi-

cient safety net when prices remain low. NAWG urges Congress to increase the PLC wheat reference price to a level that is tied to a cost of production.

In addition to title I programs, crop insurance is the most important risk management tool available to our farmers. NAWG opposes any efforts that would undermine the current structure of the program. We oppose any restrictions on eligibility for program participation based on a producer's adjusted gross income, any caps on Federal cost-share level, and any restrictions on a producer's ability to use the harvest price option. Restrictions would cause farmers to lower their crop insurance participation, which would cause premiums for all producers, big and small, to increase. Crop insurance has functioned incredibly well, and NAWG urges you to maintain the current structure of this critical program.

Ultimately, wheat farmers and all of agriculture are suffering some of the toughest economic conditions we have had to deal with since the 1980s. A strong safety net, risk management tools, conservation, and other important titles in the farm bill are needed now more than ever. Farmers who have the ability have shifted acres to crops that either have better returns or better risk protection. The shift of acres away from wheat shows that there needs to be tweaks to the program to better address the needs of our producers. Many of these tweaks are part of the consensus document that has been developed collaboratively with several other commodity organizations. This document has been included as an attachment to my written testimony. Moving forward, I urge you to move quickly in this process to ensure a full reauthorization bill can be completed prior to September 30 of 2018, so that farmers have certainty about the structure of the safety net and other farm bill programs.

With that, I will be happy to answer any questions.

[The prepared statement of Mr. Schemm follows:]

PREPARED STATEMENT OF DAVID K. SCHEMM, PRESIDENT, NATIONAL ASSOCIATION OF WHEAT GROWERS, SHARON SPRINGS, KS

Chairman Crawford, Ranking Member Nolan, and Members of the Subcommittee, thank you for the opportunity to testify today. I'm David Schemm, the President of the National Association of Wheat Growers. I raise wheat, corn, grain sorghum, and sunflowers on my farm near Sharon Springs in western Kansas. Thank you for holding this hearing as part of a larger series of hearings each of the Subcommittees are holding to review programs ahead of the next farm bill reauthorization.

Wheat growers across the country have experienced a multitude of challenges the past couple of years, with unfair competition from countries like China that have support systems that distort trade, a dollar value that is relatively high making our wheat more expensive than other major wheat producing-countries, and a bigger than expected crop right here at home last year. Wheat prices have been on the decline for the past couple of years, and took a significant dive last year. Prices are at unreasonably low levels right now and are expected to remain low for the foreseeable future. Programs authorized in the Agricultural Act of 2014 (the farm bill), and the crop insurance program in particular, have served has key tools to enable farmers to continue farming.

As the 2014 Farm Bill programs have been implemented, there have been some hiccups along the way. We've worked through them and have sought your help in influencing implementation, and we sincerely appreciate your help and attention to our concerns along the way. Despite those hiccups, the programs have been functioning as they were supposed to: as a safety net for producers. Through my testimony, I will highlight some key examples of how these programs have functioned effectively and some areas where tweaks would be helpful.

Let me start by laying out the economic conditions in wheat country.

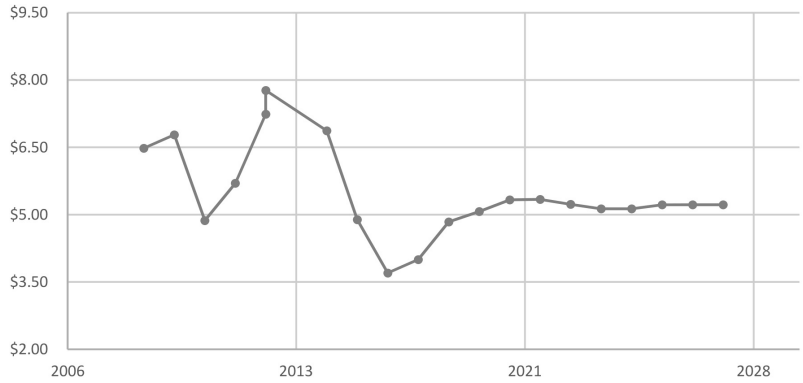
Economic Conditions in Wheat Country

The past couple of years have proven to be particularly challenging for wheat farmers across the country. Farmers of most commodities are experiencing lower than normal prices. Wheat in particular has dipped to levels we haven't experienced in a long time. Producers of Hard Red Winter (HRW) wheat in my neck of the woods became eligible for marketing assistance loans (MALs) and Loan Deficiency Payments (LDPs) for several months for the first time in several years because prices dropped below loan rates. When the last farm bill was written, loan rates were set at such a low level they were never expected to trigger. They have, but MALs and LDPs have functioned as helpful cash-flow tools. Farmers have had to deal with a rapidly declining market, and months and years of sustained low prices will make each passing year more difficult to get by, particularly for young and beginning farmers who weren't able to build up reserves during the high price years. This is particularly relevant as the average age of a farmer is 58 and expected to climb over the coming years.

There have been a number of different factors that have contributed to the low prices, which I will discuss throughout my testimony. One additional contributing factor has been market competition from other large wheat-producing countries. Though this falls outside the scope of title [I], I strongly believe that Congress needs to continue to aggressively pursue new markets. Along those lines, NAWG supports reauthorizing doubling funding for the Market Access Program (MAP) and Foreign Market Development (FMD) program as part of the next farm bill.

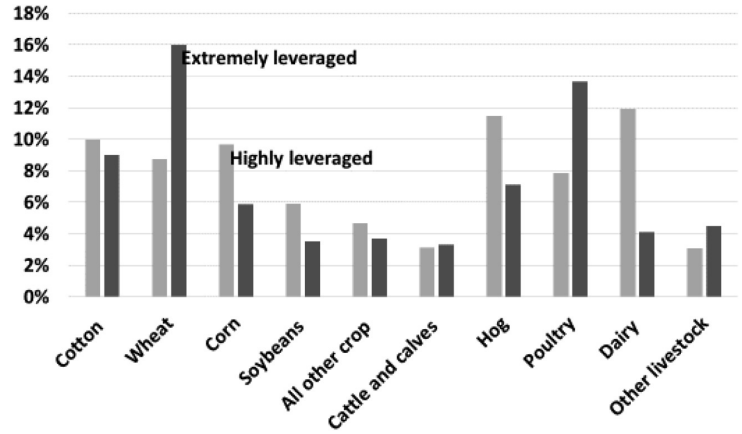
As the chart below laying out the market year average price shows, there have been some big swings over the past few years and more recently there have been significant drops in prices; the market year average price is determined by USDA and is used in setting farm program and crop insurance payments. Additionally, as I'll discuss later in my testimony, the price that farmers are actually receiving from their local elevators is often much lower than what the market year average price would show.

Market Year Average Price



The data in the above chart for 2008 through 2015 shows the Market Year Average Price from USDA NASS, and from 2016 through 2027 shows the assumptions made by the Congressional Budget Office (CBO) for future Market Year Average prices. The low prices have led to farmers needing to take on more debt in order to continue operating. As such, producers' debt to asset ratio's have grown rapidly recently. The chart below lays out the degree to which producers have taken on debt. Over eight percent of wheat producers are considered by USDA's Economic Research Service to be "highly leveraged" and 16 percent are considered to be "extremely leveraged."

About One in Ten Farms Are Highly Or Extremely Leveraged, But it Varies By Commodity

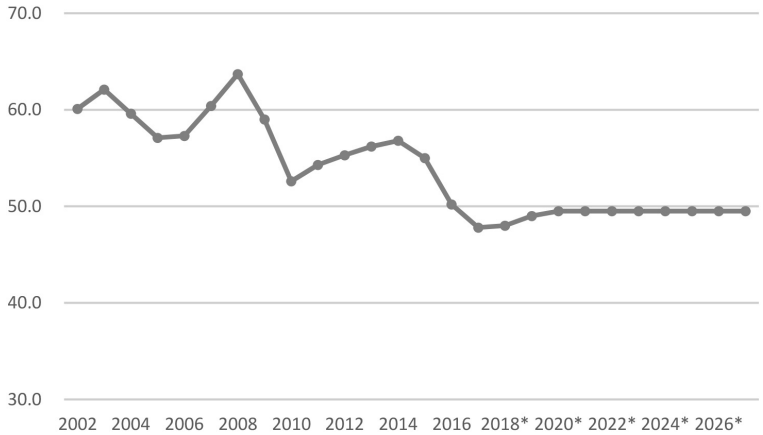


Data: USDA–ERS, Nov. 2016 forecast for 2016.

The economic conditions of the past few years have also contributed to a drop in planted wheat acreage, which is generally predicted to continue moving forward. Plantings for 2016–2017 winter wheat are at the lowest level since 1909, a time when farmers were working with a horse and plow. Spring wheat planting is expected to be down as well, and we anticipate overall planted acres of wheat will be at historically low levels this year.

Wheat Planted Acres

(Millions of Acres)



The chart above shows historic and projected future plantings of wheat. The 2002–2016 timeframe shows the actual planted acres, as published by USDA's National Agricultural Statistics Service (NASS). The 2017–2027 data points show the anticipated future plantings of wheat as published in the January 2017 Congressional Budget Office (CBO) baseline report. CBO anticipates that there will be a small swing back up in acreage, but this still exemplifies the challenging conditions facing growers of wheat when they pull back their production and shift to other crops.

Writing the Next Farm Bill

The last farm bill was estimated to have reduced spending by $23 billion over 10 years, at the time of passage. Since then, farm bill programs have cost less. The recent CBO baseline estimates that farm bill programs cost about $100 billion (over

10 years) below what was originally estimated. These programs have performed well. But it also means this Committee will have a smaller baseline for writing the next farm bill, even though there is a growing need for improving farm support programs which will require additional baseline. NAWG recently joined with a broad array of organizations, including those represented here, in sending a letter to the House and Senate Budget and Appropriations Committees laying out the economic conditions in farm country and laying out the case for more resources for writing the next farm bill than are available under the most recent CBO baseline. We want the Agriculture Committees to have the resources necessary to write programs that meet producers' needs.

Agriculture Risk Coverage (ARC) program

One of the higher profile issues we encountered during implementation was significant disparities in payment rates in the ARC-County program between neighboring counties in some areas of the country. ARC-County was, of course, designed in a way where there would be differences in payment rates as it's a county-based program. Payment rates will inherently vary across the countryside depending on the growing conditions in particular counties. However, we have concern about the data that the Farm Service Agency uses to make yield determinations.

The FSA has administratively taken the approach of first utilizing data from the National Agricultural Statistics Service (NASS). This data is gathered through voluntary producer surveys, and if NASS is unable to obtain at least 30 responses from producers in a county then the agency won't publish a yield for that county. If NASS is unable to publish a yield, FSA will then utilize a cascade of other data sources, including Risk Management Agency (RMA) data, regional NASS data, or a determination made by the state FSA director. As this sort of situation could happen in a particular county inconsistently over time, that could mean that the data used to establish a county's benchmark yields and the actual yield for the year in question could come from multiple sources; this is like comparing apples to oranges. To address this issue, our producers believe that using RMA data as the first data source would provide more assurances of the accuracy of the data that's being used, and subsequently the integrity of the payment rates established for ARC-County. We recognize that there will still be disparities in payment rates between counties, but utilizing more reliable data will help to instill more confidence in our producers that they are getting fair treatment from the program.

Much of wheat country is in very rural areas with large counties where weather and growing conditions can vary widely from one part of the county to another. This dynamic was part of the reason the last farm bill included ARC-Individual coverage (ARC–IC). As ARC–IC only applies on up to 65 percent of a participants' base acres, it is less attractive than participating in ARC-County. An option to improve the functionality of ARC-County could be to explore smaller-than-county sized geographic areas, like crop-reporting districts, that could be utilized for establishing payment rates. This approach could enable payments to be triggered at a more localized level and to be more reactive to the actual experience of producers.

Our producers acknowledge the political and budgetary considerations at play in writing the last farm bill, and the subsequent need to shift payments under the title [I] programs until after the subsequent fiscal year after the crop year has concluded. However, there are multiple negative ramifications at the farm level as a result of this budget move. The seed and fertilizer bills don't wait until a year after the crop is harvested before they come due. Additionally, when I go to the bank to prepare to plant a crop, it's nearly impossible to predict a year and a half in advance what the assistance I might be eligible for will look like; as a result I can't accurately predict my cash-flow. That has a big negative impact on my ability to get financing. It would be beneficial for you to explore the possibility of moving up the timeframe for program payments, or to maybe explore the possibility of making advanced partial payments.

Price Loss Coverage

A larger percentage of wheat base acres were enrolled in Price Loss Coverage (PLC) as compared to some of the other major commodities, like corn and soybeans. About 43.5 percent of wheat base acres are enrolled in PLC. The recent Congressional Budget Office (CBO) baseline, in projecting the costs of USDA programs over the next 10 years, assumes that Congress will allow for a producer re-election after the expiration of the current farm bill and that 80 percent of base acres will enroll in PLC. This is anticipated as lower prices of the past couple of years will begin to be incorporated into the ARC benchmark, ultimately reducing the benchmark revenue.

From NAWG's perspective, this means that it will be important to adjust the ARC formula to enable it to continue to be functioning as a safety net when the need is there. It also means we need to ensure the PLC reference price is set at a level that provides a sufficient safety net when prices are at perpetually low prices.

NAWG urges Congress to increase the PLC wheat reference price to a level that is tied to cost of production. To make PLC as effective as possible, an appropriate measure for a reference price should be what it costs to produce the crop. We feel this would be a fair way to set support levels and to provide relatively proportional levels of support.

Producer Choice

The 2014 Farm Bill rightly included a producer choice between revenue protection and price protection as part of the process of replacing the previous direct payments program. NAWG supports maintaining a producer choice between revenue and price protection as part of the next farm bill.

In general, the ARC and PLC programs have been working as they were intended to work and they have been providing a key safety net for producers across the country. We were pleased at the speed with which the Farm Service Agency (FSA) was able to implement the new programs and to make them available to producers beginning with the 2014 crop year. Moving forward, we believe these programs need to be enhanced for wheat to address the highly leveraged situation they now find themselves in, as indicated in the previous chart.

Other Title [I] Issues

Wheat growers are heavily reliant upon our export markets, with ½ of our crop being shipped out. As such, it's critically important to our growers that we have a level playing field internationally in which to sell our wheat, and that includes ensuring we have an international arbiter of rules. The World Trade Organization (WTO) framework isn't perfect, but we think it's important that all member countries abide by WTO rules, including ourselves. We applaud the work the House Agriculture Committee has done to bring attention to the rules violations that have been committed by countries like China, whose policies have been shown to cause U.S. wheat farmers to lose out on roughly $650 million a year. But we also strongly urge you to write legislation that provides a safety net that doesn't violate our trade commitments. We believe the current system of tying payments to a producers' recent historical production should be continued.

Crop Insurance—What's Working and What's Not Working

The Federal Crop Insurance Program has been and continues to be farmers' most important risk management tool. The current structure of the program, which requires a farmer to pay a premium, the cost of which is shared with the Federal Government, and the producer has to suffer an indemnifiable loss before they get any sort of payment.

Crop insurance is very popular with producers. For the 2015 crop year, there 56.8 million acres of wheat grown in the United States (according to USDA's Economic Research Service (ERS)), of which 49.4 million acres (or 87 percent) were insured (according to USDA's Risk Management Agency Summary of Business document, as of March 20, 2017). This high participation rate is indicative of the effectiveness of the program.

The last couple of years have been particularly difficult for wheat farmers. Crop insurance has played an important role in helping producers get through the current low prices. Each year there will inevitably be producers in some part of the country that experiences weather conditions outside of their control that could take out their crop. Crop insurance is critically important to enable a producer to farm another year after such an experience.

NAWG opposes any efforts that would undermine the current structure of the program. Specifically, we oppose any restrictions on eligibility for program participation based on a producer's Adjusted Gross Income, any caps on the Federal cost-share level, and any restrictions on a producer's ability to utilize the Harvest Price Option (HPO). Restrictions on eligibility would cause farmers to lower their crop insurance participation which would not only cause the producer to take on more risk, but it would also cause premiums for all producers, big and small, to increase. If producers lower their coverage or if fewer producers are participating, that means there are fewer acres over which to spread risk in the program, ultimately requiring premiums to increase.

In addition to supporting the current structure of the producer support component of crop insurance, NAWG also opposes any cuts to the delivery system. The current public-private partnership for program delivery to producers has worked very well and has ensured that producers can get timely assistance when economic or weather

disasters strike. Efforts to reduce the target rate of return or the Administrative and Operating (A&O) reimbursements would negatively affect crop insurance companies and their ability to deliver programs, and would thus have a negative impact on producers. The Federal crop insurance has also performed incredibly well, with an improper payment rate of just 2.2 percent, which is about ½ the government-wide average of 4.39 percent. NAWG urges you to exclude any of these types of proposals.

Wheat producers have experienced a few issues over the past couple of years that warrant discussion.

Yield Exclusion

NAWG was very supportive of the inclusion of the Yield Exclusion provision as part of the last farm bill. When the farm bill was being written, many producers were suffering periods of prolonged drought. The Yield Exclusion provision enables producers in a county that had yields with a 50 percent or greater hit to be able to exclude that year's yield from their Actual Production History. We were, however, disappointed that USDA was unable to implement this provision for the 2015 winter wheat crop. Members of the House Agriculture Committee were true champions of wheat during that time when you raised this problem with USDA officials. Though the Department was still unwilling to have the provision apply to that year's crop, the Committee's attention to this issue undoubtedly drove USDA to quickly move forward with implementation for spring-seeded crops that year and subsequently the 2016 winter wheat crop.

Non-Convergence in the HRW Futures Market

I'm a Hard Red Winter (HRW) wheat producer in western Kansas. Last year, our planted acres were down but we still had a crop that exceeded our previous yield record by over 10 bushels per acre. We had a much bigger crop than expected. This had a lot of implications for the markets. Where were we going to not only ship our wheat, but where were we going to store it in the interim? There were and continue to be significant logistical issues associated with the huge crop. This was just exacerbated by big crops in other large-producing countries, like Russia which was the largest producer last year. We had significant competition in our export markets from other countries whose wheat was relatively less expensive than U.S. wheat in part because of the relatively high value of the U.S. dollar. These economic forces have been part of the cause of the depressed prices.

At harvest time, as is the case for any crop, there is generally immediate downward pressure on prices because everyone is delivering to the market right from the field at the same time. We'll often experience a growing divergence in the local cash price as compared to the futures market; the difference is referred to as the basis. Producers of HRW experienced a much wider basis than what we've experience in a long time. Personally, my local basis jumped from $0.70 a bushel to $1.55 a bushel in just 10 days. This was a dramatic nose-dive in my local cash price.

There are several different options that can be explored to address this non-convergence issue that I don't need to get into here, but this Committee should be aware of the crop insurance implications of this problem. For HRW producers with revenue coverage, their contract is based on the Kansas City futures price. When the local cash price was $1.55 below the futures price, had I sold the crop and tried to pursue an indemnity, my contract would've only reflected that I was receiving the futures price rather than the actual price. In essence, my "actual" revenue was significantly inflated compared to my real experience. There are similar implications for the ARC program, in that the ARC formula utilizes a market year average price, which wouldn't account for farmers experiencing a wide basis.

NAWG has been exploring this issue to identify whether there are components of the crop insurance program that can be adjusted to make the program more reactive to what the farmer is actually getting paid for their crop. As we continue with this process, I will keep in touch with you and the rest of the Committee.

Quality Adjustments

Our wheat markets set strict standards for quality. And wheat tends to be more susceptible to quality problems than many other commodities. There are technologies in place to assist producers in producing the best quality of wheat anywhere in the world, but we are still dependent upon favorable growing conditions. This year, two of the more high profile issues our growers experienced were low Falling Numbers and vomitoxin in the northern Plains.

Many producers have suffered from widespread financial losses due to weather-induced problems resulting in poor end-use quality as measured by low Hagberg-Perten Falling Numbers. The Falling Number test detects starch degradation due to alpha-amylase enzyme activity and possibly other factors in wheat flour. This ul-

timately indicates that the flour has poorer quality for baked goods. Farmers experiencing low Falling Numbers will likely receive a discount at their elevator, often significant depending on the degree to which their load was affected. Additionally, with low Falling Numbers, though the quality has taken a hit, it isn't a yield issue. In fact, the producers in Washington, Idaho, and Oregon that experienced this problem had bigger than average yields. However, the way the statute is written, those quality discounts are applied to a producer's Actual Production History (APH); even though low Falling Numbers doesn't directly affect a producer's yield, RMA still requires that their yield be reduced to reflect that quality loss. This occurs even if the producer doesn't pursue an indemnity. From a fairness standpoint, it would be worth looking into whether such quality discounts could be applied to the price side of the equation rather than the yield side so that a producer's APH isn't affected for 10 years until that year's yield is cycled out.

Conservation Compliance

NAWG continues to have serious concerns about linkage of conservation compliance to crop insurance. NAWG supports a strong crop insurance program as part of the farm safety net and believes that growers should be encouraged to purchase crop insurance. Additional requirements to obtaining crop insurance, such as the conservation compliance requirements added in the 2014 Farm Bill serve as a disincentive to purchase crop insurance. NRCS continues to have a backlog of wetland determinations, with over 2500 awaiting review in the prairie pothole region at the beginning of January. NAWG supports voluntary conservation programs included in the farm bill that work with producers on their land in production to help them adopt conservation practices to improve natural resources and farm productivity.

Conclusion

Ultimately, wheat farmers and all of agriculture are suffering some of the toughest economic conditions we've had to deal with since the 1980s. The political and policy dynamics facing Congress this year are much different than the process to write the last farm bill. A strong safety net and risk management system is needed now more than ever. At the same time, it doesn't matter whether farmers are getting record prices or if they're bottoming out. The risks that farmers take every year in putting a crop in the ground requires there to be an effective risk management system and safety net in place to offset some of that risk in order to protect against the inevitable weather disaster or price drop. Crop insurance and the title [I] programs have proven to be effective and good policy in general.

For many farm bills, Congress has asked commodity groups to work together to come up with consensus on policy topics in the farm bill. The attached document is the beginning of that collaborative process. Farm and commodity organizations sent a letter to the Senate Budget and Appropriations Committees pointing to the sharp fall in farm prices and income since 2013 and asking Congress to provide additional funding in order to develop an effective farm income safety net in the 2018 Farm Bill. A number of these organizations have met to discuss specific issues that need to be addressed in the next farm bill and will continue to work to develop consensus proposals to share with the Agriculture Committees on potential ways to resolve them. The following organizations are in agreement on the attached initial list of positions.* To be clear, the beginning of this document covers only those issues where there is a consensus on every issue.

As our discussions continue and as guidance from the Committees is provided, we hope to expand this list to cover additional issues expected to be considered during negotiation of the new farm bill.

As you continue your series of hearings, I look forward to working with you to write the next farm bill. I also urge you to move quickly with Chairman Conaway in this process to ensure a full reauthorization bill can be completed prior to the expiration of the current farm bill on September 30, 2018, so that producers have certainty about the structure of the safety net moving forward.

With that, I'll be happy to answer any questions.

The CHAIRMAN. Thank you.

I would now like to yield to the gentleman from Minnesota, the Ranking Member of our full Committee, Mr. Peterson, for the next introduction of our witness.

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* **Editor's note:** the document referred to is entitled *Attachment,* and follows the prepared statement of Mr. Moore (located on p. 799). For purposes of this publication it is not reprinted here.

OPENING STATEMENT OF HON. COLLIN C. PETERSON, A REPRESENTATIVE IN CONGRESS FROM MINNESOTA

Mr. PETERSON. Well, thank you, Mr. Chairman, and thank you for holding the hearing.

I would like to welcome one of my constituents, Peter Friederichs, from just south of me, over in west central Minnesota in my district. He is an outstanding leader in agriculture in our area. In addition to barley, he grows wheat, soybeans, and sunflowers, I guess. And you have a seed business, right? He is one of the, as I said, leaders of our area. And as you will hear from his testimony, I went through many years fighting with the former Staff Director of the Committee, since 1992 I tried to raise the barley target prices, and I was unsuccessful year after year after year, until the staff director retired. And then we were able to get the target price raised from, it was $2 something to $4.95. One of the arguments I had with him was that, well, if we raised it, it was basically more towards the malting barley price rather than feed barley, we are going to get too much production. Well, that hasn't happened. All these arguments that we have about how these target prices are distorting production and how, if you use base acres *versus* planted acres you are going to distort production, I don't think hold up when you see what happens in the real world.

So as somebody who used to grow barley, maybe the reason that the production is down, it is so miserable to harvest, especially if you don't have a cab. You are going with the wind.

But anyway, welcome, Peter. Glad to have you here.

The CHAIRMAN. I thank the gentleman. And, Mr. Friederichs, you are recognized for 5 minutes.

STATEMENT OF PETER FRIEDERICHS, PRESIDENT, NATIONAL BARLEY GROWERS ASSOCIATION, FOXHOME, MN

Mr. FRIEDERICHS. Thank you, Mr. Chairman and Members of the Committee, for inviting me here to testify today.

I am Peter Friederichs, President of the National Barley Growers Association. I farm in west central Minnesota, growing barley, wheat, soybeans, and sunflowers. Because most barley growers also plant several other crops on their farms, I will concur with the statements my colleagues are making today, and focus for the most part on barley-specific issues.

Barley is a cool-season crop grown primarily along the Canadian border, from Minnesota to Washington State, and down into Wyoming and Colorado. This region accounts for 90 percent of the 3½ million acres planted annually. About 75 percent of this production is destined to become malting barley, with the remainder going into the feed market. Because feed barley prices can be ½ of malt barley prices, most growers do not plant barley without securing a malt contract. Good production and acceptance rates the last 2 crop years have reduced the demand for malt barley, and acreage is expected to decline this year because fewer contracts are available from the malt and beer industry.

The countercyclical nature of the 2014 Farm Bill is working as intended, especially in barley's case. Seventy-five percent of barley acres were signed into the PLC program, with the remainder going into the ARC program. No PLC payments were triggered, and

minimal ARC payments were issued for the 2014 and 2015 crop years because barley prices did not fall as sharply as other crops during those years; down just 15 percent from their peak in 2012. However, 2016 barley prices are down another ten percent and will trigger more payments. And our 2017 contract prices have fallen an additional ten percent.

The steep discount for feed barley means planting for the malting market is a high risk venture. For that reason, NBGA and our industry partners worked with the Risk Management Agency to develop a malt barley endorsement to help mitigate this risk. Although this option was first available last year, there are still issues to be worked out regarding full coverage of these quality risks. NBGA is appreciative of RMA's willingness to continue working with us on improving this endorsement. And for the record, the NBGA is a staunch supporter of the overall crop insurance program.

All farmers are very concerned about the status of agriculture trade in the current political climate. For instance, Mexico is our number one market for malting barley exports, and recent efforts to increase sales to our customers south of the border have been put on hold indefinitely due to the current uncertainty surrounding our nation's trade policy with Mexico. If this export market is lost, agricultural prices could fall further and result in even higher commodity title payments than currently expected.

The 2014 Farm Bill has created another challenge that was unforeseen at the time it was passed. Farmers are finding it increasingly difficult to secure annual operating loans from their local banks because of low crop prices, coupled with high input costs. Each year, we prepare a financial plan for our banks, showing that we can generate a positive cash-flow with our expected crop revenue, as well as our expected operating expenses. This year, many of these plans are only showing a positive cash-flow if the expected 2014 farm program payments is included. However, current Federal banking regulations are not allowing banks to include this payment that is received a year later because the discovery period of the 2017 average marketing year price does not begin until after harvest, runs for a year, and is, thus, considered too far in the future and speculative to be included. If the farmer has working capital that can be applied to the deficit the loan can still be approved, but in worst case scenarios farmers without adequate working capital may be denied operating loans, and ultimately forced out of business. If the low crop prices continue as predicted and our costs don't go down, the situation will only get worse as more and more farmers deplete their working capital.

In closing, the NBGA has recently partnered with the malting and beer industries, both large and small craft brewers, to ensure that an adequate supply of good quality malt barley is grown in the U.S. to produce the 190 million barrels of beer brewed annually. Barley acreage has been in perpetual decline over the last 2 decades, and it became clear to all that a concerted effort to keep the crop viable was needed. As the brewers know very well, without barley you have no beer. No barley, no beer.

Thank you, Mr. Chairman, for your time and attention, and I will be happy to answer questions the Committee may have for me.

[The prepared statement of Mr. Friederichs follows:]

PREPARED STATEMENT OF PETER FRIEDERICHS, PRESIDENT, NATIONAL BARLEY GROWERS ASSOCIATION, FOXHOME, MN

On behalf of the National Barley Growers Association, I want to thank the Chairman and Ranking Member as well as the Committee for this opportunity to comment on the commodity and crop insurance programs from the perspective of U.S. barley growers. I am Peter Friederichs, President of the National Barley Growers Association. I operate a fourth generation family farm in west central Minnesota near Foxhome, growing malt barley, spring wheat, soybeans, and sunflowers; as well as a registered seed sales and conditioning facility. Because most barley growers also grow a host of other crops on their farms as well, I will concur with the statements my colleagues are making here today and focus for the most part on barley specific issues.

Barley is a cool-season crop grown primarily in the Northern Plains and Pacific Northwest. This region along the U.S.-Canadian border accounts for 90 percent of the 3 to 3.5 million acres planted in the U.S. each year. The U.S. produces about 200 million bushels of barley annually and roughly 75 percent of this production is destined to become malting barley with the remainder going into the feed market. Because feed barley values are routinely less than 50 percent of malt barley values, most traditional barley growers in recent years do not plant the crop without securing a malt contract prior to seeding. The combination of good production and acceptance rates the last 2 crop years has reduced the demand for malt barley for the coming year. Acreage is expected to decline in 2017 because of a reduction in contracts available from the malt and beer industry, coupled with the depressed price for feed barley. Producers will substitute other crops in place of barley in their rotation this year; and for me personally, it will likely mean more wheat, soybeans, or sunflower acreage.

What's working with the current farm bill?

Probably to the dismay of some barley producers who see other crops receiving larger payments, the counter-cyclical nature of the 2014 Farm Bill is working as intended in barley's case. 75 percent of barley base acres were signed into the PLC program, 22 percent into ARC–CO, with the remaining four percent into ARC–IC. Because barley prices did not decline as sharply as other crops during the 2014 and 2015 crop years—just 15 percent from their peak in 2012—no PLC payments were triggered and minimal ARC–CO payments were issued for the 2 crop years respectively. However, prices for the 2016 crop year are down another ten percent and will trigger more payments; and 2017 crop year contracts have fallen an additional ten percent.

Challenges facing barley:

(1) The aforementioned quality issues and the steep discount for feed barley means planting barley for the malting market is a high risk venture. For that reason, the NBGA and its industry partners worked with the Risk Management Agency to develop a Malt Barley Endorsement for barley's standard crop insurance policy to help mitigate this risk. Although this option was first available for the 2016 crop, there are still issues to be worked out regarding full coverage for these quality risks. NBGA is appreciative of RMA's willingness to continue working with us on improving this needed endorsement. And for the record, the NBGA is a staunch supporter of the overall crop insurance program.

(2) While not part of the commodity or crop insurance title, the NBGA would be remiss if this statement did not reference our concern about the status of agricultural trade in general. Mexico is our No. 1 market for malt barley exports, and our recent efforts to increase sales to our customers south of the border has been put on hold indefinitely due to the current uncertainty surrounding our nation's trade policy with Mexico. If this export market is lost, agricultural prices could fall further and result in even higher Commodity Title payments than currently expected.

(3) Another challenge facing barley farmers—as well as other producers in all parts of the country—is the increasing difficulty in securing annual operating loans from local financial institutions because of the current depressed commodity prices coupled with still relatively high input costs. Each year, in order to secure operating loans, farmers need to prepare a farm plan for their banks showing their farm will generate a positive cash-flow with the expected revenue from the crop mix they plan to plant as well as what they expect to

pay for inputs, rent, machinery and/or land payments, and living expenses. This year, many of these plans are **only** showing a positive cash-flow *if* the expected farm program support payment for the 2017 crop is included.

However, current Federal banking regulations are not allowing banks to include this expected October/November 2018 payment because the year-long discovery period for the 2017 average marketing year price does not begin until after harvest and is considered too far in the future and speculative to be included. If the farmer has working capital that can be applied to the deficit, the loan can still be approved. However, in worst case scenarios, farmers without adequate working capital may be denied operating loans and ultimately forced out of business. If the current depressed price / high input cost environment continues as predicted, this situation will only get worse as more and more farmers deplete their working capital.

In closing, the NBGA in recent years has partnered with the malting and beer industries—both large and small craft brewers—to ensure that an adequate supply of good quality malt barley is grown in the U.S. to produce the 190 million barrels of beer that are brewed annually. This cooperation came about because barley acreage had been in perpetual decline for most of the last 2 decades, and it became clear that a concerted effort to keep the crop viable was needed. As the brewers know very well—without barley, you have no beer. No Barley—No Beer.

Thank you Mr. Chairman for your time and attention. I will be happy to answer questions the Committee may have for me.

The CHAIRMAN. You are not kidding around, are you?

And our final witness, the Vice Chairman of the National Sorghum Producers, Stockton, Kansas, Mr. Dan Atkisson, you are recognized for 5 minutes.

STATEMENT OF DAN ATKISSON, VICE CHAIRMAN, NATIONAL SORGHUM PRODUCERS, STOCKTON, KS

Mr. ATKISSON. Chairman Crawford, Ranking Member Nolan, and Members of the Subcommittee, thank you for this opportunity to come before you and present the views of the National Sorghum Producers regarding title I, crop insurance, and our next farm bill.

My name is Dan Atkisson, and I farm near Stockton, Kansas. I am a true family farmer; working alongside my father, my wife, Amanda, and my 4 year old son, Eli, whom I hope will take over our farm one day. We grow sorghum, wheat, and forages to support a herd of commercial and registered Black Angus cattle. I am honored to serve as the Chairman of the National Sorghum Producers Legislative Committee, and I hope and expect to be very engaged throughout the process of crafting this next farm bill.

Mr. Chairman, I will give an overview of several positive trends in sorghum within my written testimony, from increasing productivity to expanding markets within the food sector. These are exciting, big-picture developments for sorghum, but any positive developments for the long-term are completely overshadowed by the current state of our ag economy.

Since the passage of the 2014 Farm Bill, prices for sorghum have fallen from a benchmark of $5.10 a bushel to just $2.69 per bushel for the 2016 crop; 53 percent of that benchmark. Today in farming, it is not a question of how to make a profit, but how to minimize our losses and survive until next year.

Virtually all commodity crops have faced a similar decline in prices, but unique to sorghum is an emerging pest, the sugarcane aphid, which is driving up cost of productions, adding a burden of $430 million in the 2016 growing season alone.

The National Sorghum Producers believes in the need for a strong and reliable title I safety net that is balanced and provides assistance when needed. One very real problem with the current policy is the timing of payments and its impact on cash-flow. National Sorghum Producers asks you consider moving up farm bill assistance timing, or even making marketing assistance loan rates more relevant to help with cash-flow.

In regard to ARC and PLC, clearly, with the 20/20 vision that hindsight offers, PLC is a better safety net for sorghum farmers. PLC was very conservative up-front when prices were still above $4 per bushel, but the policy is now kicking in to provide help when it is desperately needed. In contrast, ARC assistance was a virtual certainty when farmer elections were being made. With a target revenue generated from $5.10 per bushel benchmark, the logic was to take a bird in the hand and put it to use. Unfortunately for farmers, markets have not rebounded as hoped. Going forward, we are open to the idea that the ARC model could be improved. We also believe that PLC could be improved, and generally favor this model, coupled with a strong crop insurance program. However, NSP pledges to work with you in a constructive manner, and ensure proper balance is struck and an adequate safety measure is crafted.

Before moving to crop insurance, I would like to add that we urge caution in thinking about how these policies affect plantings of commodities, and urge more thoughtful approaches to CRP going forward, along with other incentives that can encourage crop rotations that promote soil health and other conservation benefits.

Crop insurance is indispensable to sorghum farmers, but that does not mean it cannot be improved. For sorghum particularly, participation rates and coverage levels are low when compared to other row crops. A full 19 percent of sorghum acres are not insured. This is the highest among major row crops. There are many reasons for this, but the single biggest reason is that sorghum insurance is simply too expensive. Over the last 10 years, the loss ratio for sorghum has been 0.88, lower than corn and the statutory target. Considering this window of time includes 3 years of record drought within the Sorghum Belt, we believe that the rates for sorghum generally should be lowered. We are also working with private partners and RMA to explore improving these policies through a 508(h) process. We believe this will address some county-by-county inequities between sorghum and competing crops.

Finally, Congressman Ron Kind is again carrying the EWG's water with a reintroduction of the AFFIRM Act. NSP firmly believes that Kind's bill, with arbitrary limits, means tests, and publication of contracts has absolutely no place in the business transaction of crop insurance.

Mr. Chairman, in closing, I want to thank you again. As a farmer and member of the National Sorghum Producers, we truly appreciate the task you have before you. We consider all aspects of the farm bill to be critical; from research to conservation, and commodity programs to crop insurance. But tough times cause us to focus, and title I and crop insurance should rightly take center stage.

NSP appreciates your attention to these important policies, and we stand ready to work with you to make these policies work even better, going forward.

[The prepared statement of Mr. Atkisson follows:]

PREPARED STATEMENT OF DAN ATKISSON, VICE CHAIRMAN, NATIONAL SORGHUM PRODUCERS, STOCKTON, KS

Introduction

Chairman Crawford, Ranking Member Nolan, and Members of the Subcommittee, thank you for this opportunity to come before you and present the views of the National Sorghum Producers regarding the next farm bill as it relates to commodity policy and crop insurance. These policies are critically important to America's farmers and ranchers, so we greatly appreciate the Subcommittee's focus here today.

My name is Dan Atkisson, and I farm near Stockton, Kansas. I am a true family farmer, working alongside my father, my wife, Amanda, and our 4 year old boy, Eli, who I hope might also take care of our land and make a living from it one day. We grow sorghum, wheat, and forages to support herds of commercial and registered Black Angus cattle. I am very honored to serve as Chairman of the National Sorghum Producers Legislative Committee. I am also Vice Chairman of the NSP board of directors and have been very involved since becoming a member of the second Leadership Sorghum class just a couple years ago. I am a proud graduate of Kansas State University with a bachelor's degree in Agricultural Technology Management and a minor in Animal Science. I am humbled to be here today, and I hope my testimony as a farmer and on behalf of NSP will be helpful to you.

State of Sorghum and the Sorghum Economy

Although sorghum is considered an ancient grain, it has recently gained tremendous popularity for its positive health benefits for both people and pets. However, the fact remains most Americans wouldn't recognize sorghum if they saw it, and even in the world of agriculture where it is more common, sorghum has lost ground over the last 30 years to higher value crops.

Before getting into the specifics of the farm safety net, I want to begin by telling you a bit about this very important crop, and then I want discuss the current economic realities facing sorghum farmers. Sorghum is a highly adaptable crop with many varieties and uses. It produces a grain for livestock feed but is also chopped for silage or hay or simply used as a forage which is often referred to as hay-grazer. As a feedstock for renewable fuels, sorghum is uniquely positioned as both a source of starch, sugar, and cellulose all in a single crop. What makes sorghum really special is that it uses up to ⅓ less water than corn. It is grown throughout the U.S.—even in Minnesota and the Dakotas where it makes excellent pheasant habitat—but its water efficiency, drought tolerance, and soil conditioning qualities make it particularly valuable as a low input cash crop in the more arid western Great Plains and hotter regions like South Texas. The top two sorghum states are in fact Kansas and Texas, followed by Arkansas, Oklahoma, Colorado, and Nebraska.

Due to its health and environmental benefits, we believe sorghum has unique advantages and is well suited for growth on more U.S. acres. As such, our policies reflect the promise sorghum has as a crop. Sorghum acres, nationally, plummeted through the late 1980s and 1990s, and have only begun to recover in the last few years. We want to see that positive trend continue.

The first table in my testimony contains average planted acres for sorghum in 5 year increments. The steep decline in the late 1980s can be directly tied to certain farm policies. For example, the Conservation Reserve Program took millions of acres in the western Great Plains out of production. Further declines in sorghum acreage were the result of economic and agronomic changes coinciding with the planting flexibility gained in the mid-1990s. During this time, many farms that had previously utilized sorghum in rotation with other crops began to focus on producing their highest yielding and grossing crops like cotton, corn and soybeans. Please do not misunderstand me. We support a targeted CRP and the planting flexibility farmers now enjoy. We just need to be careful in the development of farm policy to avoid unintended consequences.

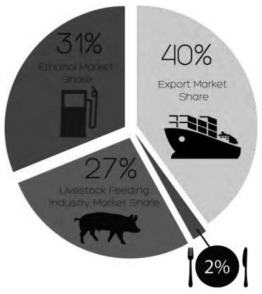
Period	Average Planted Acres
1982–1986	17,757,000
1987–1991	11,268,000

Period	Average Planted Acres
1992–1996	11,074,000
1997–2001	9,682,000
2002–2006	7,894,200
2007–2011	6,707,000
2012–2016	7,324,400

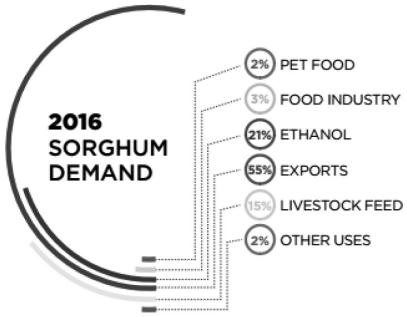
While sorghum has been knocked down over the years, we are not out. Recently, sorghum demand and markets have increased significantly. In fact, for an extended period in 2015 and 2016, sorghum was actually trading at a premium relative to corn. China has accounted for much of the increase in demand by importing sorghum to feed geese and ducks for their domestic market and to supply distillers who prefer its unique flavors. The domestic ethanol and feed markets are also growing. And, sorghum is also experiencing greater demand in the high-end food markets, catching the eye of top chefs, nutritionists, and bloggers as a healthy, versatile whole grain alternative that also meets niche consumer requests, being non-GM and gluten-free.

For years, the sorghum market was roughly as follows: ⅓ for domestic livestock feeding; ⅓ for biofuels; and ⅓ to exports, with significant volumes used abroad for food aid. However, in the last years, the sorghum market has changed dramatically as shown in the charts included below.

2014 Market for Sorghum



2016 Market for Sorghum



Seed genetics and productivity are also on the rise for sorghum. In fact, 2016 was a record year for sorghum yields with a national average production of 77.9 bushels per harvested acre. This is further evidence of a real and exciting trend as the 2014 through 2016 average of 73.8 bushels per acre exceeds the previous 10 year average by 16 percent. Our sorghum yield contests are also highlighting remarkable productivity gains as winners in the last few years have consistently approached or exceeded 200 bushels per acre. This is truly remarkable.

With this backdrop, you can appreciate why we feel these are exciting times for sorghum in the big picture and for the long-term. But, as this Subcommittee well knows, times on the farm are not as encouraging. Depressed commodity markets are yielding prices below cost-of-production. This is a function of many things, including but not limited to strong production worldwide, a strong U.S. dollar, unpredictable export markets, and predatory trade practices used by foreign countries. As is nearly always the case in agriculture, the situation we find ourselves in today is not the result of anything that we as farmers or ranchers can control. All we can do is develop a good strategy for what might work best this year; do our best to implement the plan as efficiently as possible, cutting costs wherever we can; and pray the rain will fall right, that our crop will be better than we could hope for, and prices rebound.

Since passage of the 2014 Farm Bill, prices received by sorghum farmers have fallen precipitously, as is the case with most crops. In the 5 years prior to the enactment of the current farm bill, sorghum prices averaged $5.10 per bushel. For the 2014 crop, prices fell to $4.03 per bushel—a 21 percent drop. For the 2015 crop, it fell even further, to $3.31 per bushel—a 35 percent drop compared to the 5 year benchmark. Worse yet, for the 2016 crop that was just harvested last fall, USDA is projecting the price received by farmers will be $2.70 per bushel—that is 53 percent of the benchmark price, meaning it takes twice the bushels to generate the

same revenue for a farm. For the 2017 crop we are planting this spring, most farmers are again facing the sorry prospect of burning through savings or equity. Today, in farming, it is not a question of how to make a profit, but how to minimize our losses to survive.

For sorghum specifically, we have also had to battle a very significant emerging pest threat. The sugarcane aphid (SCA) is pressing up costs of production even as market prices decline. In 2016, the SCA reached all sorghum producing regions in the United States, impacting over 70 percent of the planted acres. When present, the sugarcane aphid increases operating expenses by as much as $40 per acre—an almost 30 percent spike in production costs. This translates into an additional $200 million in expenses, nationally. When added to resulting yield losses, we calculate the total burden incurred by U.S. sorghum farmers on account of the sugarcane aphid approached $430 million in the 2016 growing season alone.

In summary on the state of sorghum and the sorghum economy, there are some real reasons for optimism about growing sorghum markets and increasing productivity for the crop. But, this positive outlook is being over-shadowed by the economic reality facing our farmers right now. While this current reality is really taxing farmers, one silver lining may be that these conditions are a better lens through which to view the importance and purpose of U.S. farm policy.

Title I—What is Working and What is Not?

Before getting into the details on our thoughts concerning the commodity title of the farm bill, I do want to thank the Agriculture Committee for its very strong Budget Views and Estimates letter that rightly points out that the budget savings and contributions to deficit reduction made in the 2014 Farm Bill are more than four times the target you were expected to hit when you passed that measure. The National Sorghum Producers was proud to add its name to a letter sent last week to the Budget Committee asking that a portion of these savings be reinvested into this critical sector of the economy. There is no more basic, nor important infrastructure that serves this nation and the world than the patchwork of independent family farms and ranchers that dot the countryside and feed, clothe, and fuel America in a manner unrivaled in history.

The National Sorghum Producers believes in the need for a strong and reliable title I safety net that is appropriately balanced and provides assistance when and where it is needed. One very real problem with the current policy that is felt very acutely in times like this has to do with something as simple as the timing of payments and the problem this poses for farmers trying to cash-flow. The National Sorghum Producers asks you consider moving up the timing of farm bill assistance so the support is put in the hands of farmers earlier than a full calendar year following the crop year it is meant to cover. For money that will be paid either way, there should be no significant budget impact. Along these lines, we would also ask that you investigate the possibility of raising loan rates to make them more relevant, which could also relieve cash-flow burdens in the marketing year.

ARC and PLC

On the choice farmers were given under the 2014 Farm Bill, 5.966 million acres or 66 percent of the total sorghum acres were enrolled in Price Loss Coverage, while 2.998 million or 33 percent were enrolled in Agriculture Risk Coverage. In the first 2 years of the farm bill, ARC paid an average $12.14 per acre for 2014, and $17.98 per acre for 2015. It is expected that a comparable amount will be paid relative to the 2016 crop, even as crop prices have dropped to 53 percent of the original benchmark average. PLC made no payments in 2014 since the season average price of $4.03 per bushel was above the reference price of $3.95 per bushel. However, for 2015, average payments of $28.23 per acre were made, and for 2016 it is expected that relief to farmers will increase to more than $50 per acre.

Clearly, with the 20/20 vision that hindsight offers, PLC is the better safety net for sorghum farmers. PLC was very conservative up-front when prices were still above $4.00 per bushel. But, the policy is now kicking in to provide help when the help is desperately needed. In contrast, ARC assistance was a virtual certainty when farmer elections were being made. With a target county revenue generated from a $5.10 per bushel previous 5 year average, and futures prices sinking, the logic was to take the bird in hand and put it to use, hoping the market would turn around in the out-years. Unfortunately for farmers, markets have not rebounded.

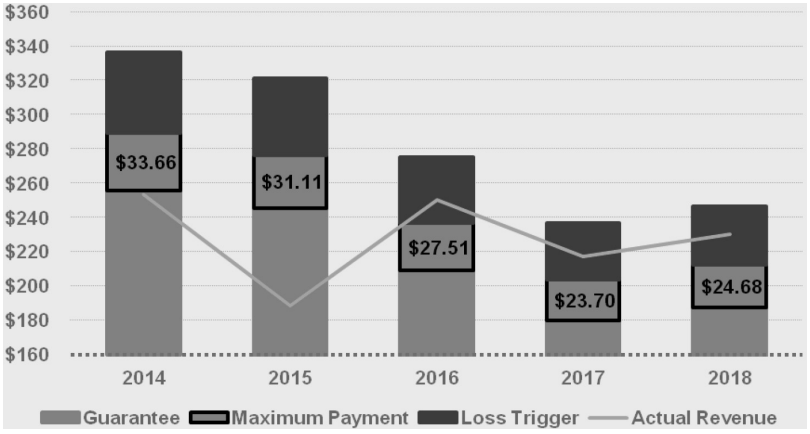
When assessing the relative value of ARC and PLC, then, we do not look at the dollars generated but rather at the risk management or downside protection that is provided. To us, the safety net is more about the reliability, fairness and timeliness of help when help is most needed. On all these counts, NSP believes PLC provides the better safety net for our farmers. Going forward, we are very open to the

idea that the ARC model could be improved. We also believe PLC could be improved, or that a hybrid approach might surface as the best model for Title I assistance. What follows is just our frank assessment of how these respective policies are working relative to the important goals listed above.

In regard to reliability, ARC misses the mark because of the revenue calculations that are used. The reality of PLC is that our farmers know that if national prices are below $3.95 per bushel, some help is on the way. Farmers can count on this, secure credit, make plans, and leverage dollars based on this certainty. In the highly uncertain business of farming, any certainty we can get is of tremendous value to us. This is also why crop insurance is so valuable—because of its rock-solid certainty. With ARC, even in the first year where, due to price decreases, it was virtually certain that some help would be on the way, no one could really count on it, and bankers could not lend on it, because it all hinged on how the county performed. In fact, many counties in heavy ARC areas did not receive ARC assistance because of strong county yields. Problems of this sort are greatly exacerbated for crops, like sorghum, that have variable yields. With large sized counties and weather events, such as hail, that can decimate one corner of the county while the bulk of the county gets a nice rain, even counties that do receive an ARC payment have both winners and losers. In short, because ARC is not reliable, it cannot hedge risk or leverage dollars in the agricultural community as effectively as PLC.

Falling Guarantees

Sorhgum ARC Revenue Guarantees, Maximum Payments, Loss Triggers, and Actual Revenues in Rooks County, Kansas



Concerning fairness, ARC again falls short because of county variability that does not always coincide with producer experience. PLC pays the same rate based on national prices to all farmers based on the historic yields they have proven on the farm. While it is not perfect, it is fair. For both 2014 and 2015, we have counties that received significant ARC payments next to counties that received no ARC payment. And, in every county that received a payment, there are producers that yielded well above the county average and producers that yielded well below. Not to mention, the FSA's arbitrary 25 percent threshold requirement for yields to be split between irrigated and non-irrigated creates even more frustration. No policy is perfect, and the National Sorghum Producers has and will continue to defend ARC against critics of U.S. farm policy, but there is no question the county-based model creates inequities and frustrations. That is why Congress has rejected this kind of approach in the past. Perhaps some of these wrinkles can be ironed out. But, as long as ARC remains a county-wide policy, it will inherently create these kinds of issues.

And, finally on the issue of timeliness, our bedrock principle is that help under the commodity title should be reserved for when help is most needed. And, we believe that PLC better achieves this objective. As prices for commodities have continued to collapse, the ARC safety net has withered. In my home county of Rooks, Kansas, the ARC revenue guarantee was $289.48 for 2014, $267.55 for 2015, and $246.13 for 2016. For the 2017 crop to be planted, the revenue guarantee is significantly diminished again—to $211.04 per acre—just as the maximum assistance per

acre has diminished from $33.66 when the fall started to $23.70 this year. Contrast this to PLC which, by remaining constant, has effectively increased in significance to the farmer as the economy has weakened. We believe that this is the better and more efficient model going forward.

There are three more issues I would raise relative to the commodity title. First is the issue of cotton and generic base. A significant number of sorghum farmers throughout the south also have generic base. The National Sorghum Producers support the National Cotton Council's efforts to designate cottonseed as an oilseed or to otherwise restore Commodity Title coverage for this important crop. The second issue is that of payment limitations and means testing. Given that the National Sorghum Producers believes the safety net should kick in to help cover significant losses when times are hard, we also believe the safety net that only partially covers losses should not be further reduced by arbitrary limits. Third, concerning the issue of the Conservation Reserve Program, which we recognize is not a title I policy but yet has some implications for commodity policy, we would be open to ideas around shorter term CRP contracts that would use cover crops, including annual forages, with the caveat that communities and infrastructure can suffer due to decreased economic activity when land goes out of production for extended periods. We also note that if more sorghum were planted around the country, there would be a lot more pheasants and quail.

Finally, let me just reiterate again that the National Sorghum Producers strongly support an effective and reliable safety net under the commodity title. We are grateful to the Agriculture Committees for the diligence and work you put into crafting a reasonable compromise in the 2014 Farm Bill that is providing some important help during these hard times, putting farmers and ranchers in a better place than we would otherwise have been. However, the primary purpose of the safety net under the commodity title is to provide a bridge to help independent farm and ranch families stay in business through the tough times, and we are genuinely concerned that if current price predictions for the next few years come to pass, the current safety net in place will fail many of our farmers. This is why we so ardently believe the farm safety net must be strengthened. This is why we signed the letter, referenced above, asking that a portion of farm bill savings be reinvested to allow this Committee to patch up its weaknesses. This is why we are as frank as we have been today.

We have witnessed time and again how a struggling farm economy is left ailing for too long without a prompt and effective mitigation effort through farm policy. And, without exception, the problems that could have been fixed fairly cheaply early on mount and mount and so does the cost of repair. When it comes to economic trouble in farm country, an ounce of prevention is truly worth a pound of cure.

Crop Insurance

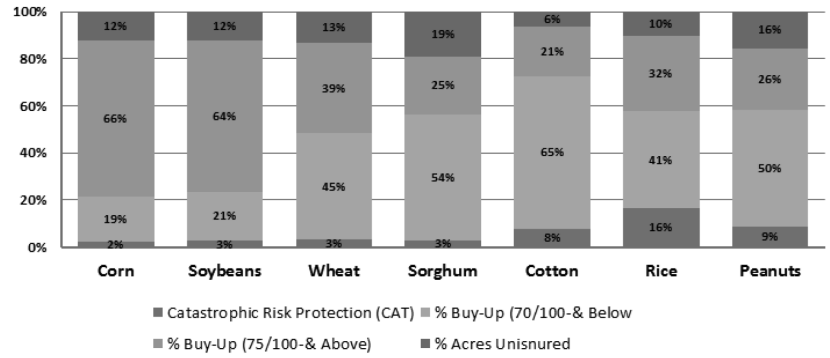
The National Sorghum Producers is strongly supportive of Federal crop insurance and urges this panel and Congress to reject any attempts to cut or weaken it. Make no mistake, proposals like that introduced by Rep. Ron Kind are crafted to kill Federal crop insurance. To struggling farmers and ranchers across this great country, there is absolutely nothing affirming about Ron Kind's AFFIRM Act.

Crop insurance is indispensable for sorghum farmers, but that does not mean it cannot be improved. For sorghum particularly, participation rates and coverage levels are low when compared to other crops. As the chart in my testimony illustrates, a full 19 percent of sorghum acres are not insured—the highest among major row crops. Moreover, only 25 percent of acres have coverage at 75 percent or above compared, for example, to 66 percent in the case of corn. There are many reasons for this, but the single biggest reason is that sorghum insurance is too expensive. Over the last 10 years the loss ratio for sorghum has been 0.88—lower than corn, for instance, and 12 percent lower than the statutory target. Considering this window of time includes 3 years—2011 through 2013—of record drought covering much of the Sorghum Belt, we believe the rates for sorghum, generally, should be lowered.

NSP is very grateful for the improvements that were made to crop insurance in the farm bill. Given the epic drought of 2011 through 2013, many of our producers have benefitted greatly from the Yield Exclusion provisions of the Bill, along with the ability to purchase different coverage levels between irrigated and non-irrigated farms. While some Supplemental Coverage Option policies have been sold, it has not met expectations. However, we expect these sales will pick up when the pricing options become more attractive, and we would encourage the Subcommittee to maintain this option, which can work well in conjunction with PLC.

Crop Insurance Coverage As a Percentage of Planted Acres

2016 Crop Year



Source: RMA, NASS.

While all these movements are positive for farmers, we need to recognize that crop insurance benefits cover what is planted and, therefore, can impact plantings based on the relative competitiveness of the policies. While we argue that our average rates are too high, the real problem becomes obvious when we start comparing county by county rates relative to competing crops. This is why NSP is so focused on bringing sorghum crop insurance policies up to par with its competing crops in all regions. We currently are working with private partners and RMA on exploring means of improving the policies via the 508(h) process or other authorities. This is not a new effort. We have worked in the past to increase options for sorghum silage, and more recently annual forage crops. We hope to continue these efforts and will keep the Committee apprised.

Finally, NSP recognizes that many of the professional critics of agriculture policy who are not actually putting themselves at risk but only booing from the sidelines have moved their vitriol from the fixed or direct payments that were eliminated in the 2014 Farm Bill to crop insurance. Congressman Ron Kind is again carrying their water with the reintroduction of the AFFIRM Act. NSP believes Kind's bill has no place in the business transaction of crop insurance, as previously noted. Crop insurance is very expensive, but I appreciate the fact that I as a fa[r]mer can choose to participate at whatever level I need and will have bankable and reliable support. The value of crop insurance is not the premium discount, or the indemnity, as the critics would have you believe, but rather it is the certainty created by this contractual arrangement where I have the peace of mind that comes with insurance on my crops. NSP is absolutely committed to protecting and improving this important tool.

Conclusion

Mr. Chairman, in closing, I want to say again how much we as farmer members of the National Sorghum Producers appreciate the task you have before you. We have focused on title I and crop insurance today, but I hope from my comments you can see that we consider all aspects of the farm bill to be critical, from research issues like the sugarcane aphid, to rural development and bioenergy, to trade promotion and market development policies. It is all important and a part of a piece, but tough economic times like our current reality do cause us to focus on the farm and making it through the next season—an area where title [I] and crop insurance rightly take center stage.

NSP appreciates what was accomplished in the 2014 Farm Bill. We look forward to working with the House Agriculture Committee and our fellow commodity organizations to make it even better going forward.

The CHAIRMAN. Thank you. I appreciate the timely testimony of the witnesses. I appreciate all of you being here.

The chair would like to remind Members that they will be recognized for questioning in order of seniority for Members who were here at the start of the hearing. After that, Members will be recognized in order of arrival. I appreciate Members' understanding.

I would now like to recognize myself for 5 minutes.

I have a general question that any of you on the panel can feel free to weigh in. During the course of the drafting of the 2014 Farm Bill, it was often said that crop insurance is the cornerstone of the farm safety net. However, crop insurance is not designed to provide multi-year protection. Have recent years shown why we need other tools like ARC and PLC in addition to a strong Federal crop insurance, or is insurance alone all that is needed to manage risk? Mr. Spurlock, we can start with you.

Mr. SPURLOCK. Yes, sir. As in my testimony, I was talking, and we were visiting the fact that crop insurance is a same-year risk management tool, as when your crops go through and you go through the drought or hail or wind, the grain snaps and any other problems in any of our other crops across the world, the crop insurance takes care of that problem, that year. We have to have the ARC and the PLC to work through the multi-year problems that occur in agriculture, and I feel that both programs are awfully important and needed.

The CHAIRMAN. Anybody else want to weigh in on that?

Mr. MOORE. Yes, thank you, Mr. Chairman. I would agree that they are both needed. There are certain areas of the country that crop insurance is not a viable safety net for them, and so they rely on ARC-County and PLC. In my opinion, you have to have both of them to give safety net capabilities in the farm bill.

Mr. SCHEMM. Mr. Chairman, thank you. As you referenced, crop insurance does, in my area experiencing long-term droughts, have an eroding factor on being able to support an operation to even keep it viable. And that is where the PLC with a price focus and ARC with a yield focus definitely comes in and helps be a factor for our areas, for those producers who tend to be more either price sensitive or yield sensitive, those components help to finish out that tool that simply helps the farmer to continue to maintain farming. It is not through just crop insurance because of the eroding factor.

Mr. FRIEDERICHS. Crop insurance for barley growers is a tough one because the malting doesn't go with the feed. It is kind of a confusing situation. We are working on it, that is all I can say at this point.

Mr. ATKISSON. Within sorghum we do have an insurance product that can help us maintain yield and revenue within a year's span, yet we have these programs to average out and to help us along. We have low periods, and that is very apparent right now with a very dramatic downturn in the farm economy. We have crop insurance to take care of some of the major risks, but we need a safety net underneath that to support us through these major downturns in the economy and through these very tough times.

The CHAIRMAN. Thank you.

Mr. Spurlock, you mentioned in your testimony about 93 percent of corn base acres were opted into ARC-County program and title I. Why was it so lopsided in 2014?

Mr. SPURLOCK. As the models that were put together by Illinois and Texas A&M, when it came time to sign up for the programs you could go to these models, and they ran the formulas and they looked at what that year actually was. With the later sign up, it worked in, it showed what payments were going to come to you in

the first year. And so as you looked at those payments over what the price loss coverage would have done, which there weren't any in the corn industry. It was a timing effect and as it has come through, those payments have come on and worked. And that formula will change as we go into the future, the way it is set up in the ARC program.

The CHAIRMAN. Hindsight being 20/20, do you feel that ARC is a program that will work long-term for corn growers?

Mr. SPURLOCK. Yes, sir. I think it will work. I also feel that there is possibly some need that we may need to do a little changing in its formula, and what that is I don't have an answer for that, but I hope that you ladies and gentlemen will be able to help in that with your research as you go through in this farm bill process.

The CHAIRMAN. If given a chance to update, do you think most corn growers would again opt in to ARC, their base acres?

Mr. SPURLOCK. Since we are in such very different financial conditions today on what the markets were, and if you were to take them back and take the price of today back to the beginning where we were making these decisions, you would see a very different process in it.

The CHAIRMAN. Thank you.

I will now recognize Ranking Member Nolan, for 5 minutes.

Mr. NOLAN. Thank you, Mr. Chairman.

I have a question for Mr. Friederichs. And when our dear colleague, who is as good and strong a champion anywhere in America for agriculture, along with my colleague, Mr. Walz, Mr. Peterson, said that he made reference to the fact that barley production was down, and that he had pulled barley production out of his farming unit, I thought he was going to conclude that the reason why it is down is because he is not producing anymore, but he didn't do that.

Are there any particular reasons for the relatively stable barley prices, as compared to other agriculture commodities? Historically, volatility is often the biggest reason for financial instability, so it would be helpful to hear from you about why barley prices don't seem to be prone to sudden movement.

Mr. FRIEDERICHS. Well, as of right now, the barley prices are, well, what is going on right now is that the contracts are getting less and less every year. You have, like right now, for my farm I am a third of what it was last year.

Mr. NOLAN. It is?

Mr. FRIEDERICHS. And the prices are also going down because of overproduction at this point is a big thing.

Mr. NOLAN. And is that because, as you referred to in your testimony, without a contract, people aren't going to plant? Or did I hear that wrongly?

Mr. FRIEDERICHS. Yes, and then if you have a weather scare, or a bad weather year, all of a sudden you have feed barley, and then there is no malt.

Mr. NOLAN. Yes.

Well, another quick question relating to barley, in addition to creating the agricultural price loss coverage programs in the 2014 Farm Bill, the farm bill also made an important change in setting a reference price for barley based on all barley, not just on feed barley. How has that impacted the barley growers, and are there

any related adjustments needed in the next farm bill with regard to that issue?

Mr. FRIEDERICHS. Boy, you are getting a little over what I can even answer at this point in time. It is going in the right direction, the program is, we are doing okay there, it is just a matter of we have to keep what we have.

Mr. NOLAN. That has played a critical role, I presume, in the ability of barley producers to stay in the business and maintain a positive cash-flow?

Mr. FRIEDERICHS. Yes.

Mr. NOLAN. All right.

Well, thank you, Mr. Chairman. I am going to yield the balance of my time to my colleagues here.

The CHAIRMAN. All right, thank you very much.

I would recognize Mr. Gibbs, from Ohio, for 5 minutes.

Mr. GIBBS. Thank you, Mr. Chairman. Thanks for holding this hearing.

Just to start off with these low prices, this will be to the whole panel, I guess. Credit availability, how do you see that you have a couple of years of losses for a producer out there and how does that tie in with the title I programs, and how does that all interact? Do you see what is happening with the credit here in the next year or 2 for producers out there, its availability?

Mr. SCHEMM. Thank you, Congressman. As I referenced in my oral testimony, I just talked with my banker yesterday and some of the points that we were discussing brings me to a lot of concern as we do go forward. He has said that he is seeing a significant amount of producers having to restructure our short-term debt or lines of credit for our production, and roll them over into long-term debt or land debt. And obviously, this brings a lot of concern to us that more highly leverages our operations.

I have seen many operations in my area bringing back younger operators, and they have been trying to incorporate this next generation. When we look at the average age of American farmers being 58, being very critical to the role of American ag and yet they were here through the good times, and now as they struggle to go through these financial tough times, we have a lot of concern what is going to happen to our small communities out there in this generational transfer.

Mr. GIBBS. Now, do you feel like the ARC and PLC programs are sufficient enough, or is it, I know coupled with crop insurance, I guess one of the questions I had, and Mr. Spurlock might have talked a little bit about it in his testimony, is, I am a firm believer that crop insurance, we should strengthen it whenever we can, not weaken it. For me as a public official, policymaker, it is a lot easier to go out and talk to my non-farm constituents about crop insurance because people understand the principle of insurance *versus* the title I programs. And I guess I am just kind of wondering, you all talked about coupling them together, obviously, the importance of title I and crop insurance, but is there a way we could structure crop insurance in such a way that it would be beneficial, and not be market distortion, and I guess that relates to how sufficient the ARC and PLC programs are, going forward, especially when you look at credit availability.

Mr. SCHEMM. My banker very much relies upon title I, ARC, and PLC when we calculate into it. And there are challenges, as I referenced in my oral testimony, in the aspect of, many times that payment can be received a year and a half later. But it is much easier to quantify that payment. They do realize and they appreciate the crop insurance aspect, but again, crop insurance only kicks in when there is basically almost a disaster level that occurs either at a yield or a price level, and then the problem that occurs with that again is the eroding stance as you go forward with either price or in a drought situation of yield that erodes that crop insurance. Again, this is where this kicks in to the title I program to be very vital in my operation, and the farmers that I talk to, in being able to sustain or to be able to get that bank note with their banker.

Mr. GIBBS. Mr. Spurlock, for corn growers, what are your thoughts on that? Do you see a way that we can improve crop insurance to be a better safety net?

Mr. SPURLOCK. Yes, sir. I think that any time we work at it, and as we go through these years new product development is awfully important to us to look at and find that next level of crop insurance policies that can improve and help all of our producers.

Mr. GIBBS. Because I have heard from some of my producers, I am hearing different things about title I, but I have heard some of my producers say let's take that money and put it into crop insurance. Would that be feasible or not?

Mr. SPURLOCK. No, sir, that would not be something we are looking at. We have our risk management action teams are in the process of running studies and looking at what is going on. And all of this information from all of our states, you go back to our grassroots level, and each state has been doing surveys and town hall meetings and working together in bringing this all out of the 26 organizations, bringing it back into this action team, and working and developing a true desire and what we think would work for the future, and a lot of what you have already seen is there.

Mr. GIBBS. Okay. I guess the reason I just mentioned that, the atmosphere is different now from the last farm bill because commodity prices are opposite what they were. But, I was amazed, we had a debate with our friends over on the side of the Capitol, and some of our Senators said, "Well, just do away with title I." I was flabbergasted. And I don't know if it is because we had high commodity prices maybe that morning, mentioned this time with low commodity prices, but I thought it was interesting, but they threw that out last time.

Mr. SPURLOCK. The choice of the two programs is what has made this one work, and will make it really work well in the future.

Mr. GIBBS. Right. Thank you. I yield back.

The CHAIRMAN. The gentleman yields.

I now recognize the gentleman from Minnesota, Mr. Walz, for 5 minutes.

Mr. WALZ. Well, thank you, Mr. Chairman. And thank you all for being here. I am grateful for it.

We are starting early. That is the right thing to do. We know how important the farm bill is. All of us have the stories. My district is proud to say it is the ninth largest agricultural district,

spread amongst a lot of commodities. Of course, corn and soybean are king, and also a lot of animal agriculture. And we found a way to make that work, providing feedstock, as well as the biofuel industries that is absolutely critical to the vitality of southern Minnesota, so I am grateful you are all here.

Before I ask a question though, I would like to thank you, Mr. Moore, for that full-throated endorsement of keeping the farm bill together. We cannot separate those who produce food from those who consume it. That is a huge mistake, and I can't tell you that all of the important things you are talking about will be derailed if that ideological piece goes forward. Again, I thank you for that.

Mr. MOORE. Well, thank you, Congressman. As I look at the farm bill, it is more of a food bill, from the way I look it. And what better place to have both the farm bill's, securities, safety nets for the people who produce the food, and have it also in the same bill that offers the opportunity for people who need that additional food and nutrition to make sure their families are comfortable and viable. What better place to have that than in the same bill, both of them working together.

Mr. WALZ. Absolutely. And the Chairman and I had a little discussion the other day on AgriTalk, and he is a strong champion of this articulation. And I have said it helps it helps us build a coalition to understand where we are both coming from. If we have an issue on the Clean Water Act, we have friends who are willing to listen to us and understand this isn't about us not caring about clean water, it is about how we go about producing the food and doing that. If you separate that, it makes it harder. Thank you both.

Mr. Schemm, thank you again too for your comments. Beginning farmer and rancher focus has been a passion of mine. You are absolutely right, it is not just demographic numbers, we have a lot of folks that really want to live on the land, a lot of folks who want to raise their children in this lifestyle, a lot of small communities that are fabulous places to live in southern Minnesota, but if we don't get this right and get them on the land, you see the demographic shift if you go back and look decade by decade. Mr. Friederichs, you have seen it in Foxhome, if you will, as it gets smaller and smaller and smaller. I lived in a town of 400 people. That is the city for you. And when I went to high school, but you know what, we had a grocery store, we had a high school, we had two gas stations, we had stores, and all the nostalgic looking back, the fact of the matter is the economics have changed and mostly because there were no opportunities for young people.

So my question to you is, why have commodity prices, and I will set you up for this one, commodity prices have gone down, all of my folks tell me rent sure hasn't, land prices sure haven't, and this is becoming a real problem. In my state, one of the drivers about this is, and we have to be honest about it, is to fund those local schools, the tax base falls heavily back on those land owners who, at this point in time, might be land wealthy and capital poor. How do you go about that? How do we talk about land prices and getting young folks back on the land? Have you got any ideas? I know it is a million dollar question.

Mr. FRIEDERICHS. Yes, you have that right. Boy, I don't know. In our area, the prices are totally different than what it is making. The land values are $5,000, $6,000 an acre, and if you figure a four percent interest rate on that, you have to have 100 bushels, 150 bushels of corn to make it, break it. Barley, you need 100 bushels. I don't know what the answer is.

Mr. WALZ. It is a tough one, because if it is not generational pass through of the land, it is very difficult. My mom still has our farm, and my cousins are able to farm on it because my mom rents it to them at a low rate because all she wants to do is make back enough to pay for the taxes. If they had to get that on the market, they wouldn't be farming right now. That is very frustrating.

Mr. FRIEDERICHS. That is very frustrating.

Mr. WALZ. Well, my final point and question to both of you is, I said it there, I believe in these win-win situations, biofuels has been an absolute American success story. It is about innovation, it is taking us off of foreign oil, it is making us more secure, it is a national security priority as well as an economic priority. Do all of you worry, I have to say, there are three names that keep me up at night in my area are Icahn, Pruitt, and Tillerson, to be very honest with you, have never said a lot. The thing that keeps me balanced in this is, just south of me in Iowa, when President Trump gave a full-throated endorsement of our biofuels industry.

Can I just, in closing, Mr. Spurlock and Moore, specifically, are you hopeful that we can keep this industry thriving?

Mr. SPURLOCK. Yes, sir. It is a little over ⅓ of our demand driver in the corn industry. As it has grown, and like you said, it is a great rural economic development project, it has put tremendous jobs into the rural areas, it has offset 540 million barrels of foreign oil that no longer comes into the U.S. We produce a much greener fuel to go into the fueling system, and we need all the support and help we can to keep the Renewable Fuel Standard going strong and keep it going.

Mr. WALZ. I appreciate it. My time is up. Mr. Moore, you will have a chance to do this, say that as often as you can say it, and I will too. We need to.

I yield back.

The CHAIRMAN. I thank the gentleman.

The gentleman from Texas is recognized for 5 minutes. Mr. Arrington.

Mr. ARRINGTON. Thank you, Mr. Chairman. And thank you panelists. I thought that getting cotton back in the farm bill as a covered commodity, was the greatest challenge and threat to west Texas, until I heard the no barley, no beer comment, and I am having to rethink that.

I want to make note and say a special thanks to Tim Lust and to the National Sorghum Producers. And they are a real asset to me, and a wealth of information, and they are great advocates and they represent the industry very well.

Speaking of cotton, when we pulled cotton out of the farm bill it had a disastrous effect on cotton producers. That is my take after being with a bunch of cotton farmers for the last year to year and a half. I also understand there were adverse impacts, ripple effects, on other producers like peanut farmers and soybean farmers. Can

anybody comment on the ripple effect, and the indirect, negative impact on other commodities?

Mr. ATKISSON. Well, as a sorghum farmer, I can comment a little bit on that, that is a direct way that policy affects planted acreage. We always need to keep in mind how our policy can affect the commodities that are grown in a certain area. While planting a certain commodity might not make sense, our farmers are seeking to make money, and they need to make money to provide for their families. They are going to find the best crop that will provide them with the most amount of income to plant on their acreages. Especially during a time like this where we need to have a safety net for some of those producers, and they are going to weigh all their options and they are going to find the commodity that is going to provide them with the best benefit for their families.

Mr. ARRINGTON. Other comments? Mr. Moore?

Mr. MOORE. Yes, thank you, Congressman. Yes, we recognize that all sectors of agriculture need to be viable. We don't want to sacrifice any sector, or any commodity. ASA is very supportive of making cottonseed oil a program crop. We recognize that if there is a disincentive to grow a crop, especially in the southern U.S. where they can grow multiple crops, Illinois is predominantly soybeans and corn, but when you disincentivize one particular crop from being grown, there are going to be other crops grown on those acres. And so we need to have all of agriculture to be successful so we can raise the boat as the tide rises.

Mr. ARRINGTON. Thank you, guys.

With respect to risk management for market risk, it seems to me that we address one part of that equation by trying to set a good and responsible reference price, and I am sure that is a difficult thing to do with market fluctuations, but it seems to me that the other part of the equation is the production cost. And my question to you is, how would one include production cost as part of the total equation in providing support and market risk coverage? Anybody on the panel. And is that even a good idea?

Mr. SCHEMM. Thank you, Congressman. That is one thing we have been exploring as a wheat group. We are faced with the challenge of six different classes of wheat grown over a very wide variety of regions, and conditions within wheat. And so the cost of production, obviously, varies much within our crop, and the challenges of that. We have looked at the reference price now and the impact that it has, what we have seen specifically for wheat, and there are other commodities we can associate this with too, is that it is not an effectively functioning reference price. And that is why we are currently exploring where we can tie in that cost of production to that reference price, but achieve something that is fiscally responsible and accurate, and reflects the regions and variety of conditions that wheat is grown in.

Mr. ARRINGTON. Other comments?

Mr. SPURLOCK. A lot of your work comes from the FAPRI, as Dr. Joe Outlaw from Texas A&M, they have the set of farms that go across the nation. They have them in the cotton industry, they are in the corn and soybean, they are livestock and everything. And Dr. Outlaw sent us a quick summary a few days ago about the production costs. And there is such a difference in production costs across

the nation. What happens in the Midwest on corn matches closely to the expenses of irrigated corn in the Texas Panhandle, but then as you go across there are different ones. That happens in every commodity. And the production costs, it is more expensive to farm in some areas than others, and how do we determine that is a hard question.

Mr. ARRINGTON. I yield back.

The CHAIRMAN. The gentleman yields.

The gentlelady from Illinois, Mrs. Bustos, is recognized for 5 minutes.

Mrs. BUSTOS. Thank you, Mr. Chairman. And because Mr. Walz's time ran out on the biofuels question, I would actually like to redirect that to Mr. Moore. I would like to hear about it from the soybean perspective.

Mr. MOORE. Thank you, Congresswoman. The feedstocks for ethanol and soy biodiesel are a bit different, and so we want to make sure that we use up the surplus soybean oil that is in the marketplace right now, and not only is that a benefit to the price, but it also helps our livestock partners in being able to have soybean meal at a relatively stable price.

One of the things we don't really talk about, and I haven't heard it here yet today, was the environmental benefits from both using ethanol and soy biodiesel. It is extremely beneficial to our environment as we go pulling a semi away from a stop sign, you don't see the black smoke anymore because they are using biodiesel B2 or B20, in our area is what we use is B20. There are a lot of environmental benefits that we really don't recognize anymore, it is more economic, but economics is a great thing, but the environmental benefits of using ethanol and biofuels is another reason to make sure that RFS is a viable standard.

Mrs. BUSTOS. Okay, thank you, Mr. Moore.

The next question I have will be for Mr. Spurlock and Mr. Moore. The 2014 Farm Bill has relinked conservation compliance provisions to crop insurance premium subsidies eligibility. Have the two of your organizations studied how compliance requirements have affected your growers? And, Mr. Spurlock, we can maybe start with you.

Mr. SPURLOCK. I am trying to think how to answer completely. When it came in and we first did the compliance into the Federal crop, people wondered how bad it would affect it and what it would do, but I don't think we have really seen a major problem with that. Since agriculture and owners of the land, as we are generational, we are the first conservationists. We go in, we take care of our land, our soil health, we want the water to be as healthy as possible. And so agriculture as a whole is the first environmentalist, we take care of it well, and I don't think that it did create any hardships for any of our producers.

Mrs. BUSTOS. Thank you.

Mr. MOORE. ASA has not done any studies to my knowledge about your question, but two things; it is a great example of how things work in D.C. where you have to build coalitions to get a bill passed. Agriculture was successful in the last bill working with conservation groups to get them onboard, and so we could get something to pass.

The other thing that you want to talk about is, in the soybean industry we talk a lot about being sustainable and using sustainable practices. And so I was not opposed to having conservation tied to Federal crop insurance because as we go talk to our customers overseas, we use that aspect of sustainability and that eight to eleven percent of the farms across the United States are spot-checked very year to make sure we are following our conservation plans. And so that is one of the talking points we use when we go talk to our customers overseas about how sustainable soybean production is in the United States.

Mrs. BUSTOS. Okay. And just one last question, and I am going to direct this one to Mr. Moore as well. It is kind of the hometown advantage of having you up there. And by the way, Mr. Chairman, I do think that when you can talk about beer and baseball and pizza all in a hearing, that is a sign of success. Mr. Moore, in your testimony you suggested changes for selecting yields under the ARC-County program. I understand that the American Soybean Association believes that RMA data should be used as the default county yield data; however, in your opinion, is county-level data always the most appropriate, and do you see value in a regional or state-level breakdown?

Mr. MOORE. In my experience, and the discussions that we have had in our organization, the closer you can get to my farm the better off we are when we do those kind of ARC-County or PLC calculations. I understand that that has to be a different price tag to it than a state level or regional level, but my personal opinion, the closer we can get to my farm and the information that I have, that I calculate every year and submit to the USDA office, is more accurate and more beneficial to each individual farmer.

Mrs. BUSTOS. All right, with that, with the 5 seconds left, I yield back.

The CHAIRMAN. Thank you.

I would now like to introduce or recognize, rather, the distinguished Chairman emeritus. Before I do, I have to translate the Latin. *Emeritus* means old, and *distinguished* means gray-haired, which he got because of the 2014 Farm Bill. That is a compliment. You earned all of that. I recognize the distinguished Chairman emeritus for 5 minutes.

Mr. LUCAS. I would say to the Subcommittee Chairman, thank you very much, and I very much respect that. And by the time you have lived through this process, you might look like me too. That is not a threat, that is an observation.

With that, I would like to turn to Mr. Spurlock. One of the proclaimed benefits of ARC that we heard during the consideration of the 2014 Farm Bill was that it was a more market-oriented approach to farm policy, and that the guarantee follows the 5 year average prices. Does that same logic apply now that we have entered this new paradigm on cash prices?

And that is an affectionate question, sir. In a positive way.

Mr. SPURLOCK. Yes, sir. As we have moved into a new paradigm, as you have said, of the lower prices, the formula has worked well coming down, but then the Olympic average will begin to make the payments less as it goes on. And so as we look at redoing it, there is something, ARC has validity to go into the future. It may need

a little bit of formula changing to make it work, but at this point is where that choice will come in, and as we start the new farm bill, if given the choice again to pick one or the other, we will be able to look at the formulas and look at from our land-grant institutions, which model works best and then we will know whether it is the PLC or the ARC for the future.

Mr. LUCAS. I appreciate those comments about the virtues of choice. That was quite a discussion 5 years ago as we launched into this process; should there be choice or should we all be tied in together.

Corn, of course, is in a unique position, as you yourself stated. Did you say 30 percent of the crop goes in to producing renewable fuel? Did I understand that, did I misunderstand that?

Mr. SPURLOCK. Yes, sir, about ⅓ of our crop, 4.2 billion bushels.

Mr. LUCAS. About ⅓ of the crop.

With the exception of our soybean friends, really no one else has quite that set of circumstances, and I very much appreciate that.

That said, the biggest challenge, and I do not speak out of turn for the full Committee Chairman or the full Committee Ranking Member, part of the big challenge that we will face in this coming year is when the revenue numbers, the new budget process, what is available to us when we have a number to work with, that will essentially determine, again, as it did last time, what kind of a farm bill we have. And I would hope that what you have just stated, and listening to your colleagues on the panel, that the framework is there, it is a matter of how do we handle the adjustments within the framework, and that all comes down to the money equation.

Just for a moment, I have to turn to my wheat friend over here, Mr. Schemm. I have heard many of my producers express concern about the effects that the quality losses can have on their production history from crop insurance. Could you visit for a moment about what kind of changes you think would help prevent those from affecting their yield history?

Mr. SCHEMM. Thank you. The challenge, especially it was espoused this year in the PNW region of the country with our wheat producers when they had what they called falling numbers occur to them. And many of them became very concerned on their crop insurance side when they went to deliver and sell those bushels at their elevator, that even though they did not make any claim on that quality loss there, that their actual yield or APH on their operations was reduced as a reflection of that quality loss. And we have a very large concern that a dynamic, even though their yields were higher, got pulled down and it erodes that risk management tool there. What we would like to see developed is a quality loss tool within crop insurance so that it will not affect their yield, but instead can affect the quality loss side of it.

There are even impacts we have had, I would suggest, of quality that occurred within the Hard Red Winter wheat region as well as this year with a very large crop, but quality that was not what the market wanted, but the market does not have a good quality factor into it, and so as a result at local elevators, the actual cash price widened to a significant amount, *versus* what the futures price was. And once again there, that eroded their crop insurance side of it

because they were not able to receive an indemnity that would be recipient of what a cash price they were having because the crop insurance was based upon a futures price.

So we are continuing to work and look at ways that we can address these quality loss things, and would like to work further with the Committee too.

Mr. LUCAS. I appreciate the gentleman's observations.

My time has expired. I yield back to the young-looking Subcommittee Chairman.

The CHAIRMAN. I thank the gentleman.

I recognize the gentleman from Georgia, Mr. Scott, for 5 minutes.

Mr. DAVID SCOTT of Georgia. Thank you, Mr. Chairman.

Mr. Spurlock, in the last year, 2015, when there was an assessment of the prices in production of corn, it was stated that it cost farmers $675 per acre to produce the corn, yet they could only get $611 back in revenue. Now, according to my calculations, that is a loss of $64 for every acre that is planted. They don't even break even. They lose $64. How can we continue to do this, particularly my own state, we planted corn on 344,000 acres and yielded back to us $210 million. But if you deduct that $64 for each acre, it appears to be a losing position. What is your recommendation as to what we must do to fix that? And this is particularly true with the climate we are in. For example, President Trump's budget proposal says that we should cut agriculture by 21 percent. Now, that budget comes out and it normally doesn't go anywhere, but once your name is called that somebody is out to get you, you really need to take heed and begin to plan for that. And I want to know what we need to do to deal with this deficit between planting the corn, costing us $675, and then harvesting that where we lose $64 per acre for producing it.

Mr. SPURLOCK. As we come through the last year, a lot of the talks that I have done and the work I have done I have talked about three different things; demand, demand, and demand. And our demand that we work with is trade, is our exports. As we look at our exports and where they are at, we need our new Administration, as they go in and they work to rewrite NAFTA and bring it up to a newer level from a 23, 25 year old program, we need that trade, we need to be out talking to Japan, to the Koreas, to the world, to improve these deals and move this demand at that level.

The next demand we have goes back to the same thing. Livestock is our major buyer. They are the biggest part of the corn in the U.S., goes into our livestock industry. They have to have that ability to access the world also with their proteins. There is a rising middle-class in the world that wants more protein, and so our ability to ship the poultry, the pork, beef, our dairy products, and any of that that we export is grain that is being fed in the U.S., and so we are there working that.

And then the last you get to is the ethanol industry, our biofuels industry, which has been so successful in working through the timeframe.

Mr. DAVID SCOTT of Georgia. Yes, and you testified on the area, the Renewable Fuel Standard of it, and I don't think enough emphasis is being given to corn in terms of making sure that our corn farmers are making money in a healthy way. And I am wondering,

as we approach this new farm bill, if we need to really set aside here, because it is just used for us, going to the grocery store, getting a good ear of corn, I love corn, I was brought up on a farm, and I realize the hogs love corn too, the horses, everybody loves corn. Even the fuel now is turning to corn. We have a real serious dynamic here. Is there anything that you would suggest we do in terms of singularly addressing the farmer, given this demand, given this weakness of return on production, that we can help them with some sort of subsidy, something that would make up and give them a comfort level out there?

Mr. SPURLOCK. I was going to say that is where our safety net is at that we are working with, and that your Subcommittee and the Agriculture Committee will work with, and we appreciate all the work and effort on risk management and the title I also.

Mr. DAVID SCOTT of Georgia. All right.

Thank you, Mr. Chairman.

The CHAIRMAN. I thank the gentleman.

And I recognize the gentleman from Florida, Mr. Dunn, for 5 minutes.

Mr. DUNN. Thank you very much, Mr. Chairman. And again, let me thank the panel for making the trip up here. I am sure you had many other things you could be doing with your time.

This is, we recognize, a difficult time. You have sustained low incomes and increasing debt. I would like to turn our attention to the question of the debt problem, if we may.

Mr. Moore, in your testimony you discussed the increasing difficulty of obtaining operating loans, and I guess what I would like to know is what are the concerns you have, and what are the pressure points in your industry and in your locale for obtaining credit on the farm? And, if we have the time, we have each of you in your different locales and your industries tell me what the problems are underwriting those loans or to get to the underwritten loans there. Thank you, Mr. Moore.

Mr. MOORE. Thank you, Congressman. Working a case, I am a community banker. I am going to sit on the Board of Directors of community bankers. I borrow money and I oversee the part of the loan group that looks at our loans.

Mr. DUNN. And so you are really attuned to——

Mr. MOORE. The working cash is king. And we came off of extremely profitable times. I paid more in income tax for 2 years in a row than I paid in the prior 25 years put together, and was happy to do it because we made money. I saw 3 years that this was going to be an issue of these low prices as they started to decline. Everyone told me that, "Oh, no, it is not the same as it was in the 1980s." And I lived through the 1980s, I survived. And we have more working cash, we don't borrow as much money as we used to back then, and land prices are way higher. Well, we burned through working cash so fast in the last 2 years. That is what bankers are looking for. If you burn through your equity that you have, that means you have to go refinance, restructure your loan, like Dave was talking about. It puts an enormous amount of stress on peoples' families, their farming operations, they can't do the things they need to do to continue to be successful and profitable and sustainable. We are in the middle of this, and we still have

some time to go before we are out of it, but it is critical that farm policy is created that doesn't harm our ability to produce food for people.

Mr. DUNN. Thank you. And right down the line, Mr. Schemm, in your industries what do you see?

Mr. SCHEMM. I am very much referencing what Mr. Moore said as well. In my discussions with my banker I have had, and talking with him about our area, he has seen a huge impact particularly upon our dryland farms as they are many times challenged with more inconsistent production and variables, and he is seeing right now they are the ones that are being hit the most. And again, restructuring short-term debt into long-term debt, the unfortunate side effect, obviously, is that raises their debt-to-asset ratio, and as that ratio gets higher and it puts stresses on more farms, we are now starting to see, and seeing across the country, a softening of land prices. And on any operation one of your key asset collaterals that you use to borrow money, and can borrow money against, is those land values. And as those land values drop, you have less collateral to utilize to be able to continue farming operations.

Mr. DUNN. Mr. Moore made reference to community banks and loaning money. Do you borrow from community banks or from a Farm Credit institution?

Mr. SCHEMM. I borrow from a community bank, and I have a lot of concern with some of the challenges that they have to meet when they deal with various regulations of trying to make sure that their own banks have a good and viable balance sheet.

Mr. DUNN. Yes. Mr. Friederichs. In your industry, Mr. Friederichs? Yes.

Mr. FRIEDERICHS. Well, in my area the farmers, there are a lot of different commodities that are growing in my area, so the sugar industry has really taken a big hit, and that is where a lot of it is, they are hanging in there, but the bankers are saying your cashflow is going away, you are using up your reserves, and it is the same all over.

Mr. DUNN. Okay. Well, I thank you very much. I wanted to get a picture of that, and it is interesting to me to know that your community banks are able to participate in the farm loans. We usually see those go to the Farm Credit System for the most part.

Mr. Chairman, I yield back. Thank you.

The CHAIRMAN. The gentleman yields back.

The gentlelady from Delaware is recognized for 5 minutes.

Ms. BLUNT ROCHESTER. Thank you, Mr. Chairman. I want to first thank the witnesses. I was fortunate to be here for all of your testimony and found it really very interesting, especially as a new Member to the Agriculture Committee.

My first question is really for all of the witnesses. What I have heard is one of the biggest challenges that farmers face right now, and the agriculture economy in general, is market volatility. And so if you could talk a little bit about market volatility. The 2014 Farm Bill provided new programs to respond to this, and I am just curious do you feel that the commodity programs and the crop insurance programs adequately smoothed volatility, and are there other things that you think the Committee should consider? And we can start at this end.

Mr. SPURLOCK. Yes, ma'am. As we have gone through these programs, the market volatility comes as we have had such a tremendous ability to produce these crops, so now we have carryovers that are carrying over in all commodities; in the corn, the wheat, soybeans I know are the ones that I see the most right now. But as we look at these, we have these ARC and PLC payments, and working with them, they have done a good job of trying to do the best they can. I mean nothing is perfect and there is always the ability to improve on these, and we would hope that your ability to improve on them would take the same template and the same work and make it better for the future with prices that we are at right now.

Ms. BLUNT ROCHESTER. Okay, thank you.

Mr. MOORE. I would agree that they are working well, but some things, just off the top of my head, we haven't got policy on it, but raise the reference price, the marketing loan price on all commodities. I take advantage of that low-interest loan that the Commodity Credit Corporation offers, and right now it is about $5 on soybeans, and that has been about ½ the price of the case of soybeans, but the market has come down.

The Olympic average that is being used to calculate the ARC price, as we come down in prices, you are taking out the high and taking out the low, but everything is going to be low now and so you are not going to be using that. And if you could end up with a 5 year instead of a 3 year average, that might be beneficial. And moving that payment up to the current year, current tax year, for example. Waiting for a year and a half after receiving a payment in 2018 for the 2017 crop year is difficult. It doesn't work with cash-flows.

Ms. BLUNT ROCHESTER. Thank you.

Mr. SCHEMM. Mr. Moore and I share many of the same concerns. The challenges that we have with wheat is that some of our producers tend to be a little bit more yield-concerned because of variability yield, and some of our producers tend to have a little bit more consistent yield because of the areas that they grow in, maybe under irrigation, things like that, so they will tend to be a little bit more price-sensitive on it. And so the ability for them to choose either the ARC or PLC programs has been very viable for them to be able to choose that, and helps to complete the whole aspect of the farm bill. As we have looked at those, part of the challenges on the price side, as you have referenced, when we talk about volatility is making sure, as Mr. Moore said, is that reference price is an accurate reference price, that it does not get set too low, and that is what we feel has happened in wheat with the $5.50 reference price, it has been set so low that it will not trigger and adequately help a producer deal with the challenges of the cost of production.

Ms. BLUNT ROCHESTER. Okay, thanks.

Mr. FRIEDERICHS. As of right now, the barley industry is doing fine as far as triggering the PLC and the ARC, but in the future I believe that it is going to start to kick in and hopefully it works right.

Ms. BLUNT ROCHESTER. Okay, thanks. Okay.

Mr. ATKISSON. And I will echo what some of my colleagues down the table said. Within sorghum, we had a higher percentage of producers went with the PLC program. PLC did what it was designed to do. When we had a dip in the market PLC was there as a safety net for those low prices, as crop insurance provided the year-to-year benefit of providing those producers with yield loss coverages and things like that. With the two tools, we have crop insurance, and then within the commodity programs those choices have provided us with the tools we need, but going through these times of the depressed economy we feel like we should step further into title I.

Ms. BLUNT ROCHESTER. Thank you.

I would yield back my time if I had some.

The CHAIRMAN. I thank the gentlelady.

And I would now recognize the distinguished Chairman of the full Committee from Texas, Mr. Conaway.

OPENING STATEMENT OF HON. K. MICHAEL CONAWAY, A REPRESENTATIVE IN CONGRESS FROM TEXAS

Mr. CONAWAY. Well, I thank the Chairman. I appreciate the discretion you have shown insulting the former Chairman and not the current Chairman.

Before I get to my questions, Mr. Moore, in your written testimony you mentioned that your team was in favor of perhaps moving cottonseed into the other oilseed program, as long as we didn't take the money away from you to do that. I certainly appreciate that. But at the end, you made a comment that as long as it was WTO-compliant. Now, was that gratuitous kind of comment just thrown in, or are you legitimately concerned that title I programs are not WTO-compliant, what was that for? Why did you stick that in there?

Mr. MOORE. We want to make sure everything we do in agriculture here is WTO-compliant.

Mr. CONAWAY. I understand that, but are you legitimately concerned that our title I programs are not WTO-compliant as they currently stand, as a team? That would be helpful to know if that is the case, because if it is, you have me really more concerned than I was otherwise. Because I believe they are, and I am not sure why that was tossed in there.

Mr. MOORE. Personally, I don't believe that they are in risk of being deemed not WTO-compliant.

Mr. CONAWAY. Okay, I got you.

Well, first off, thank you for all your policy teams going at it right now. Get that stuff to us sooner rather than later. And next spring or whenever we start putting pencil to paper, the longer you wait to give us your new good ideas, you create barriers that might have not otherwise have been there had you got those in early. Encourage your folks to come to their conclusions and decisions as early as you can, because it would make our collective efforts at getting those factored in, in as fulsome a way as you can to make that happen.

Mr. Moore, you also estimated that you think the ARC-County program will be less ascribed to, going forward, and you folks may move to PLC, and that you suggest we take another look at ARC-

County by expanding that. Does it make more sense to do that, or just stick with the PLC program that people are moving to?

Mr. MOORE. We won't know for sure. I don't think we would be able to answer that for sure until we get the numbers in front of us, but farmers prefer a choice, they don't want ten choices but a couple of choices are good, and making sure that both of those choices are available is important.

Mr. CONAWAY. Well, I intend to keep the choices available, I am just wondering if you would expand the coverage on the ARC-County payment system *versus* doing something better under PLC.

Mr. MOORE. My opinion of enhancing the ARC-County would be beneficial, more revenue base for the farmers that we represent instead of just price loss.

Mr. CONAWAY. I got you. One of the struggles we have is who to help, who to try to give risk management tools to folks who have been in business throughout that run-up to congratulations on the 2 years you paid more taxes than you had the former 25 years. That is a good thing, quite frankly. It is going to make it hard for you to run for office somewhere, so you build up equity during those years, and then in the hard years you are running through that, you are burning through cash equities, you mentioned earlier. Is the structure of our program such that we should give more attention to the folks who have not had a chance to build up equity, because they have burned through whatever they have as well, you have burned through equity. Are we structured right to go at, or ignore that issue as to how long people have been in business in terms of our programs?

Mr. MOORE. Anything you can do to encourage young people to enter into agriculture, I have a son who started farming 3 years ago so he doesn't have any equity.

Mr. CONAWAY. Right.

Mr. MOORE. And so for him to take over our farming operation he couldn't do it if he had to borrow all of the money because he has no equity built up. And so his risk is much greater than my risk.

Mr. CONAWAY. Right, so should we structure, and this is for everybody, all the others, in the entire minute I have left, should we structure the programs towards those folks or try to be neutral in that regard and just have risk management tools? Anybody.

Mr. ATKISSON. Mr. Chairman, I will handle that one, I am ½ of the average age of the average farmer in the United States. When I was younger I took advantage of some of those programs within the FSA that were targeted towards young and beginning producers, and those programs have greatly benefitted our small communities within western Kansas. Going forward, farmers are always about being fair to each other, and the fact that we need to support our young producers, but like Mr. Moore said, our young producers that are coming back are going to be at much more risk than our older, more established producers.

Mr. CONAWAY. Yes, Mr. Spurlock.

Mr. SPURLOCK. I think that as we look at it, we have to remember that our young producers are coming back behind an older set of farmers, and as long as we protect all farmers at the same time, we keep the older generation in agriculture at this time, we have

to have these programs work for everybody evenly, and when those families are healthy and in good shape they can bring back their next generations and bring them in, and the two will work together.

Mr. CONAWAY. I got you. Thank you, Mr. Spurlock.

Again, thank you for your early work on policy. The sooner you can get it to our team and we can start folding it into the system, the better it is all going to work for everybody.

I yield back. Thank you.

The CHAIRMAN. Thank you, Mr. Chairman.

I recognize the gentlelady from the Virgin Islands, Ms. Plaskett, for 5 minutes.

Ms. PLASKETT. Thank you, Mr. Chairman.

Mr. Conaway, that was very interesting, and it led me to a question that I was wondering about. The balancing that has to be done with the older farmers, the established farmers, and then these new farmers that are coming up. In the Virgin Islands, we had a lot of young people who come from economic and finance backgrounds that are interested in farming now, and are trying to assist the older farmers with the technical and the compliance expertise so they can go to the next level.

Would it be possible, or should we have programs that assist in that respect where the risk of the younger farmer, the greater risk that he has, if he is partnering with an older farming establishment, might be able to assist them in growing that business? Have you seen any? Do we have programs like that?

Mr. SPURLOCK. At National Corn, we are working within a couple of our different action teams trying to develop and put together what needs to be done for the younger farmers, looking at new programs and analyzing the ones that are there and seeing if there is a better way to do it, that we can bring more of these back into agriculture and keep them——

Ms. PLASKETT. I would love to hear about those or assist you in any way possible in that. That is really important for us to have the next generation of farmers to come onboard, and to think that it is a very vibrant possibility for them. And not strictly those who have grown up on a farm, this is something that can take us to the next level of innovation in farming in the United States.

Mr. SPURLOCK. Yes, ma'am. In the last two meetings we have had, we have a gentleman from Minnesota that is wanting to turn his farm over, and he has stood up and we have talked, he gave a plea trying to find someone, because his family is not in agriculture and not coming back, so he is asking and through social network and through the ag families, looking to find those next young farmers to go help him continue his farm on.

Ms. PLASKETT. Well, if he is a Minnesota farmer, he is probably a good Lutheran, and that is what the Virgin Islands is full of, we are from that Danish background. We may have one or two——

Mr. SPURLOCK. He may need to look in the Virgin Islands then. Yes, ma'am.

Ms. PLASKETT. Mr. Moore, one of the things that you talked about in your testimony is the need in advocating for keeping the nutrition program as part of the farm bill and not splitting the two. Could you go into more detail about that?

Mr. MOORE. Sure. It is imperative that we keep that in the farm bill. It not only builds a coalition because there are a few Members in Congress that have agriculture in their district, but everybody eats. I live in a community of 1,000 people, and my family has been involved in a local food pantry, and we live in rural Illinois with 17,000 people that live in my county, 1,000 in my hometown. The need out there for nutrition assistance was staggering to me, as we found out how many people needed to take advantage of that in the middle of rural America, where we grow cattle, hogs, soybean, corn. The need is out there. Any time we can provide great service to people who need that food, whether I am a farmer or whether you are in the anti-hunger groups, it is critically important. That is part of what sustainability is, is making our communities a better place to live, and that is what we are doing in Illinois.

Ms. PLASKETT. Thank you.

And then just quickly, I don't know if one or two of you may be able to answer this. President Trump has threatened to impose the 20 percent tariffs on all imports from Mexico, which may have, in effect, a retaliatory response by Mexico. How might that affect some of the commodities in your own trade within your organizations? Have you discussed this or thought about this?

Mr. SCHEMM. Within the wheat industry we have a huge concern over this. With over 50 percent of our wheat that is exported out of this country, this absolutely factors into a huge component of the price that our farmers are able to receive for their product.

Ms. PLASKETT. Yes.

Mr. SCHEMM. And without that trade component being in there, we obviously cannot eat all the wheat that we produce in this country, especially when we get up into the PNW, Pacific Northwest, part of our country where there are areas where they export 80 to 85 percent of it. And so again, trade is a vital component there and we have a lot of concern, and we definitely want to see new trade agreements, or trade agreements that can be beneficial to ag, because ag in general benefits from the export market.

Ms. PLASKETT. Wow. Okay, thank you.

And I yield back. Thank you, Mr. Chairman.

The CHAIRMAN. I thank the gentlelady.

I now recognize the gentleman from Georgia for 5 minutes.

Mr. ALLEN. Thank you, Mr. Chairman. And thank you all for a very interesting conversation about the state of our agriculture industry. It is amazing that the more productive you get, the less money you make, I tell you, but that seems to be the case. And obviously, the taxpayers out there have spoken, they are interested in efficiency. Frankly, a lot of people, of course I represent them, agriculture is the number one industry in my district, so I understand it, I understand the importance as far as national security of our farm program, and why we need to make sure that not only that we keep our existing farmers in business, but to add more folks. As the demand for food grows in this world, we have to be prepared to meet that need. And as, Mr. Moore, you said, not everybody farms but everybody does eat. And so it is critically important.

Talk about trade, I have looked at this situation where, frankly, those countries that ship goods in here don't pay a tax, and when

we ship goods into the other countries our producers have to pay a tax. Have you all come up with any solutions to that, because we have manufacturers, we have money moving offshore, we have manufacturers moving offshore, what can we do from an ag standpoint to deal with this? Mr. Schemm, Mr. Moore, you have any suggestions?

Mr. MOORE. Well, the American Soybean Association was very supportive of the TPP, and the benefits to agriculture in reducing those tariffs, making it fair trade and making it equitable, we continue to hope that as the Administration goes towards making bilateral agreements, they will use the agricultural benefits and the language in the TPP as a template as they go forward speaking with bilateral, for example, Japan for TPP and on NAFTA they are the same thing. We want to make sure as they modernize the NAFTA agreement that those benefits that agriculture has had over the last 20+ years are still in place. And we understand the need that all three countries need to modernize that.

Mr. ALLEN. Okay. Mr. Schemm?

Mr. SCHEMM. We were very happy to see the U.S. pursue negotiations with China over their violations of trade there that has occurred there. And so it is a key component with trade agreements that we do have enforcement of those trade agreements. According to the study that the wheat organizations have done, it cost the U.S. wheat growers almost $650 million because of China's lack of fulfilling their commitment to purchase wheat, and the subsidies that they give to their producers. This is something that, again, has huge impacts, we have calculated anywhere from 30¢ to 40¢ per bushel to our American wheat farmer, and so it is critical that those agreements get enforced. And as I referenced earlier though, it is also very critical that we have an agreement in the first place.

Mr. ALLEN. And speaking to that, we grow a lot of cotton in my district. In fact, Mr. Chairman, we grow the best cotton in the United States in my district.

Mr. CONAWAY. Your objective criteria.

Mr. ALLEN. But, one of the things that if you look where we buy all of our goods, we buy from Asia, yet they pay us market base, which is 60¢ a pound, and they pay their own farmers $1.40 a pound for inferior cotton. This trade thing, and what the President is up to here, it may be good. I think that we need to talk to our neighbors across the world about what is fair. And that is what I am interested in because, again, the American taxpayers, they are good folks and we have to make sure our farm industry is healthy, but at the same time, we are getting taken advantage of by the rest of the world. And I realize that the WTO is involved, and we are a developed nation, and some of them are underdeveloped, and all that sort of thing, but we have to figure out a way to make this work. With your help, we would appreciate that and get something here in this next farm bill that will help us with that.

I yield back, my time is up. Thank you.

The CHAIRMAN. I thank the gentleman.

I now recognize the gentleman from Florida, Mr. Lawson, for 5 minutes.

Mr. LAWSON. Thank you very much, Mr. Chairman. And it is an honor to be here with you gentlemen today. And probably before

I got here, there was a considerable amount of discussion about different areas of insurance, commodity insurance and so forth, that is very important. What I have been trying to get my hands around, and see I have pretty big hands, from being an athlete, but there has been a great deal of discussion about immigrants, and I know there is a big difference from being a farmer and working on a farm. My concern, which has happened in America and it has been really publicized a great deal during the last campaign is, with all the immigration reform, I am told by most farmers that a lot of time they would not be able to get their crops to market without immigrants' labor because Americans just don't want to do it. And so as we work here to come to some commonsense about immigration reform, I would just like you all to respond how important is this issue to being able to get your products to market?

Mr. SPURLOCK. Sir, it is a very important issue in agriculture. As you look at the vegetable industry and the amount of hand labor it takes to do that, and when you have to advertise in papers to try to get local people, and nobody shows up to work, then you have to find the labor to do that. In the meat packing industry it is a large percentage of migrant workers that are working in the meat industry. The dairy industry is the same. And on our crop farms across the nation, these things all come to pass.

The programs that we have right now, if you use H–2A and you work hard to get those gentlemen in or those ladies, the people, the workers, they can only be here for so many months and then they move on. Well, the meat packing plants, the dairies, they go yearround. We have a major problem in our work labor force, the program tends to be broke, and if there is a way we can find to fix this to be able to use this labor and use it efficiently and consistently, it would be of great interest to agriculture.

Mr. LAWSON. Yes, go ahead.

Mr. SCHEMM. I was just going to say that the ag industry stands to be one of the hardest-hit industries in this country when it comes to immigration and the ability, as you referenced, getting those crops out. And it affects all of us across the industry, whether it is fresh produce or even in my situation with wheat, and we see every year a mammoth migration of custom harvesters moving across the Great Plains. And even this year I was able to have a young man from Argentina on my operation, just learning the different farming techniques out in the world. And I can only believe that that cultural exchange will be able to benefit all of us. And so it is something that our producers have expressed a lot of concern as they have dealt with the challenges of trying to be able to deal with getting their crop to market.

Mr. LAWSON. Right. I have a lot of tomato growers up in Gadsden County, and I know the type of labor, because I have been out there in the field, that they are using, and some of the people are afraid that they are going to get deported or something of this nature, but I notice that Gadsden County is a county where they have probably the largest population of African Americans, but they are not able to get those individuals to go out in the fields to harvest the crops as they come up. Like we get off maybe two tomato crops before it really gets cold, two in north Florida and then maybe one coming off in north Georgia. And so my concern is, when I go back

to address those individuals, I want to do everything that I can to help those farmers so that they can keep those workers there to get their crops to market.

Mr. Chairman, what influence that we can have on this next farm bill to deal with that kind of situation is extremely important to me, and it is important to the farmers. And I will say that I have never seen anything like it, when I go out into the fields to take a look around and they are really working, and really working hard, and I don't think they are causing all these problems that people have been talking about.

I yield back.

The CHAIRMAN. I thank the gentleman.

I now recognize the gentleman from Nebraska for 5 minutes.

Mr. BACON. Thank you, Mr. Chairman. It is an honor to be here. Thank you for representing your various markets there and growers.

I wanted to ask you: with the current drop in prices, 45, 50 percent, will the ARC and the PLC in their current forms be a sufficient safety net for you in the commodities that you are working?

Mr. SPURLOCK. Yes, sir. As we go into this farm bill work that you have in front of you, that we think that small tweaks in these two programs will be able to make them viable for the next 5 years.

Mr. BACON. Okay. Some minor tweaks is what you are saying.

Mr. SPURLOCK. Yes, sir.

Mr. BACON. Thank you. Go ahead, Mr. Moore.

Mr. MOORE. Yes, I would agree, but I want to make sure that both the ARC program and the PLC program are offered as options for farmers to take. The minor tweaks, dropping the Olympic average or using some other reference price changes would be helpful.

Mr. BACON. Okay, thank you. Mr. Schemm.

Mr. SCHEMM. Again, agreeing with my colleagues, choice is a critical component. The key things from our perspective is, while it does lay a good foundation that, within the ARC, is going to be as simple as using more accurate data within PLC, it is a reference price for wheat that we just do not feel adequately helps protect that producer. Again, tweaks, but key critical tweaks.

Mr. BACON. Thank you. Mr. Friederichs.

Mr. FRIEDERICHS. I would have to agree with the three gentlemen on my right there. I believe it is probably going to be sufficient.

Mr. BACON. Okay.

Mr. FRIEDERICHS. I guess time will tell.

Mr. BACON. Mr. Atkisson.

Mr. ATKISSON. As my colleagues down the table have already iterated the programs are working, especially within sorghum within the PLC program design, it has done exactly what it was designed to do. While we have had a drop-off in the ag economy and prices have dropped down, it has provided us with the safety net that we have needed. No program is perfect. We think there is always room to tweak a program and to make it more viable for farmers, but so far ARC and PLC have done exactly what they were designed to do.

Mr. BACON. I am hearing even with the 45 percent to 50 percent drop in prices, that the 2014 Farm Bill has worked for you. Would you agree? Has it been an effective farm bill through this hard time?

Mr. MOORE. No. I don't think it has, at least on the fellows that I deal with in Illinois and the farmers that I deal with. There is always room for improvement in everything that gets done. I think there needs to be the tweaks to make it more effective and make it more predictable as we go through trying to secure operating notes. It is hard to know today, when I go to my banker, what I am going to get in October of 2018 for a crop I am growing. I won't know what I am going to get for sure from the 2016 crop until October of 2017, and so since we don't know, it can't be included in our cash-flow calculations.

Mr. BACON. Okay, thank you for that. Does anybody want to expand upon that, or is there agreement?

Mr. SCHEMM. I would concur with Mr. Moore that, no, they haven't, but they have laid the foundation again. And with those tweaks into those programs, they can do the job of adequately handling that price drop, but we have to make sure we make those changes into those programs.

Mr. BACON. One last question. During the 2014 Farm Bill, some had intended for there to be a $50,000 payment limit on ARC and PLC payments. How would a $50,000 payment limit be impacting your operation today in this period of multiple years of low prices if that had been proposed successfully?

Mr. SPURLOCK. That would be something we would definitely have to look at and try to evaluate how it affects most people. Any of the larger producers that are having the same problems possibly would need larger limits than that. At the level of what we are right now, they tend to be working. Most producers don't even advance and get to those limits, but it is something really to watch and evaluate.

Mr. BACON. Anyone else?

Mr. ATKISSON. Yes. Growers in the western Sorghum Belt where I am located, we are going into a time where we are really needing a safety net. Our PLC program is going to fulfill that, however, when you look at those western growers and the amount of acres that they have, and the amount of leverage, those that have leverage against them, $50,000 is not going to be much when you consider what they have at risk on a day-to-day basis.

Mr. BACON. Anyone else? I want to thank you for your, okay, go ahead. Looks like Mr. Schemm has something.

Mr. SCHEMM. I just wanted to briefly mention that part of the challenges with that limit is that both LDPs and market consistent loans would also fall underneath that limit, and that is where our producers have really fallen back and used currently. We would have to evaluate it, but we do have concerns.

Mr. BACON. I greatly appreciate your expertise.

Thank you, Mr. Chairman.

The CHAIRMAN. The gentleman's time has expired.

Just following up on Mr. Bacon's line of questioning there real quick, I am ready to close, but kind of the theme throughout the hearing has been if we can make some tweaks here and there to

PLC, but then he asked the question is the farm bill working and then we get a hard no. I am trying to figure out how we reconcile the tweaks with a hard no. Are we going to tweak it a little bit or are we in agreement that this is an abject failure?

Mr. SPURLOCK. In the corn industry the programs have worked well as it was designed at the time it was, and then unexpectedly the markets did take the tumble.

The CHAIRMAN. Okay.

Mr. SPURLOCK. The ARC program has worked well for the corn industry.

The CHAIRMAN. Yes.

Mr. SPURLOCK. Flexibility going both ways is something we might have an interest in looking at as we go into the future.

The CHAIRMAN. Great. That is what we should be about, is being flexible on this, because we are not going to achieve perfection. And I don't think anybody would agree, in this room or any other, that we have achieved perfection with the 2014 Farm Bill, far from it, but it is a heavy lift. The general consensus being we can make some modifications to these programs, we all agree on that.

Mr. SCHEMM. I would just liken a quick analogy to when I go drill wheat into residue, and if I have the wrong down pressure on that drill it turns to what I call a giant rake and it plugs up all the field. But if I adjust my down pressure just a little bit, then it will work.

The CHAIRMAN. Yes.

Mr. SCHEMM. What the current market conditions here showed was that with the current conditions and the down pressure I had, I turned into a big rake.

The CHAIRMAN. Yes.

Mr. SCHEMM. It did not work. But with a tweak of the down pressure I can make it work.

The CHAIRMAN. I would agree with that.

I appreciate you all being here today. Before I close, let me make one quick announcement. The ag tax reform hearing was rescheduled for next week. One of our witnesses will focus on how the Tax Code can hinder the transfer of farms from one generation to the next, which has been something we have discussed here today. And for all my colleagues interested in that topic, I would encourage you to attend that hearing next week as well.

Once again, gentlemen, I appreciate your time today and your testimony.

Under the Rules of the Committee, the record of today's hearing will remain open for 10 calendar days to receive additional material and supplementary written responses from the witnesses to any question posed by a Member.

This hearing of the Subcommittee on General Farm Commodities and Risk Management is adjourned.

[Whereupon, at 11:55 a.m., the Subcommittee was adjourned.]

THE NEXT FARM BILL
(THE FUTURE OF SNAP)

TUESDAY, MARCH 28, 2017

HOUSE OF REPRESENTATIVES,
SUBCOMMITTEE ON NUTRITION,
COMMITTEE ON AGRICULTURE,
Washington, D.C.

The Subcommittee met, pursuant to call, at 2:03 p.m., in Room 1300 of the Longworth House Office Building, Hon. Glenn Thompson [Chairman of the Subcommittee] presiding.

Members present: Representatives Thompson, Crawford, Davis, Yoho, Comer, Marshall, Faso, Arrington, Conaway (*ex officio*), McGovern, Adams, Evans, Fudge, Lujan Grisham, Lawson, Panetta, Soto, Maloney, Costa, O'Halleran, and Peterson (*ex officio*).

Staff present: Caleb Crosswhite, Callie McAdams, Haley Graves, Jennifer Tiller, Mary Rose Conroy, Stephanie Addison, Kellie Adesina, Lisa Shelton, Liz Friedlander, Troy Phillips, and Carly Reedholm.

OPENING STATEMENT OF HON. GLENN THOMPSON, A REPRESENTATIVE IN CONGRESS FROM PENNSYLVANIA

The CHAIRMAN. This hearing of the Subcommittee on Nutrition entitled, *The Next Farm Bill: The Future of SNAP,* will come to order. I want to welcome everyone to today's hearing.

Good afternoon. Today's Nutrition Subcommittee hearing on the future of SNAP continues the Committee's series to review current policy and to set the stage for the next farm bill. Thank you to everyone for taking the time to be here, particularly our five witnesses.

The Committee on Agriculture completed a comprehensive review of SNAP during the 114th Congress known as the *Past, Present, and Future of SNAP,* and the purpose of the review was to provide a better understanding of SNAP, the population it serves, how the program administers food benefits and other services to assist that population, and to examine ways the program can be improved. While the series highlighted specific ways that vulnerable populations are well-served, it also exposed several areas for improvement. While prior witnesses have touched on the future of SNAP in the context of specific hearing topics, this hearing's purpose will be to solely discuss the future.

SNAP, formerly called the Food Stamp Program, is designed primarily to increase the food purchasing power of eligible low-income households to help them buy a nutritionally-adequate, low-cost

diet. Benefits vary by household size, income, and expenses, like shelter and medical costs, and averaged nearly $126 per person per month in 2016. SNAP is the largest program in the domestic hunger safety net, currently offering nutrition assistance to 42.9 million eligible, low-income individuals and families, all the while providing economic benefits to communities.

SNAP has seen considerable growth in recent years. The cost of the program more than doubled from $37.6 billion in 2008, to nearly $80 billion at its peak in 2013. Likewise, participation in the program increased from 28.2 million participants in 2008, to 47.6 million participants in 2013. As the economy has recovered from the recession, participation and costs of SNAP have slowly started to decrease. In 2016, total costs were $70.97 billion, with participation at 44.2 million.

Now this hearing will provide additional opportunity for stakeholders to discuss their priorities for improvements to SNAP in the upcoming farm bill, in areas such as ensuring adequate nutrition, strengthening the pathway toward self-sufficiency, bettering outcomes for children and families via education, and further advancing program efficiency and integrity.

The panel we will hear from this afternoon will offer insight based on their operational and policy experience. These well-informed perspectives are critical as we look towards farm bill reauthorization, with a focus on acknowledging what works, reducing administrative burdens, and discussing areas for improvement. Our goal is to ensure that SNAP benefits reach those most in need in the most effective and efficient manner possible.

I want to thank all of our witnesses for sharing their time and expertise.

[The prepared statement of Mr. Thompson follows:]

PREPARED STATEMENT OF HON. GLENN THOMPSON, A REPRESENTATIVE IN CONGRESS FROM PENNSYLVANIA

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I want to thank all of our witnesses for sharing their time and expertise. I now recognize Mr. McGovern for any opening comments he would like to make.

The CHAIRMAN. I now recognize the Ranking Member of the Subcommittee, Mr. McGovern, for any opening comments he would like to make.

OPENING STATEMENT OF HON. JAMES P. MCGOVERN, A REPRESENTATIVE IN CONGRESS FROM MASSACHUSETTS

Mr. MCGOVERN. Thank you, Mr. Chairman. It is always good to be with you, and I want to thank our expert witnesses for being here today. I look forward to your testimony.

The title of today's hearing is, *The Next Farm Bill: The Future of SNAP*. If I may, let me offer my colleagues a little constructive advice. First, let me say don't even think of separating the nutrition title from the farm bill. That would be a huge mistake, and if it is done, I guarantee you there will be no farm bill. Second, with regard to SNAP, don't screw around with the program, period. There is no reason whatsoever, based on all of our now 20 hearings, to undermine SNAP through structural changes, block grants, further restrictions, more onerous requirements, or cuts. Please do not do anything that will make hunger worse in our country.

I have read some news reports that the ABAWD population might be in the Committee's crosshairs. That is able-bodied adults without dependents. As my colleagues know, the majority of people on SNAP who can work, do work. ABAWDs, under current law, are told if they don't have a job or are not in a job training program within a 3 month period of time, they are thrown off of SNAP for 3 years. I quite strongly disagree with that approach. And now, I am reading that there are some on the Committee who don't even want to give a person 3 months.

Who are ABAWDs? Some are veterans trying to reintegrate back into their communities. Some are homeless. Some have undiagnosed mental illnesses. Some live in areas of high unemployment where job training programs are few or filled. Some live in rural areas without transportation where it is difficult to get a job or to get to a job training program. In short, this is a very complicated population. But as usual, there are some who are more interested in a sound bite rather than the reality, and I would just say, "Enough." We should at least do a hearing on the ABAWD issue before making the lives of millions of Americans more miserable.

If we are talking about the future of SNAP, we need to focus on how to make the program even better. We need to make sure that anyone who needs modest food assistance benefits has access to them. We need to support and expand innovative programs that

help increase the purchasing power of SNAP. And we need to increase SNAP benefits, which currently average a mere $1.40 per person per meal, to provide families who benefit from the program with access to more nutritious food that lasts them through the entire month.

Mr. Chairman, I look forward to hearing from our witnesses today, and based on their prepared testimony, I would say that these witnesses will concur with all the other witnesses that we have had before this Committee, both brought forward by the Majority and the Minority, who have said that SNAP is a good program. It is a successful program. It is a program with a low fraud and error rate. It is a program that provides people food assistance, and that it is important that we not undermine it in any way. And that is how I hope we proceed. And again, I thank you and I yield back my time.

The CHAIRMAN. The gentleman yields back.

The chair would request that other Members submit their opening statements for the record so that the witnesses may begin their testimony and to ensure that there is ample time for questions.

I am pleased now to welcome our witnesses to the table. Thank you so much for taking the time and everything else it takes to come here to share your passion, your expertise on this incredibly important topic. And our witnesses include Ms. Stacy Dean, Vice President for Food Assistance Policy, Center on Budget and Policy Priorities in Washington, D.C.; Mr. Russell Sykes, Director of Center for Employment and Economic Well-Being, American Public Human Services Association, Washington, D.C.; Mr. Joe Arthur, Executive Director of Central Pennsylvania Food Bank, Harrisburg, Pennsylvania; Mr. Josh Protas, Vice President of Public Policy, MAZON—A Jewish Response to Hunger, based here in Washington, D.C.; and Ms. Jennifer Hatcher, Senior Vice President, Government and Public Affairs, Food Marketing Institute based in Arlington, Virginia.

Ms. Dean, please begin with your 5 minutes of testimony when you are ready.

STATEMENT OF STACY DEAN, VICE PRESIDENT FOR FOOD ASSISTANCE POLICY, CENTER ON BUDGET AND POLICY PRIORITIES, WASHINGTON, D.C.

Ms. DEAN. Thank you. Chairman Thompson, Members of the Subcommittee and full Committee, thank you very much for the invitation to testify today. I am Stacy Dean, Vice President for Food Assistance Policy at the Center on Budget and Policy Priorities, a nonpartisan policy institute here in D.C. I am very pleased to be here with you today to talk about SNAP and to share ideas for the next farm bill. I have worked on the program for more than 20 years, and this will be my fifth farm bill.

SNAP is the nation's most important anti-hunger program. It currently helps about 43 million low-income Americans to afford a nutritionally adequate diet at more than 200,000 retail outlets. Despite its modest benefits, it has powerful short- and long-term impacts, and SNAP's success can largely be attributed to its national entitlement structure. It helps families and communities weather tough economic times. It reduces poverty and food insecurity. It im-

proves health, and it supports work. The program has proven to be particularly important to families with very young children, having lasting effects on their health and development. Maintaining and building upon these strengths is the first step towards a successful title IV.

So let me turn now to some ideas for the next farm bill. The list I will run through draws from my written statement and highlights areas for consideration, and they include benefit adequacy, eligibility policy, access to SNAP, program integrity, and employment and training.

First, benefit adequacy. SNAP's maximum benefit per person per meal, based on USDA's Thrifty Food Plan, is about $1.90, while the average benefit is $1.40. Evidence is mounting that the Thrifty Food Plan is insufficient for households to purchase a healthy diet. SNAP's core purpose is to meet low-income households' basic nutritional needs. If its basic benefits cannot achieve that goal, then they really must be reconsidered.

Let me move onto eligibility policy. SNAP is generally available to low-income households, regardless of their demographics. There are some additional restrictions, though, which can impede SNAP's ability to help some struggling individuals and families meet their food needs. The ABAWD rule mentioned by Mr. McGovern is one of them. This group are childless adults working less than 20 hours per week. Despite their very-low-incomes, this group is only eligible for 3 months of SNAP out of every 36, unless they can maintain a job at 20 hours a week. This harsh time limit is frequently called a work requirement, but states are not actually required to offer these individuals a work slot before terminating their benefits, and most don't. We really encourage the Committee to consider easing this tough rule.

In the area of SNAP access, it is important to highlight that SNAP is incredibly successful at reaching eligible people. USDA estimates that 83 percent of eligible individuals participate, one of its true successes. Yet some groups have participation well below this level. For example, only 42 percent of eligible seniors participate in the program. Many of the same low-income seniors also are eligible for and similarly miss out on Medicare's Low-Income Drug Subsidy Program, and assistance from Medicaid to pay their Medicare premiums. Rather than tackle low senior enrollment issues in SNAP alone, I propose considering low or no cost ideas that would more effectively package these three benefits together to respond to the needs of low-income seniors more holistically. The Social Security Administration already acts as an application hub for these benefits, and that role could be strengthened.

Shifting to program integrity, my written testimony includes several ideas that would enhance program accuracy, such as increasing access to current wage records for states. And while fraud is a minimal problem in SNAP, it is important to keep making improvements in this area. One suggestion is to expand a current pilot FNS is running to check for dual enrollment across states in the Southeast, to make that pilot go nationwide.

Finally, SNAP's employment and training program is one of the most active areas of discussion and innovation within SNAP today. It is a significant program serving over one million people last

year. Many states are considering how to shift their programs from punitive process oriented approaches to ones focused on longer-term success, which engage participants ready to build up their skills and move up the economic ladder. A new investment in employment and training, perhaps through a competitive grant program, could allow states to expand programs that support individuals who face difficulty finding employment, or offer career and technical training that is informed by the local business community.

So in conclusion, over the many years that I have worked on SNAP, Congress has truly endeavored to balance the need to maintain SNAP's successful structure and design with changes to the program that respond to the needs of under-served groups, such as working families and seniors, and to test and implement new ideas to improve the program's efficiency, without compromising its effectiveness. And as you consider ideas for the new farm bill, I urge you to keep those goals your priority. I look forward to the discussion today. Thank you.

[The prepared statement of Ms. Dean follows:]

PREPARED STATEMENT OF STACY DEAN, VICE PRESIDENT FOR FOOD ASSISTANCE POLICY, CENTER ON BUDGET AND POLICY PRIORITIES, WASHINGTON, D.C.

Thank you for the opportunity to testify today. I am Stacy Dean, Vice President for Food Assistance Policy at the Center on Budget and Policy Priorities, an independent, nonprofit, nonpartisan policy institute located here in Washington. The Center conducts research and analysis on a range of Federal and state policy issues affecting low- and moderate-income families. The Center's food assistance work focuses on improving the effectiveness of the major Federal nutrition programs, including the Supplemental Nutrition Assistance Program (SNAP). I have worked on SNAP policy and operations for more than 20 years. Much of my work is providing technical assistance to state officials and other stakeholders and researchers who wish to explore options and policy to improve SNAP's program operations to more efficiently serve eligible households. The Center on Budget and Policy Priorities receives no government funding.

My testimony today is divided into two sections: (1) SNAP's critical role in our country as a Federal nutrition program; and (2) ideas for consideration to strengthen SNAP for the future.

SNAP's Critical Role

I've testified several times recently about the critical role SNAP plays in our country. I'm going to quickly summarize here the most important points about SNAP's successful features and results, in part because these themes were so successfully drawn out in the series of hearings before this Committee on SNAP over the past 2 years and highlighted in the comprehensive report the Committee issued late last year.

SNAP is a highly effective anti-hunger program. Much of its success is due to its entitlement structure and its national benefit structure, which focus its benefits to the households with the lowest incomes available to purchase groceries and assists poor families to obtain adequate nutrition, regardless of where they live. As of last December, SNAP was helping 43 million low-income Americans to afford a nutritionally adequate diet by providing them with benefits on a debit card that can be used only to purchase food. On average, SNAP recipients receive about $1.40 per person per meal in food benefits.

- **SNAP has largely eliminated severe hunger and malnutrition in the United States.** A team of Field Foundation-sponsored doctors examined hunger and malnutrition among poor children in the South, Appalachia, and other very poor areas in 1967 (before the Food Stamp Program, as SNAP was then named, was widespread in these areas) and again in the late 1970s—after the program had been instituted nationwide. These physicians found marked reductions over this period in serious nutrition-related problems among children and gave pri-

mary credit to the Food Stamp Program.[1] Findings such as this led Senator Robert Dole to describe the Food Stamp Program as the most important advance in U.S. social programs since Social Security.

- **SNAP is targeted at need and reduces poverty.** SNAP reaches more than 80 percent of eligible households, USDA estimates.[2] It delivers the largest benefits to those least able to afford an adequate diet; roughly 92 percent of benefits go to households with monthly incomes below the poverty line, and 57 percent go to households below ½ of the poverty line, or below $840 a month for a family of three in 2017.

  These features help account for SNAP's large anti-poverty impact. SNAP kept 8.4 million people out of poverty in 2014, including 3.8 million children, and made millions of others less poor, according to Census data using the Supplemental Poverty Measure (which counts SNAP and other non-cash benefits as income). SNAP also lifted 2.1 million children above ½ of the poverty line.[3]
- **SNAP helps low-income households put food on the table.** SNAP benefits reduce food insecurity (which occurs when households lack consistent access to nutritious food because of limited resources) among high-risk children by 20 percent and reduces fair or poor health (as reported by their parents) by 35 percent, one study found.[4] Another recent study found that participating in SNAP reduced households' food insecurity by about five to ten percentage points and reduced "very-low-food security," which occurs when one or more household members have to skip meals or otherwise eat less because they lack money, by about five to six percentage points.[5]
- **SNAP improves long-term health and educational outcomes.** Recent research comparing the long-term outcomes of individuals in different areas of the country when SNAP gradually expanded nationwide in the 1960s and early 1970s found that disadvantaged children who had access to food stamps in early childhood and whose mothers had access during their pregnancy had better health and educational outcomes as adults than children who didn't have access to food stamps. Among other things, children with access to food stamps were less likely in adulthood to have stunted growth, be diagnosed with heart disease, or be obese. They also were more likely to graduate from high school.[6]
- **SNAP is highly responsive to the economy.** SNAP is the most responsive means-tested program to changes in poverty and unemployment during economic downturns. It expands to meet need and then shrinks when need recedes, most recently during and after the Great Recession of 2007–09. This automatic response not only eases hardship for people directly hit by a downturn but also boosts economic activity in communities across the country, thereby acting as an "automatic stabilizer" for the weak economy.
- **SNAP supports work.** SNAP is designed to both supplement the wages of low-income workers and support workers during temporary periods of unemployment. Most SNAP recipients who can work do. The number and share of households that have earnings while receiving SNAP has been on the rise. Among SNAP households with at least one working-age, non-disabled adult, more than ½ work while receiving SNAP—and more than 80 percent work in the year prior to or the year after receiving SNAP. The SNAP benefit formula is structured so that participants have a strong incentive to work longer hours or to search for better-paying jobs. SNAP benefits gradually decline as earnings rise,

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[1] Nick Kotz, *Hunger in America: The Federal Response* (New York: Field Foundation, 1979).

[2] Kelsey Farson Gray and Karen Cunnyngham, "Trends in Supplemental Nutrition Assistance Program Participation Rates: Fiscal Years 2010 to 2014," USDA, June 2016.

[3] CBPP analysis of 2014 Census Bureau data from the March Current Population Survey, SPM public use file; corrections for under-reporting from HHS/Urban Institute TRIM model. This is an update from a previous analysis published in a paper by Arloc Sherman and Danilo Trisi, "Safety Net More Effective Against Poverty Than Previously Thought," CBPP, May 6, 2015, *http://www.cbpp.org/research/poverty-and-inequality/safety-net-more-effective-against-poverty-than-previously-thought*.

[4] Brent Kreider, *et al.,* "Identifying the Effects of SNAP (Food Stamps) on Child Health Outcomes When Participation Is Endogenous and Misreported," *Journal of the American Statistical Association,* 107(499), 2012: 958–975, *http://batten.virginia.edu/sites/default/files/research/attachments/JASA_KPGJ_online(1).pdf*.

[5] James Mabli, *et al.,* "Measuring the Effect of Supplemental Nutrition Assistance Program (SNAP) Participation on Food Security," prepared by Mathematica Policy Research for the U.S. Department of Agriculture, Food and Nutrition Service, August 2013, *https://www.fns.usda.gov/sites/default/files/Measuring2013.pdf*.

[6] Hilary Hoynes, Diane Whitmore Schanzenbach, and Douglas Almond, "Long-Run Impacts of Childhood Access to the Safety Net," *American Economic Review,* 106(4): 2016, 903–934.

reducing the "benefit cliff" effect in SNAP. And, as I discuss in more detail below, SNAP provides a state option to all but eliminate any benefit cliff effects in SNAP.

- **SNAP is efficient and effective.** USDA and states take seriously their roles as stewards of public funds and emphasize program integrity throughout program operations. The authorizing committees have mandated in SNAP some of the most rigorous integrity standards and systems of any Federal programs. States and USDA have achieved the highest program integrity levels for SNAP in recent years in terms of both the payment error rate and the percentage of SNAP benefits that are illegally exchanged for cash. States and USDA devote significant resources and take advantage of the most modern tools to pursue allegations of fraud and root it out when found.
- **SNAP's national benefit structure is key to these successes.** States have a high degree of flexibility in how they operate the program, but SNAP's benefit levels and eligibility rules are largely uniform across the states. The national benefit structure was established under President Nixon after an initial effort to operate the program without such standards resulted in enormous disparities across states, with some states setting income limits as low as ½ the poverty line.

  The national benefit structure ensures that poor families can obtain adequate nutrition, regardless of where they live. It also substantially reduces differences across the states in their overall financial support for poor children—a fact of special importance to southern states and rural areas, which have lower cash assistance benefits, higher poverty, and lower fiscal capacity.

I also believe that the Federal and state agencies that oversee SNAP are committed to the program, its participants, and strive for continuous improvement. In part, the 5 year farm bill cycle helps to foster an atmosphere of continual self-evaluation, a healthy sense of external scrutiny, coupled with the opportunity to pursue improvements when needed. While the core design of SNAP is largely unchanged since its origin, USDA and states have worked to strengthen and modernize the program to reflect new opportunities as well as respond to emerging challenges. This farm bill will be no different and we look forward to the opportunity to work with the Committee on continuing to improve SNAP and to build upon its core strengths.

Farm Bill Ideas for Consideration

The focus of today's hearing is on ways to build on the strengths of SNAP. Over the past 2 years, the Committee has undertaken a serious effort to learn about SNAP, including the people it serves, how the program operates at the state level, and opportunities for improving its effectiveness. This learning is reflected in the Committee's report, which details the program's strengths, including the ways in which SNAP's basic structure contributes to its effectiveness. Given the findings of the report, it is appropriate for the Committee to consider future policy improvements recognizing that the program is working well and meeting its key goals.

The remainder of my testimony will focus on a set of policy improvements that could strengthen the program without undermining the key programmatic elements that make it effective today. These policy ideas are informed by the Committee's hearings, academic research on the program, and our work with state officials, client advocate, and service provider groups, as well as our own research. The following is not a comprehensive or final list of the Center's suggestions for the 2018 Farm Bill. Instead, it is meant provide an overview of some of the key areas we recommend that you consider.

Improving SNAP's Basic Benefit

SNAP's maximum benefit per person per meal is about $1.90 and the average benefit is about $1.40, reflecting that most households are expected to contribute a share of their own income to purchase food. SNAP expects families receiving benefits to spend 30 percent of their net income on food. Families with no net income receive the maximum benefit, which is tied to the cost of the Department of Agriculture's Thrifty Food Plan (a diet plan intended to provide adequate nutrition at a minimal cost). For all other households, the monthly SNAP benefit equals the maximum benefit for that household size minus the household's expected contribution.

Given the modest maximum and average benefit, SNAP delivers strong outcomes. In recent years, however, there has been increasing concern and growing evidence that SNAP's basic benefit level is out of date and not sufficient to ensure that participating households can afford a healthy diet. This evidence includes research by leading academics:

- James P. Ziliak, a professor of economics at the University of Kentucky, makes the case that SNAP benefit levels are "based on increasingly outdated assumptions, including unreasonable expectations about households' availability of time to prepare food, and need to be modernized . . ." The current Thrifty Food Plan assumes that households can spend close to 2 hours per day preparing food, while households typically spend 30 minutes to an hour a day preparing food.[7] In addition to this assumption, the current Thrifty Food Plan, in an effort to develop a very low cost plan, assumes that households will consume a diet that is far outside the norm for what Americans eat, including far more of certain types of food—such as dry beans and fluid milk—and far less of other foods, including items commonly consumed like cheese and chicken.
- Studies also show that households experience a range of adverse outcomes due to running out of food at the end of the SNAP benefit month. For example, one study found that the rate of hospital admissions for low blood sugar (which can occur when diabetics reduce their food intake) among low-income individuals in California was 27 percent higher in the last week of the month compared to the first, an increase not found among higher-income individuals—suggesting that exhausting food budgets contributes to these hospitalizations. (California distributes SNAP in the first days of the month.)[8] Studies have also found that participants consume fewer calories and that diet quality decreases towards the end of the month as households exhaust their benefits.[9]
- Economics professors Patricia M. Anderson and Kristin F. Butcher[10] in a paper we recently commissioned, found that boosting SNAP benefits would raise not only the amount that low-income households spend on groceries but also the nutritional quality of the food purchased. The authors estimated the impact of an increase in SNAP benefits of $30 per person per month—or the equivalent of just under $7 per person per week. (This amounts to a roughly 20 percent increase in the Thrifty Food Plan.) Based on food spending patterns of households with somewhat more resources, the researchers found that a $30 increase would result in about $19 per person per month more in food spending. (This is less than the SNAP benefit increase, even though SNAP can be spent only on food, because the added benefits would free up household income for other necessities such as utility bills or non-food groceries that SNAP doesn't cover.) That increase in food spending, in turn, would raise consumption of more nutritious foods, notably, vegetables and certain healthy sources of protein (such as poultry and fish, and less fast food. The increased food spending would also reduce food insecurity among SNAP recipients.

Such a significant increase may not be feasible in the 2018 Farm Bill. Yet, evidence is mounting that SNAP's benefit is insufficient for all families to meet their basic food needs with a healthy diet. This topic merits further discussion and consideration. SNAP's core purpose is to meet low-income households basic nutritional needs. If its benefit levels compromise the program's ability to achieve that goal, then they must be reconsidered.

The Benefit Cliff

Some policymakers and service providers have raised concerns that programs that provide assistance for low-income families may discourage work if participants are worried that they will face a "cliff" where they lose their benefits all together if they take a job or increase their earnings above the program's income limit. SNAP currently contains three features that result in a fairly minimal benefit cliff for households with income right at the upper end of SNAP's income eligibility limit.

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[7] James Ziliak, "Modernizing SNAP Benefits," Hamilton Project, Brookings Institution, May 2016, *http://www.hamiltonproject.org/assets/files/ziliak_modernizing_snap_benefits.pdf*.

[8] Hilary Seligman, *et al.,* "Exhaustion of Food Budgets at Month's End and Hospital Admissions for Hypoglycemia," *Health Affairs,* January 2014, 33(1): 116–123, *https://www.ncbi.nlm.nih.gov/pmc/articles/PMC4215698/*.

[9] Jessica Todd, "Revisiting the Supplemental Nutrition Assistance Program cycle of food intake: Investigating heterogeneity, diet quality, and a large boost in benefit amounts," *Applied Economic Perspectives and Policy,* 2014; Michael Kuhn, "Causes and Consequences of the Calorie Crunch,", UKCPR Discussion Paper 2016–11, *http://uknowledge.uky.edu/cgi/viewcontent.cgi?article=1109&context=ukcpr_papers;* Jesse Shapiro, "Is there a Daily Discount Rate? Evidence from the Food Stamp Nutrition Cycle," *Journal of Public Economics,* Volume 89, Issues 2–3, February 2005.

[10] Patricia Anderson and Kristin Butcher, "The Relationships Among SNAP Benefits, Grocery Spending, Diet Quality, and the Adequacy of Low-Income Families' Resource" Center on Budget and Policy Priorities, June 14, 2016, *http://www.cbpp.org/research/food-assistance/the-relationships-among-snap-benefits-grocery-spending-diet-quality-and-the*.

First, SNAP's benefit formula, which targets benefits based on a household's income and expenses, phases out benefits slowly with increased earnings and includes a 20 percent deduction for earned income to reflect the cost of work-related expenses and to function as a work incentive. As a result, for most households with each additional dollar of earnings the household's SNAP benefits will decline by only 24¢ to 36¢. Most SNAP households, as a result, will see an increase in their total income when their earnings go up modestly.

The program does, however, have a Federal gross income limit at 130 percent of the Federal poverty line, a rule that creates a small but meaningful benefit cliff or benefit loss for some households who might increase their earnings above that level. For example, a typical household of three with income at 120 percent of the poverty line would lose about $200 a month in SNAP benefits if it took a new job or got a raise that lifted its monthly income above the gross income limit (which at 130 percent of poverty is about $2,200 a month for a family of three). This loss of SNAP would cancel out the higher earnings and the household would be no better off, and in some cases could be worse off.

Fortunately, states currently have an option to lift the gross income limit through "broad-based categorical eligibility". More than 30 states have taken advantage of the option thereby allowing benefits to phase out gradually for all working households. Consider the previous example in a state that used the categorical eligibility option to adopt a higher gross income limit. The household's SNAP benefit would drop by only about $60 to $90 a month, so the household would still be better off with the higher paying job. This state option to raise the gross income limit through broad-based categorical eligibility is the second protection in SNAP against a benefit cliff. Maintaining this option will allow more states to smooth SNAP's phase out and eliminate the relatively modest benefit cliff.

The third protection against a benefit cliff is its structural guarantee to make food assistance available to every household that qualifies under program rules and applies for help. SNAP households that leave the program because they find a job or get a raise and no longer qualify can count on SNAP being available if they need help again later. Without this guarantee a household that loses its job might have to wait until funding became available to resume benefits—as occurs now with child care and other benefits that are constrained by funding limitations from serving all who are eligible. The fact that SNAP is an entitlement lowers the perceived risks of working, making it easier for low-income families to take a chance on a new job or promotion.

We plan to do some more detailed analysis on SNAP's income phase out and resulting benefit cliff and will publish those findings shortly in order to help inform the Committee's review of this issue.

Assessing SNAP's Response to Individuals with Disabilities

SNAP provides needed food assistance to millions of people with disabilities. Over one in four SNAP participants, equivalent to over 11 million individuals in 2015, has a functional or work limitation or receives Federal Government disability benefits, according to CBPP analysis of data from the 2015 National Health Interview Survey. The program makes an important difference in the lives of these individuals. Yet, people with disabilities are more likely to live in poverty, endure material hardships, and experience food insecurity. Lower family income, higher disability-related expenses, and the challenges of providing needed assistance and care to disabled family members undermine the economic well-being of people with disabilities and their families. People with disabilities are at least twice as likely to live in poverty and struggle to put enough food on the table as people without disabilities. Disabling or chronic health conditions may be made worse by insufficient food or a low-quality diet.

The Center has a forthcoming analysis on the role SNAP plays for low-income individuals with disabilities and how we might improve the program to better address their needs. At a minimum, this issue merits further study by the Committee and USDA to determine whether Federal nutrition programs could be improved or implemented better to meet the needs of individuals with disabilities.

Maintaining and Improving Access to SNAP

SNAP is very successful in reaching eligible people. USDA estimates that some 83 percent of eligible individuals participate in the program. Working to ensure that eligible households continue to access the program remains a top priority. Despite this strong participation rate, there are groups who participate at lower rates. Low-income seniors are an example. And, we are concerned that vulnerable SNAP participants, such as pregnant women, infants, and toddlers may be missing out on important supplemental supports through WIC. We believe there are effective low- and

no-cost efforts to make better connections between eligible people and Federal nutrition benefits.

- *Increasing eligible senior enrollment in nutrition and health benefits.* Many low-income seniors who are eligible for SNAP are also eligible for Medicare Savings Programs (MSPs), which defray Medicare premiums and/or cost-sharing charges for poor and some near-poor seniors not enrolled in the full Medicaid program. Similarly, many SNAP-eligible seniors are also eligible for the Low-Income Subsidy (LIS) for the Medicare Part D prescription drug benefit. But participation rates in these programs among eligible low-income seniors are very low—generally in the range of only 35 to 50 percent. Connecting eligible poor seniors to the available Federal health and nutrition benefits for which they are already eligible would make a major dent in hardship for low-income seniors.

  In addition to lack of knowledge among low-income seniors about their potential eligibility for both nutrition and health benefits, senior participation also is inhibited by unnecessarily duplicative and uncoordinated application procedures. These procedures also push up administrative costs. While these programs have similar eligibility rules, seniors typically must apply for them via three duplicative processes—through the Social Security Administration (SSA) for LIS, at their state Medicaid agency for the MSPs, and at their state SNAP agency for SNAP (although the last two can be combined, and if a senior applies *first* for MSP, he or she should be deemed automatically eligible for the LIS).

  Eligible seniors who don't enroll forgo significant financial assistance that could make a large positive effect in helping them make their ends meet.[11] Tackling low participation rates across programs would be more effective in helping low-income seniors make ends meet than working to improve SNAP participation rates alone.

  While some of these issues are outside of the purview of the Agriculture Committee, the farm bill represents an opportunity to engage on improving services for low-income seniors. One suggestion would be to support innovative pilots that test using Social Security field offices in high-poverty neighborhoods to enroll low-income seniors and people with disabilities in a broad set of benefits. Interested local sites could test models in which a single process could facilitate enrollment in Social Security, LIS, MSP, and SNAP for struggling elderly and individuals with disabilities.
- *Ensuring SNAP's infants and toddlers are connected to WIC.* Nutrition assistance programs play an especially important role for young children, whose brains are rapidly developing. Unfortunately, young children are likelier to live in poor and food-insecure families than older children and are particularly vulnerable to the negative health effects associated with a lack of proper nutrition. Low-income pregnant and post-*partum* women, infants and children up to age 5 who participate in SNAP are also income eligible for the Special Supplemental Nutrition Program for Women, Infants, and Children (WIC). WIC provides nutritious foods, nutrition education, breastfeeding support, and referrals to health care and social services to its participants. SNAP and WIC's nutritional support lessens the impact of hardship in early childhood and improves health and economic stability into adulthood.

  SNAP does an excellent job of reaching eligible children, but it is unclear how many of SNAP's young children are connected to WIC. Our analysis of administrative and Census data suggests that many toddlers and preschoolers enrolled in SNAP are missing out on WIC, despite being eligible and despite the supplemental assistance WIC could provide and the positive long-term health outcomes of the WIC program. Given these programs' proven benefits on the long-term health and economic outcomes of young children, more can be done at the state level to ensure successful cross enrollment in these two complementary nutrition programs. USDA could promote this connection, set an expectation that states connect eligible SNAP participants to WIC and measure states' success with respect to connecting infants and toddlers to these two effective interventions. Setting an expectation that states will assist low-income infants and toddlers with available Federal nutrition assistance and then measuring states

[11] For example, the MSPs pick up annual Medicare Part B premiums of about $1,258 in 2016, as well as help with the Part B deductible of $166 and other co-insurance charges for those with incomes below the Federal poverty line. SSA estimates that the Low Income Drug Subsidy, which pays for Medicare Part D premiums, deductibles, and co-payments, has an annual value of about $4,000 for those who are enrolled. USDA estimates that elderly individuals who are eligible for SNAP but not enrolled would qualify for more than $90 a month, or about $1,100 a year.

against that expectation will elevate this issue and likely drive improved outcomes. An effort like this would not require new spending and would improve the delivery of Federal nutrition programs to SNAP's infants and toddlers.

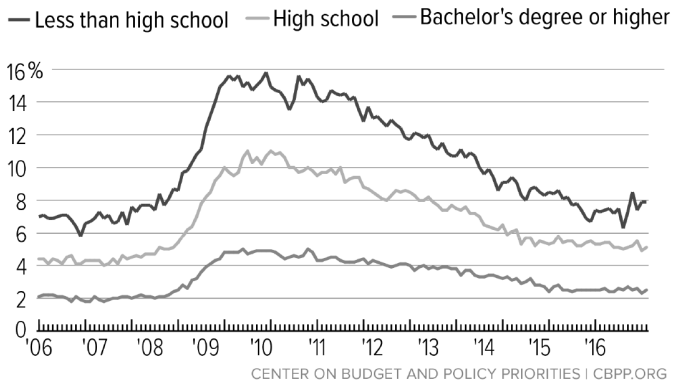
Eligibility

In general, SNAP is available to all households that meet the Federal income and asset rules. The amount that households receive is calibrated to their individual financial circumstances and their ability to purchase a basic diet. There are several groups, however, whose participation is further restricted based on their demographic or other circumstances. An example of one of those restrictions worthy of reconsideration is on individuals subject to the SNAP's 3 month time limit.

One SNAP's harshest rules limits unemployed individuals aged 18 to 50 not living with children to 3 months of benefits in any 36 month period when they aren't employed or in a work or training program for at least 20 hours a week.[12] Under the rule, implemented as part of the 1996 welfare law, states are not obligated to offer all individuals a work or training program slot, and most do not. SNAP recipients' benefits are cut off after 3 months irrespective of whether they are searching diligently for a job or willing to participate in a qualifying work or job training program. As a result, this rule is a time limit on benefits and *not* a work requirement, as it is sometimes described.

Unemployment Rates Are Higher for Workers with Less Education

Monthly Unemployment Rate



Source: U.S. Bureau of Labor Statistics, *Current Population Survey.*

Many of the individuals subject to the time limit struggle to find employment even in normal economic times. Those subject to this rule are extremely poor, tend to have limited education, and sometimes face barriers to work such as a criminal justice history or racial discrimination. They also tend to have less education which is associated with higher unemployment rates. About a quarter have less than a high school education, and ½ have only a high school diploma or GED.[13] SNAP participants subject to the 3 month cutoff are more likely than other SNAP participants to lack basic job skills like reading, writing, and basic mathematics, according to the Government Accountability Office (GAO).[14]

Unemployment rates for lower-skilled workers tend to be high. The unemployment rate for people lacking a high school diploma or GED—who make up about a quarter of all non-disabled childless adults on SNAP—stood at 7.5 percent in 2016, while the overall unemployment rate was 4.9 percent.[15] (See *Figure 1.*) Unemployment rates for workers in many lower-skilled occupations, such as those in the

[12] For a more comprehensive discussion of the time limit rule, see: Ed Bolen, *et al.,* "More Than 500,000 Adults Will Lose SNAP Benefits in 2016 as Waivers Expire," Center on Budget and Policy Priorities, updated March 18, 2016, *http://www.cbpp.org/research/food-assistance/more-than-500000-adults-will-lose-snap-benefits-in-2016-as-waivers-expire.*

[13] Steven Carlson, Dorothy Rosenbaum, and Brynne Keith-Jennings, "Who Are the Low-Income Childless Adults Facing the Loss of SNAP in 2016?" Center on Budget and Policy Priorities, February 8, 2016, *http://www.cbpp.org/research/food-assistance/who-are-the-low-income-childless-adults-facing-the-loss-of-snap-in-2016.*

[14] "Food Stamp Employment and Training Program," United States General Accounting Office (GAO–3–388), March 2003, p. 17.

[15] Bureau of Labor Statistics.

service industries, are also substantially higher than the overall unemployment rate. In December of 2015, unemployment in the food services industry was 6.9 percent, above the national overall average of 4.9 percent.[16]

While there have been few in-depth studies of those who are subject to the time limit, some evidence suggests that a sizable portion have a criminal history, which has a significant impact on job prospects. A detailed study of childless adults who were referred to community-based workfare in Franklin County (Columbus), Ohio found that about ⅓ had a felony conviction.[17] People with criminal records find it harder to be hired due to discrimination as well as low levels of education and poor work histories.[18] In addition to the stigma of incarceration, a number of states prohibit people with criminal histories from working in certain occupations. As a result, people with criminal backgrounds work less and have reduced earnings.

In addition to being harsh policy that punishes individuals who are willing to work, the rule is one of the most administratively complex and error-prone aspects of SNAP law. Many states also believe the rule undermines their efforts to design meaningful work requirements as the time limit imposes unrealistic dictates on the types of qualifying job training. For all of these reasons, many states and anti-hunger advocates have long sought the rule's repeal.

The Senate versions of the 2002 and the 2008 Farm Bills included provisions that would have softened the limit by extending benefits to 6 months out of every 12 for these unemployed adults to better reflect the length of time they would typically avail themselves of the program in the absence of a time limit. And, that rule would be simpler for states to administer. Rep. Adams through H.R. 1276, the Closing the Meal Gap Act of 2017, would convert the time limit to an actual work requirement by reframing the rule to say that that states cannot enforce the time limit unless they offer individuals subject to the rule a work slot or job training program that would meet the law's strict standard. Both of these approaches would be meaningful improvements to the current situation which results in cutting off food assistance to individuals who are willing to work but unable to find 20 hours per week of employment.

Program Integrity and Oversight

The farm bill is an important opportunity to equip USDA and states with new tools to improve SNAP's program integrity (which encompasses fraud and common error—the larger of the two issues). As new technology becomes available and as awareness improves of how problems arise, there are opportunities to improve SNAP accuracy and prevent fraud. And, with respect to fraud, while a relatively small problem, it's an ever-changing concern. Criminals are adaptable, and the government's response to them must also remain nimble and responsive to emerging patterns of fraud.

Often, our biggest obstacle to helping states implement new measures that would increase the accuracy of benefit issuance is cost. Modernized eligibility systems, access to useful third-party data, and the appropriate level of staff to process cases with a high degree of accuracy can be costly for states. While the Federal Government shares in the costs of administering the program, state budgets are the limiting factor to ensuring the best systems and technology are deployed throughout the program. Many states downsized their program operations during the recent recession and have not yet rebuilt the capacity necessary to take full advantage of new options and technology.

We offer the following suggestions as areas that Congress might want to consider to enhance SNAP's program integrity.

- A joint Federal-state effort to analyze client and retailer data for predictors of fraud and to share effective methods of identifying cases or stores that contain fraud or that are guilty of trafficking after a more in-depth investigation. Congress may wish to review whether USDA needs more resources or authority to remove offending stores from the program more quickly. In a hearing I participated in before the House Oversight Committee last year, one witness raised concerns that retailers that could be disqualified through a SNAP administra-

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[16] *Industries at a Glance: Food Services and Drinking Places,* Bureau of Labor Statistics, *https://www.bls.gov/iag/tgs/iag722.htm*.

[17] Ohio Association of Food Banks, "Franklin County Comprehensive Report on Able-Bodies Adults Without Dependents, 2014–2015," October 14, 2015, *http://admin.ohiofoodbanks.org/uploads/news/ABAWD_Report_2014-2015-v3.pdf*.

[18] Maurice Emsellem and Jason Ziedenberg, "Strategies for Full Employment Through Reform of the Criminal Justice System," Center on Budget and Policy Priorities, March 30, 2015, *http://www.cbpp.org/research/full-employment/strategies-for-full-employment-through-reform-of-the-criminal-justice*.

tive process were not always removed from the program in a timely manner in order for law enforcement to build a more powerful criminal case against the store.

- Taking the National Accuracy Clearinghouse nationwide. Through an FNS pilot, several southeastern states and Lexis/Nexis are working to run checks across states for dual enrollment in SNAP. This pilot project appears to have been quite successful at identifying a small, but unacceptable, number of individuals enrolled in two states. We encourage you to discuss with FNS whether the farm bill could assist with rolling out the effort nationwide. Our only caveat would be that we want to be sure that states are required to disenroll clients when they report a move to another state. Our understanding is that some states are slow to take such action because they want evidence that the client is moving (which can be difficult to provide). Not being able to disenroll when moving can result in an unintended dual enrollment or a household being prevented from being able to enroll in SNAP in their new state because the originating state has not yet closed the household's case.
- Some states pay (with the support of Federal matching funds) a private company, Equifax, for access to employment and wage records for some SNAP households. Employers with large numbers of low-wage workers often prefer to have a third party handle inquiries regarding their employees' wages and hours. State SNAP agencies report that when their case workers are able to easily access such current income information for applicants and participants, they have higher accuracy and less paperwork burden on both participants and employers. The Committee may wish to explore whether access to these private third-party data sources is something the program can and should provide to all states from the Federal level. A single procurement might be a cost effective approach. The Federal Government, for example, now provides such data to state Medicaid programs through the Federal data hub. Unfortunately that data is too old to be very useful to SNAP, which does a more current assessment of household circumstances. But the service HHS provides to states is worthy of replication in SNAP.

Employment and Training

SNAP's existing employment and training (E&T) program allows states, within certain parameters, to design work and job training programs that help SNAP participants gain the skills, training or experience needed to gain regular employment. States can determine which populations and geographic locations to target for services and what types of employment services to offer. A number of states have been actively revising, expanding, and improving their E&T programs over the past few years.

As part of the 2013 Farm Bill, Congress authorized ten pilot projects to test, with a rigorous evaluation, whether SNAP E&T could more effectively connect unemployed and underemployed recipients to work. The selected pilots, announced in March 2015, include a mix of mandatory and voluntary E&T programs. Several of the pilots target individuals who face significant barriers to employment, including homeless adults, the long-term unemployed, individuals in the correctional system, and individuals with substance addiction. Many of the pilots involve multiple partners that help connect SNAP participants to resources and services that are available in the community and can help them prepare for, find, or retain employment. This includes partners that provide training, help recipients secure child care assistance and other supportive services, and assist job seekers identify job opportunities.

These pilots are intended to help both states and the Federal Government understand how SNAP E&T can most effectively help SNAP recipients connect to needed job-related services and which of those services the E&T program needs to provide itself to produce the best employment outcomes possible. In addition, the farm bill requires USDA to work with states to establish performance standards by which to assess E&T programs. Both of these initiatives are underway and are built upon USDA's fairly robust effort over the past several years to support state efforts to improve their employment and training services, primarily by ensuring that their programs are preparing SNAP recipients for in-demand jobs, such as technical training and education-based programs. As a result of these policy initiatives, E&T is one of the most active areas of discussion, collaboration, and innovation within SNAP today.

We encourage the Committee to consider making new investments in E&T to expand job training opportunities for SNAP participants, perhaps through a competitive grant program. Such grants could be targeted to states with a proven track record producing positive employment outcomes in their E&T programs. Grants could support a wide range of programs including those targeted at removing bar-

riers for individuals who face a difficult time finding employment such as ex-offenders or the homeless, providing case management services (a common theme in many of the pilots), or offering career and technical training informed by the local business community. The Committee may also wish to consider proposals that would assist states that currently focus their E&T program primarily on job search and workfare—programs that have not been shown to be effective in improving employment outcomes for opportunity of participants—with the kinds of supports such as peer coaching and a learning collaborative that could help them to build more effective job training programs.

Assessing EBT

SNAP Electronic Benefits Transfer (EBT) is the electronic system that allows a recipient to authorize transfer of their government benefits from a Federal account to a retailer account to pay for the groceries they buy. EBT is used in all 50 states, the District of Columbia, Puerto Rico, the Virgin Islands, and Guam. EBT has been fully implemented since June of 2004. As the system has been in place for more than 10 years, this farm bill offers the opportunity to review how well the system is serving the program, whether it's leveraging payment technology innovations, whether the reliability of the system matches commercial systems, and whether the costs of the EBT system are competitive with other similar technologies now available. One area of potential concern is the small number of vendors for SNAP EBT services and whether there is sufficient competition in the market for price and service. Today, only two vendors virtually hold all EBT contracts with states.

Issues External to SNAP for Consideration

Much of my testimony has been about how to improve or strengthen SNAP from within the program. It's also useful to consider external factors that will set the context for what SNAP must respond to in the coming years.

The Labor Market

While reshaping SNAP's employment and training program to be one that helps workers climb the economic ladder is a priority, no job training program can change the landscape of the low-wage labor market. As I mentioned earlier, the majority of working-age SNAP participants who can work, do work, but often the jobs they are working in, or are in-between, pay low wages, have variable, unpredictable schedules, don't provide full-time hours to workers who want them, and don't provide paid sick leave or other benefits. These workers often lack access to child care and other crucial job supports, and as a result of these conditions, these jobs tend to have high turnover. (For example, workers in jobs with paid sick leave are more likely to be able to stay employed in their current job than workers without, who may lose a job if they or a family member falls ill and they are unable to take the time off.) [19]

SNAP participants who work are most likely to have service, sales, or office occupations, in occupations such as cooks, home health aides, janitors and maids, and personal care aides. They are most likely to work in the education and health industries (such as in schools, hospitals, home health services, and nursing homes), in retail trade (particularly in grocery stores and discount stores), and in leisure and hospitality (such as in restaurants and hotels).[20] These jobs tend to pay low wages and offer part-time and variable hours.

As a result, SNAP will continue to be an important support for low-wage workers and its features that respond and adapt to fluctuating earnings are important. It's also important to note that many workers will experience periods of unemployment or underemployment due to the nature of the labor market and SNAP is a crucial support to them during that time.

Repealing the Affordable Care Act

While changes to the Affordable Care Act are still under consideration, it's worth noting that the outcome of that debate will have an impact on SNAP. First, research has shown that medical expenses can affect food insecurity, as low-income individuals with health problems can face tradeoffs between food and medicine. For example, one study found that one in three people with chronic conditions were unable

[19] Heather Hill. "Paid Sick Leave and Job Stability," *Work and Occupations,* Vol. 40 Issue 2, April 2013, *https://www.ncbi.nlm.nih.gov/pmc/articles/PMC3825168/*.

[20] Unpublished CBPP analysis of March 2016 *Current Population Survey* and 2015 *American Community Survey* data.

to afford food, adequate doses of medication, or both.[21] Another found that the probability of food insecurity increases as out-of-pocket medical expenses increase.[22] Legislation that reduces health coverage or increases out-of-pocket medical expenses for low-income individuals could have an impact on SNAP. Moreover, when individuals go without care they need, their health status may decline, making it more difficult to get and keep jobs—and making the job of E&T efforts that much more challenging.

In addition, SNAP is co-administered with Medicaid in most states. When there are significant changes to that program that require states' attention, it can divert their focus from SNAP. Until the debate on health care concludes, it is premature to predict what the impact to SNAP will be and whether the Committee will need to respond. Nevertheless with changes as significant as those being contemplated by the House, there will surely be ripple effects to SNAP.

Downward Pressure on Non-Defense Discretionary Spending

Earlier this month, the Administration released its initial Fiscal Year 2018 budget proposal. The Administration's budget outline now calls for cutting overall non-defense appropriations by another $54 billion *below* the full sequestration level. Under that proposal, the cumulative inflation-adjusted cut since 2010 would grow to 25 percent. For USDA, the Trump budget calls for cutting 2018 discretionary appropriations by $4.7 billion or 21 percent below 2017.

While the initial budget did not provide many details, this lower funding level raises concerns for SNAP. First, if FNS's administrative budget is cut, that could mean reduced funding for USDA's SNAP oversight, research, and program integrity initiatives. Second, the budget proposal did single out for elimination several programs outside USDA that also support SNAP households. The Low-Income Energy Assistance Program (LIHEAP) provides low-income households with energy assistance and is slated for elimination under the Administration's budget proposal. Many LIHEAP recipients also receive SNAP. If low-income families and seniors lose LIHEAP, it will make it more difficult for them to cover their basic utilities, raising concerns about the traditional trade-off in a struggling family's budget between "heating and eating." Similarly, cuts to rental assistance and other core forms of support to very low-income households will further strain their budgets and make it harder for them to afford life's basics, including food.

Other proposed reductions, such as in the area of job training programs, also can have an impact on SNAP. First, many SNAP state agencies rely upon the job training and other services offered through the Workforce Investment Opportunity Act (WIOA) for at least some of their E&T training programs. Cuts to those programs will mean fewer work slots for E&T participants. And in many cases, the community-based organizations that provide SNAP job training are also working with Department of Labor funding. Cutting a core source of their funding may make their business less viable, reducing the overall pool of providers in a community that can provide job training. When the Administration's more detailed budget is released in May, there may be many more proposed cuts that would impact SNAP participants or the program.

Chairman Conaway rightly described the Administration budget as a "proposal," not policy. As the FY18 appropriations process moves forward however, current law funding for non-defense discretionary (NDD) programs continues to decrease relative to the FY10 level. Even if Congress does not adopt the additional cuts to NDD as proposed by the Administration, we can anticipate cuts to programs that will impact SNAP participants and the program.

Conclusion

SNAP is an efficient and effective program. It alleviates hunger and poverty and has positive impacts on the long-term outcomes of those who receive its benefits. And, SNAP has exacting standards with respect to eligibility determinations.

Over the many years that I have worked on this program, Congress and USDA have endeavored to balance the need to maintain SNAP's successful structure and design with making changes to the program that respond to the needs of underserved groups such as working families and seniors, and test or implement new ideas to improve the program's efficiency without compromising its effectiveness. As we look to the next farm bill, we look forward to working with you on changes that

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[21] Seth A. Berkowitz, Hilary K. Seligman, Niteesh K. Choudhry, "Treat or Eat: Food Insecurity, Cost-related Medication Underuse, and Unmet Needs," *American Journal of Medicine,* 2014.

[22] Robert Hielsen, Steven Garasky, and Swarn Chatterjee, "Food Insecurity and Out-of-Pocket Medical Expenditures: Competing Basic Needs?" *Family and Consumer Sciences Research Journal,* Vol. 39, No. 2, December 2010, pp. 137–151.

will improve the effectiveness of SNAP, rather than weaken or compromise its ability to meet the basic nutrition needs of struggling Americans. As you consider policy proposals, I urge you to keep that goal as your priority.

The CHAIRMAN. Thank you, Ms. Dean.

Mr. Sykes, go ahead and proceed with your 5 minutes of testimony when you are ready.

STATEMENT OF RUSSELL SYKES, DIRECTOR, CENTER FOR EMPLOYMENT AND ECONOMIC WELL-BEING, AMERICAN PUBLIC HUMAN SERVICES ASSOCIATION, WASHINGTON, D.C.

Mr. SYKES. Thank you, Chairman Thompson and others, and a particular thank you to my Congressman, John Faso, who I have known and worked with for years.

My name is Rus Sykes. I am the Director, as I said. I work at the American Public Human Services Association. We represent the appointed CEOs of human services agencies nationwide, many local organizations as well, and one of our affiliate organizations is the American Association of SNAP Directors. We like to think as the practitioners who run the program at the ground level, that we have a sort of unique credibility to speak about the pros and cons of the program.

I want to make it very clear that the overarching point is that while there is always room for reform, modernization, and improvement, SNAP is perhaps the most pivotal and economically responsive program, federally, during times of economic hardship to ensure that families and children have healthy lives and economic and social well-being. It both reduces very-low-food security very clearly and does it well, and it keeps almost five million people, including over two million children, out of poverty, based on 2013 data. It drives benefits disproportionately at hard economic times into distressed communities where unemployment is high, and other issues exist. I want to say that whatever you do in reauthorization, that essential responsiveness of the program needs to be preserved.

I want to focus on specific points of work simplification flexibility for states, the importance of system integration and shared data, measuring program success in broader terms, discussing honestly the issue that has come before you in the past about purchase restrictions and whether they should or should not occur, and finally, resources and the notion of an income cliff that happens to some that are on the program.

Let me start with talking about work. We are strong proponents of work, but we are strong proponents of work programs that actually try to find people jobs, try to help them stay in those jobs, and provide the short-term training needed based on what actually is available in local communities. We think that employers need to play a significant role in developing that kind of curricula as do community colleges, and it needs to be short-term. And we believe that work, obviously, is the economic pathway out of poverty.

Turning to ABAWDs, as Ms. Dean mentioned, I just want to simply say we are strongly in favor of work rules for able-bodied adults, but, as Ranking Member McGovern pointed out, it is a very complicated population, and when we come right down to enforcing those rules, we have to make sure that we provide real opportunity

and don't use the enforcement of those rules simply as a sanction policy, or we lose some of the people that we very most need to be helping.

On simplification, I have seen this program over my 42 years working on it, I am dating myself, go from something that was fairly simple in many ways to a very complex program from the eligibility and verification standpoint. And so we really would like to see the program focus more on outcomes and simplify it a bit for states, and we also believe in state flexibility. I know in your previous hearings that you discussed how many waivers and options states do have at their wherewithal already, but there is more that can be done on that front, and we strongly urge that we think of those areas, because states are closest to the ground. They understand their clients. They understand their labor markets, and they understand how important the program is in economic hard times.

System integration with Medicaid and multiple other programs is absolutely critical. Tiny steps have been taken in that direction with the Federal data hub and other areas, but much more needs to be done. And shared data is really critical. We need to do more in regard to building common databases so people aren't reenrolling in every different program repeatedly without having some sort of common identifier to help them be in programs.

We have several new pilots that we would like to think that you should explore. One, as Ms. Dean also mentioned, is whether benefits are adequate. We really don't know, although there is increasing evidence that they may not be. But what I would suggest is that we ought to run a geographically diverse pilot that tests the Thrifty Food Plan *versus* the Low Cost Food Plan, and rigorously evaluate it to see whether it makes a difference in very-low food security or not. Similarly, we ought to do the same thing with the earned income disregard. When we talk about needing to get those who do not work to work, we have many people on the program who are already working, and it is a critical income support for them, and they are able to deduct 20 percent of their earnings. We would like to see that raised to 30 percent. We would like to see broader measurements of the program than simply quality control and error rates. Those are incredibly important from an integrity point of view, but there are other things about poverty, very-low-food security reduction, access of job placement.

On purchase restrictions I would close with this. We also don't know, although we can see the public health division with the anti-hunger community division around whether sugar-sweetened beverages in particular lead to difficult health outcomes in areas of obesity and diabetes. Again, a pilot program that would look to test whether that kind of a prohibition would result in simple substitution patterns of someone's own money, or whether it really would reduce the incidents of those kinds of diseases would be something very important.

I look forward to a continuing dialogue with you. All of these comments have been amplified in my written remarks, and I look forward to talking further and look forward to the discussion today. Thank you.

[The prepared statement of Mr. Sykes follows:]

PREPARED STATEMENT OF RUSSELL SYKES, DIRECTOR, CENTER FOR EMPLOYMENT AND ECONOMIC WELL-BEING, AMERICAN PUBLIC HUMAN SERVICES ASSOCIATION, WASHINGTON, D.C.

Mr. Chairman and Members of the Subcommittee, thank you for this opportunity today to discuss the evolution of the Supplemental Nutrition Assistance Program (SNAP), formerly known and the Food Stamp Program (FSP). I am Russell Sykes, director of the American Public Human Services Association's (APHSA) Center for Employment and Economic Well-Being (CEEWB), and, my comments today are shared through the lens of our state and local public human services agency members across the nation.

Our member agencies are responsible for directly implementing and managing SNAP and a broad array of other connected human services aimed at improving population health and well-being. APHSA also represents human services administrators across the nation, including those who direct each state's SNAP program and who are organized within APHSA as the American Association of SNAP Directors (AASD). SNAP sits at the cornerstone of an array of core services that assure all families have access to food, housing and other supports essential to our basic health and well-being. Building on its strong foundation and history, the time is ripe for SNAP's next evolution—in coordination with other key health and human services—to assure its efficiency and accelerate its role in advancing the nation's overall population health and well-being.

Over the last 40 years I have worked in social services, including the FSP/SNAP, at every level of government and in many capacities, outside of government. I have been a direct service provider; a researcher; a Deputy Commissioner in New York State, where I administered SNAP; a Congressionally appointed member of the National Commission on Hunger; and a consultant on a variety of human services issues to major research and policy organizations. It is hardly a stretch to say that I have been in or around the program since its inception. Over that time, I have seen the FSP/SNAP grow from a small and straightforward elective program to one that is responsive to market conditions and the principal means by which the Federal Government reduces food insecurity. It has improved the material well-being of many people and is a crucial support. But it is also ripe for change in some areas due to its complexity, lack of flexibility for states to innovate and the need to modernize and coordinate both systems and data sharing with multiple other health and human service programs.

SNAP is our nation's principal nutrition assistance program for low-income Americans and is one of the largest means-tested programs in both reach and cost. In 2015, SNAP provided 45 million people (approximately 14 percent of Americans) with benefits in the average month, and benefits averaged about $125 per person per month for a total annual Federal cost of about $70 billion. SNAP also is a highly effective work support and anti-poverty program that helped nearly five million individuals including over two million children avoid poverty in 2013 according to the Census Bureau's Supplemental Poverty Measure.

To be eligible, households must have monthly gross incomes below 130 percent of the Federal poverty level (in 2016, $2,117 per month for a household of three) and net incomes below 100 percent of the Federal poverty level. SNAP is designed to supplement a household's spending on food but not pay for a household's food costs in their entirety. As households earn more, they are expected to contribute more of their own income toward food purchases.

SNAP benefits flow disproportionately to those struggling the most—a surprisingly diverse population. In 2014, 58 percent of SNAP benefits flowed to the 43 percent of SNAP households with gross incomes of 50 percent or less of the Federal poverty guidelines. In that same year, 22 percent of households receiving SNAP reported no gross income; 41 percent reported no net income; and only 31 percent had earnings. Furthermore, ten percent of recipients were elderly; 44 percent were children; and the rest were non-elderly adults.

How Did We Get Here: A Brief Evolutionary History

SNAP has evolved and grown into its current form over roughly the past 50 years. Food assistance was initially a farm subsidy program and an anti-hunger effort. In the late 1930s, farmers were producing surpluses they could not sell. Many cities were plagued by high unemployment, and some people could not afford food. In response, the Department of Agriculture developed a program to solve both issues. It allowed households to purchase with their own funds food coupons or stamps of different colors and valuations for store or commodity food purchases.

Under President Lyndon B. Johnson, the FSP became permanent. The Food Stamp Act of 1964 maintained the general structure of purchasing food coupons

worth more than the dollars paid for them by outlaying 30 percent of their own money. Over the next decade, program rules were standardized nationally. Participation grew from 500,000 to 15 million individuals between 1965 and 1974.

The program changed significantly in the late 1970s, with the elimination of the purchase requirement (EPR). The change was driven by the concern that households had difficulty finding the up-front cash to buy their food-stamp allotment. After EPR was implemented in 1979, the 30 percent household food contribution became a paper expectation rather than an up-front cash outlay. Participation increased by 1.5 million in the month following the bill's passage.

Calls to destigmatize the program gained momentum in the mid-1980s. This led to the EBT card, originally piloted in one county, which made food stamps far less distinguishable from other forms of payment. In the late 1980s, Congress officially allowed all states to use EBT and passed other changes that expanded program access. The 1990s saw a strong movement for welfare reform, and the Personal Responsibility and Work Opportunities Reconciliation Act of 1996 (PRWORA) brought about major changes to the FSP. Changes included eliminating eligibility for most legal immigrants, imposing work registration requirements for work eligible adults, but with little teeth as participation was voluntary, and even stronger work requirements on able-bodied adults without dependents (ABAWDs) that time limited eligibility to 3 in any 36 months for those who did not become employed or participate in an allowable work activity for 20 hours weekly.

The focus on tighter eligibility and work requirements began to wane over the next decade. The 2002 Farm Bill restored eligibility to many qualified aliens; adjusted the standard deduction by family size and indexed it to inflation; simplified reporting for states; and lengthened certification periods. Participation increased substantially to 26 million people in July 2006. The 2008 Farm Bill maintained emphasis on outreach and access. The legislation further simplified income reporting, allowed states to submit waiver requests to replace face-to-face interviews with telephone interviews and signatures, and extended transitional benefits to those leaving state cash assistance programs. To further destigmatize assistance receipt, the Federal program changed its name from the Food Stamp Program to the Supplemental Nutrition Assistance Program (SNAP).

The Great Recession and modifications to the program in response to it further expanded participation. Under the American Recovery and Reinvestment Act, SNAP benefit amounts were increased by 13.6 percent, which was later rolled back because it exceeded actual food price inflation. During the recession, participation rose rapidly: by 2013, 47.6 million people received SNAP benefits worth more than $76 billion. This increase in participation (and therefore costs) is exactly how the program was designed in order to be economically responsive to such economic downturns. The rapid expansion during the recession shows how SNAP is perhaps the most pivotal Federal program that secures the economic well-being of individuals, families and children facing unexpected circumstances due to job loss and general economic hardship.

With the economy improving, the 2014 Farm Bill shifted focus back to reducing costs and increasing work. The final bill reduced spending by an estimated $8 billion over 10 years. The debate over the bill raised concerns about nonworking able-bodied SNAP beneficiaries. The final bill included $200 million to fund pilot projects in ten states to test the effectiveness of various education, training and job placement programs for SNAP recipients. As of 2016, recipients and costs declined to 44.2 million recipients at a cost of $66.6 billion and are expected to remain on a decline as the economy improves. Concerns remain that the caseload decline has not reflected, as much as it perhaps should, a lower unemployment rate. That slower decline also continues to reflect a sluggish economic recovery for many and a low workforce participation rate among adults.

Where Should We Go From Here: SNAP Reauthorization and the Next Farm Bill

While SNAP must retain its current strengths and economic responsiveness, it can and should be modernized to assure its efficiency and impact. The next reauthorization of the farm bill presents the opportunity to take stock of the program at a foundational level. Significant improvements can be considered in the following areas:

- Well-structured and constructive outcome-based work rules,
- Simplification of overall program eligibility and verification rules,
- Increased state flexibility and a requirement that USDA–FNS respond promptly to state waiver and demonstration requests,
- System modernization and cross-program data sharing,

- Innovative pilot approaches that are carefully evaluated for success and replication,
- Broader performance measures than simply payment accuracy, and
- An honest discussion about potential restrictions on certain food purchases.

Those are among the areas my oral remarks will address today.

Specific Recommendations for SNAP Modernization

- Test Innovation and Use What Works
  - Allow states greater flexibility to initiate innovative approaches and impose a time limit on USDA/FNS as to when they must approve or reject state waiver and demonstration requests.
  - Several pilot programs should be enacted and rigorously evaluated for potential future replication based on effectiveness and affordability. We recommend pilots testing an alternative benefit adequacy calculation to the Thrifty Food Plan; expansion of the current Earnings Disregard from 20 to 30 percent as more working families receive benefits because of low wages; and prohibiting SNAP dollars from being used to purchase a defined category of unhealthy sugar-sweetened beverages (SSB's) to study if such a policy actually leads to a decrease in SSB consumption and better health or if households simply substitute their own funds and maintain purchasing habits.
  - Expand the Summer EBT program option that increases SNAP benefits for households with children during the non-school year calendar in areas where operating an actual Summer Food Program site is impractical due to geographic distances, lack of sponsors or other obstacles.
  - Whenever pilots or demonstrations succeed and are clearly replicable nationwide, permanently incorporate their components into the program rather than requiring constant waiver renewals.
- Simplification
  - Simplify eligibility determination through longer certification periods for stable income non-error prone households, making Combined Application Procedures (CAP) a regular component of the program, and eliminating the cost neutrality provision so that SSI recipients can automatically receive SNAP benefits.
  - Allow states, at their own option, to develop agreements with federally recognized Tribal governments to allow those entities to complete eligibility determinations for SNAP where the Tribe is also running a Tribal TANF program. In these cases, states would maintain oversight, quality control and training functions.
  - Allow states to utilize temporary staff to determine eligibility as long as they are under the direct supervision of the state. States are experiencing increases in workloads, but unable to add permanent FTE's to meet the demands of these increases because of eroding Federal administrative share of program costs.
- Administrative Modernization and Data Sharing
  - Modernize systems in SNAP as well as system interfaces with other programs, more broadly share available data across programs to foster better program alignment and efficiency and increase the emphasis and funding for research regarding what works best in SNAP.
  - Return state administrative costs for SNAP, which have eroded over the years, to their original 50/50 percent split.
- Support Work and Economic Capacity-Building as Key Ways to Increase Family Well-Being
  - Thoughtfully expand the focus on work for work eligible SNAP households, emphasizing real employment outcomes rather than process outcomes and focus employment and training programs to prepare clients for actual available jobs in local communities. Expand available E&T 100 percent funds and broaden the allowable uses of E&T 50/50 match funds to encourage additional state innovation and better coordination with other programs under the Workforce Innovation and Opportunity Act (WIOA).
  - Change the current 3 in 36 month ABAWD Time Limit work rule to 6 or 9 in 36 months and coincide it with the individual's certification period. Strictly enforce client compliance but do not impose the time limit when no job or

available work slot that meets ABAWD requirements can be provided to the individual.

- ○ Add transitional benefits of 1 to 3 months when wages result in a full loss of benefits to avoid the cliff effect of rapidly losing all SNAP benefits and assist families to stabilize economically.
- ○ Current levels of allowable resources are too low and have resulted in the use of Broad-Based Categorical Eligibility (Cat-El) by 42 states as a work around with the vast majority using it to eliminate any resource limit. Raising the resource limit for all SNAP recipients to at least $10K would make better sense and allow for families and individuals to accrue modest savings without compromising program integrity.

- Accountability and Program Integrity—Program integrity and fraud prevention in SNAP are critical. For years, the SNAP error rate was among the lowest of any major program with an extraordinary payment accuracy rate of over 96 percent. Concerns surfaced in 2014 about whether case reviews at the state level were somehow biased, often by the use of outside second party contract reviewers. Since then USDA–FNS and states have been working diligently and cooperatively to traverse and correct any instance or implication of incorrect case accuracy review. A national error rate review is currently awaiting release based on a broad sample of cases nationwide and payment accuracy is expected to remain very high. Additionally, all bias, to the degree it exists, will be removed from the review process going forward. This joint national and state effort has revealed a number of changes that need to be made to ensure consistency and the highest level of program integrity going forward. Necessary reforms include:
  - ○ Aligning QC rules consistently across FNS regions, restoring the previous $50 case error threshold, which is now at a very low level $25, simplification of QC sampling requirements and allowing states to substitute phone or online interviews for currently required QC face to face interviews. It also shows that SNAP success should be measured on multiple factors beyond just payment accuracy and timeliness of benefits. High performance bonuses to states should be awarded to states that demonstrate continuous improvement in multiple program areas.

Conclusion

SNAP benefits provide crucial supports for eligible low-income families and individuals to assist them in purchasing food, support work for those with low earnings, and respond quickly to economic downturns. SNAP also helps communities during economic downturns by bringing additional Federal dollars into the local economy, freeing dollars to be spent elsewhere. SNAP caseloads and spending also fluctuate with economic conditions. This ebb and flow of participants and costs based on economic circumstances is the key to SNAP's effectiveness.

SNAP is effective in achieving its primary goal: reducing food insecurity. The best measure is very-low-food security (VLFS), which the USDA defines as a household in which "eating patterns of one or more household members were disrupted and their food intake reduced, at least some time during the year, because they couldn't afford enough food." The best evidence points to SNAP substantially reducing VLFS and improving the general health and well-being of the overall population. Evidence also suggests that food assistance has particularly beneficial long-term impacts, especially for children.

SNAP is also a highly effective work support program and reduces poverty. Calculations using the government's Supplemental Poverty Measure, which counts SNAP as a financial resource, indicates that SNAP kept 4.8 million people out of poverty in 2013, including 2.1 million children. SNAP appears to be particularly effective for the most vulnerable, lifting 1.3 million children out of deep poverty (50 percent or less of the poverty threshold) in 2013.

I appreciate the opportunity today as Director of our Center for Employment and Economic Well-Being (CEEWB) to share the viewpoint of APHSA's state and local members and our affiliate organization the American Association of SNAP Director (AASD) who oversee SNAP daily. It is fair to say that our members can lay claim to the most detailed understanding of SNAP's important value as both a nutritional and anti-poverty program as well as the need for future program reforms that can further improve performance, address the need to help work-eligible recipients find employment through meaningful interventions, provide crucial bridge supports in economic hard times, and generally enhance client services, cost effectiveness program integrity and the economic well-being of individuals, families and children.

I am happy to answer your questions today and both APHSA's CEO, Tracy Wareing Evans, and I are more than pleased to continue our work with you as you grapple with reauthorizing, modernizing and improving SNAP for the future. Please look to us as an ongoing resource for this important effort.

The CHAIRMAN. Thank you, Mr. Sykes.

Now I yield to my colleague from Pennsylvania for the purpose of introducing our witness from Pennsylvania.

Mr. EVANS. Thank you, Mr. Chairman.

Mr. Chairman, Ranking Member, and Members of the Committee, Joe Arthur is someone who I know extremely well. In my days in the legislature, I was a part of something called the Hunger Task Force, and working with Joe and others, we did something called the Hunger Garden. But I want to make it very clear that the Hunger Garden will not replace the aspect that you do need SNAP, too, so you need both.

Joe was appointed Executive Director of the Central Food Bank in July of 2011, after serving as the Associate Director. Joe has served as a volunteer board member with the food bank. As the food bank principle ambassador, Joe presented regularly on issues of hunger in Pennsylvania to community groups, legislative gatherings, government partners, prospective donor organizations, and other forums. Joe is a leader in the anti-hunger work through his engagement as board member for the association Feeding Pennsylvania, Hunger Free Pennsylvania, Hunger Free Lancaster County as a national conference representative and food bank national affiliation. Joe will tell you that is where I learned the difference between soil and dirt, making that distinction.

Prior to joining the food bank in 2008, Joe worked 23 years in financing and accounting, primarily with Pennsylvania Community Bank. Joe holds a B.S. in accounting from Penn State and is a member of the Pennsylvania Institution of Certified Accountants.

Joe, I thank you for your leadership.

Thank you, Mr. Chairman.

The CHAIRMAN. I thank the gentleman. I am now pleased to recognize Mr. Arthur for 5 minutes of testimony.

STATEMENT OF JOSEPH "JOE" ARTHUR, EXECUTIVE DIRECTOR, CENTRAL PENNSYLVANIA FOOD BANK, HARRISBURG, PA

Mr. ARTHUR. Mr. Chairman, Ranking Member McGovern, and distinguished Members of the House Agriculture Subcommittee on Nutrition, and of course my friend from Philadelphia, Representative Evans, thank you for inviting me to testify on the importance of the Supplemental Nutrition Assistance Program, and the program's direction in the next farm bill.

You have heard my introduction. The part you didn't hear is that we distributed about 48 million pounds of food and grocery products in our 27 county service territory last year. We worked with over 900 community organizations that are our member agencies in that work. And these agencies directly feed thousands of hungry families throughout central Pennsylvania.

The 27 counties within our service territory in central Pennsylvania represent the most rural of the Commonwealth. While we have more than 1.8 million people in our state who struggle with

hunger, we are blessed with more than 57,000 family farms, 30,000 of which are in our service territory. In a region as agriculturally rich as central Pennsylvania, there is no reason that anybody should go to bed hungry. We are proud of our partnerships with agriculture.

With respect to Pennsylvania's extensive dairy industry, we are proud to share that our food bank operates the third largest charitable milk program in the nation, distributing over 1,600 quarts of fresh, refrigerated milk every business day, and that we built this program in less than 3 years with the help of our Pennsylvania Department of Agriculture, various dairy industry experts, and promotional firms, and of course dairy farmers and processors.

We are much more than a provider of food assistance, as Chairman Thompson can attest from his many personal visits over the years. We operate out of two healthy food hubs, separated by driving 2 hours along the beautiful Susquehanna River. We have equipped those with state of the art warehousing and cold chain infrastructure, efficient loading docks to handle our 16 refrigerated trucks, and commercial quality demonstration kitchens to teach healthy eating, cooking, and healthy shopping habits.

While our food bank works tirelessly to provide emergency food assistance to families at risk of hunger, the problem is too big to fix without our taxpayer-funded safety net programs such as SNAP.

While we do make a big difference for people in our community, national programs reach far more people, and if that system should be eliminated or seriously cut, we would not be able to backfill the increased demand that would occur from those actions. SNAP is the backbone of the national nutrition safety net, the first line of defense against hunger, and helps nearly 1.8 million people in Pennsylvania, or about 14.2 percent. It helps them buy groceries every month, and lifts about 13 percent of those households out of poverty.

As the House Agriculture Committee works on a new farm bill, we urge you to consider five key points. SNAP supports agriculture, local economies, jobs, and retailers. On the agriculture front, Pennsylvania's leading economic enterprise, agriculture, benefits strongly from the SNAP program. For example, the largest farm commodity in Pennsylvania is dairy. About nine percent of spending by SNAP households is actually on dairy.

Local economies. Economic research indicates that every SNAP dollar redeemed expands the economy by roughly about $1.70, leading to billions in local economic activity. Billions, with a b. In fact, roughly $2.6 billion in SNAP dollars issued in Pennsylvania in Fiscal Year 2015 generated about $4.6 billion of economic activity. The economic benefits spread through the entire food supply chain, benefitting grocers, retailers, manufacturers, producers, and farmers, and supporting millions of jobs.

Second, SNAP is timely and it responds to changes in need. One of the strongest features of SNAP is its ability to respond quickly. We have seen it grow since the recession, and now we have also seen it in recent periods actually reducing. And in fact, it contributed more than $30 billion in savings over the course of the last

farm bill, and contributed to more than $90 billion savings overall. It is a program that works, and it works on the downside too.

Third, SNAP is temporary and encourages work, and we have heard a great deal about that already.

Fourth, SNAP provides states flexibility and Federal accountability; and fifth, SNAP is efficient and accurate.

As the Subcommittee works on a new farm bill, we look forward to working with you to demonstrate how strong support for nutrition programs and agriculture programs can strengthen communities, such as the one that we serve in central Pennsylvania. Thank you very much for this opportunity to testify.

[The prepared statement of Mr. Arthur follows:]

PREPARED STATEMENT OF JOSEPH "JOE" ARTHUR, EXECUTIVE DIRECTOR, CENTRAL PENNSYLVANIA FOOD BANK, HARRISBURG, PA

Mr. Chairman, Ranking Member McGovern, and distinguished Members of the House Agriculture Subcommittee on Nutrition, thank you for inviting me to testify on the importance of the Supplemental Nutrition Assistance Program and the program's direction in the next farm bill.

I am the Executive Director of the Central Pennsylvania Food Bank, the largest nonprofit food distribution organization in Pennsylvania. We are a member of Feeding America's food bank network that covers every county in the United States. We live our mission of *fighting hunger, improving lives, and strengthening communities* every day. We truly believe no one should be hungry and are committed to working hard every day to make that belief a reality. We are also a fine example of public/private partnerships to benefit society, with generally 80 percent of our food and financial resources sourced through private donations.

Hunger in Pennsylvania and the United States

The Central Pennsylvania Food Bank distributes more than 48 million pounds of food and grocery products, equivalent to more than 40 million meals, every year to more than 900 soup kitchens, shelters, and food pantries in 27 central Pennsylvania counties. These agencies directly feed thousands of hungry families throughout central Pennsylvania. We could not do this without the generosity of food donors and financial supporters from all sectors, including food companies, retailers, farmers, corporate funders and individuals.

The 27 counties within our service territory represent the most rural of the commonwealth. While we have more than 1.8 million people in our state who struggle with hunger, we are blessed with more than 57,000 family farms—30,000 of which are in our service territory. In a region as agriculturally rich as central Pennsylvania, there is no reason that anyone should go to bed hungry. Farmers in our state and across the country produce the safest, most affordable, most abundant supply of food in the world. And we do our part every day at the Central Pennsylvania Food Bank to ensure that we are sourcing and distributing nutritious fruits and vegetables, protein and calcium that are essential to food-insecure individuals. In doing so, we're not only working to meet the supplemental nutrition needs of low-income people, we are supporting Pennsylvania agriculture and food businesses across the economic spectrum, and their employees.

The need is real, and the need is significant across the country. According to research conducted by Feeding America, there is a significant meal gap, or difference between the food low-income people need and the resources they have to buy that food. *Map the Meal Gap 2016* [1] shows that there are over eight billion meals missing from the tables of low-income Americans per year. Thousands of Pennsylvanians continue to struggle to get back on their feet and for many, work does not provide protection from poverty and food insecurity. While many people think that poverty impacts only a small number of people who remain impoverished for many years, the reality is something different . . . a majority of Americans experience food inse-

[1] *Map the Meal Gap* looks at food insecurity by county across America and the amount of meals missing from food-insecure American households.

curity over the course of their working lives, often due to unforeseen circumstances such as job loss, inadequate hours, divorce or health issues.[2]

Feeding America's quadrennial study of the people utilizing charitable food assistance, Hunger in America 2014, reveals that about ⅔ of the people our food banks and their local agencies serve are making impossible trade-offs between paying for food and other necessities like rent, transportation, health care and utilities.

One example of this is Jonah, who recently called into our food bank's Food Stamp Helpline. Jonah is a 40 year old, veteran, husband and father of two teenage children who was always able to provide shelter, food and other essential needs for his family. After being honorably discharged from the military, Jonah started working full-time for an Army Depot. Between his paycheck and veteran benefits, Jonah made ends meet without assistance. Unfortunately, last year Jonah was in an auto accident and had a brain injury which caused memory loss and balance issues, led to an emergency spinal cord surgery, and affected his ability to work. His last paycheck was in December and ever since, his savings and checking accounts have been depleted. Although he still receives his veteran benefit, this is not enough to cover his mortgage let alone buy groceries. In February, Jonah and his family were approved for nearly $400 a month in SNAP benefits. Not only has SNAP provided Jonah's family the ability to purchase healthy nutritious foods, but it supplements the limited food that he receives from his local food pantry. In addition, because his family is eligible for SNAP benefits his two children are eligible to receive free school meals, lessening the family's grocery bill. Without the SNAP benefits, Jonah and his family would have to make the choice of paying his mortgage or paying for groceries. Fortunately, he is now able to provide a warm and loving home as well as a healthy nutritious diet for his family because of the SNAP program.

Our Nation's Nutrition Assistance Safety Net

While the Central Pennsylvania Food Bank works tirelessly to provide emergency food assistance to families at risk of hunger, the problem is too big to fix without our taxpayer-funded safety net programs such as SNAP. While we do make a difference for people in our community, national programs reach far more people—and we simply could not backfill the increased demand on the charitable food system that would result if any of these safety net programs were eliminated or cut. We are already stretched to meet sustained high need. As stated as a finding in the House Agriculture Committee's comprehensive review of the SNAP program, the need for nutrition assistance cannot be addressed by just one program or group—it requires collaboration between governments, nonprofits, communities and individuals.

The people that we serve rely on these Federal programs to help meet their families' needs, and these programs are an integral piece of the safety net—working together and complementing one another. SNAP is the backbone of the national nutrition safety net, the first line of defense against hunger. SNAP helps nearly 1.8 million people (14.2 percent of Pennsylvanians) buy groceries every month and lifts 13.1 percent of those households out of poverty.

The Central Pennsylvania Food Bank operates a Food Stamps Helpline that helps individuals find out if they qualify to receive additional food assistance. Within our service territory, only 55 percent of those individuals that are income eligible for the program are receiving benefits, meaning over 200,000 potential SNAP-eligible central Pennsylvanians are not in the program. Our goal is to inform the public about this Federal nutrition program and to provide screening and enrollment assistance to those who may need and are eligible to receive benefits. As an example of our innovative efforts in central Pennsylvania to appeal to more Snap-eligible people, we have presented in *Appendix A,* a graphical image for a SNAP outreach campaign using the theme "Feed the Body, Fuel the Soul, Free the Mind". I am proud to share with you that this extraordinary campaign theme and related graphics were developed, free of charge, by several students of the Pennsylvania College of Arts and Design in Lancaster, Pennsylvania, in a recent project for Hunger Free Lancaster County. All activities for this campaign will be funded entirely by private donations.

One woman that our food bank educated, screened and helped to enroll in SNAP, is a familiar story to more and more senior citizens who are grandparents. Helen was retired and living on a fixed income in low cost senior housing, able to pay for her own groceries, utilities, and healthcare. In the spring of 2015, like many grandparents of late, Helen found herself raising three young children due to their father being involved with drugs and a mother who is in prison. Because Helen lived in senior-specific housing, she was asked to leave when she started to care for the chil-

[2] Rank, Mark Robert, Hirschl, Thomas A. and Foster, Kirk A. *Chasing the American Dream: Understanding What Shapes our Fortunes.* Oxford University Press, 2016.

dren. She took her savings and bought a house, which has increased her cost of living. When school let out for the summer Helen started seeing her Social Security check dwindle down faster and began dipping into her savings to purchase more groceries to take place of the meals the children were receiving during the school year. Although she was receiving food from a food pantry it still wasn't enough to last until her next visit. In August, Helen didn't know where else to turn and finally decided to apply for SNAP and was eligible for more than $400 a month. Now that she can provide enough food through her SNAP benefits, Helen can provide other necessities to these children, such as clothing and shoes.

The impact of SNAP is vast. SNAP serves some of the most vulnerable people in our country and directly supports farmers, the local economy, retailers, processors, and many others. Without SNAP, many people would maintain higher levels of food insecurity and farmers would have fewer outlets for their products.

While we are here today to speak about SNAP in the context of the farm bill, I think it is worth mentioning the looming appropriations process that will be underway soon.

Appropriations Process and the Farm Bill

I commend Chairman Conaway and Ranking Member Peterson in their recent communication to the House Budget Committee, requesting that the Committee consider the current economic conditions within rural communities and the significant contributions toward deficit reduction already made by the Agriculture Committee. We wholeheartedly agree that the Fiscal Year 2018 budget resolution must respect the cost savings[3] and commitments made under the 2014 Farm Bill, and that the budget process must provide flexibility necessary to develop solid agriculture and food policy in the new farm bill before the current law expires. Regarding the nutrition title of the farm bill, Chairman Conaway acknowledged that "CBO is projecting that the Nutrition Title is achieving savings relative to the previous farm bill and significantly more than anticipated during the last farm bill debate."

I also thank the Chairman for conducting a top-to-bottom review of SNAP and publishing its findings last year. As stated in the Chairman's letter, "However widely the views of Members of the Committee vary on the subject of SNAP, we all share a common conviction in the dignity of every person and the importance of creating economic opportunity so each and every person is able to live the American dream. On this, we are all agreed."

SNAP Policy Considerations

As the House Agriculture Committee works on a new farm bill, we urge you to consider five key points:

1. *SNAP supports agriculture, local economies, jobs, and retailers.*

   Agriculture: Pennsylvania's leading economic enterprise, agriculture, benefits strongly from the SNAP program. For example, the largest farm commodity in Pennsylvania is dairy. About nine percent of spending by SNAP households is on dairy, providing Pennsylvania farmers with an important source of revenue, and an important outlet for their milk. This becomes even more important given the current conditions within the dairy industry—that of tight margins, a milk surplus, low demand on the market, and disruption to foreign markets.

   Local economies: Economic research estimates that every SNAP dollar redeemed expands the economy by roughly $1.70,[4] leading to billions in local economic activity. In fact, roughly $2.6 billion in SNAP dollars issued in Pennsylvania in Fiscal Year 2015 generated $4.6 billion in economic activity.[5] The economic benefits spread throughout the entire food supply chain, benefiting grocers, retailers, manufacturers, producers and farmers, while supporting the millions of jobs they provide.

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[3] The Agriculture Committee saved $23 billion over 10 years in the context of the 2014 Farm Bill; however, CBO's January 2017 baseline estimates show that the current farm bill will save $104 billion, more than four times what had previously been pledged.

[4] Zandi, Mark M, *Assessing the Macro Economic Impact of Fiscal Stimulus 2008,* pp. 3–4, MOODY'S, Jan 2008, *https://www.economy.com/mark-zandi/documents/Stimulus-Impact-2008.pdf*.

[5] USDA, *Supplemental Nutrition Assistance Program State Activity Report Fiscal Year 2015,* pp. 5, published October 2016, *https://www.fns.usda.gov/sites/default/files/snap/2015-State-Activity-Report.pdf*.

Jobs: A 2010 study by the USDA found that for every $1 billion of added SNAP funding, between 8,900 and 17,000 jobs were created.[6] Per a study of SNAP's economic effects at the state level, in Pennsylvania a ten percent cut in SNAP funds would result in the destruction of 3,611 jobs.[7]

Retailers: SNAP spending accounts for more than ten percent of all spending on food purchased to be eaten at home.[8] The resources provided by SNAP are critical to beneficiaries, who spend them almost immediately—97 percent of SNAP benefits are spent in the month they are issued.[9] In 1 month in 2016, SNAP funded around $218 million of sales in Pennsylvania.[10]

2. *SNAP is timely and responds to changes in need.* One of the strongest features of SNAP is its ability to respond quickly to changes in need. This is the case both during natural and economic disasters. During the recent recession, SNAP participation grew alongside rising unemployment and is falling as the economy slowly recovers. CBO's January 2017 budget projections show SNAP savings of more than $30 billion over the course of the farm bill compared to estimates from just 1 year ago and project SNAP contributing to more than $90 billion in savings overall, which is far more than expected as the program contracts by design. Participation continues to decline and as of December 2016, the most recent data available, more than 4.8 million (or ten percent) lower than at its post-recession peak in December 2012 and the lowest level since September 2010.

3. *SNAP is temporary and encourages work.* SNAP supports households as they get back on their feet, providing them with needed nutrition and encouraging work.

   New participants spend an average of only 12 months on SNAP and most leave the program within 2 years. SNAP is structured to provide a strong work incentive and was designed to essentially *not* have a "benefit cliff." In fact, for every additional dollar a SNAP participant earns, their benefits decline by about 30¢ not a full dollar. So, participants have a strong incentive to find a job, work longer hours, or seek better-paying employment.

   More than ½ of SNAP households with at least one working-age, non-disabled adult work while on SNAP; more than 80 percent work in the year before or after receiving SNAP. For many of these families, SNAP is an important support while they are between jobs and looking for work.

4. *SNAP provides states flexibility and Federal accountability.* SNAP's structure couples local decision-making with Federal oversight to deliver a program that is both flexible for state administrators and accountable to the Federal taxpayer. States have a robust framework of state options when administering SNAP, enabling them to adapt the program to best meet the needs of their state.

   At the same time, Federal oversight ensures that SNAP is accountable both to taxpayers and to participants. Consistent eligibility parameters and benefit levels across states ensure that eligible families are guaranteed food assistance when they fall on hard times, regardless of where they live.

5. *SNAP is efficient and accurate.* Nearly 93 percent of Federal SNAP spending goes for benefits to purchase food. The remainder goes toward administrative costs including monitoring of retailers that accept SNAP and anti-fraud activities, and important services like employment and training that help participants improve their employability and move toward work or improve their prospects.

   SNAP payments are accurate and the program has historically low error rates. SNAP has one of the most rigorous payment error measurement sys-

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[6] Hanson, Kenneth, *The Food Assistance National Input-Output Multiplier (FANIOM) Model and the Stimulus Effects of SNAP,* USDA, Economic Research Service, October 2010, *https://www.ers.usda.gov/webdocs/publications/err103/8003_err103_reportsummary_1_.pdf.*

[7] Thompson, Jeffrey and Garrett-Peltier, Heidi, *The Economic Consequences of Cutting the Supplemental Nutrition Assistance Program,* Published March 2012, The Center for American Progress, *https://www.americanprogress.org/issues/poverty/reports/2012/03/19/11314/the-economic-consequences-ofcutting-the-supplemental-nutrition-assistance-program/.*

[8] Wilde, Park E., *The New Normal: The Supplemental Nutrition Assistance Program (SNAP),* May 2012, mer. J. AGR. ECON. 95(2): 325–331.

[9] Center on Budget and Policy Priorities, *Policy Basics: Introduction to the Supplemental Nutrition Assistance Program (SNAP),* March 2016, *http://www.cbpp.org/research/policy-basics-introduction-to-the-supplementalnutrition-assistance-program-snap.*

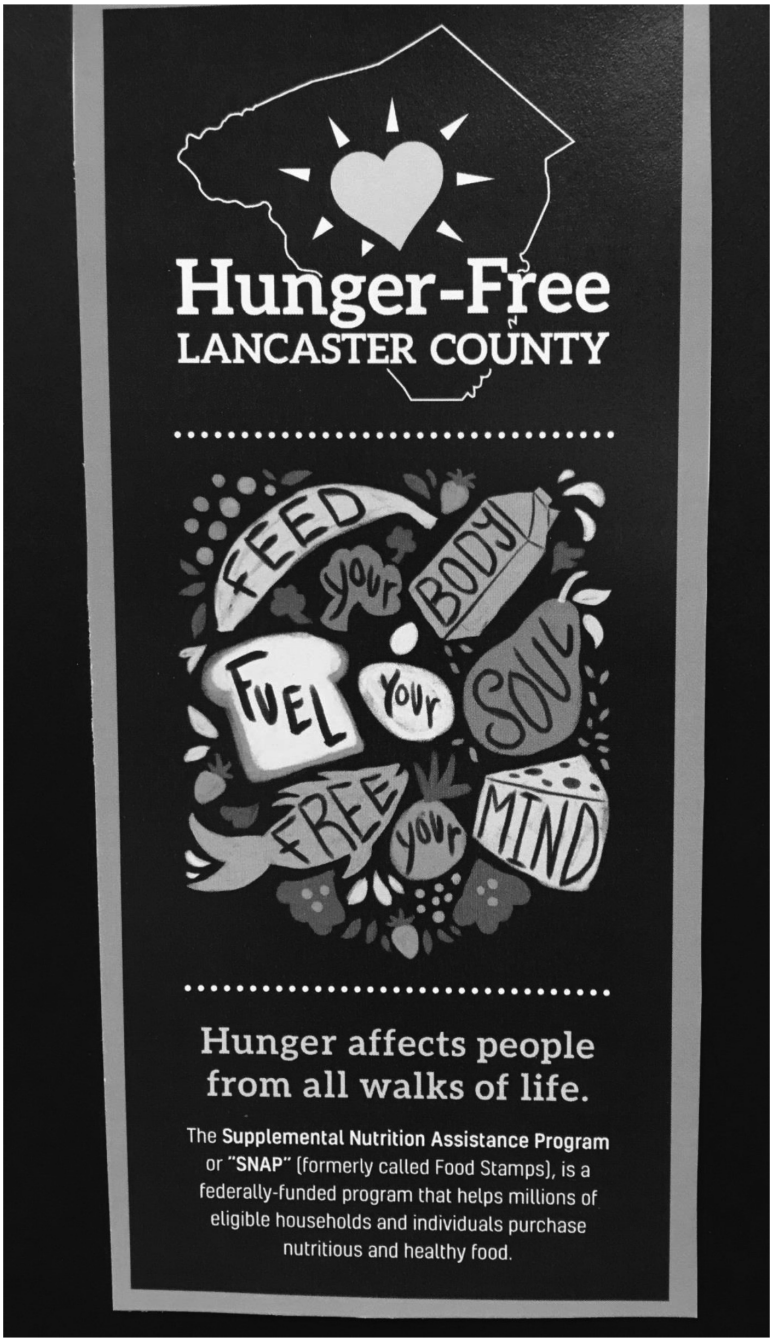
[10] USDA, Data from SNAP Nutrition Tables: October 2016, last accessed December 2016, *https://www.fns.usda.gov/pd/supplemental-nutrition-assistance-program-snap.*

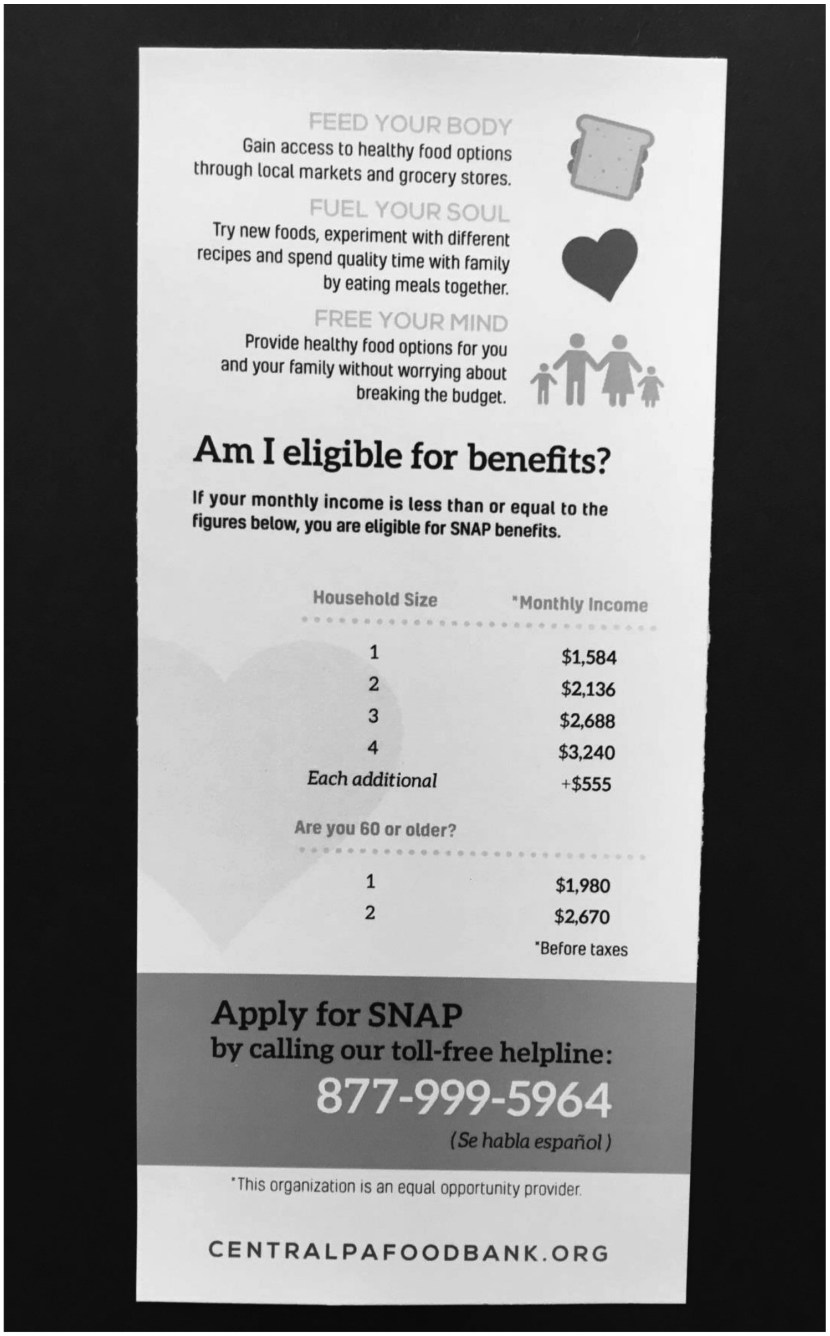
tems of any public benefit program. It also has one of the best records of accuracy in providing benefits only to eligible households. The most recently available data show that more than 99 percent of SNAP benefits are issued to eligible households.

As the Subcommittee works on a new farm bill, we look forward to working with you to demonstrate how strong support for nutrition programs and agriculture programs can strengthen communities such as the one we serve in central Pennsylvania. These programs work well, but with any policy or program, can always be improved to ensure that more families and children have access to the nutrition they need.

Working together, we believe that we can achieve a farm bill that helps strengthen our agriculture economy, provides support to rural communities, and reduces hunger through partnership and collaboration.

On behalf of the Central Pennsylvania Food Bank, thank you for this opportunity to present testimony.


Hunger-Free
LANCASTER COUNTY
FEED your BODY
FUEL your SOUL
FREE your MIND
Hunger affects people from all walks of life.
The Supplemental Nutrition Assistance Program or "SNAP" (formerly called Food Stamps), is a federally-funded program that helps millions of eligible households and individuals purchase nutritious and healthy food.



FEED YOUR BODY
Gain access to healthy food options through local markets and grocery stores.

FUEL YOUR SOUL
Try new foods, experiment with different recipes and spend quality time with family by eating meals together.

FREE YOUR MIND
Provide healthy food options for you and your family without worrying about breaking the budget.

Am I eligible for benefits?

If your monthly income is less than or equal to the figures below, you are eligible for SNAP benefits.

Household Size	*Monthly Income
1	$1,584
2	$2,136
3	$2,688
4	$3,240
Each additional	+$555

Are you 60 or older?	
1	$1,980
2	$2,670

*Before taxes

Apply for SNAP
by calling our toll-free helpline:
877-999-5964
(Se habla español)

*This organization is an equal opportunity provider.

CENTRALPAFOODBANK.ORG

The CHAIRMAN. Mr. Arthur, thank you so much for your testimony.

Mr. Protas, please go ahead with your 5 minutes of testimony whenever you are ready.

STATEMENT OF JOSH PROTAS, VICE PRESIDENT OF PUBLIC POLICY, MAZON—A JEWISH RESPONSE TO HUNGER, WASHINGTON, D.C.

Mr. PROTAS. Thank you, Chairman Thompson, Ranking Member McGovern, distinguished Members of the Subcommittee on Nutrition, and the Committee of Agriculture, thanks so much for the opportunity to testify here today. I am pleased to be able to share perspectives from MAZON—A Jewish Response to Hunger, a national organization committed to ending hunger among people of all faiths and backgrounds in the U.S. and Israel.

In Jewish tradition, and across all faith traditions, there is a fundamental value of taking care of the most vulnerable among us. In *Leviticus,* we are commanded to leave the corners of our fields and the gleanings of our harvests and vineyards for the poor and the stranger. This commandment is a clear expression of our collective responsibility to each other. Its wisdom respects the dignity of those who are poor, and gives them a role in taking care of their needs by harvesting the corners of the fields themselves. We are not to judge those who are poor, nor should we assume to know the circumstances of their lives.

In our country today, we are blessed to have a national program that manifests this value and works effectively to provide assistance to those who endure hardship. This program respects the dignity of those who experience hunger and poverty, responds when the needs increase, supports work, promotes long-term health and well-being, contributes to our economy, and provides vital assistance to the most vulnerable in our society. Of course, this program is SNAP.

SNAP is not the only assistance that is available, but it is the most essential. The problem of food insecurity is profound and complex, with responses coming both from government programs and from charitable and faith-based community organizations. While some argue that charities should do more to address food insecurity, the massive scale of this problem and the realities of the charitable sector demonstrate just how unreasonable this is. Many of these agencies are small operations, run out of basements or closets in a local house of worship, only a few days each week and for a few hours each day. Only the Federal Government has the capacity to solve an issue of hunger's magnitude, and SNAP plays a pivotal role, providing needed assistance to tens of millions of Americans who struggle.

Can SNAP be improved? Of course. But cutting the funding and reach of the program is not an improvement, and transforming SNAP into a block grant program threatens its impact and its responsiveness.

Nothing speaks louder to the truth of SNAP than the voices of those affected by hunger. MAZON commissioned photo journalist Barbara Grover to collect stories from people who have experienced this painful reality. One consistent refrain heard is that SNAP ben-

efits routinely don't last until the end of the month, forcing families to take desperate measures to make ends meet. Another is how SNAP recipients often purchase cheap and unhealthy foods to fill them up.

To address this, MAZON recommends that Congress change the SNAP benefit calculation to the USDA Low Cost Food Plan, in order to provide a more appropriate level of assistance and empower food-insecure families to better meet their nutritional needs.

On the ABAWDs, too many able-bodied adults without dependents have recently found themselves cut off from SNAP benefits after the re-imposition of the 3 month time limit. Who are these ABAWDs? They are 60,000 veterans. They are single parents of children over the age of 18. They are homeless individuals and ex-offenders who struggle to find employment. They are residents of areas where economic recovery has failed to materialize. They are 19 year olds who have just aged out of foster care and have no family on whom to rely. Re-imposing time limits seems cruel and misplaced when too little is being done to ensure that these people have access to good paying job opportunities and available job training slots. We recommend that innovative and effective employment and training programs be robustly funded, made more widely accessible, and set up with reasonable parameters, including individualized case management. It is critical that these are voluntary programs that build people up, rather than mandatory sanction-based programs that penalize individuals.

More needs to be done to connect under-served populations with assistance. High rates of food insecurity among seniors, veterans, Native Americans, college students, and LGBT individuals are concerning, and more must be done to increase SNAP participation for these groups. We recommend additional outreach and education efforts to make individuals in these and other under-served populations aware of the assistance available to them through SNAP, and remove the barriers that prevent them from accessing it.

MAZON's work reveals that stigma associated with SNAP is a significant barrier to participation. The perpetuation of myths and negative stereotypes of SNAP participants in the media and by public officials is damaging to the program, hurts efforts to expand access to people who are struggling, and makes it more difficult to achieve the larger goal of ending hunger.

In conclusion, I would simply and vehemently state that SNAP works. While there are certainly opportunities to make program improvements, including increasing benefit levels and expanding program access, the fundamental structure of SNAP as an entitlement program is solid and should not be undermined. Instead, robust and targeted investments to strengthen program features should be considered.

Along with my written testimony, I have shared just a few stories of people impacted by SNAP featured in MAZON's traveling multimedia exhibition, *This Is Hunger*. I encourage you to read these personal reflections, and keep in mind the real people this program helps. Thank you.

[The prepared statement of Mr. Protas follows:]

PREPARED STATEMENT OF JOSH PROTAS, VICE PRESIDENT OF PUBLIC POLICY, MAZON—A JEWISH RESPONSE TO HUNGER, WASHINGTON, D.C.

Distinguished Members of the Subcommittee on Nutrition and Committee on Agriculture, thank you for the opportunity to testify before you today.

I'm pleased to be able to share the perspectives about the SNAP program on behalf of MAZON—A Jewish Response to Hunger, a national nonprofit organization working to end hunger among people of all faiths and backgrounds in the U.S. and Israel.

In Jewish tradition—and across all faith traditions—there is a fundamental value of taking care of the most vulnerable among us. In *Leviticus,* we are commanded to leave the corners of our fields and the gleanings of our harvest and vineyards for the poor and the stranger. This commandment is a clear expression of our collective responsibility for each other. Its wisdom respects the dignity of those who are poor and gives them a role in taking care of their needs by harvesting the corners of the fields themselves. We are not to judge those who are poor, nor should we assume to know the circumstances of their lives.

In our country today, we are blessed to have a national program that manifests these traditional values and works effectively to provide assistance to the millions of people who struggle with food insecurity. This program respects the dignity of those who experience hunger and poverty, responds when the needs increase, supports work, promotes long-term health and well-being, contributes to our economy, and provides vital assistance to the most vulnerable in our society. Of course, this program is the Supplemental Nutrition Assistance Program—SNAP.

SNAP is not the only assistance that is available, but it is the most essential. The problem of food insecurity is profound and complex, with responses coming from both government programs and from charitable and faith community organizations.

The charitable sector provides important short-term assistance through an array of food pantries, food banks, and houses of worship, but this assistance is inherently insufficient to address the systemic problem of hunger or feed the significant and persistent number of people who need help. While there are those who argue that charity alone can address food insecurity, the massive scale of this problem and the realities of the charitable sector demonstrate just how impossible that is. Many of these agencies are small operations open only a few days a week and for a few hours each day. They are often run by volunteers out of basements or closets at their local houses of worship, and they primarily distribute food that has been donated from within their communities.

Charities cannot sufficiently fill the gaps created by the erosion of government programs. The budget of the largest food charity is a mere fraction of the Federal response to food insecurity. Only the Federal Government has the capacity to solve an issue of hunger's magnitude. It is essential that SNAP and other government nutrition safety net programs are operated with the utmost effectiveness, efficiency, and accountability, and the USDA works diligently to ensure this is the case.

SNAP is a highly effective anti-poverty program that assists tens of millions of Americans who struggle with food insecurity. The program responded to the increased needs during the Great Recession as it was designed to do, and program participation is dropping now as employment rates and economic conditions have improved.

Can SNAP be improved? Of course. But dismantling the structure of the program is not an improvement, and transforming SNAP into a block grant program threatens its impact and responsiveness.

Studies have shown us a great deal about the success of SNAP and where its limitations have kept it from living up to its promise. But nothing speaks louder to the truth of SNAP than the voices of those affected by hunger. MAZON commissioned photojournalist Barbara Grover to collect stories across the country from people who have experienced the painful reality of food insecurity. These stories are featured in *This Is Hunger,* a multimedia exhibition that is currently traveling to communities on the East Coast. One consistent refrain from people interviewed is that their SNAP benefits routinely didn't last until the end of the month, forcing their families to take desperate measures to make ends meet. Another is how people confronted with a meager budget for food often resort to purchasing cheap and unhealthy products to fill them up, giving up fresh and more nutritious choices.

We recommend that Congress change the SNAP benefit calculation to correlate with the USDA Low Cost Food Plan in order to provide a more appropriate level of assistance and empower food-insecure families to better meet their nutritional needs.

Too many able-bodied adults without dependents (ABAWDs) have recently found themselves cut off from SNAP benefits after the re-imposition of the 3 month time

limit. Who are these ABAWDs? They are 60,000 veterans. They are single parents of children over the age of 18. They are homeless individuals and ex-offenders who struggle to find employment. They are residents of states where the economic recovery has failed to materialize. They are 19 year olds who have just aged out of foster care and have no family on whom to rely. Re-imposing time limits seems cruel and misplaced when too little is being done to ensure that these SNAP recipients have access to good paying job opportunities and available job training slots. SNAP Employment and Training programs can offer innovative and effective means to transition people back to work, as the new E&T pilot programs called for in the last farm bill are demonstrating.

We recommend that such employment and training initiatives be robustly funded, made more widely accessible, and set up with reasonable parameters, including individualized case management. It is critical that these are voluntary programs that build people up rather than mandatory sanction-based programs that penalize individuals.

As a country, we must do more to encourage workforce participation and pathways out of poverty, which must include support for affordable and accessible childcare, expansion of tax credits, and living wages.

We also recommend more support for innovative strategies to promote healthier eating among SNAP recipients, including building on the success of programs such as the Food Insecurity Nutrition Incentive grant program and the Senior Farmers Market Nutrition Program, which contribute to notable increases in the consumption of fresh fruits and vegetables.

More needs to be done to connect under-served populations with helpful assistance from SNAP. High rates of food insecurity among seniors, veterans, Native Americans, college students, and LGBT individuals are concerning and more must be done to increase SNAP participation for these groups.

We recommend additional outreach and education efforts to make individuals in these and other under-served populations aware of the assistance available to them through SNAP and remove the barriers that prevent them from accessing it. MAZON's work reveals that stigma associated with SNAP is among the biggest barriers to participation. We regularly encounter misinformation about the program that makes older Americans reluctant to participate. Similarly, MAZON's efforts to remove barriers to access SNAP for food-insecure military families reveals significant negative associations with the program that exacerbate shame and stigma, making it more difficult for those who are struggling to seek out help. On this topic, I would like to express MAZON's sincere appreciation to Chairman Thompson and Ranking Member McGovern for their co-sponsorship of the Military Hunger Prevention Act, which was recently introduced by Representative Susan Davis and would remove an unintentional barrier to SNAP access for currently serving military families in need.

Too much rhetoric has been focused on criticizing the SNAP program and impugning the character of SNAP recipients. The perpetuation of myths and negative stereotypes of SNAP participants in the media and by public officials is damaging to the program, hurts efforts to expand access to people who are struggling, and makes it more difficult to achieving the larger goal of ending hunger. The energies of the House Committee on Agriculture would be better spent supporting and cooperating with USDA to further reduce error rates and ensure that SNAP is reaching and serving a greater proportion of those who need assistance.

In conclusion, I would simply and vehemently state that SNAP works. While there are certainly opportunities to make particular program improvements, including increasing benefit levels and expanding program access, the fundamental structure of SNAP as an entitlement program is solid and should not be undermined. Instead, robust and targeted investments to strengthen program features should be considered.

Along with my written testimony, I have shared just a few stories of people impacted by SNAP who are featured in MAZON's traveling multimedia exhibition *This Is Hunger*. I encourage you to read these personal reflections and keep in mind the real people this program helps. Thank you.

ATTACHMENT

Dylan from Commerce, Georgia



It was the best time, when my mom had a job. I actually enjoyed life. I used to get to do whatever. Now, I get up in the morning and put on my shoes like anybody else, but when I get to school, I think about losing our house.

My mom got laid off 4 years ago from her job at the school district. It really gets to me, it really does, that they let her go. She'd been there 20 years and is more qualified than a lot of teachers, but it seems that getting full time work around here is all political now. The only work my mom can get these days is substitute teaching. It's part time and not enough to pay for the basics. The fact that my 84 year old grandpa is keeping us from losing our house, pretty much gets to me. Before I go to bed at night, I actually pray that we won't.

I have a lot of weight on my shoulders for a 14 year old. I can't stand our situation. I've had to sacrifice a lot since my mom lost her job. I'm actually wearing my mom's pants right now because we can't afford to buy me clothes. I can't take the college classes I qualified for because we can't afford them. My mom doesn't know it, but I quit baseball so she wouldn't have to spend money on my uniform. It's not a good feeling when you're sitting in the house eating chips and potted meat as your friends are off playing ball and going to steakhouses when they win. It's not a good feeling at all.

Our food stamps have gone from $300 to $200 a month for my mom and me. We're not able to afford healthy foods that some people can. It's usually chips, bologna sandwiches and all that. We've had to open up canned foods from the pantry that's probably older than me. Eating like this and knowing that your friends are eating regular food makes me feel like I'm not normal. We run out of food some months and I go to bed hungry. I've gone days without sleep because of hunger. The next day, I'll go through class pinching myself, doing stuff to stay awake.

Being hungry affects your appearance, how you act. When I'm hungry, I'm not in the mood for anything. I'm depressed. Then, my mom picks me up and I continue to work as hard as I can in school. I've wanted to become a surgeon since the fourth grade. I keep reminding myself that if I work hard in life, I can get to where I'm fine. Then I can buy my mom a new house.

It's not fair that we have to go through this. It's not fair for anybody to have to go through this. You shouldn't have to worry about where your next meal is gonna come from—especially people with kids.

Mollie from New Orleans, Louisiana



I used to have big money, the good income. I'd take friends out to dinner and travel—to London and Scotland. If I saw a collectible online I wanted, I'd buy it. I could not have perceived in a million years that I would ever be unemployed and kicked out of my apartment. Then, the recession hit and by 2012, my successful New England tour company was making ⅕ the income it did the year before. I'm a single woman so I decided to cut my losses, sell the business, and move back to New Orleans. That's the place that feels like home to me.

I did everything to find work and applied for countless jobs. But I was either overqualified or rejected because of my age. After 9 months, my savings ran out. I became late in my rent and couldn't pay my utilities. I had to sell everything I owned—my car, art, CDs, antiques—to have cash to live on. I was evicted from my apartment with nowhere to go. I figured I could live on the streets, but not my dog. I gave him to an Akita rescue organization, but that broke my heart since he was the only thing left from my past. Four days later I followed him to Thibidoux, Louisiana—a place I'd never heard of before.

Not long after I got here, I saw a long line of people in front of a building. I was curious what they were doing, what was in the boxes they were getting. That's how I found out about the food pantry. Before that, I had never heard of food pantries. Since then, I've been going to Good Samaritan Food Bank whenever I can. Although you don't get to pick and choose what you want, it's good because they include things you can't buy with food stamps—like toiletries and paper products.

These days, I'm eating pretty low level, just canned goods like Vienna sausage, spinach, peaches, because $200 in food stamps is just not enough for one adult. I drink a lot of water to help prevent hunger. I can't afford fresh food. I only eat lunch and dinner and have only coffee for breakfast. When my food stamps run out, it's kinda scary not knowing if I'm gonna have any money to eat tomorrow. Every time I go to the grocery store I look my receipt and say, "O.K., how much do I have until the sixth of next month when I get my food stamps again?" I'm worrying all the time, trying to save myself here. I'm thinking: I've got so much to give, a lot of experience. I ask myself, "What can I do next? What haven't I tried?" So I pray, take a nap, re-strategize, and pick myself up.

I've had moments of being embarrassed and on the verge of tears because I don't understand why I can't control any of this. But when I eat, I feel refreshed, and that maybe things will get better. They have a bit. I'm working part time at a retail big box store. I make $8, which comes to $800 a month. I'm living in a run-down trailer, but at least it's with my dog. I'm hoping to get full time work, so I can afford to move us to a better place. I don't know if I'll ever make the money that I did up north, but I hope I can move back to New Orleans someday. New Orleans has always been a happy place to me.

Belinda from Thibidoux, Louisiana



One afternoon, my brother was backing out his car and didn't see my daughter. He ran over her. They told me that she was gonna die within the first 45 minutes of the accident. That was in 2004. But here we are in 2013, and she's still alive.

My normal child was left in a wheel chair with traumatic brain injury and a trachestomy. Six months later, my mom got diagnosed with cancer. Then Katrina hit and I lost my mobile home and some family members. Then my parents died, one after another. My life has changed dramatically over the past decade. To get through it, I just keep my priorities are straight—to make sure my kids have the best education, clothes on their backs and food on the table.

Before this, I made really good pay in nursing. I was able to take care of my three daughters and help out my parents. But the first year after the accident, we never knew what was going to happen and I had to resign from my job to be by my daughter's bedside. When I tried to go back to work, the recession had hit Louisiana and all they'd give me was work on an as-needed basis. The thing that's so confusing is that everyday I apply for these jobs in the newspaper, and I don't get any calls back.

I'm a single mom and my only steady income since the accident is a little less than $2,000 a month in government assistance. My mortgage alone is $1,000 a month and paying that is my first priority because I'm not gonna have my kids on the street. I need car insurance to get my daughter to all her doctors appointments. She can't miss 'em. And I have to pay the lights and water. All that's left for groceries is between $150 and $300 a month. That's not enough to feed growing children. When I make a little extra cash house cleaning or doing private nursing, I go straight to the grocery store to buy food.

I applied for food stamps but was told my income was too much. If I got food stamps, that would change our lives a lot. I would buy stuff with vitamins in it, like fresh fruit and vegetables, instead of the canned vegetables like spinach, corn, and baked beans that I can afford. I am a parent that wants my kids to eat healthy food—stuff that's gonna promote their growth and won't make them sick—but I'm havin' to fry everything because that fills my kids up and stretches the quantity *versus* giving them quality food. It makes me feel bad that I have to say "no" to them, but I have to get them to understand that we don't have enough food to share when their friends come over. That's hard because I was raised to share everything we have.

I've made sacrifices to make sure that my kids don't starve. I'll go without eating to make sure they can. I done sold radios, my TV, even furniture to buy food. There are times when my kids wake up durin' the night and they're hungry. I try to figure out if there's somethin' in the house to give them, like the snacks that I get at the food pantry, so they can go back to sleep. The food pantry is a blessing. I'm just grateful that I can rely it, but I feel degraded to go there because I don't wanna be dependent on nobody for nothing. But the upside is I know my kids are gonna have food to eat if I go there.

I'd do whatever I had to do to make sure that my kids have. I try to make the best out of every day. After all, one minute you can be up and another minute you can be down.

Ashley from San Diego, California



My husband's an E4 Petty Officer on a warship. When he joined the Navy, I didn't think it was going to be all sunsets and roses, but I didn't expect that we'd have to eat ramen 7 nights a week because that's what we could afford. We thought being in the military might be a way out of living from paycheck to paycheck, but you know, a full-time clerk at [T]aco [B]ell makes more than my husband. It's frustrating that he risks his life to keep us safe from terrorism, and misses holidays and birthdays, and doesn't get paid enough to feed the family the way he'd like with healthy, fresh food.

When we found out my husband was being transferred to San Diego we thought for sure he'd get a cost of living allowance on top of his paycheck. They're given in Hawaii and other expensive places, so we thought we'd definitely get it here. But there is no COLA for San Diego so that makes living here really hard. We're not alone.

I'm shocked that so many military families are standing in line at the food pantry because they really need help. Many of us struggle for months before finding out that there are services for us, and then it's pretty much word of mouth. I don't know a whole lot about FSSA, but I looked into food stamps and it seemed like we made $100 a month too much. Food stamps considers our housing allowance as income, even though we don't see a penny of it, but my daughter qualifies for free breakfast and lunch at school because our income is so low. I understand how base pay, hazard pay, and family separation pay should be considered income, but not the BAH. If that were changed, it would help families like us tremendously because then we'd qualify for food stamps and I could feed my family healthier food instead from a box.

My husband's base pay is so low that we are barely getting by. We have to juggle our finances. We've given up cable and going to the movies. The first place I cut is food because the consequences are too great if I don't pay the car insurance or have gas money so my husband can get to work. I try to put away $50 a month for emergencies. I go to the food pantry because every bit helps. Some people would say it's wrong to use the food pantry if I can save something, but if I was forced to choose, I'd rather put that little bit into savings, as opposed to using it to buy a small bag of extra groceries, so we'd have money if we need to visit a sick parent or something.

I was so embarrassed at first to go the food pantry because I grew up with everything I needed. But I'd rather be embarrassed and be able to feed my family at least one extra meal a week and buy a bit of fresh food. It's nice to be able to have my daughter say, "I'd like a snack" and be able to give her an apple instead of chips, because when she eats healthy, she isn't lethargic. It makes me so sad that my daughter is 6 and I have to tell her "no" sometimes. But on the other hand, I would rather grow up understanding that things costs money.

I looked for a job, but it wasn't worth it. We'd be negative $400 or $500 a month after paying for daycare and what would I do when my husband is deployed? My daughter needs one parent around if she gets sick or needs help with school. Like all military kids, she already gives up a lot.

Cheryl from Tuba City, Arizona



Even though we never married, I never thought my boyfriend and I would separate. We had it made—we had five kids, a nice apartment in Flagstaff, our own washer/dryer, we ate out all the time. But at the height of the recession, the place he worked at went out of business. He tried to go out on his own, but he struggled. One day, he just didn't come home after work. I was pregnant then with our youngest, and to this day she hasn't met her father yet.

After that, I moved my family to the Navajo reservation where I grew up. I got the piece of land that was my tribal right and put a small RV on it. Right now, my only means of supporting my family is a bit of child support, food stamps and WIC, which give me milk, cheese, bread and cereal for my youngest kids.

I really want to work, but the jobs I could get won't pay enough for me to afford daycare for the two who aren't in school yet. I can't afford to hook up the water or electricity, so we're living without power. I can't afford to feed the kids like I want—like they ate before. I never know when or how much child support is coming in, so I have to put aside a little money each month for times when a kid gets sick and I'll need to buy cough syrup or something. It's hard to live like this, but we do it. We're a tight family.

We live mostly on ramen, potatoes and Hamburger Helper and whatever we get in the boxes from the food pantry. I am pretty good at budgeting and making things stretch, but food is very expensive on the reservation and my food stamps last for only 2 weeks. When my food stamps come in, it's like Christmas for the kids because they get the foods they've been waiting for—the things they've written down on a list for me, like strawberries and apples. Sometimes the kids say, "mom I'm hungry," and "my friends eat better than we do," but I tell them this is what we have. I think they understand what's going on because when they see the food running low, they hide some of what they're given in school and bring it home to eat later. It makes me feel so sad inside that I can't give my kids all that they want, but I don't let them see it. I try to make it up to them by getting them a pizza once in a while.

I never thought I'd live in an RV, or have to chop wood for heat, or shower outdoors with buckets. I thought I'd always be able to provide for my kids. At least we're not bouncing around like some families. At least we have a place we can call home.

Charles from Haman, Louisiana



My whole family was truck drivers, so it was in the blood for me to be a truck driver. I hauled government jeeps and guns all over the country. I just loved my job—going to different states and Canada. I had a stroke 9 years ago, at 62, and it shut all that down. I wasn't about ready to retire, but the stroke kept me from working. I'm wheelchair-bound now.

I never imagined I'd get to this age and this would be my life. Living on low-income you learn how to stretch your money. It was hard at first because before the stroke, things were good. My family used to go out to eat, to ball games and just had fun—invite people over for a fish fry. But now, life's a struggle. My only income is $1,200 a month from Disability. I live in low-income senior housing and get Medicare, but after the monthly bills, I can't cover everything else I need.

I can only really afford to go to one doctor appointment a month, but that just ain't enough. I try to have more money to spend on the doctor by putting more blankets on the bed at night instead of using the heat, but I still don't save enough for all the appointments I need to treat my diabetes and a heart condition. It makes me feel terrible that I can't afford to take care of my health. After my medical, I'm only left with about $160, plus $17 in food stamps, to spend a month on food. I used to eat grits, eggs, steaks and stuff like that, but since the stroke, I don't buy what I want to eat, but what I can afford to eat—mostly beans and lunchmeat, or something to make a sandwich with. I'm supposed to be on a special diabetes diet, but I just can't afford to buy that food. There are times towards the end of the month when all I can afford to eat for days at a time is bread and milk. I don't like it, but milk and bread kills the hunger a bit. When you're hungry and your stomach's growling, I tell yah, it really don't feel good. Getting the commodities once a month from the food pantry helps, but if I could get $40 or $50 in food stamps, I could feed myself.

Where I live, we are low-income people and we don't have money to buy everything we need, so we share. Sometimes the girls over in the other quarter cook turkey neck bone, or something like that, and they bring it over here. I've realized that's how we're surviving, by sharing.

My wife is dead and kids are adults now. They're struggling too. What really hurts me is when my daughter calls and asks for $25–$30 to get her hair cut and I says "baby if I had it, I'd give it to you." She's in college and I don't' have nothing to give her right now and that's the hardest thing for me.

To read more stories of people who struggle with food insecurity, visit thisishunger.org/stories.

THIS IS HUNGER
A community engagement program of MAZON | A Jewish Response to Hunger

The CHAIRMAN. Thank you, Mr. Protas.

Ms. Hatcher, go ahead and proceed with your 5 minutes of testimony when you are ready. Thank you.

STATEMENT OF JENNIFER HATCHER, CHIEF PUBLIC POLICY OFFICER AND SENIOR VICE PRESIDENT, GOVERNMENT AND PUBLIC AFFAIRS, FOOD MARKETING INSTITUTE, ARLINGTON, VA

Ms. HATCHER. Thank you for the opportunity to testify, and for the work that each of you has already done to understand SNAP and its importance.

First, the supermarket retailers, wholesalers, and suppliers that FMI represents are fortunate to work with some of the world's best farmers and ranchers to ensure that the products we have on the shelf are safe, top quality, available year round, and at the most affordable price possible.

From the food retail perspective, SNAP has evolved in a positive way over the past several years. It has become more efficient, more flexible to address unique needs and less prone to fraud or error. We now have a national electronic program with nationally approved products that is consistent from state to state. We have seen tremendous operational efficiencies, particularly around fresh products due to the expansion of the dates SNAP benefits are distributed by state agencies to customers. The administrative and licensing function is working extremely well. SNAP has very adeptly addressed significant fluctuation and the number of eligible beneficiaries.

A couple of suggestions moving forward. First, there is enormous opportunity for USDA to continue to allow for innovation and flexibility in how we serve the customer, engaging the SNAP customer in a digital format. Second, we continue our focus on the efficiency of the transmission part of the transaction. Third, there should be no mandatory fees charged to merchants. Fourth, we need to encourage new entrants to the EBT contractor space to bring greater efficiency and innovation. Finally, the USDA online pilot needs to include more grocers, more locations as soon as possible to have a greater impact on technology design.

There has been a great deal of thoughtful discussion regarding what SNAP participants are buying and how those products contribute to health. FMI's President and CEO, Leslie Sarasin, recently testified before the Committee about how SNAP restrictions would affect the grocery industry and our customers. Additionally, last May, Kathy Hanna with the Kroger Company testified about a partnership Kroger had entered with AARP, who received a Food Insecurity Nutrition Incentive, or FINI grant, from USDA. Another example of a successful and growing FINI partnership is the Double Up Food Bucks Program, operating in 17 Family Fare/(SpartanNash) stores in Michigan and 51 Price Chopper stores in Kansas City, Missouri.

An amazing 95 percent of FMI's supermarket members report employing dieticians at the corporate, regional, and store level. Additionally, a growing number of FMI members are employing in-store chefs.

Some have suggested that beyond the incentives, we should look at penalties and restrictions. Thoughts coming from folks on what these penalties or restrictions might look like are all over the map. Some have proposed that penalties should only apply to certain states or counties. Others have suggested that penalties should

only apply to certain people. The efficiencies and simplicity of the administrative function of SNAP have happened because of the consistency of a national program. If we put a pilot or a block grant in place in one store or a series of stores or in one county, it will require significant IT spending. If a penalty were put in place in one county or stores or state, the customer would simply avoid shopping in the location with the restrictions in place, penalizing not only the customer, but also the store owners. Many have said that they don't want the penalty to apply to seniors or veterans or the disabled, or those with young children. Recent USDA figures indicate that 82 percent of SNAP benefit dollars are currently utilized by those customers. If this concept was developed into policy, would some kind of indicator be put on the SNAP cards of those individuals for whom penalties would apply? Would store clerks be charged with enforcement of that process? Would a team of people at USDA be hired to develop and update an electronic product list of those items that would trigger a penalty or restriction, and send it electronically to the 260,000 SNAP authorized retailers on a monthly basis? As you can see, an idea that seems relatively simple in theory could have enormous impact, expense, and complexity without a clear benefit.

I would be pleased to try to answer any questions you may have.

[The prepared statement of Ms. Hatcher follows:]

PREPARED STATEMENT OF JENNIFER HATCHER, CHIEF PUBLIC POLICY OFFICER AND SENIOR VICE PRESIDENT, GOVERNMENT AND PUBLIC AFFAIRS, FOOD MARKETING INSTITUTE, ARLINGTON, VA

Chairman Thompson, Ranking Member McGovern, and Members of the Committee,

My name is Jennifer Hatcher, and I serve as Chief Public Policy Officer and Senior Vice President of Food Marketing Institute,[1] a trade association that represents food retailers and wholesalers, as well as their suppliers of products and services. FMI members are located in every Congressional district across the country. FMI's tag line when referring to its member companies is "Feeding Families and Enriching Lives," a responsibility we take very seriously.

As this Committee considers policies regarding "the Next Farm Bill: The Future of SNAP," FMI very much appreciates the opportunity to testify and the work each of you have already done to understand SNAP and its importance.

First, supermarkets are fortunate to work with some of the world's best farmers and ranchers in the world as supply chain partners to ensure that the products we have on the shelf are safe, top quality, available year round when customers want them, and at the most affordable price possible.

We applaud the detailed review of agriculture policy and SNAP by this Committee and would like to share some of the progress we have identified with regard to SNAP, some of the changes we have seen in our customers and stores over the past 6 years and then will look at the future of SNAP and our partnership with USDA and the Congress.

From the food retail perspective, the Supplemental Nutrition Assistance Program (SNAP) has evolved in a positive way over the past several years. It has become more efficient, more flexible to address unique needs and less prone to fraud or error.

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[1] Food Marketing Institute proudly advocates on behalf of the food retail industry. FMI's U.S. members operate nearly 40,000 retail food stores and 25,000 pharmacies, representing a combined annual sales volume of almost $770 billion. Through programs in public affairs, food safety, research, education and industry relations, FMI offers resources and provides valuable benefits to more than 1,225 food retail and wholesale member companies in the United States and around the world. FMI membership covers the spectrum of diverse venues where food is sold, including single owner grocery stores, large multi-store supermarket chains and mixed retail stores. For more information, visit *www.fmi.org* and for information regarding the FMI foundation, visit *www.fmifoundation.org*.

We now have a national program with nationally-approved products that is consistent from state to state. The evolution to 100% interoperable electronic transactions, thanks in large part to the foresight of this Subcommittee in 2001, has made the program much easier for operations and compliance and much simpler for customers. It allows states to share and compare data and retailers to look for inconsistencies and fraud.

We have seen tremendous operational efficiencies particularly around fresh product, on-shelf availabilities and fewer out of stocks due to the expansion of the dates SNAP benefits are distributed by state agencies to customers. Only seven states continue to issue benefits on 1 day in the month, a number we continue to work to reduce (benefits issuance chart attached).

The administrative and licensing function is working extremely well. There is a very competent and responsive team at USDA charged with this responsibility.

- SNAP has very adeptly addressed significant fluctuation in the number of eligible beneficiaries via both regular issuance changes due to economic downturns and improvements and Disaster SNAP (D–SNAP) special issuance for major disasters. Following the major economic downtown, in December 2012, there were 47,792,056 people on the program *vs.* the most recent figures in December 2016: 42,968,525 people (which represents the lowest monthly level since September 2010).

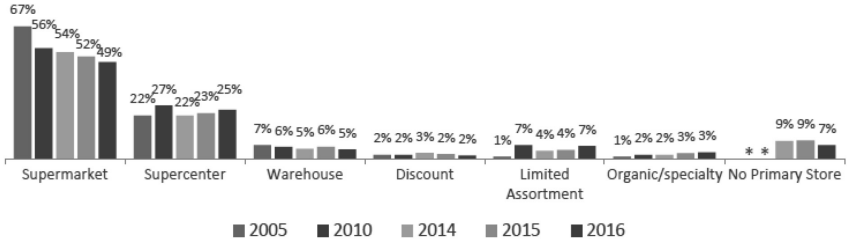
Through this recent positive evolution of program elements, we have also seen significant changes in our customers' tastes and desires and approaches to shopping.

- Households have moved to shared responsibility for shopping (almost ¼ of shoppers have a 50/50 split in the shopping.)
- Shoppers are visiting a broad array of stores for their shopping.

Shoppers Continue To Shop Multiple Channels

Shoppers today are visiting a broad array of stores to get their shopping done. The last 10 years have seen a slow but steady shift of shoppers away from traditional supermarkets as primary store to other channels, such as supercenters, club stores and limited assortment retailers. Notably, in the past 3 years, a significant number of shoppers are no longer claiming any one store as their primary store for groceries (see *Chart 1.1*).

Chart 1.1: Channel of Primary Store

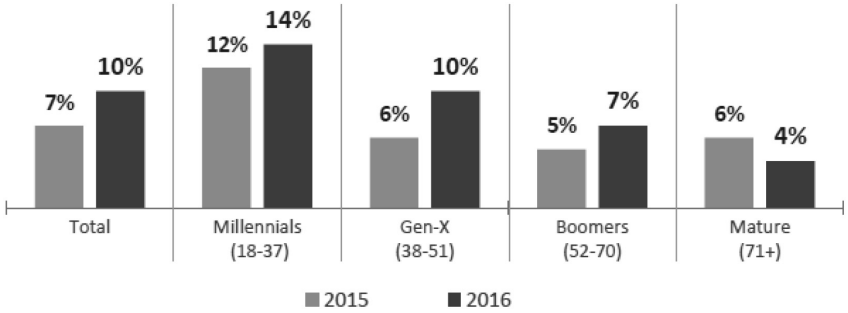


Source: FMI *U.S. Grocery Shopper Trends,* 2016. Q; "Which store or service do you consider your **primary** source of grocery-type items? In other words, where do you spend the most money on grocery-type items for use in your home?" 2016: n = 2,061. * "No primary store" not measured prior to 2011. Other channels (Convenience, Dollar, Drug, Ethnic, Military and On line-only) account for approximately 2% of all primary store channels selected in 2016. Other channels account for 1% of all primary store channels selected in 2015. (See *Appendix: Table A.9*).

- Online is growing. We anticipate it starting to grow more aggressively—perhaps reaching 20% by 2025.[2]

[2] "The Digitally Engaged Food Shopper." The Nielsen Company and Food Marketing Institute, January 2017.

Chart 1.5: Past 30 Day Usage of Online Grocery, Trended By Generation



Source: FMI *U.S. Grocery Shopper Trends, 2016.* Q: "Please indicate the sources where you've purchased grocery-type items, either in person or online in the past 30 days. (Online channel.)" 2016: n = 2,061. 2015: n = 2,265. (See *Appendix: Table A.8*).

- Shoppers are using digital tools to be better informed about food, shopping and cooking.

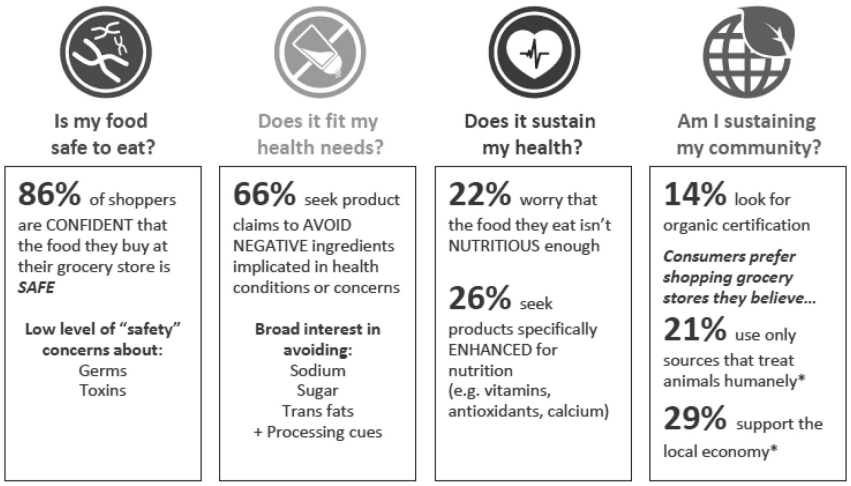
Table 1.3: Shopper Activities Used Occasionally/Frequently Via Smartphone, By Generation

Shopper Online Activities: Occasionally/Frequently	Total	Millennial	Gen-X	Boomer	Mature
Use digital coupons	49%	**59%**	45%	44%	18%
Look up recipes	47%	**66%**	47%	24%	8%
Check weekly sales specials at your primary store	46%	**55%**	41%	41%	25%
Read reviews of products and brands	32%	**41%**	31%	22%	17%
Scan QR codes or traditional barcodes of grocery type items to compare pricing across stores (for example, with Amazon)	23%	**29%**	22%	15%	10%
Use the in-store item locator	21%	**29%**	19%	15%	7%
Scan QR codes or traditional barcodes of grocery-type items to learn more about their nutritional value	20%	**23%**	19%	18%	13%

Source: FMI *U.S. Grocery Shopper Trends, 2016.* Q: "While at the grocery store, how often do you use each of the following with your smartphone? (Top-2 Box)" (Among shoppers with smartphones) n = 731. (See *Appendix: Table A–36*).

- With the continued threat to center store, stores have to rethink their focus and space allocations—some are getting laser focused on fresh categories—ready to eats, private brands—and some on pharmacy and expanded health and wellness program offerings.
- With nearly nine in ten shoppers having confidence in the safety of food at the grocery store, stores are able to focus more of their wellness attention to labels, analyzing nutritional claims and other wellness distinctions.

Figure 3.1: Health & Wellness Conti[n]uum: From Food Safety to Community Wellness



Source: FMI *U.S. Shopper Trends, 2016.* Q: "How confident are you that the food in your grocery store is safe?" (See *Appendix: Table A.59*). Q: "What healthy aims do you look for on the package when purchasing a product? (Select all that apply)" (See *Appendix: Tables A.48–49*). Q: 6 "How concerned are you about the nutritional content of the foods you eat?" (See *Appendix: Table A.45*). * The Hartman Group. "Transparency," 2015.

The factors consumers consider when choosing a store or a product are getting morecomplex. Where once there were three key factors—cost, taste, convenience—now more than½ of shoppers are also considering additional considerations, including health andwellness, food safety, and corporate social responsibility.

Future

First, there is enormous opportunity for USDA to continue to allow for innovation and flexibility in how we serve the customer, engaging the SNAP customer in a digital format with more product information, menu planning, and better budgeting.

We need to continue our focus on the efficiency of the transmission part of the transaction. We need more and better up time on EBT systems; they are currently not performing at the same level of efficiency as debit and credit card systems. Any system outage results in hours and hours of back-end work matching failed transactions to make sure customers are not double charged when a system returns to functionality.

In spite of the lower performance in some cases, there have been efforts by some processors to charge retailers fees on transactions—a tactic that has been strictly prohibited for decades and needs to be clarified in this farm bill. There should be no mandatory fees charged to merchants.

One area where retailers see a growing challenge is the actual transmission of the transaction through the state contracted processors. Currently, states contract with payments processors to handle SNAP and eWIC transactions. Unfortunately, there are very few processors in this space, in fact, until recently only two. This lack of competition has made the systems less reliable, and we have seen a growing frequency of down-times where our members cannot process SNAP transactions and customers cannot buy groceries. This is incredibly disruptive at store level with abandoned baskets and slowing down of checkout lines, all coming at a great cost to our members and a great inconvenience to customers. Even more concerning, the state-contracted processors are now beginning to propose that merchants and their acquirers pay a fee to process SNAP transactions. This tactic has been strictly prohibited for decades by the law written by this Committee. FMI and our retail members will be seeking further legislative clarification in the next farm bill that there should be no fees charged to grocers for accepting SNAP.

We also need new entrants to the state SNAP EBT contractor pool as competition inevitably leads to greater efficiency and innovation. As mentioned earlier, until recently there were only two processors in the market. Recently we learned of a new

entrant, Solutran, currently contracting to process both SNAP and eWIC, and we are excited to work with them in some of these new areas. While three is better than two, we look forward to working with the Committee on finding additional ways to attract new entrants into the market.

The demographics of shoppers and how they shop is changing dramatically. In January, USDA announced seven retailers and seven states selected to participate in a 2 year pilot currently slated to begin in August. While FMI has not had any additional communication since the announcement about the project, we understand that it is not moving very fast and seems to be limited to very few transactions. Based on industry research, more grocery customers are shopping online. If we wait 2 years for a small scale pilot and then evaluate data before determining scalability and criteria, there will not be any significant focus on new technology implementation for 3 years or more, which is likely to be very late in the technology evolution to be able to impact design. One thing we continue to learn is that integrating functionality early in technology design and utilization is far simpler and less expensive than after-the-fact retrofitting. FMI hopes that USDA will move more quickly on a second round in the pilot to allow for more grocer participation across the country.

Responding to consumer interest in having more information about products, the retail grocery industry recently launched the SmartLabel initiative under the leadership of FMI and GMA. Currently covering over 5,000 products and expecting 30,000 products by the end of 2017, SmartLabel is a digital platform that organizes required and voluntary product information and makes it accessible to customers from an app, QR code or website. Through SmartLabel and Facts Up Front, which launched in 2011, the retail grocery industry is working to help consumers make more informed choices about food and their health.

FMI members have a strong commitment to reducing food waste in our supply chain and addressing consumer confusion that can lead to waste in the home for SNAP customers and for all customers. Since 2011, we have worked with the Grocery Manufacturers Association (GMA) and National Restaurant Association (NRA) as part of the Food Waste Reduction Alliance (FWRA), which has established itself as one of the leading industry-led coalitions fighting food waste in the United States. FWRA provides a forum for sharing innovative best practices and improving the measurement of food waste in our supply chains, and has emerged as a "go to" resource for NGOs, academics and policy makers.

FMI has also worked with our partners at the Grocery Manufacturers Association to reduce food waste by addressing consumer confusion around date labels. In February, FMI and GMA announced a voluntary, industry-led effort to begin reducing the dozen or more different terms currently found on food packages to two consistent phrases—"BEST if used by" for packages where quality is the primary concern and "USE by" for perishable or short shelf-life products. Efforts are already underway to implement this new phrasing.

I would also be remiss if I did not mention one of our proudest resources—the Food Keeper (available as an app or online at *http://www.fmi.org/industry-topics/consumer-affairs/foodkeeper-food-storage-database*)—which was developed as part of an innovative collaboration between FMI, USDA, and Cornell University. The Food Keeper allows consumers to look up individual product categories and receive guidance on storage and preparation of the product to maximize freshness, quality and shelf life.

The health and eating habits of SNAP participants is another area I would like to address. There has been a great deal of thoughtful discussion in the Committee on what SNAP participants are buying and consuming. FMI's President and CEO, Leslie Sarasin, recently testified before the Committee about how SNAP restrictions would affect the grocery industry and our customers. Additionally, last May, Kathy Hanna with the Kroger Company testified about a partnership Kroger had entered with AARP who received a Food Insecurity Nutrition Incentive (FINI) Grant from USDA. The partnership allows Kroger to incentivize SNAP customers to purchase more fresh fruits and vegetables in their stores. We recently received an update that the program is growing strong with weekly coupon redemptions around $2,700. Currently the program is active in seventeen of their stores around the Memphis, TN area and will expand to another eight in the coming months.

Partnerships like these and even individual actions by grocers are the creative incentives that are a win-win for local farmers, supermarket and customers. Another example of a successful and growing FINI partnership is the Double Up Food Bucks program operating in 17 Family Fare/(SpartanNash) stores in Michigan and 51 Price Chopper stores in Kansas City, MO. (article attached).

There is a growing market for grocers to help all of their customers make the right food choices for their families based on both budget and nutrition. An amazing

95% of FMI's members report employing dietitians at the corporate, regional and store level. Just recently local grocer Giant Food Stores announced an expansion of its in-store nutritionists program by adding three more to their staff.

Grocers like Giant employ in-store dietitians and nutritionists to perform one-on-one consultations for customers with specific dietary needs, store tours and community classes to help educate customers on how to make the right selections for their families and prepare the foods they buy. Additionally, a growing number of FMI's members are employing in-store chefs who host cooking demonstrations, help with menu building and provide recipes. These services are provided to all customers regardless of how they pay.

Some have suggested that beyond the incentives, we should look at penalties and restrictions. Thoughts coming from folks on what these penalties or restrictions might look like are all over the map. Some have proposed that penalties should only apply to certain states or counties. Others have suggested that penalties should only apply to certain people. I want to reiterate that the efficiencies and simplicity of the administrative function of SNAP that have achieved easier operation and compliance and a simpler customer experience have happened because of the consistency of a national program. If we put a pilot or a block grant in place in one store or a series of stores or one county, it will require significant IT spending. The impact on the card is also unknown. If a penalty were put in place in one county or stores or state, the customer could simply avoid shopping in the location with the penalties or restrictions in place—penalizing not only the customer, but also the store owner. Another point that some who have suggested a penalty or restriction for purchasing unhealthy foods is that we don't want the penalty to apply to seniors or veterans or the disabled or those with young children. Recent USDA figures indicate that 82% of benefit dollars are currently utilized by those categories of people. If this concept was developed into policy, would some kind of indicator be put on the SNAP cards of those individuals for whom penalties would apply? Would store clerks be charged with enforcement? Would a team of people at USDA be hired to develop and update an electronic product list of those items that would trigger a penalty or restriction and send it to the 260,000 SNAP authorized retailers on a monthly basis? As you can see, an idea that seems relatively simple in theory, would have enormous impact, expense and complexity without a clear benefit.

At FMI, we take the responsibility of providing our customers safe and affordable food and nutrition very seriously. As discussions regarding the future of food and agriculture policy continue, we very much appreciate the opportunity to provide our insight as we learn from our members and our customers.

State-by-State Monthly SNAP Benefit Issuance Schedule

(Current as of February 13, 2017; Food Marketing Institute Research)

State	Day(s) of SNAP Benefit Distribution
Alabama	In August 2013, the state expanded their distribution dates, moving from the 4th to the 18th of the month to the 4th through the 23rd of the month. To assist in the transition, recipients received ½ of their benefit on their original date and ½ on their new date in the month.
Alaska**	The main SNAP issuance is all on the first day of the month. Smaller supplemental issuances for new applicants and late recertifications occur daily throughout the month.
Arizona	SNAP benefits are distributed over the first 13 days of the month by the first letter of the recipients' last name. For example: last names that begin with A or B are distributed on the first day of the month; 2nd day of the month: C and D; *etc.*
Arkansas	Arkansans receive their benefits on these 8 days: 4th, 5th, 8th, 9th, 10th, 11th, 12th or 13th of each month, based on the last number of their [S]ocial [S]ecurity [N]umber.
California	California is different in that each county distributes SNAP to those who qualify. The payments go out to all those who qualify between the 1–10 of the month. Others (*i.e.,* new applicants) get paid throughout the month depending on when they were accepted.
Colorado	Food Stamp benefits are distributed on the first 10 days of the month by the recipient's last digit of their [S]ocial [S]ecurity [N]umber.
Connecticut	SNAP benefits and cash are distributed on the first 3 days of the month, by the first letter of the recipient's last name. (A–F are available on the first; G–N on the second and O–Z are distributed on the third day of the month.)
Delaware	Benefits are made available over 23 days, beginning with the 2nd day of every month, based on the first letter of the client's last name.
District of Columbia	Benefits are made available from the 1st to the 10th of every month, based on the first letter of the client's last name.

State-by-State Monthly SNAP Benefit Issuance Schedule—Continued

(Current as of February 13, 2017; Food Marketing Institute Research)

State	Day(s) of SNAP Benefit Distribution
Florida	All SNAP recipients moved from a 15 day distribution to a 28 day distribution in April 2016. In March 2016, to assist in the new transition, benefits were "split." Recipients received the first ½ of their benefits on their "old" date and received the second ½ of their monthly benefits on what was their "new" date going forward. The ACCESS Florida system assigns benefit availability dates based on the case number recipients received when they became eligible for the SNAP program.
Georgia	In September 2012, SNAP benefits in Georgia expanded from the 5th to the 14th, and then finally to the current 5th to 23rd of each month, distributed every other day.
Hawaii	Benefits are made available on the 3rd and the 5th of every month, based on the first letter of the client's last name.
Idaho	Benefits were previously made available on the first day of every month. (Prior to August 2009, benefits were distributed on 5 consecutive days at the beginning of each month, but this was later moved to 1 day.) In 2014, H.B. 565 was enacted. The bill requires the state Department of Health and Welfare to issue SNAP benefits over the course of 10 consecutive days within a month. Bonus money received from USDA paid for the cost of the change. Currently, and since July 1, 2016, benefits are distributed over the first 10 days of each month based on the last number of the birth year of the recipient; for example, a birthday of 8/25/64 would receive benefits on the 4th day of each month.
Illinois	SNAP benefits are made available on these 12 days of the month: 1st, 3rd, 4th, 7th, 8th, 10th, 11th, 14th, 17th, 19th, 21st, and 23rd of every month, based on a combination of the type of case and the case name.
Indiana	On January 1, 2014, the state implemented an expanded schedule for the distribution of benefits during the fifth through the twenty-third day of each month, to be issued every-other-day, based on the first letter of the recipient's last name. For example: A or B = benefits available on the 5th; first Letter of the Last Name is: C or D = benefits available on the 7th. Previously, benefits were made available on the first 10 calendar days each month. (TANF is issued on the first of the month.)
Iowa	Benefits are made available over the first 10 calendar days of every month, based on the first letter of the client's last name.
Kansas	Benefits are made available over the first 10 calendar days of every month, based on the first letter of the client's last name.
Kentucky	Benefits are made available over the first 19 calendar days of every month, based on the last digit of the client's case number. This was recently expanded from the previous 10 day distribution.
Louisiana	Benefits are made available between the 1st and the 14th of every month, based on the last digit of the client's SSN. (Elderly and disabled benefits are made available between the 1st and the 4th of every month.)
Maine	Benefits are available the 10th to the 14th of every month based on the last digit of the recipient's birthday.
Maryland	In January 2016, the distribution schedule was changed. Benefits are now distributed from the 4th to the 23rd of every month, based on the first three letters of the client's last name. Previously, benefits were distributed from the 6th through the 15th of the month. This was accomplished through a 5 month phase-in.
Massachusetts	Distribution is based on the last digit of each recipient's [S]ocial [S]ecurity [N]umber and distributed over the first 14 days of the month.
Michigan	In January 2011, SNAP moved from a 7 day distribution to the current distribution, which is from the 3rd to the 21st, distributed every-other-day, based on the last digit of the head of household's recipient identification number. For example, clients' numbers ending with 0 will receive food benefits on the 3rd of the month; numbers ending with 1, food benefits will be available on the 5th of the month.
Minnesota	Benefits are staggered over 10 calendar days, beginning on the 4th through the 13th of every month, without regard to weekends or holidays, based on the last digit of the client's case number.
Mississippi	Effective February 2017, benefits are made available from the 4th to the 21st of every month, based on the last two digits of the client's case number. Benefits were previously distributed from the 5th to the 19th (15 days) of every month.
Missouri	Benefits are made available over the first 22 days of every month, based on the client's birth month and last name.
Montana	Benefits are distributed over 5 days by the last number of the recipient's case number, from the 2nd to the 6th of every month.
Nebraska	Nebraska distributes benefits during the first 5 calendar days of the month. The day of distribution is based on the last digit of the [S]ocial [S]ecurity [N]umber.
Nevada **	In Nevada, food stamp benefits are issued on the first day of each month.
New Hampshire **	New Hampshire benefits are available on the 5th of every month.
New Jersey	The monthly SNAP allotment is available over the first 5 days of the month. The day is based on the number in the 7th position of their case number. Some of the cases still receive their benefits based on the assignment at the time the county was converted to EBT. In Warren County, all benefits are made available on the 1st of the month.
New Mexico	Benefits are made available over 20 days every month, based on the last two digits of the SSN.

State-by-State Monthly SNAP Benefit Issuance Schedule—Continued

(Current as of February 13, 2017; Food Marketing Institute Research)

State	Day(s) of SNAP Benefit Distribution
New York	The process is twofold as follows: in New York City, recipients receive their SNAP benefits within the first 13 business days of the month, according to the last digit of their case number, not including Sundays or holidays. The actual dates change from 1 month to the next, so NYC publishes a 6 month schedule showing the exact availability dates. For the remainder of New York State, recipients receive their benefits within the first 9 days of the month, also according to the last digit of their case number, including Sundays and holidays.
North Carolina	Effective July 2011, the state expanded its 10 day distribution schedule. Benefits are now distributed from the 3rd to the 21st of every month, based on the last digit of the primary cardholder's Social Security Number.
North Dakota **	Benefits are made available on the first day of every month.
Ohio	In April 2014, Ohio expanded its SNAP distribution from the first 10 days of the month to the first 20 days of the month, staggered every 2 days. This only affected SNAP recipients who moved from one county to another; recipients who experienced a 1 day or more break in eligibility; and, all new recipients. Recipients who were on SNAP before April 2014 did not see a change.
Oklahoma	Benefits are made available from the 1st to the 10th of every month, based on the last digit of the client's SNAP case number.
Oregon	SNAP is distributed on the first 9 days of the month as such: [S]ocial [S]ecurity [N]umbers ending with "0" or "1" distribute on the 1st day of the month, numbers ending with a "2" are distributed on the 2nd day of the month and so on.
Pennsylvania	Benefits are made available over the first 10 business days of every month (excluding weekends and holidays) based on the last digit of the client's case number.
Rhode Island **	Benefits are made available on the first day of every month.
South Carolina	In 2012, South Carolina expanded from a 9 day to a 19 day issuance. Current recipients stayed within the 9 day distribution, but all new recipients were given a date that expanded into the 19 days.
South Dakota **	Benefits are made available on the 10th day of every month.
Tennessee	In October 2012, Tennessee expanded distribution from 10 to 20 days.
Texas	Benefits are made available over the first 15 days of the month, based on the last digit of the client's SNAP case number.
Utah	Benefits are made available on the 5th, 11th, or 15th of every month, based on the first letter of the client's last name: A–G available on the 5th; H–O available on the 11th; P–Z available on the 15th.
Vermont **	Vermont benefits are available on the first of every month.
Virginia	On September 1, 2012, benefit distribution was moved from 1 day a month to 5 days, and then eventually to the current 1st to the 9th day of every month, based on the last digits of the client's case number.
Washington	Benefits are staggered over the first 10 days of the month based on the last digit of the households' assistance unit number. Weekends and holidays do not affect the schedule. **However, beginning February 1, 2017, an expansion of distribution was fully implemented.** Going forward, it will be the first 20 days of the month.
West Virginia	Benefits are made available over the first 9 days of every month, based on the first letter of the client's last name.
Wisconsin	Benefits are made available over the first 15 days of every month, based on the eighth digit of the client's SSN.
Wyoming	SNAP is distributed on the first 4 days of the month.

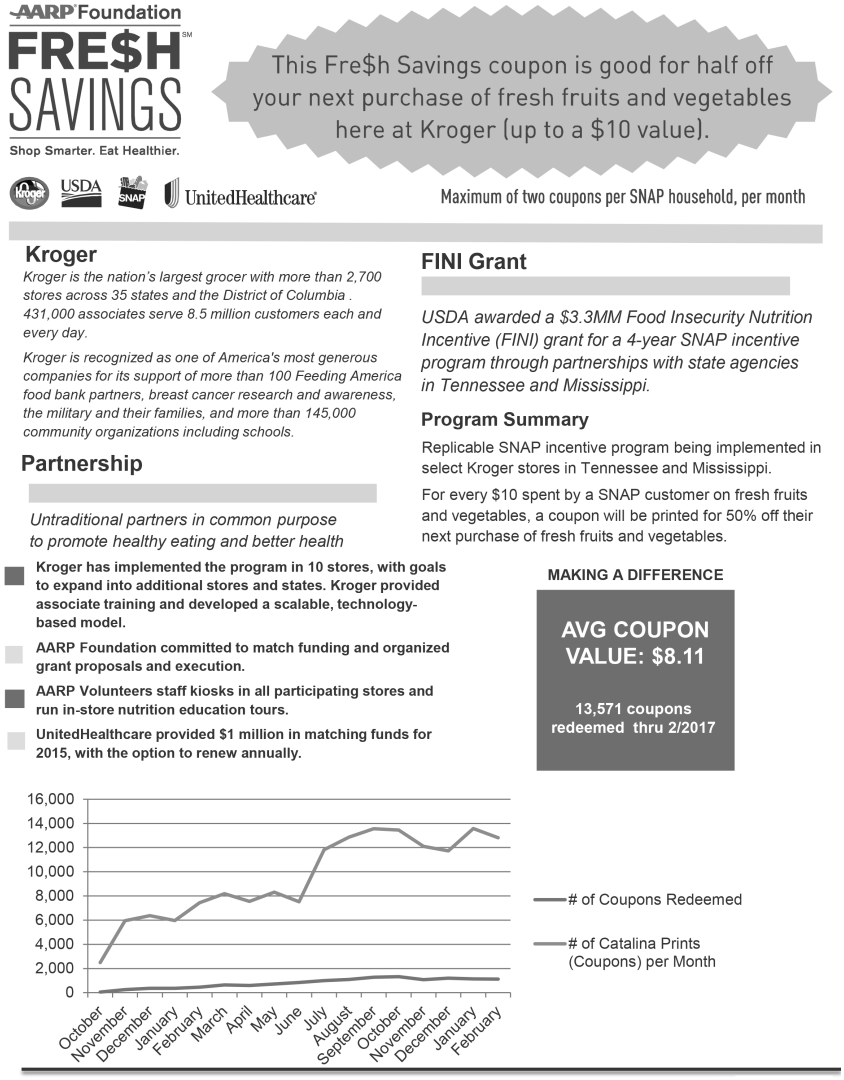
Notes:

** States with asterisks are those that only distribute benefits on 1 day a month. There are seven that still do so. Warren County, New Jersey distributes only 1 day a month, although the rest of the state distributes over 5 days. Also, there are four states that distribute SNAP just 2 or 3 days a month.

Additional Distribution Information:

There is no limit on the number of days for stagger. The only condition in regulation is that no single household's issuance should exceed 40 days *between* issuances.

Currently, benefit recipients may only be issued their benefits one time a month, or within 40 days.



Local Produce Incentive Program Expands

USDA-Backed Double Up Food Bucks Rolls Out to Dozens of Retail Locations

Supermarket News

Mark Hamstra, Mar. 16, 2017



The Double Up Food Bucks program benefits local farmers while enabling low-income consumers to purchase healthy produce.
Photos courtesy of SpartanNash.

An increasing number of food retailers have found that a healthy-eating incentive program that was originally launched at farmers' markets can help drive sales in their stores as well.

The program, called Double Up Food Bucks, offers low-income consumers an incentive to buy local produce and to purchase more fruits and vegetables overall. It has been growing quickly in the grocery sector, with dozens more stores slated to come online around the country this year.

This spring Double Up will be rolled out to 51 Price Chopper stores in the Kansas City, Mo., market, after launching in just a handful of Price Chopper locations in 2015.

"We're big proponents of the program, because it helps our customers, it helps local farmers, and it's good for us, too, so it's a win-win program all around," said Michael Beal, chief operating officer, Ball's Food Stores.



SpartanNash offers Double Up Food Bucks at 17 Family Fare stores in Michigan.

Ball's debuted Double Up Food Bucks in four Kansas City-area Price Chopper locations in 2015 and has since expanded it to 14 stores. This spring, several additional Price Chopper operators in the market are planning to launch the program. In addition, a Whole Foods Market in Overland Park, Kan., and Rollin' Grocer, a

traveling store based out of a trailer, also participate in the program in the Kansas City market.

Double Up Food Bucks was launched by the Ann Arbor, Mich.-based Fair Food Network in five farmers' markets in the Detroit area in 2009. Consumers who receive Supplemental [Nutrition] Assistance Program (SNAP) benefits, formerly known as food stamps, can earn $1 toward the future purchase of any produce item for every $1 they spend on local produce at participating grocery stores.

The program received a boost through $100 million in funding that was included in the 2014 Farm Bill, some of which was awarded last year to local organizations supporting Double Up Food Bucks. The Food Insecurity Nutrition Incentive (FINI) grants program was created to support healthy food incentive programs like Double Up Food Bucks across the country.

"It has energized this field, and incentivized more partners to bring this program into their communities," said Emilie Engelhard, communications director at the Fair Food Network, of the FINI program.

Beal said the Double Up Food Bucks program has driven up sales of local produce in double digit percentages at Ball's Price Chopper stores and has increased transactions among SNAP customers.

The local organization driving the program in the Kansas City area, called Double Up Heartland, has a goal of expanding the program to 117 retail locations and 68 farmers' markets in the region by 2019, according to Engelhard.

In addition to Kansas and Missouri, the Double Up Food Bucks program has also been rolled out to grocery stores in Michigan, Arkansas, New York, Colorado and New Mexico, and just last month was introduced in California. The program launched in the San Jose, Calif., market in three retail locations—two Arteaga's Food Centers and one location of Food Bowl 99.

This summer it is slated to debut at Schnuck Markets in the St Louis, Mo., area, according to the Double Up Heartland website.

"We really do see grocery as being an important next tier for incentive work," said Engelhard.



Retail banner D&W Fresh Market reflects SpartanNash's commitment to fresh.

SpartanNash, based in Grand Rapids, Mich., in 2014 became the first major retailer to offer Double Up Food Bucks in multiple stores when it launched in two Family Fare supermarkets in Michigan. The program was expanded to five Family Fare locations in 2015, and last year it expanded the rollout to 17 Family Fare stores in Michigan.

In 2016, 80% of points earned toward produce were redeemed, SpartanNash said. The company said it was in the process of "significantly expanding its program for 2017."

"I love that we can offer the Double Up Food Bucks program at our store for the fourth year in a row," said Renee Harris, store director of the Family Fare Supermarket in Battle Creek, Mich. "Through the program, we can support local products while helping our customers stretch their food dollars and encourage healthier eating."

SpartanNash said the program exemplifies its commitment to corporate responsibility, including environmental sustainability and social responsibility.

Fair Food Network said both Ball's Food Stores and SpartanNash have been important to the growth of the program at retail.

"The partnership with SpartanNash significantly raised the profile of the work within the grocery sector at large," said Oran Hesterman, President and CEO of Fair Food Network. "SpartanNash understood early on the power of this work as a means to better serve its customers and the broader community."

SpartanNash and Ball's Food Stores both have long had a commitment to local produce, and SpartanNash recently expanded its capabilities in this area with the acquisition of Caito Foods Service, a distributor of fruits, vegetables and prepared foods.

"We are excited to join forces with SpartanNash and increase our footprint in providing local fresh products," Tony Mitchell, VP of sales and procurement at Caito Foods, told SN. "This acquisition will serve to enhance our reach to a greater number of regional family farms and consumers."

He said consumer interest in local product, which is being driven in large part by Millennials, continues to gain strength.

"We understand that customers have a growing appetite for locally grown items, and SpartanNash has an equally strong appetite for supporting local farmers," said Mitchell.

Beal of Ball's Food Stores said he continues to see growth in demand for local produce as well.

"Our consumers are telling us they want fresh, and its almost to the point where there's a perception by consumers that it's as important as organic," he said, noting that many of the local farmers who supply Ball's locations do farm organically.

"Local farmers want to get their goods to market, and we have been doing that with local farmers for 18 or 20 years," said Beal. "This is just another benefit of working with local farmers, and we continue to help them grow that business."

Source URL: *http://www.supermarketnews.com/produce-floral/local-produce-incentive-program-expands*.

The CHAIRMAN. Thank you for your testimony, Ms. Hatcher. The chair would like to remind Members that they will be recognized for questioning in order of seniority for Members who were here at the start of the hearing. After that, Members will be recognized in order of arrival. I appreciate Members' understanding.

We are joined in this hearing by the Ranking Member of the full Agriculture Committee, so I am pleased to recognize Mr. Peterson for 5 minutes of questioning.

OPENING STATEMENT OF HON. COLLIN C. PETERSON, A REPRESENTATIVE IN CONGRESS FROM MINNESOTA

Mr. PETERSON. Thank you, Mr. Chairman. I won't take 5 minutes, but I appreciate you holding this hearing. I appreciate the witness' testimony.

This hearing is entitled, *The Next Farm Bill: The Future of SNAP*. Well, I believe that the future of SNAP is in the farm bill, and I think that everybody knows by now that I doubt if it is not in the farm bill, then we won't even have a farm bill in the future.

I know there are other Members of the Committee and other Members of the House and Senate who agree with that assessment, but I worry that the House leadership isn't on the same page, and I don't want to find us in another situation where leadership steps in and mucks this up by adding unrealistic work requirements or some other ideological policy that would blow up the whole bill, similar to what happened in 2013.

The Committee's review of SNAP covered a lot of issues. We heard about the success of the program. We also heard some ways that we may be able to improve performance. I hope that we can

keep these facts in mind and find some common ground to make sure SNAP is as effective as possible, and that we maintain this effective program.

Again, I am not quite sure where SNAP policy is headed, but the farm bill is where it needs to stay. I want to thank the Chairman for the time, and I yield back the balance of my time.

The CHAIRMAN. The gentleman yields back.

I will now take the liberty of 5 minutes of questioning.

First of all, just thank you to all five of our witnesses for being here today and the experience you are contributing to a great conversation. We don't get the good public policy without good information, and you are serving a tremendous role here. It is appreciated.

Mr. Arthur, we have seen many food banks evolve from simply distributing food to providing more comprehensive anti-hunger programming, and social service outreach to their local communities. In your testimony, you speak of both the food distribution and SNAP application assistance services that the Central Pennsylvania Food Bank provides. How do you work to connect families to these and other programs such as SNAP, or employment and training that may be able to offer them longer-term support and a path towards self sufficiency? And can you reflect a little bit on how you work collaboratively with partners and other local organizations in your community to provide case management and other types of supportive services?

Mr. ARTHUR. Thank you, Mr. Chairman. I will take that in a few parts.

First of all, we do direct SNAP outreach now as part of our overall food assistance services. And just for the Subcommittee, in our central Pennsylvania territory, if you add up SNAP and the other Federal food assistance programs, WIC, The Emergency Food Assistance Program, all of those, they are about ten times larger in the amount of food that is distributed in our service territory, ten to one. And we distributed almost 50 million pounds of food last year, that is to give you an idea of the scale here.

The second part of that, we do SNAP outreach because we think it is a very efficient way to serve, and as I noted in my written testimony, we are actually on the low end participation rates for folks that might be eligible for SNAP in central Pennsylvania, lower than the national average, lower than the state average. We decided that something needed to be done, that we needed to be in that type of work, and we actually right now support that on just privately funded dollars, no tax dollars. We believe that is a very important way to serve.

With respect to other services, we are proud that many of our partners do very holistic services right in their communities and their neighborhoods, community action programs, Salvation Army programs, of course, many faith-based organizations, and others that actually do, in addition to food service, do direct assistance with job searches, training, *et cetera.* We feel that we are a better partner if we can take away all of the food assistance costs and work, and then lend our shoulder to their work to help people get connected to jobs. While we don't directly create a lot of jobs—al-

though I have 100 employees, we do help others that do that. We believe that is very important.

Probably the newest work that we do is with healthcare. We are working with some of the primary healthcare organizations in central Pennsylvania. Names you might know would be like Penn State Hershey Medical would be a big one, Geisinger Health Systems. We work with them at the intersection of healthy eating and good health outcomes, and there are a lot of details in the programs that we do, but it is very important that we do that work as well. And we also, as Chairman Thompson has seen, we actually have teaching kitchens and we do a very robust curricula around helping our member agencies and their clients learn better habits on the whole food chain. We are very proud of that, and last year we did over 1,600 hours of training like that.

I am very proud that we are part of the broad spectrum of not only making sure people are fed, but that they can sustain their own lives. We are working to end hunger, not just to feed people.

Thank you.

The CHAIRMAN. Thank you.

Mr. Protas, in your testimony, and I appreciate your testimony. You really kind of touched on the diversity of individuals that are within that able-bodied adults without dependents classification or label. But in time limits and subsequent employment and training programs, what do you see is the key to engaging individuals? How do you do that so to better engage recipients so you ensure that they are able to reach their full potential and progress in their pathway out of poverty?

Mr. PROTAS. Thanks for the question.

It is important that there are opportunities available to these ABAWDs. In many locations where an individual may be facing a time limit, there simply aren't enough job opportunities or available job training slots, so to have the expectation for somebody to participate in a job training program that isn't there or to find a job that is not readily available or accessible for them in the community where they live is an unfair expectation. Investments should be made to make sure that we have job training opportunities that are readily available that have case management that will effectively help that person along that path, and help that person get back to work.

We heard in previous hearings testimony from other witnesses about the importance of that individualized case management, and that is just a critical component that more investment is needed in.

The CHAIRMAN. Thank you. My time has expired. I am pleased to recognize the Ranking Member for 5 minutes of questioning.

Mr. MCGOVERN. Well thank you, Mr. Chairman. I want to applaud the opening statement of our Ranking Member, Mr. Peterson, as you can tell, some of us are just a little anxious about where we might be going as we approach the farm bill with regards to SNAP. And part of it is because of some statements that we have seen in the press about additional requirements and potential changes that make us a little bit uneasy, but we need to be clear-eyed as we move forward and make sure that whatever we are contemplating on doing, that it is actually the right thing and it is based on reality and not based on perception. Because some of the

perception with regard to people who are on SNAP is not reflective of real life. There are many people on this program who work and they earn so little that they still qualify for the benefit. We had 20 hearings and this is the 20th, and the Majority actually put together a report, without any input from the Minority, so I would like to ask unanimous consent to insert in the record a letter I sent to Chairman Conaway giving my side of the story on these 19 hearings.

The CHAIRMAN. Without objection.

[The information referred to is located on p. 964.]

Mr. MCGOVERN. And again, the latest target seems to be these able-bodied adults without dependents, and again, it is a very complicated population.

Ms. Dean, in your testimony, you expressed concern about the loss of benefits for vulnerable ABAWD populations. Can you identify for us what some of the challenges might be for people who can't meet the work requirements to avoid the current 3 month time limit, and what do you think about suggestions that the waiver should be completely eliminated, or that we should reduce the amount of time ABAWDs can spend on SNAP?

Ms. DEAN. I think that is a very ill-advised policy approach, to withdraw more food assistance from this desperately poor group. I don't think it is going to improve their well-being or the well-being of the communities that they live in.

One of the mistakes we make about this group is thinking that they are some kind of unified demographic solely by the fact of their age, 18 through 49, and they are without children and they are not working 20 hours a week. That is how the law groups them together, but of course, in life, they are different kinds of people. Mr. Protas' testimony pulled out some terrific examples of folks who could struggle. An 18 year old who just ages out of foster care with no family support system and there is no more state support to help this individual find work. An ex-offender, someone who has just left prison is hopefully getting help for job training, but the reality is the job market for ex-offenders is just not the same as everyone else. And then also, the group overall tends to be working in very low wage, low skill jobs that have a higher unemployment rate than the overall unemployment rate, and so our expectation that when they lose a job, or again, fall below 20 hours a week, working 18 hours a week is not enough. If they lose a couple of shifts, it may take them more than what is left on their 90 day clock to raise those hours again. There are a lot of reasons why they struggle.

Mr. MCGOVERN. And Mr. Protas, I appreciate your comments about ABAWDs, and I am concerned about this population, and I am concerned about how we characterize them here in Congress. Oftentimes they are characterized as people who just don't want to work, or they are lazy, or they are trying to take advantage of the system, when in my experience, from what I have been able to tell, again, that is not an accurate picture. I would like to hear your response to how do the characterizations of ABAWDs distract from our goal of ending hunger, and how can these critical depictions discourage under-served populations like veterans from getting the help that they so desperately need?

Mr. PROTAS. Thank you for the question.

We regularly encounter instances where misinformation and negative associations about SNAP make those who are struggling reluctant to seek out help, including, as you said, seniors, veterans, and surprisingly, currently serving military families. And I want to just express thanks to Chairman Thompson and to you, Ranking Member McGovern, for your support of the Military Hunger Prevention Act. In our work with military families, we know that many of them are very reluctant to come for help and to apply for SNAP because of the negative associations with the program, and that comes from public discussions from things that are out there in the media. And when people are struggling and need that help and are reluctant to participate in a program and to apply for a program, it hurts. It hurts their families, it hurts the kids in those families. And so this negative rhetoric has real consequences, and it really needs to stop.

Mr. MCGOVERN. That is all my time. Thank you.

The CHAIRMAN. I thank the gentleman.

I am now pleased to recognize the gentleman from Arkansas, Mr. Crawford, for 5 minutes of questioning.

Mr. CRAWFORD. Thank you, Mr. Chairman. Thank you all for being here today.

Ms. Hatcher, I want to start with some technology issues. Since the program's inception, we know that technology has moved at an exponential pace, and some of the changes that have taken place have moved us more to an electronic-based type of administration of the program. What are some of the challenges that you see that retailers have to manage with regard to maintaining pace with that technology, and how does that affect, ultimately, the beneficiaries?

Ms. HATCHER. We have certainly benefitted by moving the program finally to 100 percent electronic. In the days you were talking about, with paper coupons there was a lot more opportunity for fraud. What we are looking at now is taking the next step and using some of the digital and online resources to be able to offer those to SNAP customers as well. I know that USDA has put in place a pilot project for seven states and seven stores, but I guess what I am saying is that we can go beyond that. Many things are moving to online and we need to really get in at the ground level at this to make sure that we are moving the technology along with SNAP in the right direction.

Mr. CRAWFORD. Do you think the agencies are keeping pace with regard to that technology? Are there some barriers between the retailer and the administrators, or are we staying in close contact or are we having some challenges there?

Ms. HATCHER. I definitely think we are staying in close contact. There are certainly additional opportunities, and we want to make sure that we are not doing something that is going to move us in the wrong direction.

One of the things we are trying to do is to encourage more EBT contractors to enter the space, because with more competition and more contractors, you get more ideas and more innovation. We just had one recent addition that folks are pretty excited about to add to the folks that are out there. That is one of the things that we

want to help to do is to get that information out to other businesses that might be interested in entering this environment to move down with additional ideas.

Mr. CRAWFORD. One of the topics that comes up invariably—we are talking about food deserts and we are talking about nutrition programs and things of that nature, and ironically, this was a topic that we had earlier in a hearing today is one of the most productive rural or agricultural districts in the country, mine, and we have problems with access to healthy food.

In previous hearings, we have talked about possibly grocery stores serving as essentially distributors and going out into rural areas that are relying on convenience stores almost exclusively for their nutrition. Can you talk about what a good model might be to help incentivize grocers to sort of act as those distributors to small rural communities that don't otherwise have access to healthy food? Because healthy food choices are also a part of the problem, and when all you have is access to prepared foods that aren't maybe necessarily the greatest in health benefit?

Ms. HATCHER. No, I think that is a great point. We are starting to see a lot of innovation in that space in a community where it may not make sense to build a freestanding grocery store in a particular area, we have seen more mobile vans utilizing libraries and other community centers, as well as, like you mentioned, convenience stores. More delivery models where you could deliver some of those products rather than having a freestanding store there. There are a lot of potential opportunities, going forward, but the vans have probably had a lot of promise where you have a store that has a van that's going in a particular area or distributing to another location.

Mr. CRAWFORD. I am sure technology enhances that or facilitates that to a large degree. Are you aware of any kind of tax incentives that can be utilized to incentivize a retailer to participate in that space?

Ms. HATCHER. I am not aware of any tax incentives right now on that, but certainly will look into it and see if there is anything anybody has tapped into, because that might be a really good opportunity.

Mr. CRAWFORD. Thank you, I appreciate it, and I yield back.

The CHAIRMAN. The gentleman yields back. I am pleased to recognize the gentlelady from North Carolina, Ms. Adams, for 5 minutes of questioning.

Ms. ADAMS. Thank you, Mr. Chairman, and Ranking Member McGovern, thank you. Thank you to the witnesses for your testimony.

In the 12th District of North Carolina that I represent, there are some parts of Charlotte that are enjoying economic growth with real estate prices that rival those here in Washington, D.C. However, many neighborhoods throughout the city have not been able to participate in the new economic opportunities that exist just a few miles down the road. Whole communities have been left behind by how Charlotte has grown over the last several decades. And so as the city works to bring more equitable development and opportunities to everyone in the city, we need the SNAP program more

than ever to help families put food on the table from one month to the next.

Ms. Dean, last year the State of North Carolina decided to stop all waivers for SNAP work requirements for able-bodied adults. Can you spell out how imposing SNAP work requirements on able-bodied adults risks states kicking people off the program who are still eligible to participate?

Ms. DEAN. Thank you for that question. Yes, the state legislature prohibited the governor from ever seeking a waiver again in the future, which struck me as really short-sighted with respect to policy, particularly in a state, for example, that experiences so many hurricanes as natural disasters, wanting the ability to respond to individuals, it seems to me you would want that flexibility.

The North Carolina Budget and Tax Policy Center did a terrific analysis of the states' decision to cut off all waivers and therefore impose the time limit, and they actually looked at some of the rural counties in North Carolina and compared the number of available jobs to the number of individuals who were going to be cut off, and the number being cut off because they weren't working 20 hours a week exceeded the number of available jobs collected by the governor. And of course, available jobs doesn't mean jobs that these individuals are qualified for.

So it is shifting an enormous burden to the charitable sector to step in and help feed these individuals and it undermines their ability to work when they spend most of their time looking for how to feed themselves. It was a very unfortunate decision.

Ms. ADAMS. Yes, thank you very much. I served 20 years in the North Carolina House, and we haven't made the best decisions all the time.

Ms. HATCHER. Congresswoman Adams, I wanted to call out to Congressman Evans' work with one of our members in Philadelphia on this issue with ex-offenders and finding positions, jobs for them through Uplift Solutions. There are some public-private partnerships that can be impactful.

Ms. ADAMS. Thank you very much.

As a follow up, Ms. Dean, we have discussed in previous hearings that many states do not offer a standard medical expense deduction for seniors and the disabled to document their true cost of living when they apply or recertify for SNAP benefits. In states that do offer standard medical deductions, have you seen more seniors claiming the deduction in order to increase their monthly SNAP benefits?

Ms. DEAN. We have, and your bill offers a terrific policy idea to make it easier for states to offer the medical expense deduction, which basically targets more food assistance to seniors and people with disabilities with significant out of pocket medical expenses. It is an under-utilized feature of the program, and sets up a dynamic between paying for drugs and other health needs and food. SNAP has a feature to help seniors and people with disabilities, and we want to see more states take advantage of it.

Ms. ADAMS. Okay, and so you have documented through the organization that these benefits have consistently not kept pace with rising food costs, so how would switching to the Low Cost Food

Plan permit SNAP recipients to more adequately put food on the table?

Ms. DEAN. Well the Low Cost Food Plan is about 30 percent higher than the USDA's estimate of a Thrifty Food Plan, so it would provide additional food benefits. Just to be clear, SNAP benefits do keep pace with food inflation, but what USDA hasn't been able to do is reevaluate the Thrifty Food Plan in light of our changing understanding of what makes a healthy diet. Access to fresh produce, shifting away from extreme assumptions about a SNAP household's getting their protein from milk and dried beans as opposed to chicken and cheese. It is just out of sync with what we are all buying and what the cost of a basic healthy diet is.

Ms. ADAMS. Thanks very much. Mr. Chairman, I am out of time.

The CHAIRMAN. I thank the gentlelady. I am now pleased to recognize the gentleman from Kansas, Mr. Marshall, for 5 minutes of questioning.

Mr. MARSHALL. Thank you so much.

My first question is for Mr. Sykes. I am always interested in efficiency. Whenever I am responsible for other people's money, I try to take even better care of it, so talk a little bit about efficiency. I read somewhere 93 percent is a number. Has that been a pretty good number the past 20 years, or where have we been up and down——

Mr. SYKES. I presume you are talking about payment accuracy at this point?

Mr. MARSHALL. No, efficiency.

Mr. SYKES. I am sure that goes to——

Mr. MARSHALL. If we give you a dollar, how much of it is actually being spent on food by the person?

Mr. SYKES. Well, virtually all of it is being spent on food by the person because, other than small limitations on what can be purchased, the interesting thing is we have reached over 83 percent of eligible households, which is an extraordinarily high percentage of eligibles. And even more importantly, about 90+ percent of all possible benefits are being issued, which means that some people that may be left out of the program——

Mr. MARSHALL. No, I guess that's a different efficiency. The efficiency I am wondering is if we are giving a dollar to the SNAP program, how much of that is being spent on food?

Ms. DEAN. Ninety-three percent, you got it right. The rest is on admin and programs like employment and training.

Mr. MARSHALL. And what has that been like the past 20 years? Is that a good number?

Ms. DEAN. Yes, it has eked up just a bit, but that is about the level. It has been around 93, 95 percent for a while.

Mr. MARSHALL. Okay. My next question is for Ms. Dean. Ms. Dean, I am an obstetrician. WIC has been a very, very successful program for my patients, pregnant moms and breastfeeding moms, and the great thing about WIC, when my patients touch those people, the whole family touches them, and they are in the same building where maybe they get flu shots and other public healthcare needs. Explain to me how WIC works with SNAP and opportunities for working with each other.

Ms. DEAN. I love the WIC program too. It is an incredible evidence-based program that hits infants and toddlers right at the moment that they most need it.

WIC is a prescription benefit, though, that provides supplemental foods and assumes that the household is also getting SNAP or has enough income to be able to buy a basic diet. Whereas SNAP is available to purchase any or all foods, WIC is prescriptive and limited, that is a big difference.

I do think, and I really hope that the Committee takes a look at ensuring that all SNAP households with a pregnant or post-*partum* mom, infants and toddlers also take advantage of WIC. That is pretty true for infants, but it is not true of toddlers through the age of 4, and I think that would be an enormous and important benefit boost at that critical stage of life. And even just measuring and ranking states could improve performance there.

Mr. MARSHALL. Okay, I yield back.

The CHAIRMAN. The gentleman yields back. At 3:02, votes have been called on the House floor. I apologize. The Committee will stand in recess until they have been concluded. I encourage all Members to return promptly so that we can reconvene at that time after the conclusion of votes.

[Recess.]

The CHAIRMAN. This Committee on Agriculture Nutrition Subcommittee will reconvene. My apologies for the recess. Votes have a way of getting in the way of things around here.

I am pleased to recognize my good friend and colleague from Pennsylvania, Mr. Evans, for 5 minutes of questioning.

Mr. EVANS. Thank you, Mr. Chairman.

Ms. Dean, can you speak to the data that does not support the view that the social safety net is discouraging labor for SNAP?

Ms. DEAN. I am sorry?

Mr. EVANS. The question is can you speak to the data that does not support the view that the social safety net is discouraging labor for SNAP? In other words, you——

Ms. DEAN. You mean that participation in public benefits isn't discouraging labor force participation?

Mr. EVANS. Right.

Ms. DEAN. Yes, there have been a number of studies that looked at whether participation in benefits such as Medicaid, SNAP, other programs discourages engagement in labor force participation.

Mr. EVANS. Right.

Ms. DEAN. And by and large, there is really no evidence to suggest that it does dampen people's interest in working. There is an enormous amount of labor force participation amongst people in poverty. That is, in fact, how they get by. There is effectively no cash assistance available. Work is the way for everyone in this country, including people in poverty.

Mr. EVANS. Mr. Arthur, I heard you in your testimony talk about food banks and SNAP in terms of really addressing food insecurity, which is ultimately an objective that we are working towards. Maybe if you had your crystal ball, where do you think we are relative to addressing food insecurity, even with that strategy of food banks and the policy around SNAP. Can you speak to that a little bit?

Mr. ARTHUR. I would say right now I am very optimistic if we can prevent damage to the programs. In our work in central Pennsylvania, we actually set a bold goal of actually closing the meal gap by 2025, and we are well along in that work, meaning make sure that everyone in need has three healthy meals a day, and our numbers tell us we are getting close to 70 percent of closing that gap. But that gap implies that the nutrition programs are going to remain in place, and we are taking care of the folks who either are still slipping through or need a little extra help. That dynamic, that equation can change radically if there is any harm done to SNAP or other nutrition programs.

The work that we do with our partners, it is very collaborative, and across the board there is significant work being done to not only feed people, but to help them be more sustainable, help themselves be more sustainable. Do no harm would be our strong recommendation to this Committee for SNAP. Do no harm.

I would also, Representative Evans, like to take a moment. I need to thank some folks really quick. We are 80 percent privately funded, as I put in our written testimony. That 80 percent comes from over 300 food donors, commercial entities, farms, *et cetera,* that produce that 50 million pounds that I mentioned in my testimony. And we have over 25,000 monetary donors that make up the 80 percent of our funding that is from private donation. We are part of that public-private partnership that works together to make sure the safety net is sealed, that we are reaching everybody. And I have several folks at this table that are donors or represent donors.

I, actually, am optimistic if we can hold the line in SNAP and maybe make some improvements that we can continue to close the meal gap and keep working on actually ending hunger, which as we all know, is related to jobs.

Mr. EVANS. Last question to Ms. Hatcher. Can you talk a little bit about your retail partnership, because obviously SNAP has an economic impact on retailers. Can you talk a little bit about that?

Ms. HATCHER. Thank you, Congressman Evans.

Absolutely SNAP has an economic impact. What we see too now is that our customers are our customers, and more than 50 percent of our customers are using multiple tender, so multiple forms of payment in one transaction at the store. A person that is using SNAP benefits is also using cash or a debit card or another form of payment, so it truly is a supplement, which is why it is so important that this electronic system stay in place and that we maintain the efficiency that we have in the program right now.

Mr. EVANS. Thank you, Mr. Chairman. I yield back the balance of my time.

The CHAIRMAN. The gentleman yields back. I am now pleased to recognize the gentleman from New York, Mr. Faso, for 5 minutes.

Mr. FASO. Thank you, Mr. Chairman. I appreciate the witnesses coming here today, and particularly I want to recognize my friend, Rus Sykes, who has been working in this field for many years, and he and I have collaborated on a number of things.

One of the things that I raised with Mr. Sykes and Ms. Dean before we had the vote was there has been some discussion in the Committee today about the work requirements. And I was won-

dering if you could just provide us with some data as to how this is working. You mentioned there are some 30+ states that are imposing work requirements now. Is that through waivers where they get that permission, or is that just the statutory authorization?

Ms. DEAN. Every state has a SNAP employment and training program, and they have a lot of flexibility on whether they compel participation in the program and sanction food assistance for individuals who refuse to participate or fail to participate. Other states take a different approach, which would be perhaps a more workforce oriented. They offer skills based training or programs that could help remove barriers.

Mr. Costa represents where there is an incredible program in Fresno that he can speak to you in great detail that does barrier removal for individuals with child care issues, felony convictions, all of those. There is a lot of diversity in approaches. What Rus and I were talking about with you is we would like to see states have the ability to ramp this up and work with what is effective, and there are some terrific demos in place that were authorized by the last farm bill that are going to teach us a lot about what will work.

Mr. SYKES. Yes, I agree with everything Stacy said. One of the things, we do gold standard research in the pilot programs that we implemented in the last farm bill. We are not going to really have any final data on them for about 2 or 3 more years that are being studied by MDRC and Mathematica. But I am sure there are replicable findings in them already, and they are a mixture of voluntary and mandatory programs. They involve, a number of them, employers which is really key, because in this modern era, if the employers aren't involved, then they want people with the soft skills to come to work, but if they are not involved in developing the actual job curricula that has to do with what they need as far as an employer, I don't think they will succeed as much.

In fairness, USDA has begun to take the work programs far more seriously. They had a very small staff devoted to it for years. Now they have a person responsible for work programs in every region and a core staff here nationally. I expect to see much more thoughtful application of these programs in the future, and hopefully more success that is measureable as far as getting people off the rolls, not because we sanction them for failing, as we should, but because we help them get jobs that make them no longer eligible and more sufficient.

Mr. FASO. Well thank you, and I am wondering if there are any particular states or localities that have programs, you mentioned Fresno, where they seem to be doing a particularly good job of coordinating work and getting people actually into employment?

Mr. SYKES. Yes, one of the ones that is constantly touted, and rightfully so, is the State of Washington. In fact, our APHSA board chair does much of the work operating that program in the State of Washington. They have a huge employer pipeline network. They are really focusing on SNAP E&T and they are also trying to intertwine that work with their WIOA programs and with the TANF program, and I know Stacy, you have made examples of others as well.

Ms. DEAN. Yes, I will throw in Iowa and Connecticut as examples of states that work with the community college system to promote technical and skills based training.

Mr. FASO. Good. And Mr. Sykes, tell me a little parochially here about New York.

Mr. SYKES. Well, I mean, New York has been the largest user of SNAP E&T funds for many years. SNAP E&T funds come in two forms. There is 100 percent share Federal money, which is capped at $90 million or thereabouts, and then there is a more open-ended stream of 50/50 match money where the state can put up its own money and draw down Federal money. And New York has done a fairly good job, I would say. One of the ones that looks very well when you think about how seriously they take the enterprise, and you know, my ex-colleague and very good friend who is the Executive Deputy at OTDA now, Barbara Gwinn, is someone you should really speak to about that.

One of the things we think is we would like to see the resources expanded a bit for employment and training, particularly on the 100 percent side and I think that would help more states take it more seriously. USDA needs to be a little more relaxed about what would count as 50/50 match requirements. It is often very rigid as to what you can use as state match and what kind of services you can offer through the program.

Mr. FASO. Thank you very much. Mr. Chairman, I yield back.

The CHAIRMAN. The gentleman yields back. I am pleased to recognize the gentleman from California, Mr. Panetta, for 5 minutes of questioning.

Mr. PANETTA. Thank you, Mr. Chairman. Ladies and gentlemen, thank you very much for being here. Your preparation, your participation, and your time, I appreciate that.

Let's talk about fresh fruits and vegetables, something I like to bring up quite often based on where I hail from, the Salinas Valley, otherwise known as my colleagues are going to get sick of me saying, the salad bowl of the world.

It was mentioned earlier by my colleague from Arkansas, Mr. Crawford, talking about the challenges of getting people on SNAP to consume more fruits and vegetables. And one of the responses was a mobile van in rural areas. Any other ideas that you can come up with to help ensure that people in rural areas on the SNAP program can have more opportunities to consume these items? I mean, we have a number of field workers who are out there picking fruits and vegetables every day, hours upon hours a day, yet they go home and they don't eat fruits and vegetables, and that is an issue. And so I just wondered if there are any other ideas that you had?

Ms. DEAN. Let me just jump in on that quickly. First, I would like to say, my first job was working for your father at OMB, it was a great pleasure, so shout out for him.

Mr. PANETTA. Thank you.

Ms. DEAN. The main issue is whether the individuals have the resources to purchase fresh fruits and vegetables, which it may not be that they are expensive in the salad bowl of the country, but in other parts of the country, they can be quite expensive and out of reach. And that is why some of us today talked about improving

the adequacy of the benefits so that those are more affordable for folks.

It is a separate issue about whether retailers have the stock available, and it is a serious concern as to whether, even with the resources, are they there for participants. But most participants do shop at major grocery stores or superstores, and would have access to them.

Mr. SYKES. We also have seen expansion of some Healthy Incentives Pilot Programs that help people purchase fruits and vegetables, and increasingly, farmers' markets, more and more the EBT programs—the portable ones have penetrated that venue, particularly in rural areas, at least that makes things a bit more accessible.

Mr. PANETTA. Great, great.

Ms. HATCHER. Congressman, just a couple of thoughts on the supermarket side. Certainly there is the access piece, availability of dollars to purchase. Some of the things that are ongoing right now in terms of teaching folks, exposing them to new fruits and vegetables, teaching them how to cook them. We are seeing a lot more with dieticians in store. We now have 95 percent of our stores with dieticians. We are seeing a lot more cooking demos and chefs in store, and you are really going to start to see behavior, folks becoming more comfortable with those different items.

And then you are talking about the other point, which is the delivery point in rural areas of how do we get those items directly to the customer, and we are seeing a lot more in addition to the vans, the folks who are doing more online shopping now too. We are seeing a lot of different possibilities to make sure that, rather than if a community can't support a full scale supermarket, is there an area, a library, a community center, or a church where they can drop off that fresh produce on a regular basis at a specific time. The mobile vans, like I mentioned, that we are seeing, there are a lot of possibilities, going forward. But there are certain segments; first, we need to teach folks, to make them available, make it affordable, but also then teach them how to cook these items and how to make them delicious.

Mr. PANETTA. Understood.

Mr. PROTAS. Just a quick note about the incentive programs. We have seen really positive evidence about changes in behavior from the FINI grants, the Senior Farmers' Market Nutrition Program. There are some exciting pilots for Veteran Farmers Market Nutrition Programs. Maybe there is a possibility of a pilot program that would serve rural needs. We need you to look more at the opportunities around those investments.

Mr. ARTHUR. Representative, you mentioned the rural areas, and we serve rural areas, but I look over to the great work that has been done in the Philadelphia area which provides a great example to rural areas. We are learning from The Food Trust. We are learning from Philabundance, which is a food bank, and they are fair and square market. And we are also learning from Brown's ShopRites over in the Philadelphia market. Some of that work translates into rural areas, and particularly around smaller stores, smaller format stores. Many corner store markets in Philadelphia

now have fresh fruits and vegetables because of the great work by The Food Trust and the Fresh Food Financing Initiative.

Mr. PANETTA. Outstanding. Thank you. I yield back my time.

The CHAIRMAN. I thank the gentleman. The gentleman from California, Mr. Costa, is not a Member of the Subcommittee, but has joined us today. I have consulted with the Ranking Member, and we are pleased to welcome him to join in the questioning of witnesses. Mr. Costa, you are recognized for 5 minutes of questioning.

Mr. COSTA. Thank you very much, Mr. Chairman and Members of the Subcommittee. This is an important issue. We have had many hearings on it, of course. But the nutrition programs are a key component of the farm bill, as we all know, and obviously, a lot of discussion not only today, but in previous hearings has been around the notion of how we make it more effective. Obviously when we looked at the trim lines between 2008 that were stated and present, and the amount of beneficiaries obviously had a lot to do with the way the Great Recession impacted so many communities throughout our country. And obviously there was a great deal of need.

But we also, of course, want to provide opportunities for people to gain their independence, and there has been a lot that has been discussed about able-bodied adults without dependents and there has been a lot of discussion on how the safety net works during economically tough times.

I would like to focus my comments and maybe Stacy Dean, you are the person to talk to, because the notion of training programs and getting people back to an opportunity to gain full employment and be able to be on their own two feet is discussed a lot about here. But these training programs that have taken place around the country have varying degrees of success, and they cost money. We need to be aware of that, and if this farm bill were willing to expand those training programs, we have to be willing to put our money where our mouth is to make them effective.

The Bridge Academy is one of those programs, and I have been working with Pete Weber and a lot of other folks, and we have a very significant success rate in terms of those that have been able to benefit from it.

Ms. Dean, you have gotten a chance to come out there it was selected as one of the ten pilot programs, the pathway to self reliance all told for more than 80 percent of those enrolled have gained employment. More than 80 percent of them have retained their employment after a year, and about 30 percent have achieved full self reliance within 18 months. And this is has affected a combination of 1,200 families and 2,300 families between 2016 and 2018. This deals with a whole lot of efforts that include financial literacy, English classes, and digital training.

How do we best expand upon this, Ms. Dean, since you had a chance to get out there? The ABC approach, which is first, to get a job; second, to get a better job; and then third, to get a career?

Ms. DEAN. Thank you, Mr. Costa. You stepped out the three or four times I mentioned and highlighted the Bridge Academy, because it is a terrific program.

Mr. COSTA. But I came back.

Ms. DEAN. You did, and as expected, you asked about this terrific example.

So the number one way to do this, of course, we can't, which is to replicate the Pete Weber's of the world to other parts of the country, but some of the things that they do are important and are potentials for other places.

First is they recruit incredibly carefully the clients that they are going to work with. They can talk to 100 to 200 people before they identify a family that is the right fit for them who will match what they are offering, as opposed to trying to push a round peg into a square hole. They spend 18 months with these families. They work holistically with the whole family. If mom is afraid to go to work because she doesn't think her child is going to school and needs help, they try to address, for example, both issues. They also will not place someone in a job that doesn't have career advancement possibilities. They have incredibly strict parameters around who they will work with, and they have an unbelievable network in the community so they can leverage services.

The two biggest issues that they say that their participants face are transportation and childcare. Without those, they have difficulty getting to work reliably and so that is why Bridges tries to tackle those pieces.

SNAP's Employment and Training Program is actually incredibly flexible in that it allows states, in fact, requires states to provide transportation and childcare for households——

Mr. COSTA. We should continue that and try to expand upon it.

Ms. DEAN. Absolutely. Absolutely, and also the flexibility in the types of services, and not just to target the head of household, but to be allowed to provide case management and meet broader family needs that may be impeding the ability to get back to employment.

Mr. COSTA. Well I thank you. I thank you, Mr. Chairman, and the Members of the Subcommittee for allowing me to participate with you this afternoon, and I can tell you, having visited and been a part of this effort for several years now, 4 years, it works. And if you have the kind of resources and people who want to make a difference, you can, in fact, make this successful. We ought to build upon this as we are looking at this year's farm bill so that we can have these kind of successes around the country.

Thank you.

The CHAIRMAN. The gentleman's time has expired. I am pleased to recognize Mr. Soto from Florida for 5 minutes of questioning.

Mr. SOTO. Thank you, Mr. Chairman.

My first question circles around whether SNAP benefits are currently adequate or not. We see it is an average of $1.40 per meal with a maximum of $1.90, so it would be great to hear from all of you of whether you believe that is adequate to provide healthy meals, and if not, what should it be?

Mr. SYKES. Well let me say first that the Thrifty Food Plan is quite old, and was based on a study of food price costs over 40 years ago. One could say perhaps at the time it was adequate, but it also took into account the fact that the kinds of things you could purchase took long preparation hours and extremely long times, beans and many other things that would be healthy, and that is not really possible, quite often, today.

The Low Cost Food Plan, which is the next step up, which has some more logic to it, but would be to move to it completely would be an extraordinarily expensive issue. One of the things that we have talked about is we really ought to learn exactly what having a different basis for benefits would do as far as lowering food insecurity even further, and so we are recommending that we do a fairly lengthy broad-based pilot that would substitute the Low Cost Food Plan for the Thrifty Food Plan, study it, study what it does for health issues, low-food security, and then if it is, begin to think about how to replicate it on a broader scale.

Mr. PROTAS. I would just say the adequacy of the Thrifty Food Plan is an important topic. In my written testimony, I shared some stories from people who deal with food insecurity and hunger, and I mentioned in my opening statement that it is something that we hear routinely that people lament that their SNAP benefits don't last until the end of the month and they have to make very desperate choices. I am looking at Dylan's story, which was part of the written testimony, who is a 14 year old who talks about going to bed hungry on a number of occasions, and his mom sacrificing food in order to feed him. That says it is not only the SNAP benefits, but the other available resources for that household don't go far enough, so there is clearly an issue and something that needs to be looked at seriously.

Ms. HATCHER. Congressman, we certainly see it in shopping patterns in terms of what SNAP customers buy at the beginning of the month *versus* the middle of the month and towards the end of the month. They are definitely at the end of the month trying to find low-cost, high calorie items. We definitely see it on that end.

Mr. ARTHUR. If I might respond also, the comment on the end of the month brings us into perspective. In physical food assistance, we are working with our member agencies, our pantries to adopt more of a choice model and to have that align with the MyPlate, the USDA MyPlate, and we believe that the benefits for SNAP should align with that as well, and that is a healthy diet format. Since so much work has gone into that, why not align the benefit to actually achieve that type of healthy eating? Our perspective is that you need a little more money to eat healthy.

Mr. SYKES. Just to add one other thing. I mean, realistically or not, the Thrifty Food Plan allotment, whatever it winds up to be for the particular household side after you do the equations of eligibility, is not the only money that is being meant to be spent. I mean, households are meant to be spending 30 percent of their own income after certain deductions. That is not to say that we shouldn't look at the Low Cost Food Plan, we definitely should and test it, for all the reasons I said earlier.

Mr. SOTO. Would anybody be willing to take a stab at what it should be?

Mr. SYKES. More.

Mr. SOTO. We hear that a lot around here. I yield back, Mr. Chairman.

Mr. ARRINGTON [presiding.] Thank you, Mr. Soto. I would now yield 5 minutes to Mr. Lawson from Florida.

Mr. LAWSON. Thank you very much, Mr. Chairman. I want to thank you all for waiting on us here.

Each of you know that states are granted the flexibility in administering SNAP and ensuring that vulnerable individuals are receiving basic food assistance. In the State of Florida, for instance, our Governor has elected not to allow waivers for the work required for ABAWDs. But this decision by the Governor prevents mayors and local elected officials from asking for an exemption in the areas that have high unemployment or have insufficient employment opportunity. Not only does Florida not allow localized and informed geographic decisions by elected officials, but it has brought to my attention that the advocates in Florida across this country are having real difficulty in getting data on the characteristics of who ABAWDs are. A permanent group in Tallahassee, for instance, has been paying the state thousands of dollars to get demographics about ABAWDs. Sometimes there are not a lot of organizations that can afford to do that. We don't know whether these individuals are veterans, if they are struggling with mental health issues, some form of disability. If they are waiting on disability decisions, if they are illiterate or don't have access to adequate employment. This is a real issue.

With that in mind, my question is leading up to the farm bill. How can we expect to have an informed decision on the changes that would affect ABAWDs without any sense of what issues ABAWDs are facing and who these individuals are? To come to a conclusion, how could this Committee benefit from, let's say, a requirement in the upcoming farm bill that ensures states collect and share adequate data on ABAWDs to help us make informed decisions? And I know I don't have much time, but anyone who wishes to answer that, please go ahead.

Ms. DEAN. Thank you, Congressman. I will take a quick crack at that. You are right that it is a very complex demographic. We don't know a lot about them, you are right. Some are veterans, some are homeless, some are individuals waiting for a disability determination. Under the law, someone who has some kind of impairment ought to be exempt from the rule, but many states send a very complicated legalese letter to the individual and put the entire burden of them to self-identify as being exempt under a rule that most of us here would have difficulty understanding if it was the first time we were learning about it.

A better understanding of who this whole group is and its impacts would be hugely beneficial to the Committee, but in the end, these are very, very poor folks who just simply can't afford to feed themselves, and SNAP has a rule that gets in the way of offering food assistance to these individuals. Their poverty and their food insecurity is one of the most important things to know about them so that we can think about how SNAP can address their needs.

Mr. SYKES. Just to add one more issue to that, a reason we really need to have good employment programs for people, some of the ABAWDs happen to be noncustodial parents as well of children who may have a mother on TANF or other things of that nature, and so rather than viewing the ABAWD requirement, the 3 and 36 month time limit rule as trying to get them off the rolls, these are the very people we really need to engage in honest work programs and get them income so they can be participating not only in the

workforce, but participating in paying support for their children to the degree that they are not custodial parents.

So one thing we have suggested about the ABAWDs is the 3 month limit is awfully quick, and it is really hard for states to find adequate slots that meet the rules of ABAWDs. We have suggested—one thing that we have done is if you are going to maintain a time limit at all, that it should be expanded to 6 or 9 months, and it should be aligned with the individual's certification period, so states have more ability to work with someone on their individual needs for employment.

Mr. ARRINGTON. Thank you, Mr. Lawson. The gentleman from Arizona, Mr. O'Halleran, is not a Member of the Subcommittee but has joined us today. I have consulted with the Ranking Member and we are pleased to welcome him to join in the questioning of the witnesses, so I will yield 5 minutes.

Mr. O'HALLERAN. Thank you, Mr. Chairman and Members of the Committee, for this opportunity.

I would like to talk a little bit about my district first. I represent 12 Native American Tribes in Arizona. The district is larger than Pennsylvania. The Navajo Nation alone is larger than West Virginia. The Native American communities suffer from a much higher rate of food insecurity than the general population. On the Navajo Nation, the rate of food insecurity is five times the national average. I would like you to keep in mind the fact that we have a tremendous amount of elderly, cultural issues, tremendous amount of veterans based on per capita, a much higher rate of veterans per family than anywhere else in the United States. And because of the work requirement, in an area that has very little economic development potential even, high unemployment, 50 percent, 80+ percent in some of these areas. I just would like to know what opportunities do you see, and I would like to direct this to Mr. Protas. What opportunities do you see in the farm bill to better address the nutritional needs of Native Americans seeking work?

Mr. PROTAS. Thank you for the question, Congressman, and I know the district well. I grew up in Phoenix and spent a very enjoyable summer in Camp Verde working for the Park Service. I also know that the food insecurity rates in Indian Country are staggering, and particularly on the Navajo Nation where it is upwards of 75 percent of the population.

You have a very complicated situation where you have high food insecurity and high unemployment, also in an area that is an agricultural producing area, so you have food insecurity in food deserts and people who can't access that food. And so this is an issue that impacts a lot of folks in Indian Country where there are not the proper levels of economic investment and business development for Native producers to really bring those products to market, and also to contribute to the local food economies.

Sadly in the recent news that we saw about the Trump budget, there were proposals to cut funding for programs that serve rural areas, including in Indian Country. Cuts and elimination of programs, including rural development agencies, rural business—cooperative grant programs, Rural Utilities Services, and rental assistance grants.

So first off, those kind of proposals would have a disastrous impact on rural communities in Indian Country. Instead, what could be done is to have USDA look at targeted investments in the agricultural systems to really lift up Tribal producers and to make sure that that food is accessible in Tribal contacts to be able to provide within the FDPIR food package, and also to create jobs, because as you mentioned, the unemployment rates are staggering in areas like the Navajo Nation. Targeted investments are important to be able to increase that employment to make people no longer dependent on food assistance, and also to make that food available in Indian Country.

Mr. O'HALLERAN. Thank you.

We have 4,000 miles just in the Navajo Reservation of dirt roadways. It takes some students 4 hours round trip to get to school. Obviously, and others that are unemployed can't afford much gasoline, and yet I had heard you talk about superstores and not being able to have enough money towards the end of the month, and anybody can comment on this, but what does the rest of the panel see as the potential to help these people out, both in Indian Country and rural Arizona and rural America? Because obviously what was just said highlights the fact that it is an area that does not necessarily fit the urban environment/suburban environment process where there is poverty, but poverty located near resources. Please.

Ms. DEAN. I think you highlight the challenges of rural poverty quite well, and I do hope that part of the farm bill is thinking about rural development, economic investment in rural areas, as well as creating new opportunities for individuals who live there.

One of the things we see looking at unemployment rates in rural areas is they might be relatively low, but they, in fact, in no way reflect the fact that jobs have just left the area. The unemployment rate measures folks who are actively seeking work, but if you live in a community where jobs left long ago, you have just dropped out of the labor market. It doesn't mean work is there, and it often goes unrecognized the difficulty of rural America.

Mr. O'HALLERAN. Thank you, Mr. Chairman.

Mr. ARRINGTON. The gentleman's time has expired. I now yield to the gentlelady, and my neighbor in New Mexico, Ms. Lujan Grisham, for 5 minutes.

Ms. LUJAN GRISHAM. Thank you, Mr. Chairman, and I really appreciate the comments that my colleague from Arizona has made about the rural and frontier nature of our states, and particularly highlighting what it looks like in Indian Country. I might just add that there are still places in the Navajo Nation where there is no running water or electricity. The challenges are incredible, and these safety net programs are incredibly valuable and important. And in this Committee, we spend a lot of time, not today, but a lot of time talking about fraud, we are talking about work requirements, and really looking at constraining the program when, in my opinion, if we were to look carefully, we are going to find that we really have the opposite, that people cannot make it on these benefits; that we are penalizing those poorest and most at risk in our country.

In my district and in my state, unfortunately since my time on the Agriculture Committee, we have been one of the hungriest

states in the nation with some of the hungriest children in the nation. And I am going to focus somewhere else, even though we also have the highest unemployment and in the areas that you talked about in rural areas where there really aren't new jobs and people leave the job market, and there is a sense that because they had a job there must be another one is also not accurate.

But I have another issue that I am really interested in about how we work with USDA and through the farm bill to ensure that states are held accountable to make sure that the benefits that we do have available make their way to recipients. Because there is a perverse incentive to do the opposite, and you may or may not know that New Mexico is under Federal investigation by USDA, which was no easy trick. After 7 years of having consent decrees and finally a Federal judge last year saying we need a special master and we need to pay attention, because, in fact, we now know that the Human Services Department in the State of New Mexico falsifies SNAP records; this is what they do. They add assets so that they don't meet the expedited requirement, because they don't want to get dinged when there are insufficient state employees or insufficient attention to meet those basic rules. There is a perverse incentive actually to not provide SNAP benefits. And if you can imagine, homeless veterans, families with children, that they aren't getting any SNAP benefits because the state precludes them falsely from having access, more than 300 in just the recent review in just one community. And it took me well over 2 years to get USDA to even agree to do the investigation, even though they were quite clear, and I am quoting them when they said, "We have one of the most fouled up SNAP programs in the country."

What can we do, both in terms of the farm bill, and in USDA accountability that the assumption is the beneficiaries are somehow the problem out there. Certainly, I have no tolerance for a potential beneficiary who is doing it wrong or is trying to cheat, but in fact, you can have whole Administrations that are preventing these very necessary benefits from getting to the very families who need them and deserve them. What do you think?

Ms. DEAN. First, I really want to thank you for how dogged you have been in pursuing the appropriate administration of SNAP in your state. Your constituents owe you a great debt.

For most states, timeliness is a core to the ethos of the program. Benefits must go out to emergency applications within 7 days or 30 for a regular application. And in fact, in recent years most states have pushed to do same day service, at least for some share of their households. I would say what you are raising as a concern, well, there is a much broader concern, but narrowly that the timeliness metric, that we don't have integrity there, that we can't count on it, and when we see it falter, the agency isn't swift to swoop in and do something. Which is not necessarily the case with respect to payment accuracy.

The Committee could take steps to make the timeliness measure more consistent and more scientific, and to bring to bear the same weight of the agency on that that they do with payment accuracy. In general, it really is an important thing to states, but there are times when they are just so far out of compliance that it becomes the norm that benefits can take 40, 60, 90 days to be issued to

needy people, and that is completely unacceptable. It should not ever be tolerated.

Ms. LUJAN GRISHAM. Right, and maybe with my time almost running out, Mr. Chairman, the thing to think about would be that we have states tell you that they are going to be behind and they are worried about their constituents, that there could be staff assigned from USDA, and that is something that we could put in the farm bill. You do a carrot, and then if it is purposeful, I am happy with a really big stick.

Thank you very much.

Mr. ARRINGTON. Thank you, Ms. Lujan Grisham. I will yield 5 minutes to myself. I don't know that I will need all 5 minutes.

I am sorry for coming in and out, so if I have repeated a question or a conversation, especially being so gracious with your time, I apologize in advance.

I did hear, Mr. Protas, your opening remarks where you quoted *Leviticus,* I believe, and that is a great reflection on the character of God and the compassion of God's heart, and how we ought to reflect that compassion in our lives, but the scripture tells us in 2 *Thessalonians* Chapter 3:10, it says "For even when we were with you, we gave you this rule. If a man will not work, he shall not eat." And then he goes on to say "We hear that some among you are idle." I think that every American, Republican or Democrat, wants to help the neediest among us, and it is a reasonable expectation that we have work requirements. I think that gives more credibility, quite frankly, to SNAP.

And so my question to you, and again, if I have missed the conversation, I apologize, but tell me what is a reasonable and responsible work requirement as part of the SNAP program? I will tell you that when I travel the 29 counties in west Texas in my district, this comes up often, and I need to be able to explain to them what my colleagues and my stakeholder friends think about a work requirement, and what is reasonable and responsible. I will ask anybody to comment on that.

Mr. SYKES. Well I agree that work requirements are important. I view them very similarly to a social contract. People who are able-bodied and able to work, whether they be with or without dependents, we ought to do everything we can to help them reach a higher level of self-sufficiency, because we do an excellent job in this country, even with people when they have low wages of supplementing those wages.

But having said that, I mean, the work rules for ABAWDs and the work rules in general, the ABAWD work rule, quite candidly, is more so a time limit than it is a work rule, and it doesn't take into account the fact that it often takes longer to work with people who don't have labor force participation. What I would say is that, if a state or a locality has done everything in their power to work with the client and to try to help them find a suitable employment training program that meets the ABAWD standard, for instance, but unable to do that, then it is wrong to penalize the client in my mind. If the client willfully decides that they are just not interested, I don't disagree with you that, quite candidly, they have set their own situation in motion. But, what doesn't happen too often is these programs aren't real. They aren't really focused on getting

people jobs. They aren't focused on outcomes. They are often focused on seat time, and it is quite easy to just ultimately say to the recipient, well, you didn't meet the work rule, but we didn't do anything to help you meet it.

Mr. ARRINGTON. Does anybody on the panel believe we ought to enhance the work requirement? That we ought to have a stricter work requirement for able-bodied adults?

Ms. DEAN. No, I do not.

Mr. ARRINGTON. Nobody on the panel?

Ms. DEAN. I just want to make sure we are very clear, because there is a distinction here. There is the 3 month time limit on childless, unemployed adults. States separately have very sweeping authority to impose work requirements on many other adults in the program, and many, many do. It is not as if nothing is going on, and I often fear that there is an enormous misunderstanding about that, the level of intensity of the work programs.

Mr. ARRINGTON. Can I——

Mr. ARTHUR. Mr. Chairman, if I might just take a broader shot at that.

There is——

Mr. ARRINGTON. Please make it short, because I have a little time and I want to get one more question in.

Mr. ARTHUR. I just wanted to state that there is an implicit assumption in a lot of this discussion that poor people and taxpayers are diametrically opposed, that taxpayers are funding these poor folks. In our society, the level of taxes at the Federal, state, and local level, income excess tax fees, the poor are heavy taxpayers. They are just heavy taxpayers, and we need to keep that in mind as we have these discussions that poor folks pay a lot of taxes.

Mr. ARRINGTON. I have just a few seconds here.

I struggle with the issue of what kind of foods somebody ought to be able to purchase with tax funded SNAP funds, and would you guys allow me to go over time just for a few seconds here just to finish this question?

So I really do. I honestly have tension here. I don't want the purchase of foods that may, in fact, cause in the long-term taxpayers to pay out on the back-end for healthcare issues. But I don't want the Federal Government to be involved in defining what is *healthy food,* and I certainly don't want a nanny state. You could probably predict from my line of questioning. How does one incentivize in the SNAP program good choices, healthy choices, as opposed to the Federal Government giving some top down edict on what is and what isn't healthy?

Ms. HATCHER. Maybe I should start with that one. We are seeing a lot of new incentives in terms of healthy foods. One of those is happening at store level. We now have 95 percent of our stores with dieticians in the store, either in the actual store location or corporate. We are seeing changes in behaviors, starting to teach customers how to cook some of these healthy foods, how to identify things that they may not have tried before and how to cook them. I know that we heard from a couple others on the panel talking about these projects that are going on to do that, and in addition to that, we have seen some of these FINI grants with the Double Up Bucks Program, the AARP Program that I think was in Con-

gresswoman Lujan Grisham's district, to see behaviors when you do show folks how to use these products and how to get them more affordably to really start to drive behavior. We are really going to see a lot of new possibilities going on in that space.

Mr. ARRINGTON. Thank you.

Before we adjourn, and thanks for indulging me in a few more seconds there. Before we adjourn, I invite the Ranking Member to make any closing remarks.

Mr. MCGOVERN. Well thank you. Thank you. I appreciate it, and I am sorry. We had another hearing that I went to, but we got it done in time for me to come for my closing remarks.

I want to thank all of your for your testimony, and I appreciate your answer on ways to incentivize people to make healthier choices. There are programs that are up and running now. We have a Healthy Incentives Pilot in Massachusetts that is doing very well. You talked about the FINI grants and there are all kinds of programs that are working. The challenge is to make sure the resources are there so that they can be widespread. And it is hard for people to make the kinds of choices that a dietician would deem as nutritious when you are basically talking about on average $1.40 per person per meal. It is an inadequate benefit, from my vantage point.

But I do want to just say that I think that everybody here, unless I missed it when I was gone, pointed out that the ABAWD population is a vulnerable population. It is fair to say that the system isn't working for them the way it should. It is a complicated population. It doesn't fit into a nice, neat stereotype. And I would just, again, I end as I began, to caution this Committee and this Congress from doing anything that would make it more difficult for this population. We are talking about making sure people have enough to eat, and I worry that, based on some of the reports that I have read in the press, that we may be going down a road that might cause more harm than good.

So thank you very much for your testimony, and Mr. Chairman, thank you very much for yielding me the time to close.

Mr. ARRINGTON. You bet, absolutely.

Well thank you. I want to reiterate the Ranking Member's sentiments for your time, and sorry you had to wait longer because of votes, but I appreciate your thoughtful remarks in response to our questions.

Under the Rules of the Committee, the record of today's hearing will remain open for 10 calendar days to receive additional material and supplementary written responses from the witnesses to any question posed by a Member. This hearing of the Subcommittee on Nutrition is adjourned.

[Whereupon, at 4:41 p.m., the Subcommittee was adjourned.]

[Material submitted for inclusion in the record follows:]

SUBMITTED LETTER BY HON. K. MICHAEL CONAWAY, A REPRESENTATIVE IN CONGRESS FROM TEXAS

March 15, 2017

Dear Colleague:

The Supplemental Nutrition Assistance Program (SNAP) is the most important nutrition assistance program in the United States, with approximately $70 billion in benefits currently serving just shy of 43 million individuals. As with many means-tested benefit programs, there is a detailed framework of Federal law and regulation governing SNAP. However, the program is ultimately administered by states that have a number of options for implementing certain policies as well as access to waivers of Federal law and regulations in specific cases. SNAP benefits are fully funded by the Federal Government, with administrative expenses divided equally between the Federal and state governments.

The House Committee on Agriculture, by way of a hearing series entitled, *Past, Present, and Future of SNAP,* heard from 60 witnesses over the course of 16 hearings in the 114th Congress. These hearings afforded the Committee the opportunity to learn more about recipient characteristics, program administration and function, and the innovative initiatives of Federal, state, local, and private entities.

Compiled by my staff, the enclosed report outlines the program history and structure of SNAP and includes 15 key findings across four broad themes. The report identifies a number of ways the program is working successfully and a number of areas in need of improvement. That said, nothing in the enclosed report suggests gutting SNAP or abolishing a program that serves so many.

In the 115th Congress, we have initiated the work of reauthorizing the farm bill, including SNAP. While there will be a time for formal input on the farm bill, I welcome your feedback on the report along with your suggestions for moving forward. Please feel free to send your thoughts to Jennifer Tiller, Professional Staff, at **Redacted**.

Sincerely,



Hon. K. MICHAEL CONAWAY,
Chairman,
House Committee on Agriculture.

ATTACHMENT

COMMITTEE ON AGRICULTURE

K. MICHAEL CONAWAY, CHAIRMAN



Past, Present, and Future of SNAP

Hearing Series Findings: 114th Congress

"We can all agree that no one ought to go hungry in America, and SNAP is essential in protecting the most vulnerable citizens during tough times. For many it is a vital lifeline to keeping food on the table."

Chairman K. MICHAEL CONAWAY.[1]

Executive Summary

The House Committee on Agriculture completed a comprehensive review of the Supplemental Nutrition Assistance Program (SNAP) during the 114th Congress. Known as the *Past, Present, and Future of SNAP,* the purpose of the review was to provide a better understanding of SNAP and the population it serves, to review how SNAP utilizes cash and noncash benefits to serve that population, and to examine ways the program can be improved. While the series highlighted specific ways that vulnerable populations are well-served, it also demonstrated several areas for improvement. The series also highlighted that there is sincere interest on both sides of the aisle in ensuring that SNAP is meeting the needs of those it is intended to serve. Several key findings emerged from the testimony of 60 witnesses across 16 hearings:

Findings Theme 1: Serving SNAP Recipients through Innovation and Flexibility in Program Delivery

1a. SNAP serves a wide-ranging demographic, and the program must adapt to meet the needs of each recipient.

1b. States can take advantage of available state options and waivers, as well as new and developing technologies.

1c. Broad-Based Categorical Eligibility (BBCE) is the most significant state option in SNAP recipient eligibility determinations.

1d. The need for nutrition assistance cannot be addressed by just one program or just one group—it requires more collaboration between governments, charities, businesses, health systems, communities, individuals, and many others.

[1] K. Michael Conaway, Chairman of the House Committee on Agriculture. Hearing of the House of Representatives, Committee on Agriculture. *Past, Present, and Future of SNAP.* February 25, 2015. Washington, D.C.

1e. The diversity of programs serving low-income households has simultaneously generated overlaps and gaps in recipient services.

Findings Theme 2: Climbing the Economic Ladder through Work

2a. Unemployment and underemployment are leading causes of poverty, and promoting pathways to employment is the best way to help individuals climb the economic ladder out of poverty and into self-sufficiency.

2b. Combined with other welfare programs, SNAP recipients may face a "welfare cliff" when they are just above the income eligibility level, which can create disincentives to finding work or increasing earnings.

2c. Better enforcement of work requirements is needed in some states, and enforcement needs to be coupled with more effective SNAP employment and training (E&T) programs.

Findings Theme 3: Maintaining Program Integrity

3a. SNAP needs clear program goals and must be evaluated according to metrics aligned with those goals to generate program improvement.

3b. SNAP fraud rates can be improved through innovative state and Federal strategies and technologies.

3c. SNAP error rates are only as good as the program parameters on which they are based.

3d. State flexibility in administering SNAP should not jeopardize program integrity.

3e. Data availability—with robust privacy protections—is a key concern in ensuring SNAP is functioning as intended.

Findings Theme 4: Improving Food Access and Promoting Healthy Food

4a. Americans in both urban and rural communities cannot improve their diets without adequate access to healthy food.

4[b]. Nutrition education—working in tandem with targeted incentives—can help SNAP recipients develop healthy lifestyles and healthy eating habits.

From the Chair

December 7, 2016

Through our *Past, Present, and Future of SNAP* hearing series, the House Committee on Agriculture heard from 60 witnesses in 16 hearings over the course of the past 2 years on the Supplemental Nutrition Assistance Program (SNAP), the most important nutrition assistance program in the United States. With around $70 billion in benefits going to more than 43 million SNAP recipients each year, even small program improvements can result in better nutrition for hungry families and in taxpayer resources being used more effectively. This report documents the findings of the hearing series, which reviewed characteristics of SNAP recipients, the functioning of the program, and innovations in serving those in need of nutrition assistance.

While it may have generated "hearing fatigue," the review of SNAP was an essential part of our work as we prepare to reauthorize SNAP in the 115th Congress. SNAP is a complex program implemented uniquely by each state. It serves diverse populations with a wide range of needs, many of which are not visible without taking a deeper dive into the program to see how it works.

We know that we live in a country with the safest, most affordable, and most abundant food supply in the world. While Americans on average spend less of their disposable income on food than any other country in the world, those on the lower end of the income ladder in the United States spend more than 34 percent of their disposable income on food—if they have any disposable income at all. It is our responsibility to help our most vulnerable citizens, whether they are children, the elderly, the disabled, veterans, or those who are down on their luck due to no fault of their own. SNAP serves that purpose, partnering with many other organizations to put food on the plates of those who would otherwise be hungry. It is the Committee's role to ensure we are successful in accomplishing that purpose.

You will find nothing in this report that suggests gutting SNAP or getting rid of a program that does so much to serve so many. What you will find are a number of ways the program is working successfully and a number of areas in need of improvement. You will find areas for innovation, for adjustment, for education and training, and for rethinking the best ways to serve those in need.

There is common ground to be found on SNAP, both in understanding the needs of the population SNAP serves, and in working collaboratively to improve SNAP. That common ground must be found not only within Congress, but across government agencies, nonprofits, the private sector, universities, communities, recipients,

and a host of other partners involved in meeting the needs of our nation's most vulnerable citizens.

SNAP serves a critical mission: to feed those who need it and to empower those who are able to move from SNAP to self-reliance. This report focuses on how SNAP currently achieves this mission, and highlights the suggestions of our many witnesses on how SNAP can more effectively fulfill its mission.

Hon. K. MICHAEL CONAWAY,
Chairman,
House Committee on Agriculture;

Hon. JACKIE WALORSKI,
Chairwoman, Subcommittee on Nutrition,
House Committee on Agriculture.

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Overview of Hearing Series

Over the course of the 114th Congress, the House Committee on Agriculture undertook a top-to-bottom review of SNAP. The Committee conducted 16 educational hearings from February 2015 to November 2016 during its hearing series entitled the *Past, Present, and Future of SNAP.* These hearings took a closer look at how SNAP works and examined the challenges faced by recipients. A wide array of witnesses, including hunger advocates, researchers, USDA officials, and SNAP recipients testified before the Committee. See *Appendix A* for a complete listing of hearings and witnesses.

SNAP is the largest program under the jurisdiction of the Committee, accounting for 79 percent of total farm bill spending.[2] CBO currently projects that SNAP will cost an average of $69.75 billion per year over the next 10 years, making it the largest Federal food program serving low-income families in the United States.[3]

Program participation nearly doubled (up 81 percent from FY 2007 to FY 2013) as a result of the recent recession. In an average month in FY 2007, 26.3 million people (or about nine percent of the U.S. population) were enrolled in SNAP. That increased to 47.6 million people (or about 15 percent of the U.S. population) in FY 2013, owing to the fact that the economy was slow to recover and many families remained reliant on SNAP. Even now, with a 4.6 percent unemployment rate (com-

[2] Congressional Budget Office. *Estimated Budgetary Effects of H.R. 2642, the Agricultural Act of 2014. https://www.cbo.gov/sites/default/files/113th-congress-2013-2014/costestimate/hr2642lucasltr00.pdf.*

[3] Congressional Budget Office. *Baseline Projections for Selected Programs.* August 2016. *https://www.cbo.gov/about/products/baseline-projections-selected-programs.*

pared to a 9.6 percent unemployment rate for 2010), there were still 43.4 million SNAP participants as of July 2016.[4–5] Because of the magnitude of the program, the House Committee on Agriculture devoted significant time and effort to educating Members on how SNAP works, who it serves, and what can be done to make it more effective.

Several critical themes emerged as witnesses presented their testimony based on research, work in the community, or personal experience with SNAP. This report summarizes the key findings from the hearing series. The report also presents additional background information as needed to facilitate an understanding of the issues that were discussed in the hearings.

History of SNAP

While the United States has a long history of providing nutrition assistance to its citizens, the Supplemental Nutrition Assistance Program (SNAP), as we know it, traces its roots to the 1960s. In 1963, President Kennedy proposed permanently authorizing a small pilot project—which had been introduced in 1961—called the Food Stamp Program (FSP). The authorizing legislation, the Food Stamp Act of 1964, began with a lofty goal of utilizing "the nation's abundance of food . . . to safeguard the health and well-being of the nation's population and raise levels of nutrition among low-income households."[6]

In response to growing hunger across the United States, Congress amended the Food Stamp Act in 1971 to establish national-level eligibility and benefit standards. The program also included a purchase requirement for food stamps. That is, recipients paid for the stamps (limited to no more than 30 percent of their income with the 1971 amendments), and then received a "bonus" payment to cover the difference between the amount paid and the amount needed to attain a low-cost, nutritionally adequate diet.[7]

The Food Stamp Act of 1977 eliminated the purchase requirement and replaced it with the "net income rule" whereby recipients were expected to spend 30 percent of their net income on food and use the stamps as a supplement. The Act also established statutory income eligibility based on the Federal poverty level, established ten categories of excluded income, and established the principle that stores must sell a substantial amount of staple foods to be authorized to accept food stamps.

Electronic Benefit Transfer (EBT) technology was established as an issuance alternative to the paper stamps in the 1990 Mickey Leland Memorial Domestic Hunger Relief Act. EBT cards allow a recipient to authorize the transfer of their government benefits from a Federal account to a retailer account to pay for products received. Demonstration projects were conducted by state implementation agencies until the welfare reforms of 1996—officially known as the Personal Responsibility and Work Opportunity Reconciliation Act (PRWORA)—mandated states implement EBT systems as the source of benefit issuance by October 2002.[8] The EBT card works in the same way as a debit card, with recipients using a PIN number at the point of sale. Some states use the EBT card for multiple Federal welfare programs, including the Special Supplemental Nutrition Program for Women, Infants, and Children (WIC) and the Temporary Assistance for Needy Families (TANF) program. See *Appendix B* and *Appendix C* for a description of Federal welfare and nutrition programs, including both WIC and TANF.

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[4] U.S. Department of Labor, Bureau of Labor Statistics. November 2016. *http://data.bls.gov/timeseries/LNS14000000*.

[5] USDA Food and Nutrition Service (FNS). *Supplemental Nutrition Assistance Program (SNAP) Summary—Latest Available Month: July 2016. http://www.fns.usda.gov/pd/supplemental-nutrition-assistance-program-snap*.

[6] P.L. 88–525.

[7] USDA FNS. *From Food Stamps to the Supplemental Nutrition Assistance Program: Legislative Timeline. http://www.fns.usda.gov/sites/default/files/timeline.pdf*.

[8] USDA FNS. *A Short History of SNAP. http://www.fns.usda.gov/snap/short-history-snap*.

1996 Welfare Reform [9]

The Personal Responsibility and Work Opportunity Reconciliation Act was signed into law on August 22, 1996. The changes in this Act reshaped cash and food welfare programs and helped reduce Federal welfare spending. The biggest reform from 1996 was replacing the Aid to Families with Dependent Children (AFDC) with fixed annual grants to states for TANF. The impact of welfare reform on each state General Assistance (GA) program differed based on a number of factors, including whether populations that were no longer eligible for Federal assistance as a result of the Act would have become eligible for a state GA program and whether a state chose to provide benefits to those groups no longer eligible for Federal assistance. The 1996 Welfare Reform also impacted food stamps by:

- Giving states more control over food stamp operations and coordination with family cash aid;
- Adding work rules and time limits for adults without dependents and expanding existing work requirements;
- Cutting future benefits; and
- Placing greater limits on eligibility and expanding penalties for violating rules.

The Food Security and Rural Investment Act of 2002 (2002 Farm Bill) also made significant changes to SNAP. The Quality Control system was reformed, improving payment accuracy by 34 percent between FY 2000 and FY 2004. Optional policy changes for states were also included, such as aligning the definition of income and/or resources to that used in TANF or Medicaid, adopting a simplified reporting system, and providing transitional benefits for recipients leaving TANF.[10]

The Food, Conservation, and Energy Act of 2008 (2008 Farm Bill) formally changed the name of FSP to SNAP. It made substantive spending and programmatic changes, authorizing an increase of more than $10 billion in spending on Federal nutrition programs over the following 10 years. Household benefits were increased and eligibility was expanded via adjustments to asset tests.

SNAP is now a catchall for individuals and families who receive no or lower benefits from other welfare programs, largely because the eligibility criteria in SNAP are relatively more relaxed. As a result, the net effect has been to increase SNAP enrollment. For example, in the welfare reforms of 1996, the cash welfare program Aid to Families with Dependent Children (AFDC) was converted into a block grant known as TANF, which has rather rigorous work and activity requirements and includes a time limit. Another program available to those who are laid off from work is Unemployment Insurance (UI). These benefits require individuals to have a work history and to be fired through no fault of their own to be eligible for assistance. UI benefits are also time-limited, typically lasting 6 months. A third program, Federal disability benefits, requires individuals to prove they are unable to work. For many families who have not collected SNAP in the past, SNAP is now a default option for filling in the gaps.

SNAP grew considerably in response to the Great Recession, touched off by the financial crisis from 2007 to 2009. As the U.S. economy suffered and unemployment rose to nearly ten percent, enrollment in the program increased from 28.2 million participants in FY 2008 to 47.6 million in FY 2013, as shown in the following chart.[11] Enrollment in SNAP often lags the economy, as it takes time for changes to work through from businesses to individuals, ultimately resulting in the need for food assistance.

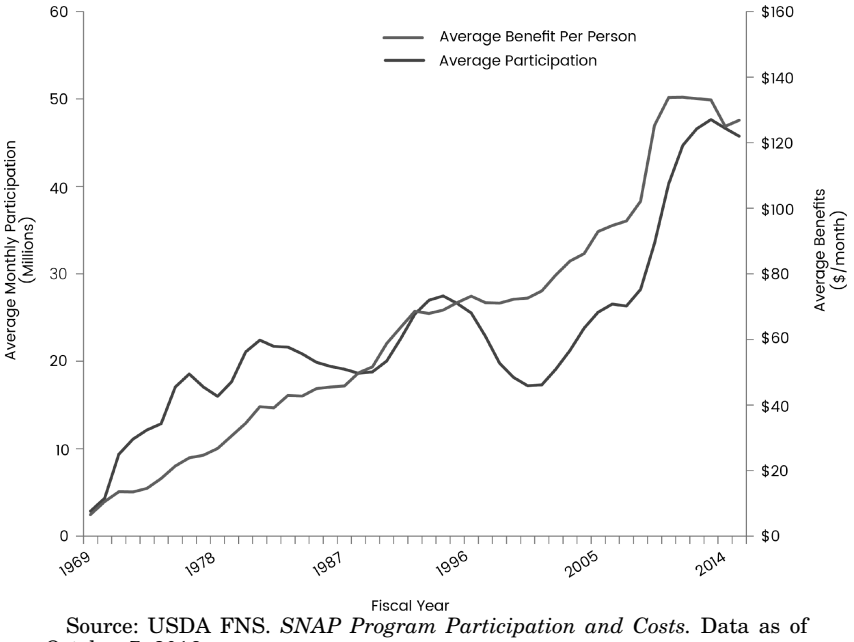
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[9] Vee Burke, Congressional Research Service. *The 1996 Welfare Reform Law.* July 1, 2003. *http://royce.house.gov/uploadedfiles/the%201996%20welfare%20reform%20law.pdf.*

[10] USDA FNS. *A Short History of SNAP. http://www.fns.usda.gov/snap/short-history-snap.*

[11] U.S. Department of Labor, Bureau of Labor Statistics. *Labor Force Statistics from the Current Population Survey. Series ID LNU04000000. http://data.bls.gov/timeseries/LNU04000000?years_option=all_years&periods_option=specific_periods&periods=Annual+Data.*

SNAP Program Participation and Average Benefits

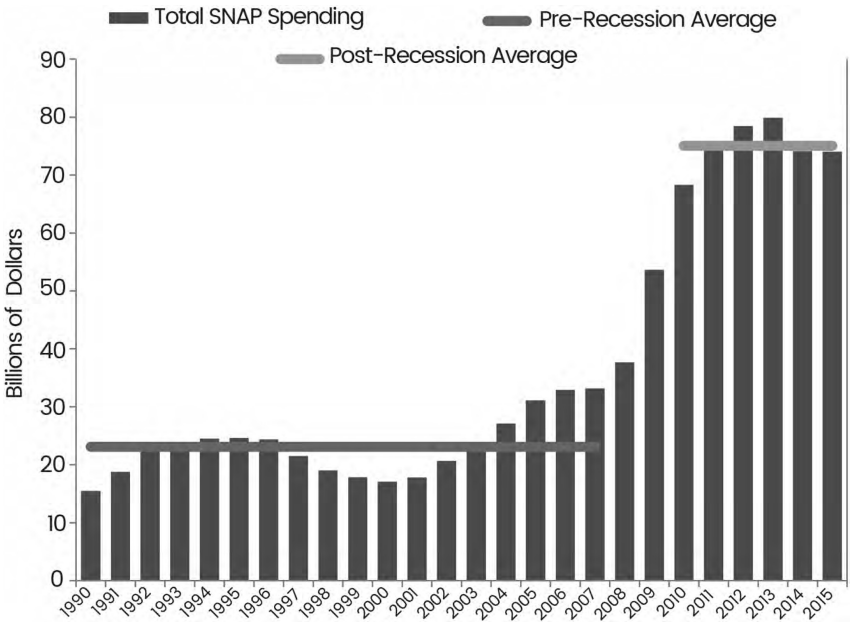


Source: USDA FNS. *SNAP Program Participation and Costs.* Data as of October 7, 2016.

Accordingly, the cost of the program more than doubled from $37.6 billion in FY 2008 to nearly $80 billion at its peak in FY 2013. Although the latest unemployment estimates have largely returned to pre-recession levels, SNAP participation levels have been slow to respond. CBO estimates that SNAP participation will remain above 33 million people (and well above pre-recession levels) through FY 2026, assuming a continued unemployment rate of 5.0 percent.[12] USDA data shows that spending on SNAP remains three times what it was prior to the recession ($23.09 billion pre-recession average compared to $73.99 billion post-recession in FY 2015). However, SNAP spending is now projected to be significantly lower than it was estimated at passage of the 2014 Farm Bill.

[12] Congressional Budget Office. *Baseline Projections for Selected Programs.* March 2016. *https://www.cbo.gov/about/products/baseline-projections-selected-programs#20.*

SNAP Spending Pre- and Post-Recession



Source: USDA FNS. *SNAP Program Participation and Costs.* Data as of October 7, 2016.

Program Structure

Similar to many of the other means-tested benefit programs, there is a detailed framework of Federal law and regulation governing SNAP. However, the program is ultimately administered by states that have a number of options—for example, asset testing and transitional benefits—for implementing certain policies as well as access to waivers of Federal law and regulations in specific cases.[13]

SNAP benefits are fully funded by the Federal Government, although state policy options may play a role in increasing or decreasing the size of the caseload. Administrative expenses, such as those used for determining initial and ongoing eligibility, are divided equally between the Federal and state governments.

While SNAP is an entitlement program—meaning that those who qualify for assistance are entitled to the assistance—it is unique in that it is funded through the annual appropriations process. In order to prevent the program from running out of funds for benefits, there is also a $3 billion contingency fund that is also appropriated annually, with 2 years of availability. This means that in any year, there are up to $6 billion in contingency funds available. Congress would need to appropriate additional funds if both the currently appropriated funds and contingency funds were exhausted.

SNAP Eligibility

SNAP eligibility is tied to the Federal poverty level, a measure of income issued by the Department of Health and Human Services to determine eligibility for a number of welfare benefits. To qualify for SNAP, applicants must meet the eligibility and income requirements mandated by Congress, both of which are discussed at length in this report. While eligibility requirements are nuanced and vary widely based on state options, SNAP recipients are generally subjected to income requirements mandated by Congress.

The basic SNAP beneficiary unit is the household. A household can be either a person living alone or a group of individuals living together. Most households must meet both the gross and net monthly income tests provided in the following table

[13] FNS allows states to submit waivers that may be approved under certain criteria. These waivers all relate to regulations FNS requires of states. *http://www.fns.usda.gov/snap/waivers-rules*.

to receive SNAP benefits, but households with an elderly person or an individual who is receiving certain disability benefits only have to meet the net income test. If eligible for SNAP, an applicant household also undergoes a calculation of its monthly benefit amount (or allotment). This calculation utilizes the household's net income as well as the maximum allotment, a figure that equals the current value of the "Thrifty Food Plan" (TFP).[14] Developed in the 1930s and now updated monthly, the TFP is USDA's national standard estimate of the minimum cost of eating at home and is broken out by gender and age.

Households that have income over the amounts listed in the following table cannot receive benefits. For example, a household of four would be ineligible for SNAP if their gross monthly income exceeds $2,633 (or if their net monthly income exceeds $2,025). These thresholds are critical because they determine program eligibility for many Americans.

Maximum Income by Household Size for SNAP Eligibility

	Gross Monthly Income (130 percent of the Federal poverty level)	Net Monthly Income (100 percent of the Federal poverty level)
1	$1,287	$990
2	$1,736	$1,335
3	$2,184	$1,680
4	$2,633	$2,025
5	$3,081	$2,370
6	$3,530	$2,715
7	$3,980	$3,061
8	$4,430	$3,408
*	+$451	+$347

*Each additional member.

Note: Gross income is a household's total, non-excluded income before any deductions have been made. Net income is gross income less allowable deductions.

Source: USDA FNS. *SNAP Eligibility. http://www.fns.usda.gov/snap/eligibility*.

To put these thresholds in context, in FY 2015, approximately 82 percent of SNAP households lived below the Federal poverty level. Forty-two percent of SNAP households had incomes less than or equal to ½ of the Federal poverty level, and they accounted for 57 percent of all benefits.[15] Regardless of income, all eligible one- and two-person households are guaranteed a minimum benefit equal to eight percent of the maximum benefit for a one-person household. For FY 2017, the minimum benefit for one- and two-person households in the contiguous U.S. is $16.[16]

For FY 2017, the maximum monthly benefit in the 48 contiguous states and DC is $194 for a one-person household, $357 for a two-person household, and $649 for a four-person household.[17] In determining a household's benefit, the net monthly income of the household is multiplied by 30 percent (because SNAP households are expected to spend 30 percent of their income on food), and the result is subtracted from the maximum benefit to determine the household's benefit.

Findings Theme 1: Serving SNAP Recipients through Innovation and Flexibility in Program Delivery

SNAP serves a diverse group of low-income individuals, primarily by providing benefits for the purchase of food. SNAP is intended to assist low-income individuals in strengthening their food purchasing power while they work to lift themselves out of poverty. This point was clearly illustrated by Robert Greenstein of the Center on Budget and Policy Priorities: "a family whose rent and utility costs consume ⅔ of its income will have less money to buy food than a family that has the same income

[14] Randy Aussenberg, Congressional Research Service. *Supplemental Nutrition Assistance Program (SNAP): A Primer on Eligibility and Benefits.* February 2, 2016. *http://www.nationalaglawcenter.org/wp-content/uploads/assets/crs/R42505.pdf*.

[15] USDA FNS. *Characteristics of Supplemental Nutrition Assistance Program Households: Fiscal Year 2015*. Report No. SNAP–16–CHAR. November 2016. *http://www.fns.usda.gov/snap/characteristics-supplemental-nutrition-assistance-households-fiscal-year-2015*.

[16] USDA FNS. *SNAP Fiscal Year Cost-of-Living Adjustments.* Memo dated August 10, 2016. *http://www.fns.usda.gov/sites/default/files/snap/SNAP-Fiscal-Year-2017-Cost-of-Living-Adjustments.pdf*.

[17] USDA FNS. *Supplemental Nutrition Assistance Program (SNAP): How Much Could I Receive? http://www.fns.usda.gov/snap/how-much-could-i-receive*.

but receives a rental voucher to cover a portion of its rental costs."[18] Most SNAP recipients face more challenges than food insecurity. They also face housing, utility, transportation, and childcare costs, to name a few. As noted earlier, this program has become a catchall for low-income individuals who either do not qualify for a more targeted program like WIC or who need to supplement their income (and other forms of public assistance) to purchase food. Challenges facing recipients may also differ depending on whether the recipient is a single parent, part of a two-parent household, an older American, a veteran, currently serving in the military, disabled, or is in an urban or rural environment. Jim Weill with the Food Research and Action Center (FRAC) pointed out the often surprising fact that "rural food insecurity rates are higher than metro area rates; and food insecurity rates are roughly the same in every region of the country, albeit they are highest in the South."[19] To best serve this diverse population, one must understand the demographics and the specific challenges they face.

> *"rural food insecurity rates are higher than metro area rates; and food insecurity rates are roughly the same in every region of the country, albeit they are highest in the South."*
>
> JIM WEILL, Food Research and Action Center.

In FY 2015, about 45.8 million people living in 22.5 million U.S. households participated in SNAP in an average month. Of those households:[20]

- 32 percent had earned income;
- 22 percent had zero gross income; and
- 40 percent had zero net income.

Seventy-five percent of households included a child, an elderly individual, or an individual with a disability, and these households received 82 percent of all SNAP benefits. A majority of SNAP households with children were single-adult households. In total, almost ⅔ of participants are children, elderly, or disabled: 44 percent of participants were under age 18, 11 percent were age 60 or older, and ten percent were disabled nonelderly adults.[21]

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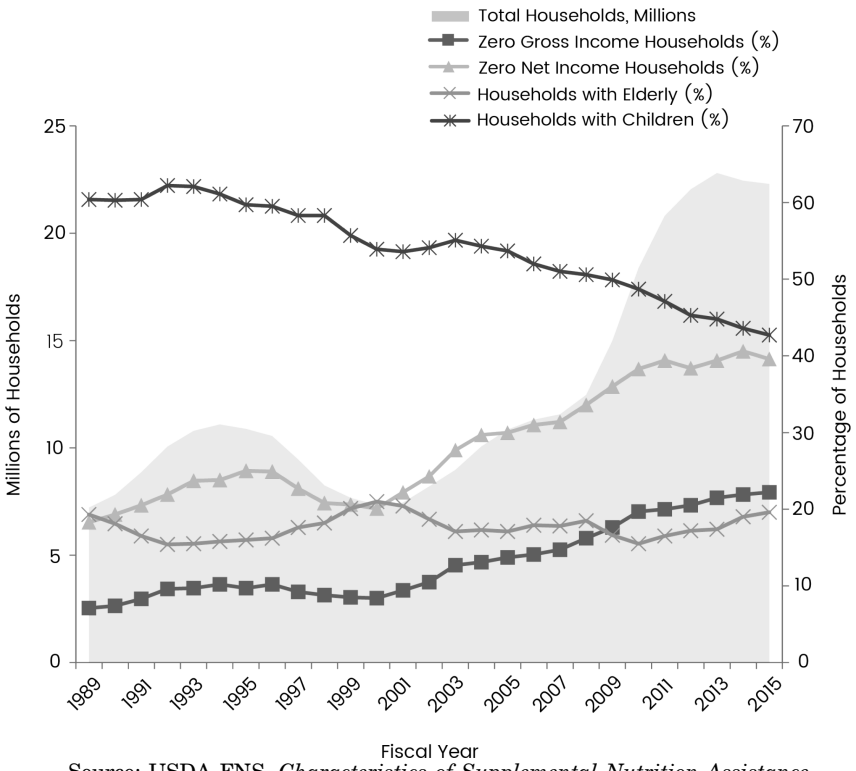
[18] Robert Greenstein, President, Center on Budget and Policy Priorities. Hearing of the House of Representatives, Committee on Agriculture. *Past, Present, and Future of SNAP.* February 25, 2015. Washington, D.C.

[19] Jim Weill, President, Food Research and Action Center. Hearing of the U.S. House of Representatives, Subcommittee on Nutrition, Committee on Agriculture. *Past, Present, and Future of SNAP: Developing and Using Evidence-Based Solutions.* July 15, 2015. Washington, D.C.

[20] *Id.,* n. 15.

[21] *Id.,* n. 15.

SNAP Household Participation and Characteristics: Decreasing Share of Households with Children, and Increasing Share of Households with No Gross or Net Income [22]



Source: USDA FNS. *Characteristics of Supplemental Nutrition Assistance Program Households: Fiscal Year 2015.* Report No. SNAP–16–CHAR. November 2016. *http://www.fns.usda.gov/snap/characteristics-supplemental-nutrition-assistance-households-fiscal-year-2015.*

A more comprehensive listing of the characteristics of SNAP recipients for FY 2015 is provided in the following table and provides important context for the discussion of recipients in the next section.

SNAP Households, Participants, and Benefits Summary

	SNAP Households (000)	Percent (%)	Participants in Households with Household Characteristic (000)	Percent (%)	Approximated Annual Dollars (000) Based on SNAP QC Sample	Percent (%)
Total						
Total	22,293	100.0%	45,184	100.0%	68,012,160	100.0%
Children	[9,510]	42.7%	30,774	68.1%	44,824	65.9%
Seniors	4,361	19.6%	5,503	12.2%	6,703,452	9.9%
Non-Elderly Individuals with Disabilities	4,498	20.2%	8,349	18.5%	10,409,256	15.3%
Adults Age 18 to 49 without Disabilities in Childless Households (ABAWDs)	4,265	19.1%	5,098	11.3%	10,027,836	14.7%
Locality						
Metropolitan	18,325	82.2%	36,952	81.8%	56,300,844	82.8%
Micropolitan	2,177	9.8%	4,520	10.0%	6,455,412	89.5%
Rural	1,451	6.5%	3,087	6.8%	4,387,500	6.5%

[22] *Id.,* n. 15.

SNAP Households, Participants, and Benefits Summary—Continued

	SNAP Households (000)	Percent (%)	Participants in Households with Household Characteristic (000)	Percent (%)	Approximated Annual Dollars (000) Based on SNAP QC Sample	Percent (%)
Rural	1,451	6.5%	3,087	6.8%	4,387,500	6.5%
Countable Income Source						
No Gross Income	4,943	22.2%	7,574	16.8%	16,454,208	24.2%
No Net Income	8,837	39.6%	15,011	33.2%	32,155,152	47.3%
No Earned Income	15,212	68.2%	25,241	55.9%	42,283,800	62.2%
TANF Income	1,293	5.8%	3,850	8.5%	6,276,360	9.2%
SSI	4,559	20.5%	7,912	17.5%	10,557,420	15.5%
Social Security Income	5,451	24.5%	8,026	17.8%	8,827,512	13.0%
SNAP Benefit						
Minimum Benefit	1,610	7.2%	1,931	4.3%	309,372	0.5%
Maximum Benefit	9,160	41.1%	15,333	33.9%	32,906,256	48.4%

Note: the values in this table are calculated based on the SNAP QC sample and may vary from the programmatic totals also published by USDA.
Source: USDA FNS. *Characteristics of Supplemental Nutrition Assistance Program Households: Fiscal Year 2015.* Report No. SNAP–16–CHAR. November 2016.

Finding 1a: SNAP Serves a Wide-Ranging Demographic, and the Program Must Adapt To Meet the Needs of Each Recipient

SNAP serves a wide variety of individuals, both young and old. It serves veterans. It serves the disabled. It serves individuals, couples, and large families alike. The needs of these populations are wide-ranging and require various programmatic adaptations to meet those needs. This section provides an overview of SNAP participant characteristics that were highlighted throughout the hearing series.

Seniors

Seniors have the lowest rates of SNAP participation among eligible households of any demographic. While the low participation rate has a variety of causes, a prominent explanation is the stigma associated with SNAP and welfare in general. Many factors contribute to a lack of access to food among seniors, including a lack of a substantial income, the gap between Medicaid and the cost of living, limited income with specialized diets, and mental and physical illnesses.[23] The issues facing these populations must be viewed holistically, with SNAP as one piece of a larger solution to solving hunger for seniors.

At the Committee's hearing on *Special Populations*, Eric Schneidewind with AARP detailed the unique impact age can have on food insecurity:

> "Elderly households, which are defined as those with an individual over age 60, represented 19 percent of all SNAP recipients in FY 2014. Out of this cohort, 85 percent received either Supplemental Security Income (SSI) or Social Security, and 82 percent of elderly households receiving SNAP consisted of an elderly individual living alone. On average, elderly SNAP households received an average benefit of $129 per month. According to research by the AARP Foundation—a charitable affiliate of AARP—over 17 percent of adults over the age of 40 are food-insecure. Among age cohorts over age 50, food insecurity was worse for the 50–59 age group, with over ten percent experiencing either low or very low food security. Among the 60–69 age cohort, over nine percent experienced similar levels of food insecurity, and over six percent among the 70+ population. This emphasizes the fact that the younger segment of older Americans are often at deeper risk for food insecurity than their older counterparts, primarily because they have yet to receive Social Security benefits and—even if they have specialized needs or limitations—might not qualify for other nutrition assistance programs geared toward older Americans."[24]

Beyond the affordability of food and complexities of transportation, seniors often have specific dietary needs, and specialized diets can be difficult to afford on a limited income. Metabolic illnesses, such as diabetes, require special consideration.

[23] Lynda Ender, AGE Director, The Senior Source. Hearing of the House of Representatives, Committee on Agriculture. *Past, Present, and Future of SNAP: The World of Nutrition and the Role of the Charitable Sector.* April 15, 2015. Washington, D.C.

[24] Eric Schneidewind, President-Elect of AARP. Hearing of the House of Representatives, Subcommittee on Nutrition, Committee on Agriculture. *Past, Present, and Future of SNAP: Addressing Special Populations.* January 12, 2016. Washington, D.C.

Vinsen Faris with Meals on Wheels pointed out that for seniors ". . . even a slight reduction in nutritional intake can exacerbate existing health conditions."[25] A person with diabetes may be unable to eat foods with added sugars or even foods, such as grains, that turn into fructose when digested. While many food banks and pantries are trying to provide a larger range of healthy foods for families with dietary restrictions, the increasing number of seniors with dietary restrictions still poses a significant challenge.

A number of SNAP options and other programs are designed to address these challenges. Elderly and disabled SNAP recipients are able to assign their EBT card to another individual so that person can purchase food. Congregate (community meal) food sites—similar in concept to group sites for providing summer meals for children—allow seniors to gather for a prepared meal. There is also a special Senior Farmers' Market program to promote the purchase of fresh fruits and vegetables. Finally, the Commodity Supplemental Food Program (CSFP) works to improve the health of low-income elderly persons at least 60 years of age by supplementing their diets with nutritious, USDA-surplus foods provided in boxes delivered to their homes through local food banks.

Children

SNAP serves 9.5 million households with children, which account for 43 percent of all SNAP households.[26] While single-parent households are more susceptible to food insecurity, especially those with single mothers, two-parent families also struggle with food insecurity. Among married couple families with children, the rate of hunger among individuals is 3.5 percent (3.9 million individuals); whereas for households headed by a single mother, the rate is 13.2 percent (4.7 million individuals); and for households headed by a single father, the rate is 7.2 percent (0.8 million individuals).[27]

The Committee hearing *Breaking the Cycle* focused on how to best give children who grew up in low-income households a chance to climb the economic ladder. Dr. Caroline Ratcliffe with the Urban Institute pointed out that "roughly 29 million of today's children are expected to live below the poverty line before age 18."[28]

Educational attainment (including technical school or local community college) is a key component of breaking the cycle; in fact, a parent's education level can influence whether or not a child grows up in poverty. Gaining skills to be in a long-term stable job can bring about higher wages and more opportunity for economic mobility. Education is becoming increasingly important as Dr. Elisabeth Babcock of the Crittenton Women's Union noted: "Seventy-five percent of the jobs in the economy as of 2020 are predicted to require education beyond high school, and all of the jobs that pay family sustaining wages require this."[29]

Poverty has negative consequences on a child's cognitive and physical development. Poverty has a trickle-down effect that can impact the emotional well-being of children, in both the long- and short-term. Dr. Eduardo Ochoa, Jr. from Children's HealthWatch outlined the negative impacts poverty and food insecurity can have on the development of children:[30]

- Household food insecurity increases the risk of developmental delays by approximately 70 percent in early childhood;
- Mental health problems such as depression and anxiety disorders in mothers and behavioral problems in preschool age children are more common when mothers are food-insecure;

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[25] Vinsen Faris, Executive Director, Meals on Wheels of Johnson and Ellis Counties in North Central Texas. Hearing of the House of Representatives, Subcommittee on Nutrition, Committee on Agriculture. *Past, Present, and Future of SNAP: Addressing Special Populations.* January 12, 2016. Washington, D.C.

[26] *Id.*, n. 15.

[27] Coleman-Jensen A., Rabbitt M.P., Gregory C., Singh A. *Statistical supplement to household food security in the United States in 2014.* Washington, D.C.: U.S. Department of Agriculture, Economic Research Service. September 2015. *https://www.ers.usda.gov/webdocs/publications/err194/53740_err194.pdf.*

[28] Dr. Caroline Ratcliffe, Senior Fellow and Economist, Urban Institute. Hearing of the House of Representatives, Subcommittee on Nutrition, Committee on Agriculture. *Past, Present, and Future of SNAP: Breaking the Cycle.* October 27, 2015. Washington, D.C.

[29] Dr. Elisabeth Babcock, President and CEO, Crittenton Women's Union. Hearing of the House of Representatives, Committee on Agriculture. *Past, Present, and Future of SNAP: The Means to Climbing the Economic Ladder.* June 10, 2015. Washington, D.C.

[30] Dr. Eduardo Ochoa, Jr. Children's HealthWatch. Hearing of the House of Representatives, Subcommittee on Nutrition, Committee on Agriculture. *Past, Present, and Future of SNAP: Breaking the Cycle.* October 27, 2015. Washington, D.C.

- Food insecurity is linked to developmental consequences for both girls and boys during kindergarten through third grade; and
- Food-insecure children are more than twice as likely to be in fair-to-poor health than are food-secure children.

Nutrition programs that are especially targeted to children provide much-needed nutrition assistance in key periods of a child's developmental growth, promoting their health and well-being, and impacting their ability to learn, grow, and develop to their full potential.[31] Ruth Riley, a former WNBA player shared her own experience with SNAP: "I often joke that growing up I was tall, lanky and uncoordinated. Looking back, I can't imagine what my path would have been if I'd been tall, lanky, uncoordinated . . . and hungry."[32]

> *"I often joke that growing up I was tall, lanky and uncoordinated. Looking back, I can't imagine what my path would have been if I'd been tall, lanky, uncoordinated . . . and hungry."*
>
> RUTH RILEY, former WNBA player.

Several programs outside of SNAP also serve children's nutrition needs. WIC provides Federal grants to states so beneficiaries—low-income pregnant or *postpartum* women and infants and children under 5 who are at nutritional risk—can purchase specific healthy foods. The School Breakfast Program (SBP) and National School Lunch Program (NSLP) provide children with meals at free or reduced prices, depending on income eligibility. A child that lives in a household that receives SNAP automatically qualifies for school meals. Because nutrition is so important to a child's development, when the SNAP benefit allotment is calculated for a household, there is no reduction in the SNAP benefit amount due to the child receiving meals at school.

Many of the factors associated with a child's future success go beyond what any single government program can or should achieve. SNAP is not the only means of breaking the cycle of poverty, but it can play a key role in increasing the food security of children.

Veterans

Veterans make incredible sacrifices on behalf of our country; therefore, it is imperative they have the resources they need to be successful in civilian life. Of the 22 million veterans in the United States, about 1.7 million are in households currently participating in SNAP (which is approximately eight percent of all veterans in the United States). Veterans vary in age, functional capacity, and financial need. Approximately 46 percent of our veterans are seniors, including those that served in World War II, Korea, or Vietnam.[33] While younger veterans may align more closely with the able-bodied populations, they may also have widely-varying levels of disabilities or limitations.

Some veterans are able to reenter the workforce immediately after returning home, while others may need assistance adjusting to civilian life and training to reenter the workforce. Some have mental impairments, such as post-traumatic stress disorder (PTSD), that need to be treated and cared for in order for them to live a healthy life.

Some veterans are unable to reenter the workforce at all. In most cases, veteran advocacy groups are focused on obtaining earned Veterans Affairs benefits which can take months, but they do not immediately connect veterans to SNAP which can be available immediately. Again, SNAP cannot solve all of the challenges a veteran faces, but it is an important component of serving eligible veterans once they return home.

Active-Duty Military

As Abby Leibman of MAZON—A Jewish Response to Hunger points out: "For currently serving members of the military, food insecurity is triggered by a number of different circumstances, including low pay among lower ranking enlistees, high un-

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[31] National Commission on Hunger. *Freedom from Hunger: An Achievable Goal for the United States of America.* 2015.

[32] Ruth Riley. WNBA Athlete. Hearing of the House of Representatives, Subcommittee on Nutrition, Committee on Agriculture. *Past, Present, and Future of SNAP: Breaking the Cycle.* October 27, 2015. Washington, D.C.

[33] U.S. Department of Veterans Affairs. National Center for Veterans Analysis and Statistics. FY 2016 Q1. *VA Benefits & Health Care Utilization. http://www.va.gov/vetdata/docs/pocketcards/fy2016q1.pdf.*

employment among military spouses, larger household sizes, challenges around activation and deployment, and unexpected financial emergencies."[34]

Historically, active-duty military members had the option to participate in the Family Subsistence Supplemental Allowance (FSSA), administered by the Department of Defense, rather than utilizing SNAP. This program assisted military members that were in the lowest pay bracket and had multiple children. FSSA benefits could be used at the same places as SNAP, including military commissaries. In addition to financial requirements, military personnel were required to request access to FSSA up through their chain of command. The program was officially disbanded on September 30, 2016, for individuals serving within the United States or U.S. territories. It was determined the benefit was duplicative, underutilized, hard to qualify for, and less valuable than SNAP, with as few as 100 military families utilizing FSSA. In contrast, in 2014, USDA projected that there were as many as 22,000 military families receiving SNAP in the United States.

A significant barrier facing some military families is how they receive their housing allotment. If families live in military housing, it is treated as an in-kind benefit and is not counted toward their SNAP eligibility calculation, lowering their income and increasing their SNAP benefit amount (SNAP eligibility is discussed in detail later in this report). However, if the family receives the Basic Allowance for Housing to reside off base, then the housing allowance is counted as income for the family when computing eligibility, increasing the family's income and decreasing the SNAP benefit. This simple distinction can be the determining factor for whether military families qualify for SNAP.

Finding 1b: States Can Take Advantage of Available State Options and Waivers, As Well As New and Developing Technologies

As Chairman Conaway pointed out in his opening statement at the March 2, 2016, hearing: "State flexibility can be an important tool in helping a family move out of poverty, however, the American taxpayer needs confidence that government programs are being targeted to those most in need."[35]

SNAP implementing agencies have various policy options made available through statute, regulations, and waivers. By using the flexibility available to them, states have the ability to adapt their programs to meet specific needs within their local communities. These can improve access to the program and improve efficiency of program administration.

States have the ability to expand SNAP categorical eligibility beyond recipients who receive **cash** benefits from another specified program (*e.g.,* TANF, SSI, or GA). Known as Broad-Based Categorical Eligibility (BBCE), households that receive **noncash** benefits funded by TANF or Maintenance of Effort (MOE) funds are deemed eligible for SNAP, thus indirectly aligning a state's SNAP asset and income limits with the TANF noncash benefit program. Other state options include the ability to centralize or decentralize administration of SNAP; to make adjustments to how often recipients have to report changes in income; to determine how soon the state must take action on changes in income; to determine adjustments to allowances for utilities and homeless housing; to determine how vehicles are treated as assets; to determine how various types of income are treated; to decide how drug felons are treated; to determine whether transitional benefits are offered; to offer online applications; and to make use of various technology options. Additional details are provided in the table that follows.[36]

Many witnesses pointed to the importance of state options in allowing SNAP to target those in need. Examples of requests for additional flexibility include allowing states to ask for additional information in filing an online application and for flexibility in determining when interviews for initial certification or recertification are conducted.[37]

Waivers are awarded to states at the discretion of USDA's Food and Nutrition Service (FNS), whereas state options are used at the discretion of states. Many

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[34] Abby Leibman, President and CEO, MAZON—A Jewish Response to Hunger. Hearing of the House of Representatives, Subcommittee on Nutrition, Committee on Agriculture. *Past, Present, and Future of SNAP: Addressing Special Populations.* January 12, 2016. Washington, D.C.

[35] K. Michael Conaway, Chairman of the House Committee on Agriculture. Hearing of the House of Representatives, Committee on Agriculture. *Past, Present, and Future of SNAP: Examining State Options.* March 2, 2016. Washington, D.C.

[36] USDA FNS SNAP. *State Options Report.* April 15, 2016. *http://www.fns.usda.gov/snap/state-options-report*.

[37] Stephanie Muth, Deputy Executive Commissioner for the Office of Social Services, Texas Health and Human Services Commission. Hearing of the House of Representatives, Committee on Agriculture. *Past, Present, and Future of SNAP: Examining State Options.* March 2, 2016. Washington, D.C.

waivers that are widely used eventually become state options. As Stacy Dean of the Center on Budget and Policy Priorities pointed out, the use of waivers from USDA allows states to test new ideas: "USDA can waive certain SNAP requirements to test whether a change would be in the program's interest."[38] Jon Baron of the Laura and John Arnold Foundation also pointed out a need for testing ideas at the state level, and then using that information to inform FNS and SNAP agencies in other states. However, he cautioned that "to build a body of proven effective strategies within SNAP, as in welfare, will require a much larger effort, specifically strategic trial and error."[39] There is a need for balance between state options, waivers, and program efficiency and integrity. FNS plays an important role in providing guidance and oversight to states, as well as in centralizing key program functions.

"to build a body of proven effective strategies within SNAP, as in welfare, will require a much larger effort, specifically strategic trial and error."
JON BARON, Laura and John Arnold Foundation

States have the option to make a number of determinations on program administration, reporting, eligibility, and resources, even beyond those included in this report. Select decisions that states must make in deciding how to operate SNAP are included in the table below.

Select State Options for SNAP

Title of State Option	It Is the State's Option to Determine:
Program Administration	Is it a state or county administered program?
Reporting Requirements	How frequently must SNAP recipients report changes in household circumstances?
Simplified Reporting—Action on Changes	Must the state agency act on all changes reported during the certification period, or only on changes that increase household benefits?
Simplified Reporting—Certification Length	How often will a state certify households based on various circumstances (*e.g.,* 6, 12, 24 or months)?
Simplified Income and Resources	Will some types of income and resources be excluded to align SNAP policy with TANF or Medicaid policy?
Simplified Self-Employment Determination	Will the state adopt a simplified method for determining the cost of doing business for the self-employed? If so, will the method be a flat percentage, a figure based on average costs, or another method?
Simplified Homeless Housing Cost	Will the state use a standard $143 per month for homeless shelter expenses?
Standard Utility Allowances (SUAs)	Will the standard utility allowance be mandatory (thus, the state is opting out of prorating SUA's for households that share a living space and is required to use a SUA that includes specific treatment of utility costs for public housing residents)?
Treatment of Vehicles	Will the state's SNAP vehicle policy be aligned with their TANF policy (only if it will result in lower attribution of household assets)? Will the state opt to exclude all vehicles or exclude at least one vehicle? Will the state raise the exception amount above the standard exception amount of $4,650 to fair market value?
Treatment of Income and Deductions of Ineligible Non-Citizens	For non-citizens who would have been ineligible for SNAP prior to PRWORA, will the state count all, or a pro-rated share of the individual's income and deductions when determining the benefit level of other household members? For non-citizens who are ineligible for SNAP because of PRWORA, will the state count none, or a pro-rated share of the individual's income and deductions when determining the benefit level of other household members?
Child Support Expense Income Exclusion	Will the state treat legally obligated child support payments as deductions or income exclusions?
Child Support Related Disqualifications	Will the state disqualify individuals who fail to cooperate with child support enforcement, who are in arrears in court-ordered child support, or both?
Comparable Disqualifications	Will the state disqualify SNAP applicants or recipients who fail to perform actions required by other means-tested public assistance programs? (Applies to that individual only, not entire household)
Drug Felony Disqualifications	Will the state opt out entirely from the permanent disqualification of SNAP eligibility of drug felons, or chose to implement less severe restrictions, or leave the lifetime ban in place?
Work Requirements and Disqualification Policy	For work requirements, will the state (1) establish disqualification (DQ) periods longer than the minimums? Will the state (2) make the DQ permanent upon the third occurrence? Will the state (3) sanction the entire household if the head of household fails to comply?
Broad-Based Categorical Eligibility (BBCE)	Will the state expand categorical eligibility to "Broad-Based Categorical Eligibility" (BBCE), making eligible households that receive noncash benefits that are funded by TANF or Maintenance of Effort (MOE) funds? (Households must still provide documentation of income and expenses for benefits to be calculated, must meet all other SNAP rules, and have net incomes low enough to qualify for benefits).
Transitional Benefits Alternative (TBA)	For households leaving TANF or state-funded cash assistance programs, will the state offer up to 5 months of benefits at a level equal to the amount the household received prior to TANF termination (adjusted for the loss of TANF income)? Will state agencies exclude households where all members are ineligible to receive SNAP benefits because of means-tested programs, failure to cooperate with child support agencies, and/or are delinquent on court-ordered child support?
Document Imaging	Will the state create a paperless or less paper intensive certification process?

[38] Stacy Dean, Vice President for Food Assistance Policy, Center for Budget and Policy Priorities. Hearing of the House of Representatives, Committee on Agriculture. *Past, Present, and Future of SNAP: Examining State Options.* March 2, 2016. Washington, D.C.

[39] Jon Baron, Vice-President for Evidence-Based Policy, Laura and John Arnold Foundation. Hearing of the House of Representatives, Subcommittee on Nutrition, Committee on Agriculture. *Past, Present, and Future of SNAP: Developing and Using Evidence-Based Solutions.* July 15, 2015. Washington, D.C.

Select State Options for SNAP—Continued

Title of State Option	It Is the State's Option to Determine:
Demonstrations for the Elderly and Disabled	Will the state implement a more streamlined application and certification process for the elderly (ESAP)? Will the state request a demonstration waiver to establish a Standard Medical Deduction (SMD) for elderly or disabled SNAP household members in lieu of calculating actual allowable, out-of-pocket medical expenses?

Note: This table reflects state options reflected in the most recent USDA FNS *State Options Report.* April 15, 2016.
Source: USDA FNS SNAP. *State Options Report.* Options as of October 1, 2015. Published April 15, 2016. *http://www.fns.usda.gov/snap/state-options-report.*

Technology plays an important role in implementing these state options. For example, the use of computers streamlines the application process and makes SNAP more accessible to low-income families. The use of technology can also ease administrative burdens and enhance program integrity.

Finding 1c: Broad-Based Categorical Eligibility (BBCE) Is the Most Significant State Option in SNAP Recipient Eligibility Determinations

Given that SNAP is a state-administered program, states have a number of options at their disposal for determining the eligibility of SNAP participants. One of the most significant state options is the type of categorical eligibility states choose to implement: regular, narrow, or broad-based. Categorical eligibility provides flexibility and administrative ease for states to administer several welfare programs simultaneously, in particular by altering or eliminating asset tests, gross income tests, and net income tests. States that elect the broadest form of categorical eligibility are unable to guarantee that they are only serving households with limited assets.

In general, to become eligible for SNAP, households must meet gross income, net income, and asset thresholds. In summary, the income and asset requirements for SNAP eligibility are:[40]

Gross Income: gross monthly income (all income as defined by SNAP law) for the household must be at or below 130% of the Federal poverty level.

Net Income: net household monthly income (with SNAP-specific deductions subtracted) must be at or below 100% of the Federal poverty level.

Assets: household assets are limited to a maximum of $2,250 per household (adjusted for inflation) or $3,250 (adjusted for inflation) for households that have an elderly or disabled member, with various exceptions for assets like homes, vehicles, and retirement savings.

SNAP Asset Test Summary[48]

Asset tests in SNAP are intended to limit program eligibility to those households who are most in need. This directs program benefits to those with the fewest financial resources. Federal rules impose a resource test on a household's liquid assets, with the limit dependent on whether the household includes an elderly or disabled member, effectively applying a less restrictive asset test to those groups.

SNAP legislation in 1964 left it to the states to set asset limits.[41] This changed in 1971, when the Secretary of Agriculture was required to set asset limits with exceptions for elderly households.[42] Since that time, SNAP asset limits have been raised and lowered and adjusted for inflation, and additional exceptions were made for households with disabled members.[43–47] For FY 2017, the maximum value of counted assets for most households is capped at $2,250, and the maximum value of counted assets for households with an elderly or disabled member is capped at $3,250.

Included Assets:

- Cash on hand.

[40] *Id.,* n. 14.
[41] P.L. 88–525, § 5.
[42] P.L. 91–671, § 4
[43] P.L. 95–113 § 1301.
[44] P.L. 96–249, §§ 108, 138.
[45] P.L. 99–198, § 1514.
[46] P.L. 107–171, § 4107.
[47] P.L. 110–246, § 4104.

- Checking and savings accounts.
- Savings certificates.
- Stocks and bonds.
- Nonrecurring lump sum payments and lump sum payments that have been disregarded as income.
- A portion of the value of vehicles (in some cases).
- Recreational property.

Excluded Assets:

- Household's primary residence (home and surrounding property).
- Business assets.
- Personal property (household goods and personal effects).
- Lump sum earned income tax credit and other non-recurring payments.
- Burial plots.
- Cash value of life insurance policies.
- Value of all tax-recognized pension savings/plans and education savings.
- Certain other resources whose value is not accessible to the household.
- Certain other resources that would not yield more than $1,000 if sold.
- Certain other resources that are required to be disregarded by other Federal laws.

Of note is the vehicle asset limit, which is exercised as a state option. States have the option to align their SNAP vehicle policy with their TANF policy when it will result in a lower calculation of assets. The standard excluded amount of a vehicle is $4,650; however states may raise this amount to fair market value, opt to exclude the full value of at least one vehicle, or opt to exclude the value of all vehicles.[49]

Federal law provides two basic pathways for SNAP eligibility: (1) by meeting program-specific Federal requirements (including those above), or (2) by being deemed automatically, or "categorically" eligible, based on participation in other low-income assistance programs. In general, categorical eligibility eliminates the need for making a financial eligibility determination for SNAP if a household has already been through a determination for another low-income program (even if the eligibility criteria are not the same). However, categorically eligible households generally must still meet prescribed income requirements to receive SNAP benefits.

For states electing to use categorical eligibility, there are three types:[50]

Traditional Categorical Eligibility: All members of a household are automatically made eligible for SNAP based on the receipt of needs-tested cash aid from TANF, SSI, or GA. These households have already met the income and asset tests for cash aid, and these thresholds are generally stricter than those for SNAP.

Narrow Categorical Eligibility: A less restrictive eligibility standard than traditional categorical eligibility, with eligibility conveyed through receipt of cash or specific noncash benefits from TANF, such as child care and counseling. Relative to traditional categorical eligibility, more households are eligible with narrow categorical eligibility.

Broad-Based Categorical Eligibility (BBCE): The least restrictive option, where households may become eligible for SNAP because they qualify for any noncash TANF or state MOE funded benefit. This broadens the eligibility for SNAP because noncash TANF benefits typically are available to a broader range of households and at higher income levels.

By allowing states to align their SNAP eligibility (and asset tests) with TANF eligibility (and asset tests), BBCE has eliminated the asset test for SNAP in many states. As shown in the following map, as of January 2016 there are 42 states that

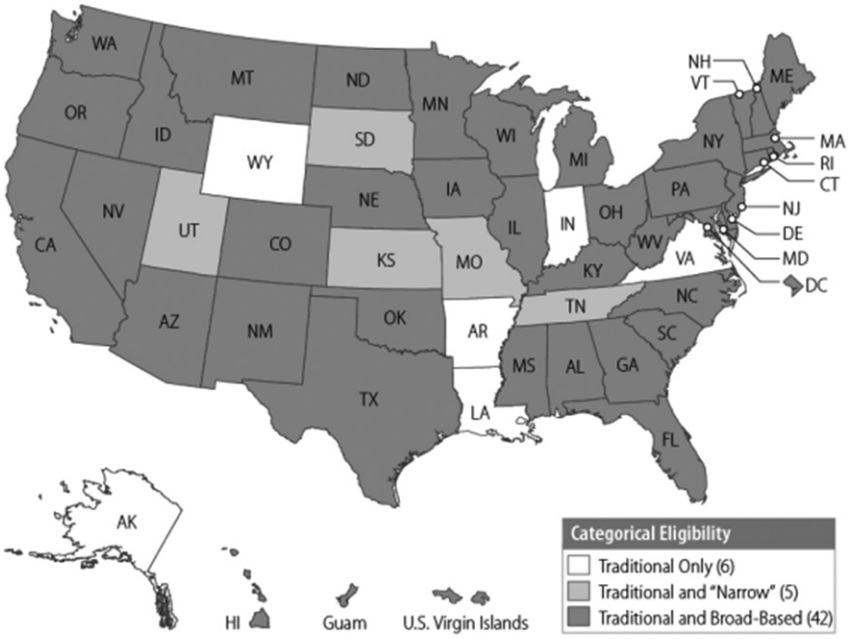
[48] *Id.,* n. 14.

[49] *Id.,* n. 36.

Editor's note: the footnotes were out of sequence in the document, they have set as submitted.

[50] Gene Falk and Randy Aussenburg. Congressional Research Service. *The Supplemental Nutrition Assistance Program (SNAP): Categorical Eligibility.* February 2, 2016. *http://www.nationalaglawcenter.org/wp-content/uploads/assets/crs/R42054.pdf.*

states. As shown in the following map, as of January 2016 there are 42 states that currently use BBCE. Only five of the 42 states that utilize BBCE have an asset test that applies to most applicants. In the other 37 BBCE states, there is no asset test for households that qualify for SNAP under BBCE rules.[51] In contrast, there are six states that use only traditional categorical eligibility. Since states that do not administer an asset test generally do not collect data on the assets of SNAP households, it is not possible to determine the extent to which BBCE has resulted in households with assets above the usual SNAP asset limit receiving benefits. Households that are not deemed categorically eligible for SNAP may apply for and receive SNAP benefits under regular SNAP rules.[52]



Source: Gene Falk and Randy Aussenberg. Congressional Research Service. *The Supplemental Nutrition Assistance Program (SNAP): Categorical Eligibility.* February 2, 2016. *http://nationalaglawcenter.org/wp-content/uploads/assets/crs/R42054.pdf*.

Karen Cunnyngham of Mathematica highlighted the impacts of BBCE: "We estimate that, in [FY] 2014, eight percent of SNAP households were eligible solely through state expanded categorical eligibility programs."[53] She also reported that within BBCE, approximately three percent of households were eligible through higher income limits, and five percent of households were eligible through higher asset limits.

Compared to the other options available to states, BBCE has the most significant impact on determining eligibility. While households eligible solely due to categorical eligibility receive lower-than-average benefits, recipient benefits for the eight percent of households made eligible due to BBCE could still account for hundreds of millions of dollars in benefits.

In contrast to BBCE, most other state options deal more with program administration than with eligibility. By allowing states to grant eligibility to those who receive noncash benefits in other specified programs, some state options broaden the pool of recipients and eligible applicants and extend benefits beyond the original pa-

[51] USDA FNS. *Broad Based Categorical Eligibility.* August 2016. *http://www.fns.usda.gov/sites/default/files/snap/BBCE.pdf*.
[52] *Ibid.*
[53] Karen Cunnyngham, Senior Researcher, Mathematica Policy Research. Hearing of the House of Representatives, Committee on Agriculture. *Past, Present, and Future of SNAP: Examining State Options.* March 2, 2016. Washington, D.C.

rameters of the program. There are few other state options that do this, and none of them do it to the same extent as BBCE.

Finding 1d: The Need for Nutrition Assistance Cannot Be Addressed By Just One Program Or Just One Group—It Requires More Collaboration Between Governments, Charities, Businesses, Health Systems, Communities, Individuals, and Many Others

Private-sector charitable organizations play a vital role in assisting families living in poverty. Whether it is a food bank helping families put food on the table or a nonprofit researching the best way to engage families so they can successfully transition out of poverty, all of these organizations play a role. "Everyone; the Federal Government, state governments, not-for-profits, the private sector, researchers, and recipients themselves, have a role to play in lifting Americans out of poverty and up the economic ladder," stated Subcommittee Chairwoman Jackie Walorski during the hearing focused on *Addressing Special Populations.*[54]

> *"Everyone; the Federal Government, state governments, not-for-profits, the private sector, researchers, and recipients themselves, have a role to play in lifting Americans out of poverty and up the economic ladder."*
>
> Rep. JACKIE WALORSKI (IN–2), Nutrition Subcommittee Chairwoman.

Public-private partnerships emphasize the value in understanding what is happening within communities, and holistically in the life of individuals, in order to best meet their needs. As Dustin Kunz of the Texas Hunger Initiative stated in his testimony, "Complex problems require complex, creative, and collaborative solutions. Public challenges, such as food insecurity, require a response that exceeds the capabilities and resources of any one department, organization, or jurisdiction. Collaboration provides a way to stretch those resources and accomplish more with less, and the benefits of these partnerships include cost savings and enhanced quality and quantity of services, while also addressing community needs, enhancing trust, and increasing citizen support."[55] SNAP should work in tandem with the services that are being provided locally. The Federal Government should then work to enhance the work on the ground and not impede it. This also requires the individual in need to be invested in working toward self-sufficiency. Unless the individual, local, state, and Federal organizations are all working together, efforts to improve the circumstances may be in vain. Jonathan Webb with Feed the Children affirmed that by stating, "when we are looking at these solutions, it needs to be a broad-based approach to the solution that understands that poverty is a component, education is a component, employment is a component, and bringing these collaborative folks to the table to take their piece of the issue in a way that gives them flexibility to test new ideas is the approach that we are suggesting."[56]

Establishing best practices and forming models based on evaluation metrics leads to stronger case management and informs what works best for specific communities. Jeremy Everett of Texas Hunger Initiative asserts that "when public and private partnerships are carefully informed by research and evaluation, stronger networks are likely formed between clients and local organizations, thus building a foundation for increased social capital for low-income families."[57] For public-private partnerships to work, it is important to understand the needs and resources in a community and how those can be leveraged to assist low-income individuals to climb the economic ladder.

> *"when public and private partnerships are carefully informed by research and evaluation, stronger networks are likely formed between clients and local organizations, thus building a foundation for increased social capital for low-income families."*
>
> JEREMY EVERETT, Texas Hunger Initiative.

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[54] Jackie Walorski, Chairwoman of the Subcommittee on Nutrition, Hearing of the House of Representatives, Committee on Agriculture. *Past, Present, and Future of SNAP: Addressing Special Populations.* January 12, 2016. Washington, D.C.

[55] Dustin Kunz, Research Project Manager, Texas Hunger Initiative. Hearing of the House of Representatives, Committee on Agriculture. *Past, Present, and Future of SNAP: The World of Nutrition and the Role of the Charitable Sector.* April 15, 2015. Washington, D.C.

[56] Jonathan Webb, Director of Foundations and Community Outreach, Feed the Children. Hearing of the House of Representatives, Committee on Agriculture. *Past, Present, and Future of SNAP: The World of Nutrition and the Role of the Charitable Sector.* April 15, 2015. Washington, D.C.

[57] Jeremy Everett, Director, Texas Hunger Initiative. Hearing of the U.S. House of Representatives, Subcommittee on Nutrition, Committee on Agriculture. *Past, Present, and Future of SNAP: Developing and Using Evidence-Based Solutions.* July 15, 2015. Washington, D.C.

The charitable sector provides case management as a key component in improving the overall well-being of a low-income individual or family. Case management allows the holistic needs of the individual to be recognized by identifying barriers, providing tools and skills, and connecting clients to available resources. This has been applied in the SNAP Employment and Training (E&T) program and in the initial application process to ensure clients are receiving the government benefits they qualify for, as well as services that might be available to them in their community. This was highlighted by Jon Anderson of Georgia's Division of Family and Child Services, who emphasized the importance of coordinating nutrition services with other government services through the use of case management.[58] Although case management differs based on the community, organization, and its goals, it has proven a critical component of ensuring that SNAP recipients have an increased chance of upward mobility. Patrick Raglow with Catholic Charities of the Archdiocese of Oklahoma City, emphasized the success of case management strategies: "Case management as employed by Catholic Charities and similar agencies, seeks to engage those we serve in a relationship to best address the conditions which bring the client to us, and not merely transfer resources to cover immediate needs. We accompany people on their journey to self-sufficiency, drawing from each client's own resources, talents, aspirations, and objectives."[59]

Food banks provide another example of the combined efforts of charitable organizations and government programs to alleviate hunger. Many food banks receive some level of government funding through The Emergency Food Assistance Program (TEFAP) and CSFP. TEFAP provides assistance to food banks through mandatory funding in the farm bill, bonus purchases made by USDA to provide support to agriculture markets, and through storage and distribution funds provided through the appropriations process. While Federal commodities and funds are important to food banks, the majority of their food is donated by retailers, manufacturers, and private donors. In addition to working through TEFAP and CSFP, food banks are very involved in many facets of SNAP. They can be the grantees of SNAP E&T, SNAP Outreach, and/or SNAP-Ed (officially, the Nutrition Education and Obesity Prevention Grant program funding).

Many food banks also have staff that provide support in signing up low-income individuals for public benefits. While food banks do play a crucial role in assisting low-income individuals, it is important to note that the United States cannot simply "food bank" its way out of hunger. Rather, it takes the coordinated effort of all Federal, state, and local partners. Leveraging existing resources and promoting successful practices on the ground is an important step in reducing hunger and poverty in the United States. As Kate Maehr with the Greater Chicago Food Depository stated, "if we can keep the Federal nutrition programs strong, then the dollars that we get from private donations can actually help us support innovative efforts."[60]

Finding 1e: The Diversity of Programs Serving Low-Income Households Simultaneously Generates Overlaps and Gaps in Recipient Services

While addressing food insecurity in the United States must involve a variety of organizations meeting a diversity of needs of low-income individuals, that complexity has led to duplication among welfare programs. The resulting confusion is pervasive at all levels—Federal, state, and local—in both public and private organizations. Dr. Eugene Steuerle with the Urban Institute had this to say about current policies that assist those in poverty:

> "With some exception, 20th century social welfare policy has entailed a liberal-conservative compromise that has never had a primary focus on mobility and opportunity, upon work and the gains that come about when individuals or households unite in marriage and other joint efforts. It has also failed for the most part to integrate programs efficiently and equitably, leading to high combined marginal tax rates, a weakened ability to adjust to individual circumstances, a lack of coordination among programs serving the same people, an inadequate targeting of benefits to those who qualify, and—relative to a focus

[58] Jon Anderson, Deputy Division Director, Division of Family and Children Services. Hearing of the House of Representatives, Subcommittee on Nutrition, Committee on Agriculture. *Past, Present, and Future of SNAP: Improving Innovation and Success in Employment and Training Programs.* September 13, 2016. Washington, D.C.

[59] Patrick Raglow, Executive Director, Catholic Charities of the Archdiocese of Oklahoma City. Hearing of the House of Representatives, Committee on Agriculture. Past, Present, and Future of SNAP: The Means to Climbing the Economic Ladder. June 10, 2015. Washington, D.C.

[60] Kate Maehr, CEO, Greater Chicago Food Depository. Hearing of the House of Representatives, Committee on Agriculture. *Past, Present, and Future of SNAP: The World of Nutrition and the Role of the Charitable Sector.* April 15, 2015. Washington, D.C.

on human capital and work—a lower growth rate for the economy as a whole."[61]

Federal food assistance is provided through a decentralized system that involves multiple Federal, state, and local organizations. The complex network of 18 food assistance programs (listed in *Appendix B*) emerged in a piecemeal fashion over the past several decades to meet various needs. In hearing testimony, the U.S. Government Accountability Office (GAO) noted that according to USDA and local providers, the multiple food assistance programs help to increase access to food for vulnerable or target populations.[62] However, GAO also testified that this patchwork of food assistance programs shows signs of program overlap. This can create unnecessary work and lead to inefficient use of resources. Further, overlapping eligibility requirements create duplicative work for both service providers and applicants. According to Dr. Angela Rachidi with the American Enterprise Institute, "The extent to which we can limit the burden on staff and on families by better consolidating and coordinating food assistance programs, the better these families will be served and the better the government's money will be spent."[63]

According to GAO, some food assistance programs provide comparable benefits to a similar population, but are managed separately, which could be a potentially inefficient use of Federal funds:[64]

- Six programs—NSLP, SBP, Fresh Fruit and Vegetable Program (FFVP), the Summer Food Service Program (SFSP), the Special Milk Program, and the Child and Adult Care Food Program (CACFP)—all provide food to eligible children in settings outside the home, such as at school, day care, or summer day camps.
- Two programs—CSFP and the Elderly Nutrition Program—both target older Americans.
- Individuals eligible for groceries through the CSFP are generally eligible for groceries through both TEFAP and SNAP.
- The Federal Emergency Management Agency's Emergency Food and Shelter National Board Program and TEFAP both provide groceries and prepared meals to needy individuals through local government and nonprofit entities.
- SFSP is similar to the Summer Seamless Option of the NSLP.

This patchwork system did not develop overnight, and the current framework is the result of a variety of factors. In fact, some of the overlap is rooted in split jurisdiction among the authorizing committees in Congress. For example, in the House of Representatives, the House Committee on Agriculture has jurisdiction over SNAP; Nutrition Assistance Program grants for Puerto Rico, American Samoa, and the Commonwealth of the Northern Mariana Islands; Food Distribution Program on Indian Reservations (FDPIR); CSFP; TEFAP; Community Food Projects; the Senior Farmers' Market Nutrition Program; and authorizes the funding for FFVP. The House Committee on Education and the Workforce handles WIC; SFSP; NSLP; SBP; WIC Farmers' Market Nutrition Program; Special Milk Program; CACFP; and FFVP, generally. TANF, SSI, the Children's Health Insurance Program (CHIP), and Medicaid are authorized by the Committee on Ways and Means, and the housing programs are overseen by the Financial Services Committee.

Various Federal, state, and local agencies are then responsible for administering this patchwork of programs on the ground. Regarding SNAP, the operation of the program is at the discretion of each state. For instance, in California, SNAP is a county-run program. In Texas, SNAP is administered by the state. The same goes for E&T programs within states. For example, New Jersey operates its E&T programs out of its Workforce Commission while some other states, such as Georgia, run their E&T programs out of their Health and Human Services departments. Dr.

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[61] Dr. Eugene Steuerle, Senior Fellow, Urban Institute. Joint Hearing of the House of Representatives, Subcommittee on Nutrition, Committee on Agriculture and the Subcommittee on Human Resources, Committee on Ways and Means. *Past, Present, and Future of SNAP: The Means to Climbing the Economic Ladder.* June 10, 2015. Washington, D.C.

[62] Kay Brown, Director, Education, Workforce, and Income Security, U.S. Government Accountability Office. Hearing of the House of Representatives, Subcommittee on Nutrition, Committee on Agriculture. *Past, Present, and Future of SNAP: The World of Nutrition, Government Duplication, and Unmet Needs.* May 20, 2015. Washington, D.C.

[63] Dr. Angela Rachidi, Research Fellow, American Enterprise Institute. Hearing of the House of Representatives, Subcommittee on Nutrition, Committee on Agriculture. *Past, Present, and Future of SNAP: The World of Nutrition, Government Duplication, and Unmet Needs.* May 20, 2015. Washington, D.C.

[64] *Id.,* n. 62.

Angela Rachidi of the American Enterprise Institute cited a specific example in New York City where SNAP, WIC, school food programs, and child and adult care programs are all administered by different agencies and the result is that each agency must determine eligibility and administer benefits separately. According to Dr. Rachidi:

> "A better system would be to consolidate programs that share the same goals and coordinate programs across one or two governing bodies, with a focus on the person or household. This will save the government money and reduce the burden on participating families. It may also improve service delivery to families by ensuring that they are made aware of all the benefits they are eligible for, as well as limiting the chance for errors, fraud, and abuse. I provided three specific examples where coordination could be beneficial—setting nutrition guidelines, authorizing retailers, and administering nutrition education programs—and reducing inefficiencies in eligibility determination should also be explored."[65]

While the preceding examples concern nutrition programs, silos exist throughout the welfare system. Eligibility workers within one program may not know the eligibility requirements for another welfare program. This uncoordinated system makes it challenging to share information on participating households. In the Committee's first *Past, Present, and Future of SNAP* hearing, Douglas Besharov with the University of Maryland confirmed this, saying, "there is a great need to modernize the program and to coordinate it with TANF, with unemployment insurance, with SSI, with SSDI, and as well, the earned income tax credit."[66]

> *"there is a great need to modernize the program and to coordinate it with TANF, with unemployment insurance, with SSI, with SSDI, and as well, the earned income tax credit."*
>
> DOUGLAS BESHAROV, University of Maryland.

A system that works in silos has a higher likelihood of fraud and error going undetected. States are beginning to focus more on coordination through data sharing across states and throughout the various programs.

Findings Theme 2: Climbing the Economic Ladder through Work

In the early days of the Food Stamp Program, eligibility requirements were established on a state-by-state basis. When the program expanded nationally, the Federal Government began establishing uniform standards of eligibility, which included work requirements. There are now two main types of work requirements for SNAP: general work requirements and what is known as the "ABAWD time limit", which is a time limit for receiving SNAP benefits for Able-Bodied Adults without Dependents (ABAWDs). While some form of work requirements have historically been mandated, it is up to states as to how they are carried out. A recurring critique of work requirements is the degree to which they are enforced by states. As Dr. Ron Haskins with the Brookings Institution stated in his testimony, "[SNAP] currently has modest work requirements, but they do not appear to be rigorously enforced."[67]

> *"[SNAP] currently has modest work requirements, but they do not appear to be rigorously enforced."*
>
> Dr. RON HASKINS, Brookings Institution.

The current **general work requirements** were created in 1971 by an amendment to the Food Stamp Act of 1964 (P.L. 91–671). Additional changes in the 2008 Food and Nutrition Act mandated that in all states, non-exempt participants must:

- Register for work;
- Accept a suitable job if offered one; and
- Not voluntarily quit a job without good cause or reduce work effort below 30 hours per week.

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[65] Dr. Angela Rachidi, Research Fellow, American Enterprise Institute. Hearing of the House of Representatives, Subcommittee on Nutrition, Committee on Agriculture. *Past, Present, and Future of SNAP: The World of Nutrition, Government Duplication, and Unmet Needs.* May 20, 2015. Washington, D.C.

[66] Douglas Besharov, Professor, University of Maryland School of Public Policy. Hearing of the House of Representatives, Committee on Agriculture. *Past, Present, and Future of SNAP.* February 25, 2015. Washington, D.C.

[67] Dr. Ron Haskins, Senior Fellow, Brookings Institution. Hearing of the House of Representatives, Subcommittee on Nutrition, Committee on Agriculture. *Past, Present, and Future of SNAP: Breaking the Cycle.* October 27, 2015. Washington, D.C.

Certain participants (who constitute a large share of SNAP participants) are exempt from these requirements because they are physically or mentally unfit for work; under age 16; over age 59; between 16 and 18 and not the head of household and attending school; and for various other reasons. It is also important to note that the general work requirements are a requirement to register for work, not a minimum for hours worked.

The welfare reforms of 1996 also added the **time limit for ABAWDs** who are not working and not otherwise exempted. Adults aged 18–49 who are not physically or mentally unfit for work or caring for a minor child are now ineligible for SNAP if they have received 3 months of SNAP benefits during the previous 36 months, unless the participant:

- Works at least 20 hours per week;
- Participates in an E&T program for at least 20 hours per week; or
- Participates in a state's "workfare" program.

The welfare reforms of 1996 allowed states to request a temporary waiver from USDA—typically for up to 12 months—for the ABAWD time limit in all or parts of the state when unemployment is high or there are not enough jobs available. After the 2008 economic crisis, a majority of states operated under the statewide ABAWD time limit waivers. As the economy recovered, fewer states were eligible to extend their statewide waivers beyond January 2015. As of October 1, 2016, there were 16 states without ABAWD waivers, 26 states approved for partial waivers, and 11 states with waivers for the entire state or territory.

All states are also granted an exemption to be administered at the state's discretion, allowing them to continue to provide SNAP benefits for up to 15 percent of recipients who would otherwise be made ineligible by the ABAWD time limit.

Finding 2a: Unemployment and Underemployment Are Leading Causes of Poverty, and Promoting Pathways to Employment Is the Best Way To Help Individuals Climb the Economic Ladder Out of Poverty and Into Self-Sufficiency

According to the National Commission on Hunger and others, work is a crucial factor in helping low-income individuals lift themselves out of poverty.[68–69] While many families on SNAP work, there are a large number of households that do not report earned income, which is income that a person receives for doing work (such as salaries, wages, tips, *etc.*). According to the most recent USDA *SNAP Characteristics Report,* 68 percent of total SNAP households reported no earned income. When looking at the SNAP households that one might expect to generate an earned income (*e.g.,* households that do not contain children, disabled, or the elderly), only 20.6 percent of these households reported earned income.[70]

It comes as no surprise that employment is highly correlated with income. In 2014, according to the U.S. Census Bureau, only 2.7 percent of full-time workers lived below the Federal poverty level, compared with 32.3 percent of adults who do not work. Even part-time work makes a significant difference, with only 17.5 percent of part-time workers living below the poverty level.[71]

During the hearing *The Means to Climbing the Economic Ladder,* Members heard testimony from organizations that work within local communities to provide job training to low-income individuals. Recipients come from a range of situations that require various levels of job training to prepare for a successful job. Without a strong foundation in work skills, individuals may need more assistance in gaining and maintaining a job. WeCare, a job training program located in New York City, grouped SNAP recipients in four categories: (1) fully employable, where no accommodations were needed; (2) employable, with accommodations; (3) temporarily unemployable, which is also referred to as needing wellness or condition management; or (4) possible Federal disability benefits.[72] "It is not just about giving people food. It is about worker training. It is about getting people in the community back on

[68] *Id.,* n. 67.

[69] National Commission on Hunger. *Freedom from Hunger: An Achievable Goal for the United States of America.* 2015.

[70] *Id.,* n. 15.

[71] U.S. Census Bureau. *Income, Poverty, and Health Insurance Coverage in the United States: 2012. http://www.census.gov/prod/2013pubs/p60-245.pdf.*

[72] Grant Collins, Senior Vice President, Fedcap Rehabilitation Services, Inc. Hearing of the House of Representatives, Subcommittee on Nutrition, Committee on Agriculture. *Past, Present, and Future of SNAP: The Means to Climbing the Economic Ladder.* June 10, 2015. Washington, D.C.

their feet," Subcommittee Ranking Member Jim McGovern stated.[73] The ability of the Federal Government to account for these special circumstances is limited; therefore, it is crucial that state and local partners are invested.

"It is not just about giving people food. It is about worker training. It is about getting people in the community back on their feet."
Rep. Hon. JAMES P. MCGOVERN (MA–2), Nutrition Subcommittee Ranking Member.

Finding 2b: Better Enforcement of Work Requirements Is Needed in Some States, and Enforcement Needs To Be Coupled With More Effective SNAP Employment and Training (E&T) Programs

The importance of work has always been recognized, but not necessarily emphasized, as noted by David Stillman with the Washington Department of Social and Health Services. According to Stillman, "While [SNAP] has had a requirement to include an [E&T] component since 1998, most states' programs have consisted of a referral to a job search program."[74] SNAP E&T programs assist in providing job training and job readiness to SNAP recipients. USDA's FNS gives each state funds and a set of requirements to implement their E&T programs. States decide which department will run their programs (*e.g.,* Health and Human Services, Workforce Commission, *etc.*) and whether or not they work in tandem with other work-support programs in the state (*e.g.,* TANF, Workforce Innovation and Opportunity Act Programs). Each state is required by law to operate a SNAP E&T program, though they have considerable flexibility in the design and scope of their programs. States must submit annual state E&T plans identifying, among other things, the services the state plans to offer; the categories and types of individuals the state intends to exempt from E&T participation; characteristics of the population the state agency intends to place in E&T; and the geographic areas covered and not covered by the E&T plan. Services offered must include one or more of the following components:

- Job search activities;
- Job search training, including skills assessments, job finding clubs, training in employability techniques, and job placement services;
- Workfare programs;
- Programs designed to improve the employability of eligible individuals through actual work experience, training, or both;
- Educational programs to improve basic skills and literacy;
- Programs designed to increase an individual's self-sufficiency through self-employment;
- Programs to provide job retention service for up to 90 days following employment; or
- Other employment, educational, or training programs approved by the Secretary of Agriculture or the state.

States also have the flexibility to determine what type of participation to require under the program—either mandatory or voluntary participation. States can also choose to work with local nonprofits. State E&T programs are generally operated on a county-by-county basis and offer different services to different SNAP recipients based on where they live. In most cases, especially in rural counties, recipients get basic assistance in the form of being provided a computer for job searches. Seattle Jobs Initiative, an innovator in the employment training space, has partnered up with FNS to provide best practices to programs across the country to assist in providing better services.

The 2014 Farm Bill enjoyed bipartisan support in focusing on the importance of work via SNAP E&T Pilots. The grants to implement these pilots were awarded to ten states to focus their efforts on different community needs and implementation methods, including focusing on both urban and rural settings, comparing voluntary *versus* mandatory participation, and evaluating whether job readiness training *versus* on-the-job training better prepares recipients for work. While the pilots are a few years away from having tangible metrics, they are still able to provide initial

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[73] James P. McGovern, Ranking Member of the Subcommittee on Nutrition. Hearing of the House of Representatives, Committee on Agriculture. *Past, Present, and Future of SNAP: The World of Nutrition and the Role of the Charitable Sector.* April 15, 2015. Washington, D.C.

[74] David Stillman, Assistant Secretary, Economic Services Administration, Washington State Department of Social and Health Services. Hearing of the House of Representatives, Subcommittee on Nutrition, Committee on Agriculture. *Past, Present, and Future of SNAP: Improving Innovation and Success in Employment and Training Programs.* September 13, 2016. Washington, D.C.

best practices in improving recipients' job skills and job entry. Pete Weber with the Fresno Bridge Academy cited research from the Center on Budget and Policy Priorities on common characteristics across effective E&T programs. They found that the most effective programs include providing education or remediation to allow individuals with low education levels to access industry-specific training programs; individualized, hands-on work to build life skills; and provision of supportive services (transportation and flexible funds to help purchase items to help individuals work or look for work).[75]

If the Federal Government is going to help enable recipients to climb the economic ladder, first there must be a better understanding of what is happening at the local level and what can be improved upon. As stated earlier in this section, there is concern that general work requirements are not adequately enforced. States must engage in greater oversight of the enforcement of the general work requirements to ensure those who can work do. At the Federal level, the way states enforce the work requirements must be taken into account to ensure that this can be done with administrative ease.

Successful E&T programs paired with work requirements promote the importance of work and help maintain program integrity. "There is little evidence that harsh provisions are necessary to encourage able-bodied adults to work. Reasonable requirements, strongly enforced, and accompanied by the carrots for work provided by the work support system, may well be enough to encourage adults to work," stated Dr. Ron Haskins with the Brookings Institution. Those that can work should work, and they need to be provided with the tools to aid in their upward economic mobility. This "builds the participants' confidence in their own natural ability and self-worth."[76–77]

Finding 2c: Combined With Other Welfare Programs, SNAP Recipients May Face a "Welfare Cliff" When They Are Just Above the Income Eligibility Level, Which Can Create Disincentives To Finding Work Or Increasing Earnings

SNAP does not operate in a vacuum. The recipients of one Federal program are often the recipients of multiple Federal programs. During a joint hearing on the welfare cliff, then-Chairman of the House Ways and Means Committee Paul Ryan pointed out that, "right now we have a safety net that is designed to catch people falling into poverty. What we need is a safety net to lift people out of poverty."[78] According to the most recent *SNAP Characteristics Report,* 20 percent of SNAP recipients receive SSI, 24 percent receive some form of Social Security benefits, nine percent receive child support enforcement payments, seven percent receive support from TANF, and four percent receive UI. A recipient just below the income threshold of certain programs may see a significant decrease in the amount of assistance they receive when they obtain employment that provides earned income over a certain threshold, leading to what is known as the "welfare cliff." This phenomenon is highlighted in the figure below.

"right now we have a safety net that is designed to catch people falling into poverty. What we need is a safety net to lift people out of poverty."
Rep. PAUL RYAN (WI–1), former Ways and Means Chairman.

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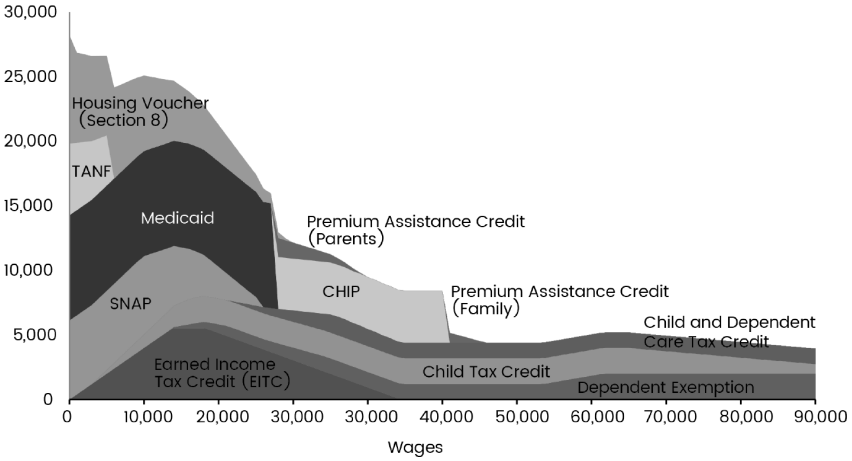
[75] Pete Weber, Founder, Fresno Bridge Academy. Hearing of the House of Representatives, Subcommittee on Nutrition, Committee on Agriculture. *Past, Present, and Future of SNAP: Improving Innovation and Success in Employment and Training Programs.* September 13, 2016. Washington, D.C.

[76] *Id.,* n. 67.

[77] Leon Samuels, Executive Director, Strive DC. Hearing of the House of Representatives, Committee on Agriculture. *Past, Present, and Future of SNAP: The Means to Climbing the Economic Ladder.* June 10, 2015. Washington, D.C.

[78] Paul Ryan, Chairman of the House Committee on Ways and Means. Joint Hearing of the House of Representatives, Subcommittee on Nutrition, Committee on Agriculture and the Subcommittee on Human Resources, Committee on Ways and Means. *Past, Present, and Future of SNAP: The Means to Climbing the Economic Ladder.* June 10, 2015. Washington, D.C.

Tax and Transfer Benefits for Universally Available and Additional Programs



Note: This scenario applies to single adults with two children.

Source: Dr. Eugene Steuerle, Senior Fellow, Urban Institute. Joint Hearing of the House of Representatives, Subcommittee on Nutrition, Committee on Agriculture and the Subcommittee on Human Resources, Committee on Ways and Means. *Past, Present, and Future of SNAP: The Means to Climbing the Economic Ladder.* June 10, 2015. Washington, D.C.

Individuals may be forced to decide whether to reduce the number of hours worked and gain more government benefits, or work and lose said benefits but have less monthly income than if the recipient was to forgo working. In discussing the welfare cliff, Dr. Casey Mulligan of the University of Chicago highlighted two reasons government tax and spending rules reduce the reward for work. First, there are income contingencies that occur—if a household receives more income from work, it receives fewer benefits. Second, there are employment contingencies—the more employment a household has, the more its taxes and benefit amounts are impacted even if its income is the same.[79]

Chanel McCorkle, a SNAP recipient, described her experience with the welfare cliff: "After I lost my job I applied for Temporary Cash Assistance through the Department of Social Services. Thirty days after I applied I was granted cash assistance, and immediately received daycare vouchers and an increase in food stamp assistance. The daycare vouchers I so desperately needed while I was working were finally granted to me after it cost me my job." [80]

The answer to fully addressing the welfare cliff does not wholly rely on SNAP; instead it relies on coordination across committees and welfare programs to ensure they reduce poverty and hunger while encouraging work that leads to greater economic success. Erik Randolph with the Illinois Policy Institute described the welfare cliff by providing the following example: "A single parent in Lake County, Illinois, who earns $12 per hour brings home just over $22,000 in net pay. However, that same single parent is eligible for an array of welfare benefits as follows:

- "Refundable tax credits from the Earned Income Tax Credit, the Additional Child Tax Credit, and the Illinois Earned Income Tax Credit;
- "Food assistance, including SNAP, food packages from WIC, and the National School Lunch Program;
- "Housing assistance from the Housing Choice Voucher Program;

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[79] Dr. Casey Mulligan, Professor, Department of Economics, University of Chicago. Joint Hearing of the House of Representatives, Subcommittee on Nutrition, Committee on Agriculture and the Subcommittee on Human Resources, Committee on Ways and Means. *Past, Present, and Future of SNAP: The Means to Climbing the Economic Ladder.* June 10, 2015. Washington, D.C.

[80] Chanel McCorkle, Candidate, America Works of Maryland. Joint Hearing of the House of Representatives, Subcommittee on Nutrition, Committee on Agriculture and the Subcommittee on Human Resources, Committee on Ways and Means. *Past, Present, and Future of SNAP: The Means to Climbing the Economic Ladder.* June 10, 2015. Washington, D.C.

- "Subsidized child care services; and
- "Medical assistance for both the parent and her children."

Randolph continued, "When you add up the value of those potential benefits, it comes to an astounding $39,534, bringing the total net receivables in terms of earned income and benefits to $61,655. In comparison, suppose you earn $18 per hour, bringing home about $33,000 in net pay. That is a gain of about $11,000 in earned income. However, your potential welfare benefits will drop drastically to $5,236 from $39,534, for a loss of more than $34,000. Why would any sane person voluntarily give up $34,000 in benefits to gain only $11,000?" [81]

Findings Theme 3: Maintaining Program Integrity

Program integrity within SNAP is critical for both the functioning and long-term sustainability of the program. Jessica Shahin of USDA FNS emphasized this in her testimony at the *Evaluating Error Rates and Anti-Fraud Measures to Enhance Program Integrity* hearing: "As vital as the program is to so many, and as well as it operates, we can all agree that it can do even better, and it is up to all of us, the Federal Government, the states, and the local providers to work together to improve it by holding ourselves accountable. FNS is committed to continually improving the integrity of SNAP. FNS has long recognized that SNAP cannot succeed without strong public confidence, so good stewardship of tax dollars is one of our most important objectives." [82]

> *"FNS has long recognized that SNAP cannot succeed without strong public confidence, so good stewardship of tax dollars is one of our most important objectives."*
>
> JESSICA SHAHIN, USDA FNS.

At the same hearing, Dave Yost, Auditor of State in Ohio, discussed the public perception and impact of food stamp fraud: "Food stamp fraud hardens the hearts of good people and deafens their ears to the sound of hunger. Every dollar wasted or fraudulently spent is a dollar that could be used for its intended purpose: to feed the poor. For those who hunger, and for those who pay the bill, we owe a greater effort toward integrity." [83]

> *"Food stamp fraud hardens the hearts of good people and deafens their ears to the sound of hunger. Every dollar wasted or fraudulently spent is a dollar that could be used for its intended purpose: to feed the poor. For those who hunger, and for those who pay the bill, we owe a greater effort toward integrity."*
>
> DAVE YOST, Auditor of State in Ohio.

Both of these witnesses highlighted how critical it is to seek constant and continuous improvement in SNAP. They also pointed out how important it is to understand any issues or problems that arise with payments and to ensure that sufficient steps are taken to address and prevent future issues.

In any discussion of program integrity, it is important that terms be carefully defined. In the context of SNAP:

- **Improper payments,** or "**SNAP errors**", are under or overpayment of benefits due to:
  - Unintentional administrative errors in eligibility or benefit determination; and
  - Misrepresentation of eligibility;
- **Fraud** is the intentional misuse of SNAP benefits. It includes:
  - Benefits trafficking, which is the exchange of SNAP benefits for cash or noncash goods or services (other than eligible food) by recipients and/or retailers;

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[81] Erik Randolph, Senior Fellow, Illinois Policy Institute. Joint Hearing of the House of Representatives, Subcommittee on Nutrition, Committee on Agriculture and the Subcommittee on Human Resources, Committee on Ways and Means. Past, Present, and Future of SNAP: The Means to Climbing the Economic Ladder. June 10, 2015. Washington, D.C.

[82] Jessica Shahin, USDA FNS, SNAP Associate Administrator. Hearing of the House of Representatives, Committee on Agriculture. *Past, Present, and Future of SNAP: Breaking the Cycle.* October 31, 2016. Washington, D.C.

[83] Dave Yost, Auditor of State, State of Ohio. Hearing of the House of Representatives, Committee on Agriculture. *Past, Present, and Future of SNAP: Breaking the Cycle.* October 31, 2016. Washington, D.C.

- Misrepresentation of eligibility resulting in benefits being improperly awarded to recipients; and
- Misrepresentation of information by businesses or individuals when applying to become a SNAP authorized retailer.

As made clear by these descriptions, there is overlap between the components of fraud and improper payments, and addressing program integrity is a challenging and complicated issue. Clarity in what is being measured and how those metrics can be used to ensure benefits reach intended recipients are critical considerations in the structure of the program.

Finding 3a: SNAP Needs Clear Program Goals and Must Be Evaluated According to Metrics Aligned With Those Goals To Generate Program Improvement

The Food and Nutrition Act of 2008, as amended, lays out Congressional intent for SNAP:

> "It is hereby declared to be the policy of Congress, in order to promote the general welfare, to safeguard the health and well-being of the nation's population by raising levels of nutrition among low-income households. Congress hereby finds that the limited food purchasing power of low-income households contributes to hunger and malnutrition among members of such households. Congress further finds that increased utilization of food in establishing and maintaining adequate national levels of nutrition will promote the distribution in a beneficial manner of the nation's agricultural abundance and will strengthen the nation's agricultural economy, as well as result in more orderly marketing and distribution of foods. To alleviate such hunger and malnutrition, a supplemental nutrition assistance program is herein authorized which will permit low-income households to obtain a more nutritious diet through normal channels of trade by increasing food purchasing power for all eligible households who apply for participation."[84]

Throughout the hearing series, witnesses emphasized that SNAP does not simply provide nutrition to low-income recipients. It also provides nutrition education, better access to fresh fruits and vegetables, valuable employment and training opportunities, and coordination with other welfare programs. Monitoring the progress on all of these objectives is a major challenge, and witnesses documented the need for targeted program metrics and evaluations.

SNAP program performance is currently evaluated in a number of ways. Some of those evaluations provide the characteristics of SNAP recipient households, including household composition; presence of children, elderly, or disabled persons; gross and net income; and other characteristics.[85] Other evaluations provide information on the over 250,000 retailers who participate in SNAP and on FNS's monitoring and evaluation of retailers. USDA publishes a report of compliance activity for retailers, reflecting sanctions (including disqualifications) and other compliance actions. In FY 2015, USDA flagged over 17,900 stores for potential violations and initiated over 3,700 compliance actions on authorized firms found in violation of SNAP regulations.[86]

In another method of program monitoring and evaluation, states and FNS have quality control (QC) procedures in place to review household eligibility determinations. States review a sample of their SNAP cases, and FNS subsequently verifies a sub-sample of those cases. The results of this review are used to calculate state error rates, and the state error rates are averaged (weighted) to estimate the national error rate. Much of the information on SNAP performance is collected at the state level because the states are responsible for making SNAP eligibility determinations.

The design and structure of programs can also be critical in ensuring they are able to be monitored and evaluated adequately. For example, the 2014 Farm Bill funded ten pilot projects designed to reduce dependency and increase work, all of which are required to have a "control group" that does not participate in the program, in order to be able to measure whether the pilots achieve their desired outcomes.

One area of SNAP that differs from the program evaluation methods of other means-tested programs is that SNAP includes bonuses tied to error rates. USDA provides states with financial bonuses and imposes sanctions to reduce or maintain

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[84] *Food and Nutrition Act of 2008* as Amended, Declaration of Policy, Section 2.
[85] *Id.,* n. 15.
[86] USDA FNS. *SNAP Retailer Management FY 2015 Year End Summary. http://www.fns.usda.gov/snap-retailer-data*.

low error rates. In general, $24 million is allocated among states with the best payment accuracy and most improved payment accuracy.[87]

> *"The Federal Government could greatly accelerate evidence building within SNAP by creating strong incentives for states to use their existing funds to rigorously test new employment/training strategies."*
>
> JON BARON, Laura & John Arnold Foundation.

There are differences of opinion regarding state bonuses and the basis on which they should be awarded. Some believe these bonuses serve as an important incentive to states to focus on particular areas of SNAP success. For example, as Jon Baron at the Laura and John Arnold Foundation noted, "The Federal Government could greatly accelerate evidence building within SNAP by creating strong incentives for states to use their existing funds to rigorously test new employment/training strategies."[88]

However, there is also concern about whether the reporting and evaluation that are done are adequate to measure the intended outcomes of the program. This is critical for determining whether SNAP is successful or not, and in what ways the program can be improved. As pointed out by Dr. James Sullivan of the University of Notre Dame: "By steering resources towards the most effective social programs, evidence of what works and what doesn't can significantly improve the lives of the poor."[89] He further states, "By guiding funds away from ineffective programs, high quality impact evaluations allow us to do more good with the limited resources available."

Witnesses who testified at the hearings on reporting and evaluation suggested that using evidence to guide policy can generate positive outcomes. This requires actions such as incentivizing innovation and measurement of program effectiveness. Measurement of effectiveness is highly dependent on data available, and the decentralized nature of SNAP administration has long hampered data collection efforts.

The importance of adequate reporting metrics is readily apparent in efforts to track and prevent churn. Churn occurs when "SNAP households rapidly cycl[e] on and off the program, usually due to lapses through the recertification process."[90] Churn imposes costs both to participants and to agencies administering the program. For agencies, churn increases costs by requiring agencies to process additional applications from households reentering the program. For participants, costs include the loss of benefits that they otherwise would have received, the administrative burdens of the reapplication process, and other burdens related to coping during the period without benefits.

Data and research are conflicting regarding how long SNAP participants are on the program. Stephen Tordella of Decision Demographics testified on a recent study of SNAP participation dynamics his organization conducted. Based on their findings, SNAP spells (or continuous time on the program) have gotten longer over the past decade: ½ of those who entered the program between 2008 to 2012 ("new entrants") exited within 12 months, compared to 10 months during the mid-2000s and 8 months in the early 2000s. SNAP spell lengths were shorter for individuals in families without children and for ABAWDs. Spell lengths were longer for new entrants living in poverty, those in single-parent families, nonelderly disabled adults, and children.

Overall, however, most entrants left the program within 2 years.[91] Understanding why a recipient is moving on and off the program is of benefit to the recipient and could lower administrative costs. Adequate reporting and evaluation metrics can get

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[87] Kay Brown, Director, Education, Workforce, and Income Security, U.S. Government Accountability Office. Hearing of the House of Representatives, Committee on Agriculture. *Past, Present, and Future of SNAP: Evaluating Error Rates and Anti-Fraud Measures to Enhance Program Integrity.* July 6, 2016. Washington, D.C.

[88] Jon Baron, Vice-President for Evidence-Based Policy, Laura and John Arnold Foundation. Hearing of the House of Representatives, Subcommittee on Nutrition, Committee on Agriculture. *Past, Present, and Future of SNAP: Developing and Using Evidence-Based Solutions.* July 15, 2015. Washington, D.C.

[89] Dr. James Sullivan, Rev. Thomas J. McDonagh, C.S.C., Associate Professor of Economics, University of Notre Dame and Director, Wilson Sheehan Lab for Economic Opportunities. Hearing of the House of Representatives Subcommittee on Nutrition, Committee on Agriculture. *Past, Present, and Future of SNAP: Developing and Using Evidence-Based Solutions.* July 15, 2015. Washington, D.C.

[90] Gregory Mills, Senior Fellow, Urban Institute. Hearing of the House of Representatives, Subcommittee on Nutrition, Committee on Agriculture. *Past, Present, and Future of SNAP: Recipient Characteristics and Dynamics.* February 26, 2015. Washington, D.C.

[91] Stephen Tordella, President, Decision Demographics. Hearing of the House of Representatives, Subcommittee on Nutrition, Committee on Agriculture. *Past, Present, and Future of SNAP: Recipient Characteristics and Dynamics.* February 26, 2015. Washington, D.C.

at the root of the issues recipients face and allow states to best know what individuals are facing.

Finding 3b: SNAP Fraud Rates Can Be Improved Through Innovative State and Federal Strategies and Technologies

Fraud rates are one of several important indicators of SNAP program integrity. Fraud is especially malicious because it is intentional. SNAP recipient fraud can occur when applicants make misleading or false claims to obtain benefits or when applicants misuse benefits by trading them for cash or noncash goods or services (this particular type of fraud is known as "trafficking"). Examples of trafficking include the illegal sale of SNAP benefits for cash and sales of SNAP benefits for ineligible items. For example, from 2009 to 2011, trafficking of SNAP benefits for cash at a discount to food retailers diverted an estimated $858 million annually from SNAP benefits, and overall, approximately 1.3 percent of total SNAP benefits were trafficked via retailers.[92]

While these numbers are alarming, a September 2012 USDA Office of Inspector General (OIG) report found that the exact amount of recipient fraud is difficult to estimate accurately and recommended that FNS determine the feasibility of creating a uniform methodology to calculate recipient fraud in the same way across states. FNS ultimately determined that to do so would require legislative authority mandating significant state investment of time and resources in addressing fraud beyond current requirements.[93]

Responsibility for addressing SNAP fraud falls on both FNS and states. At the Federal level, FNS is responsible for managing retailer fraud. SNAP retailers are approved nationally, and any fraud they commit could have implications across state borders. At the state level, individual state or local agencies that administer SNAP are responsible for detecting, investigating, and prosecuting fraud committed by recipients. FNS retains responsibility for providing guidance and monitoring state activities.

Strategies for addressing fraud are wide-ranging and include: cross-referencing across state databases to identify duplication, monitoring transactions that are for an even dollar amount, conducting undercover investigations, and using an electronic audit trail of EBT transactions to identify trafficking. GAO's hearing testimony also pointed out that many states employ fraud reporting hotlines and websites, and that many states do extensive review of school enrollment, vehicle registration, vital statistics, and credit reports to detect potential fraud. However, the depth of this analysis varied considerably and at the time of GAO's report, for example, Florida was routinely reviewing EBT transactions data for suspicious patterns, while Texas was only reviewing transactions for households that had been referred for potential fraud. Some states, but not all, monitored postings on social media and e-commerce sites to monitor for individuals selling SNAP benefits. States have reported limitations on their ability to track fraud due to inadequate staffing levels.[94]

At the Federal level, FNS has over 100 analysts who analyze retailer data, conduct undercover investigations, and process cases against violating retailers. The Federal Government also collects delinquent SNAP recipient claims via the Treasury Offset Program; these claims could be because of intentional program violations by the client, inadvertent household error, or a state agency error.[95]

Reducing or eliminating SNAP fraud is critical to program integrity and continuing to provide benefits to eligible individuals and households. Although fraud is an ongoing concern, efforts to address it are also ongoing.

Finding 3c: SNAP Error Rates Are Only As Good As the Program Parameters On Which They Are Based

The SNAP error rate is an often-cited parameter of SNAP program integrity. USDA's SNAP payment error rate is determined via the SNAP Quality Control System, which measures the accuracy of eligibility and benefit determinations made by states. The SNAP payment error rate is the sum of overpayments and underpay-

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[92] USDA FNS. Nutrition Assistance Program Report. *The Extent of Trafficking in the Supplemental Nutrition Assistance Program: 2009–2011.* August 2013. *http://www.fns.usda.gov/sites/default/files/Trafficking2009.pdf*.

[93] *Id.,* n. 87.

[94] *Id.,* n. 87.

[95] USDA FNS. *What is FNS Doing to Fight SNAP Fraud. http://www.fns.usda.gov/fraud/what-fns-doing-fight-snap-fraud*.

ments, but notably excludes errors of less than $37 per month.[96] As of FY 2014, the SNAP national payment error rate was 3.66 percent, which reflected a combined rate of 2.96 percent overpayments and 0.69 percent underpayments.[97] Using the $69.99 billion in total payments in FY 2014, overpayments of 2.96 percent were equal to just over $2.07 billion. There has been a long-term downward trend in SNAP error rates calculated as a percent of benefits, but it is important to note that these have come as the value of benefits from the program have been increasing, and the dollar value of overpayment of benefits was on a general uptrend through FY 2011.[98] Regardless of the improvements in SNAP error rates, taxpayer dollars must be used and protected appropriately, since even low error rates represent significant taxpayer cost.

While fraud is clear cut in that it requires malicious intent, SNAP administrative errors are considered unintentional. Although they are unintentional, error rates vary substantially based on program design. Using the policy options provided in SNAP statute, states have the option of implementing an option called "simplified reporting," which requires households to report changes in income only when their income rises above a certain level. Simplified reporting may lower error rates because it reduces the frequency of required reports. States that do not utilize this option require households to report their earnings more frequently. This option is discussed at length later in the report.

In another example of the potential for variation in error rates, the use of BBCE in determining eligibility for SNAP means that there are fewer steps required in an agency determination of household eligibility. By linking SNAP eligibility to receiving noncash services provided by TANF, the state effectively removes or increases SNAP asset limits, increases the SNAP gross income limit, and removes the SNAP net income limit (because they are using the TANF noncash asset and income limits instead). According to GAO, "state flexibilities that simplified program policies or procedures may therefore have contributed to decreases in the SNAP improper payment rate, though the rate was likely affected by additional factors as well, such as changes in the number of SNAP applicants and state staffing levels." In other words, if fewer hurdles are required to determine SNAP eligibility, there are fewer opportunities for making errors. Reducing the error rate may not necessarily be a good thing if it comes at the expense of robust eligibility requirements. Of 33 state options GAO reviewed, 17 likely reduced the potential for error. In some cases, potential to reduce the error rate was also a key factor in a state's decision to adopt certain policies.[99]

Another concern with SNAP error rates was highlighted in the USDA OIG's review of the QC process to determine whether there are sufficient controls in place to ensure the integrity of SNAP error rate determinations. After reviewing national, regional, and state level procedures, OIG found that states "weakened the QC process by using third-party consultants and error review committees to mitigate individual QC-identified errors, rather than improving eligibility determinations" and that error cases were also treated non-uniformly. They also found that "FNS' two-tier QC process is vulnerable to state abuse due to conflicting interests between (1) accurately reporting true error rates and incurring penalties or (2) mitigating errors and receiving a bonus for exceeding standards." Further, OIG concluded that "FNS' QC process understated SNAP's error rate." OIG recommended that FNS consider changing QC from a two-tier process to a one-tier process in which FNS or a third party reviews the cases.[100] These concerns are of particular importance because states are also eligible to receive high-performance bonuses based on their error rates. This can create perverse incentives for states to seek ways to hide errors rather than seek actual program improvement.

In response to OIG's findings, USDA FNS has undertaken an extensive review of the QC process, including issuing strong guidance to states on the integrity of the SNAP Quality Control system. States were provided directives on preventing bias, on misusing error review committees and third party systems, and on their responsibilities for addressing improper payments.[101] USDA's review process revealed data

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[96] Agricultural Act of 2014, Section 4019. Note that the $37/month is adjusted annually at the rate of changes in the value of the Thrifty Food Plan.

[97] USDA FNS. *Supplemental Nutrition Assistance Program (SNAP): Quality Control. http://www.fns.usda.gov/snap/quality-control*.

[98] USDA FNS. *SNAP Quality Control Error Rates. http://www.fns.usda.gov/snap/snap-quality-control-error-rates*.

[99] *Id.*, n. 87.

[100] USDA Office of Inspector General. *FNS Quality Control Process for SNAP Error Rate.* September 2015. Audit Report 27601–0002–41.

[101] USDA FNS. *Integrity of the SNAP Quality Control System.* Quality Control Policy Memo: 16–02. Jan. 20, 2016.

quality concerns in 42 states for FY 2015. USDA has indicated it will not be releasing national error rates for FY 2015. However, in November 2016, USDA released the error rates for 11 states where QC data can be validated. In accordance with Federal policy, ten of those states will receive payment accuracy bonus awards.

The presence of state flexibilities and concerns with the QC system show that there are ways that states can significantly lower error rates without necessarily improving program integrity. Thus, SNAP error rates must be considered in the context of any changes in program design and state options for implementing SNAP. Perhaps more importantly, additional consideration is needed in whether performance bonuses based on SNAP error rates are warranted, given subjective program design and implementation.

Finding 3d: State Flexibility in Administering SNAP Should Not Jeopardize Program Integrity

Some state flexibility within SNAP is critical to better targeting benefits to those in need, for streamlining program administration, and for coordinating with other programs. However, the discussion of SNAP error and fraud, as well as the extensive needs of some SNAP beneficiaries, indicates that flexibility and accountability must be in balance. As described in extensive detail earlier, states have a long list of options they can take at their discretion as well as the ability to apply to FNS for waivers from many SNAP program requirements. State options can be difficult to track because they are implemented at the option of the state and are typically reported to FNS primarily via an annual state plan submission.

Further, after reviewing 33 state options, GAO concluded that the majority of state SNAP policy flexibilities likely reduced payment errors. Of the 17 that potentially reduced the likelihood of payment errors, 11 simplified the SNAP program requirements (generally reducing opportunities for participants and caseworkers to make errors) and six modified the procedures for receiving and processing information. One of the most commonly used options relates to recipient reporting frequency.[102]

Recipient Reporting Frequency

SNAP implementing agencies are granted flexibility in determining the requirements for recipients to report changes in income (or other key household changes). However, flexibility in reporting comes with a tradeoff in the timeliness of the information the state agency has on recipients.

A perfect example of this tradeoff can be seen in reporting requirements for the elderly or disabled. Households in which all members are elderly or disabled have a certification period of up to 24 months with a 12 month periodic reporting requirement.[103] This reduces the burden on the household and on the state agency for handling reporting; however, a year could pass with no update in household status, in which time the household composition could change.

State agencies have the option of requiring SNAP recipients to report household circumstances at various intervals and in various ways. State agencies can use different reporting systems for different types of households, or different geographical areas, but each household is subject to only one reporting system:

- For **change reporting,** recipients may be required to report changes periodically or within a certain time, typically within 10 days, after certain changes in circumstances occur.
- Under **periodic reporting,** participants report either monthly, quarterly, or using a simplified system with reduced reporting requirements. Under **simplified reporting,** households are required to report changes in income between certification and scheduled reporting periods when total countable income rises above 130 percent of the poverty level or when work hours for ABAWDs fall below 20 hours per week. State agencies have the option to act on all changes reported during the certification period, or to act only on certain changes that result in an increase in household benefits. States that have chosen to act on all changes must act to verify any changes reported and take appropriate action, even if this change reduces the client's benefit. This option allows states that have combined SNAP/TANF programs to more seamlessly integrate the two. It avoids a situation where the TANF program has acted on a change, but SNAP has not, and it decreases caseworker burden by aligning the programs.

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[102] *Id.,* n. 87.
[103] *Food and Nutrition Act of 2008.* Section 3(f).

Households certified for SNAP for longer than 6 months must submit a periodic report at least once every 6 months, but no more than once every 4 months, during the certification period. Some [state] agencies have opted to certify simplified reporting households for 12 months, with a periodic report at 6 months. Others have opted to certify these households for 6 months.[104]

The net result of the state option for simplified reporting, and other state options such as BBCE, is that states can generate reductions in their state error rate without necessarily increasing the likelihood that the program serves those most in need.

Beyond reporting requirements and other state flexibilities, there is also an important systematic role that FNS plays in SNAP program consistency and oversight. Important efficiencies are gained by retaining some roles in program administration at the Federal level. Because SNAP retailers, transactions, and recipients can all reach across state lines, a unified approach to management of these portions of SNAP and oversight of implementation are all critical in program integrity.

Unfortunately, there are significant examples of when states fell short in their responsibility to protect SNAP program integrity. As was mentioned at several of the hearings, a USDA review of New Mexico's Human Services Department and its implementation of SNAP found severe compliance issues with SNAP administration, primarily with recipient certification, improperly slowing the application process, and improperly paying benefits.

A balance must be struck between enhancing program integrity and ensuring "that the administration of benefit programs does not impose additional burdens on working families." [105] Requiring an individual to take off work and stand in a long line to see a caseworker, for instance, creates an undue burden on the recipient. Addressing the administrative burden of reporting requirements while utilizing data sharing among and within states could ease administrative burdens while improving program integrity.

Finding 3e: Data Availability—With Robust Privacy Protections—Is a Key Concern in Ensuring SNAP Is Functioning As Intended

Because SNAP is state (and in some cases, county) administered, program data and eligibility determinations are managed at the state agency level. The Committee's review of SNAP points to room for improvement in how data is collected among state and county agencies and FNS. Currently, data modeling is used to augment actual data. For example, Karen Cunnyngham of Mathematica highlighted the use of this approach to "compare poverty, SNAP eligibility, and SNAP participation across states." [106]

At the request of Chairman Conaway, GAO recently reported on practices that can enhance the utilization of data by states.[107] States are required by law and regulation to determine eligibility for SNAP. Verification of that information, and in particular, verification of income information of potential SNAP beneficiaries, is a critical challenge for states and is a data-intensive process, as noted by GAO: "One financial criterion for SNAP eligibility and benefit amount involves household income, which can come from various sources, including earned income, such as wages and salaries, and unearned income, such as payments from other government programs." [108]

Agencies at the state and county level that administer SNAP simplify this process with data matching to (1) obtain information on households' income, (2) verify information provided on income, and (3) identify discrepancies. Data matching can also inform agencies on changes in income for interim checks and recertification of recipients.

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[104] *Id.,* n. 36.

[105] Dr. Olivia Golden, Executive Director, Center for Law and Social Policy. Joint Hearing of the House of Representatives, Subcommittee on Nutrition, Committee on Agriculture and the Subcommittee on Human Resources, Committee on Ways and Means. *Past, Present, and Future of SNAP: The Means to Climbing the Economic Ladder.* June 10, 2015. Washington, D.C.

[106] Karen Cunnyngham, Senior Researcher, Mathematica Policy Research. Hearing of the House of Representatives, Committee on Agriculture, Subcommittee on Nutrition. *Past, Present, and Future of SNAP: Evaluating Error Rates and Anti-Fraud Measures to Enhance Program Integrity.* February 26, 2015. Washington, D.C.

[107] U.S. Government Accountability Office. Report to the Chairman, Committee on Agriculture, House of Representatives. *Supplemental Nutrition Assistance Program: More Information on Promising Practices Could Enhance States' Use of Data Matching for Eligibility.* GAO–17–111. October 2016.

[108] *Ibid.*

A survey of all states shows that they conduct multiple data matches for income. In total, 16 types of state data matches were reported. Examples of data sources used by states for data matching include: [109]

- Old Age, Survivors, and Disability Insurance (OASDI) income information can be obtained from multiple data matches with the Social Security Administration (SSA) and is used by 51 of 53 state agencies.
- SSI information comes from several direct data matches with SSA and is used by 51 of 53 state agencies.
- The Work Number® is a commercial verification service operated by Equifax Inc. that provides payroll information from participating employers for a fee and is used by 45 of 53 state agencies.
- Public Assistance Reporting Information System (PARIS) Interstate file from the Department of Health and Human Services (HHS) provides information on individuals' benefit receipt in other states, but is used by 40 of 53 state agencies.

The GAO study showed that the opinion of state officials on the usefulness of each data match varied widely. For example, SSI and OASDI were overwhelming viewed as useful. In contrast, the National Directory of New Hires (NDNH) and the Beneficiary Earnings Exchange Record (BEER) were considered not at all or somewhat useful by a majority of states. Opinions about usefulness generally were derived from concerns about accuracy (and ability to verify accuracy) and timeliness of data that is being used to determine program eligibility and benefits.

States recognize the need for improving their data matching processes. Some states are targeting and streamlining their data matching activities, including prioritizing which matches need follow-up. For example, Texas, Virginia, and Washington have enabled caseworkers to look up data from multiple data systems with a single search.

SNAP is not the only Federal program that requires data on household income, and there is a particular opportunity to leverage information and systems used for TANF and Medicaid income verification. For example, the Center for Medicaid and Medicare Services (CMS) created the Federal data services hub ("the Hub") that provides a single access point to gather information for eligibility determinations for Medicaid. That includes access to data from SSA and Work Number®. Although this data is also used for SNAP, data use agreements currently in place do not allow the use of this information for SNAP eligibility determinations. This hindrance is a concern for states interviewed by GAO and is an area where additional access to data and technology could enhance program functionality and efficiency.

Robert Greenstein of the Center on Budget and Policy Priorities testified on the use of data to improve program integrity.[110] He noted that innovation that is used in states such as Utah, Washington, and Idaho, enables caseworkers to access data in real time and to process reported changes in household income. Other suggestions include helping states share tools and innovations across states via establishment or procurement of IT solutions, removal of barriers to IT adoption, or increased incentives for states to adopt well-regarded options. These solutions would not only improve program integrity but also reduce the burden on SNAP recipients. As Representative Ashford pointed out, ". . . data collection, and then also being able to rely on data to make decisions in a coordinated way, is the most important thing we can do." [111]

Findings Theme 4: Improving Food Access and Promoting Healthy Food

Limited access to supermarkets, grocery stores, and other sources of nutritious food may make it more difficult for many Americans to consume a healthy diet. This is a particular concern for SNAP, with Federal spending intended to provide nutrition to millions of Americans. Hearing witnesses indicated that recipients would benefit from improved access to healthy food.

Areas with limited access to fresh food are oftentimes called "food deserts." According to USDA, to qualify as a low-access community, at least 500 people and/or at least 33 percent of the Census tract's population must reside more than 1 mile from a supermarket or large grocery store; for rural areas the distance is more than

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[109] *Ibid.*

[110] Robert Greenstein, President, Center on Budget and Policy Priorities. Hearing of the House of Representatives, Committee on Agriculture. *Past, Present, and Future of the Supplemental Nutrition Assistance Program.* February 25, 2015. Washington, D.C.

[111] Brad Ashford, Member of the House Committee on Agriculture. Hearing of the House of Representatives, Committee on Agriculture. *Past, Present, and Future of the Supplemental Nutrition Assistance Program.* February 25, 2015. Washington, D.C.

10 miles. This becomes an issue when the easiest store to get to primarily provides packaged and processed food. SNAP recipients may find the convenience of a local market is greater than the cost and time it takes to travel farther to a supermarket. High-calorie foods with minimal nutritional value can often be a staple for families with limited resources.

As Dr. James Ziliak of the University of Kentucky noted, "Many of our low-income families, especially in urban areas, don't have ready access to the whole spectrum of foods that make up the Thrifty Food Plan that underlies USDA's plan for the SNAP benefit." [112] His concerns were also echoed by Dr. Kimberlydawn Wisdom of the Henry Ford Health System: "Today, SNAP recipients live in neighborhoods and communities where making healthy choices can be challenging, if not impossible, due to the lack of safe, well-equipped, and well-maintained places to work and play, and the absence of nearby full-service grocery stores and other health services. These factors contribute to the malnutrition that now coexists with overweight and obesity. Comprehensive literature reviews examining neighborhood disparities and food access have found that neighborhood residents with better access to supermarkets tend to have healthier diets and reduced risk for obesity." [113]

Finding 4a: Americans in Both Urban and Rural Communities Cannot Improve Their Diets Without Adequate Access to Healthy Food

A number of approaches have been taken to address the well-documented concerns of access to healthy food. The Committee heard from multiple witnesses about how small and local retailers help provide access to food in both urban and rural areas where large-format stores are not easily accessible.[114–115] For example, Eric Schneidewind of AARP noted that the AARP Foundation in Chicago is connecting fresh food supplies to food deserts.[116] Another witness, Jimmy Wright, owner of Wright's Market, spoke about the opening of Carver Neighborhood Market in South Atlanta, an area that was previously considered a food desert. Wright has also started a shuttle service for all customers, including SNAP recipients, who are not able to reach his store in Opelika, Alabama, due to a lack of transportation. He is also now working on an online ordering and home delivery option to enable greater access to nutritious food for his customers.[117]

Other programs like those presented by Dr. Shreela Sharma of the University of Texas and Brighter Bites, combine food delivery with nutrition education. Brighter Bites is a three-part program in low-income communities for 16 weeks during the school year and 8 weeks during the summer that (1) delivers 30 pounds of fresh produce, (2) provides nutrition education in school and for parents, and (3) gives families an opportunity to try a healthy, tasty recipe.[118] Brighter Bites has achieved promising results, with 98 percent of families increasing their fruit and vegetable consumption and cooking more at home, having more fruits and vegetables available at home during meals, and using nutrition labels to make purchasing decisions.

Allowing SNAP benefits to be utilized for online purchases is a prominent way retailers are working to bring nutritious food to both urban and rural areas that might not have had easy access before. While this is not yet a reality, the 2014

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[112] Dr. James P. Ziliak, Founding Director, Center for Poverty Research; Professor and Carol Martin Gatton Endowed Chair in Microeconomics, Department of Economics, University of Kentucky. Joint Hearing of the House of Representatives, Subcommittee on Nutrition, Committee on Agriculture and the Subcommittee on Human Resources, Committee on Ways and Means. *Past, Present, and Future of SNAP: The Means to Climbing the Economic Ladder.* June 10, 2015. Washington, D.C.

[113] Dr. Kimberlydawn Wisdom, Senior Vice President, Community Health and Equity, Henry Ford Health System. Hearing of the House of Representatives, Committee on Agriculture. *Past, Present, and Future of SNAP: Evaluating Effectiveness and Outcomes in Nutrition Education.* June 22, 2016. Washington, D.C.

[114] Doug Beech, Counsel, Casey's General Store. Hearing of the House of Representatives, Committee on Agriculture. *Past, Present, and Future of SNAP: The Retailer Perspective.* March 2, 2016. Washington, D.C.

[115] Carl Martincich, VP of Human Resources, Love's Travel Stops and Country Stores. Hearing of the House of Representatives, Committee on Agriculture. *Past, Present, and Future of SNAP: The Retailer Perspective.* March 2, 2016. Washington, D.C.

[116] Eric Schneidewind, President-Elect of AARP. Hearing of the House of Representatives, Subcommittee on Nutrition, Committee on Agriculture. *Past, Present, and Future of SNAP: Addressing Special Populations.* January 12, 2016. Washington, D.C.

[117] Jimmy Wright, Owner, Wright's Market. Hearing of the House of Representatives, Committee on Agriculture. *Past, Present, and Future of SNAP: The Retailer Perspective.* March 2, 2016. Washington, D.C.

[118] Dr. Shreela Sharma, Professor of Epidemiology at the University of Texas, Co-Founder of Brighter Bites. Hearing of the House of Representatives, Committee on Agriculture. *Past, Present, and Future of SNAP: Evaluating Effectiveness and Outcomes in Nutrition Education.* June 22, 2016. Washington, D.C.

Farm Bill allowed for the implementation of five online retailing pilots. Speaking on the potential impact of the online pilots, Eric French with Amazon said, "this would open up new options for millions of SNAP recipients, while providing our existing customers who are SNAP recipients with the ability to stretch their SNAP dollars and choose the payment type that is best for them."[119] Members are watching with interest to see the impact these online pilots have on improving food access.

Technology allows organizations to create innovative ways to increase access to nutritious food and to understand what people are purchasing. This innovation includes how grocery stores and farmers' markets are using point-of-sale equipment to implement an initiative called Double Up Food Bucks in their respective models. Double Up Food Bucks is a program started by the Fair Food Network which provides an incentive for purchasing fruits and vegetables at participating grocery stores and farmers' markets. Another example is the creation of an app for use at farmers' markets that accepts all forms of tender (SNAP, WIC, Debit, Credit, *etc.*). The app assists in tracking what people purchase at the market, measuring "actual changes in purchasing patterns, track[ing] improvements, and figur[ing] out what works to increase customers' consumption of the most nutritious foods."[120] As Gunnar Lovelace of Thrive Market pointed out, "The proliferation of technology, specifically information technology, has increased in ways that no one could have predicted. Presently, 75 percent of individuals living in poverty have a smartphone. Through their smartphone, they can now order goods and services that may have previously been out of reach to them, either geographically, or in some cases, financially."[121]

A variety of innovative approaches are appropriate and much-needed in improving access to healthy food for SNAP recipients. SNAP has an opportunity to adapt to changing consumer demographics and preferences while improving program delivery and access.

Finding 4b: Nutrition Education—Working In Tandem With Targeted Incentives—Can Help SNAP Recipients Develop Healthy Lifestyles and Healthy Eating Habits

Nutrition education is often provided in conjunction with food benefits to encourage healthy eating. This is accomplished through SNAP-Ed and the Expanded Food and Nutrition Education Program (EFNEP), both authorized in the farm bill.

SNAP-Ed is an approximately $400 million program awarded via Federal grants to state agencies. The state agencies can then award grants to various organizations in the state, such as food banks, land-grant universities, or nonprofits. SNAP-Ed targets low-income individuals and communities through a variety of public health approaches to improve the likelihood that persons eligible for SNAP will make healthy choices within a limited budget and choose active lifestyles consistent with the current *Dietary Guidelines for Americans.* The Healthy, Hunger-Free Kids Act of 2010 amended SNAP-Ed to place greater emphasis on evaluations and measuring program effectiveness. It also restructured the allocation formula to provide a more even distribution among the states. SNAP-Ed has the flexibility to work in schools, grocery stores, parks, or public gyms. SNAP-Ed offers many different forms of direct education and takes community input into consideration when developing education programs.

In contrast, EFNEP is an approximately $68 million program operated through the Cooperative Extension Service at 1862 and 1890 Land-Grant Universities. EFNEP delivers direct education via peer educators in a series of interactive, hands-on lessons to improve four core areas: diet quality and physical activity; food resource management; food safety; and food security. EFNEP tends to be less flexible in how it delivers services than SNAP-Ed, but it has the capacity to reach more people than SNAP-Ed because it operates in more areas—both urban and rural—across the country.

SNAP-Ed and EFNEP both have the ability to focus efforts on ensuring that low-income individuals have access to nutritious food and the knowledge of how to prepare food. SNAP-Ed programs tend to focus more heavily on younger children, while

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[119] Eric French, Director of Grocery, Amazon. Hearing of the House of Representatives, Committee on Agriculture. *Past, Present, and Future of SNAP: Opportunities for Improving Access to Food.* November 16, 2016. Washington, D.C.

[120] Pamela Hess, Executive Director, Arcadia Center for Sustainable Food and Agriculture. Hearing of the House of Representatives, Committee on Agriculture. *Past, Present, and Future of SNAP: Opportunities for Improving Access to Food.* November 16, 2016. Washington, D.C.

[121] Gunnar Lovelace, Executive Director, Thrive Market. Hearing of the House of Representatives, Committee on Agriculture. *Past, Present, and Future of SNAP: Opportunities for Improving Access to Food.* November 16, 2016. Washington, D.C.

EFNEP programming focuses more on the family. Dr. Jo Britt-Rankin with the University of Missouri acknowledged the gap in home economic skills, saying, "we know that many of our young people today are almost two generations from having cooking skills."[122] Both programs work to address the climbing obesity and diabetes rates that correlate with poor eating habits. Even so, the number of individuals these programs reach is expansive and is continuing to grow as the programs become stronger and as FNS implements requirements for evaluation metrics and shares best practices. Sue Foerster with the Association of SNAP Nutrition Education pointed out that "the size of our population that we are trying to influence is 90 million people that have incomes below 185 percent of poverty. Of that, about 40 million are already SNAP participants, and [you] can see that the scope of our effort is quite large."[123]

A number of incentive approaches have also been explored in SNAP, either independently or in conjunction with nutrition education. For example, the 2014 Farm Bill began the Food Insecurity Nutrition Incentive (FINI) grants. FINI grants support projects to increase the purchase of fruits and vegetables among low-income consumers participating in SNAP by providing incentives at the point of sale. Examples of this include using loyalty cards in a grocery store to put bonus amounts into SNAP recipients' accounts.[124] In Memphis and North Tennessee, Kroger has also partnered with AARP on its FINI grant to incentivize SNAP customers to purchase more fruits and vegetables.[125] Many programs pair an incentive for healthy eating with additional education on selecting and preparing healthy food.

Food Eligibility

Discussions about incentivizing healthy purchases are often coupled with discussions about restricting the foods eligible for purchase with SNAP benefits. Currently, the Food and Nutrition Act of 2008 defines eligible food for SNAP as any food or food product for home consumption and also includes seeds and plants that produce food for consumption by SNAP households. Since the definition of food is a specific part of the Act, any change to this definition would require action by Congress.

In general, SNAP recipients can use SNAP benefits to buy any food products **except:**

- Beer, wine, liquor, cigarettes or tobacco;
- Vitamins and medicines;
- Food that will be eaten in the store; and
- Hot foods.

SNAP benefits cannot be used to buy nonfood items, such as pet foods, soaps, paper products, and household supplies.

Since passage of the Food Stamp Act in 1964, Members of Congress have proposed changes to the list of eligible items on SNAP, including proposals that would make SNAP similar to the WIC program. The few waivers that have been requested from USDA were denied, and there are currently no waivers in place to allow state and/or local governments to impose restrictions.

Some argue that outright restrictions on food eligibility would cause a number of challenges, including expanding bureaucracy or burdening smaller stores without the technology to identify and track products eligible for SNAP benefits. Some also argue that restrictions would be ineffective in changing the purchasing patterns of participants since SNAP recipients are generally expected to purchase 30 percent of their monthly food with their own money and that there is no guarantee restricting the use of SNAP would affect total food purchases, other than substituting one form of payment (cash) for another (SNAP benefits).

In contrast, others contend that SNAP should assist in purchasing nutritious food. To enhance program integrity and sustainability, some have argued that Federal

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[122] Dr. Jo Britt-Rankin, Extension Committee on Organization and Policy. Hearing of the House of Representatives, Committee on Agriculture. *Past, Present, and Future of SNAP: Evaluating Effectiveness and Outcomes in Nutrition Education.* June 22, 2016. Washington, D.C.

[123] Susan Foerster, Founding Member, Association of SNAP Nutrition Education. Hearing of the House of Representatives, Committee on Agriculture. *Past, Present, and Future of SNAP: Evaluating Effectiveness and Outcomes in Nutrition Education.* June 22, 2016. Washington, D.C.

[124] Mike Beal, Chief Operating Officer, Balls Food Stores. Hearing of the House of Representatives, Committee on Agriculture. *Past, Present, and Future of SNAP: Opportunities for Improving Access to Food.* November 16, 2016. Washington, D.C.

[125] Kathy Hanna, Senior Director Enterprise Payments and Store Support, The Kroger Company. Hearing of the House of Representatives, Committee on Agriculture. *Past, Present, and Future of SNAP: The Retailer Perspective.* March 2, 2016. Washington, D.C.

dollars should focus on improving the health of the recipient. They argue that restricting item eligibility—for items such as sodas or candy—provides an assurance that recipients are purchasing items that improve their overall nutrition. Some argue that limiting eligibility of some food items also gives greater assurance to the general public that tax dollars are being used to improve the food security of SNAP recipients.

USDA recently assessed the feasibility of collecting data on SNAP purchases at the point of sale and has provided a detailed summary of the food items that are being purchased. USDA concluded that item-level transaction data can currently be collected from 80 percent of all EBT redemptions from the retailers that use integrated electronic cash register (IECR) systems, but not from stores with less sophisticated systems. FNS concluded that it would need additional legal authority to require stores to collect and submit transaction level data.[126]

USDA also recently analyzed point-of-sale transaction data collected for calendar year 2011 from a leading grocery retailer "whose stores would be classified as grocery stores, supermarkets, and combination food and drug stores." USDA found many non-staple items (*e.g.,* sweetened beverages and prepared desserts) among the top items purchased by SNAP households, as summarized in the following table.[127]

SNAP Household Expenditures by Summary Category

Summary Category	SNAP Household Expenditures	
	Rank	% of Expenditures
Meat, Poultry and Seafood	1	19.19%
Sweetened Beverages	2	9.25%
Vegetables	3	7.19%
Frozen Prepared Foods	4	6.92%
Prepared Desserts	5	6.90%
High Fat Dairy/Cheese	6	6.50%
Bread and Crackers	7	5.39%
Fruits	8	4.68%
Milk	9	3.54%
Salty Snacks	10	3.43%
Prepared Foods	11	3.07%
Cereal	12	2.84%
Condiments and Seasoning	13	2.65%
Fats and Oils	14	2.36%
Candy	15	2.10%

Source: USDA FNS Nutrition Assistance Program Report. *Foods Typically Purchased by Supplemental Nutrition Assistance Program Households.* November 2016. *http://www.fns.usda.gov/snap/foods-typically-purchased-supplemental-nutrition-assistance-program-snap-households*.

USDA's report will undoubtedly reignite the discussion on food eligibility within SNAP and ways in which SNAP can incentivize healthier eating. As noted above, incentives partnered with nutrition education can lead to healthier eating patterns in low-income individuals.

Appendix A: Hearings and Witnesses

Past, Present, and Future of SNAP (http://agriculture.house.gov/calendar/eventsingle.aspx?EventID=2430)

Full Committee: February 25, 2015

- Mr. Douglas Besharov, Professor, School of Public Policy, University of Maryland, College Park, MD
- Mr. Robert Greenstein, Founder and President, Center on Budget and Policy Priorities, Washington, D.C.

[126] USDA FNS Nutrition Assistance Program Report. *Feasibility Study of Capturing Supplemental Nutrition Assistance Program (SNAP) Purchases at the Point of Sale.* November 2016. *http://www.fns.usda.gov/snap/feasibility-study-capturing-supplemental-nutrition-assistance-program-snap-purchases-point-sale*.

[127] USDA FNS Nutrition Assistance Program Report. *Foods Typically Purchased by Supplemental Nutrition Assistance Program Households.* November 2016. *http://www.fns.usda.gov/snap/foods-typically-purchased-supplemental-nutrition-assistance-program-snap-households*.

SNAP Recipient Characteristics and Dynamics (http://agriculture.house.gov/calendar/eventsingle.aspx?EventID=2429)

Subcommittee: February 26, 2015

- Ms. Karen Cunnyngham, Senior Researcher, Mathematica Policy Research, Washington, D.C.
- Dr. Gregory Mills, Senior Fellow, Urban Institute, Washington, D.C.
- Mr. Stephen Tordella, President, Decision Demographics, Washington, D.C.
- Dr. James P. Ziliak, Founding Director, Center for Poverty Research, University of Kentucky, Lexington, KY

The World of Nutrition and the Role of the Charitable Sector (http://agriculture.house.gov/calendar/eventsingle.aspx?EventID=2418)

Full Committee: April 15, 2015

- Ms. Kate Maehr, CEO, Greater Chicago Food Depository, Chicago, IL
- Ms. Keleigh Green-Patton, South Holland, IL
- Mr. Dustin Kunz, Salesforce Administrator and Research Project Manager, Texas Hunger Initiative, Waco, TX
- Ms. Lynda Taylor Ender, AGE Director, The Senior Source, Dallas, TX
- Mr. Jonathan Webb, Director of Foundations and Community Outreach, Feed the Children, Edmond, OK

The World of Nutrition, Government Duplication and Unmet Needs (http://agriculture.house.gov/calendar/eventsingle.aspx?EventID=2413)

Subcommittee: May 20, 2015

- Ms. Kay Brown, Director, Education, Workforce, and Income Security, U.S. Government Accountability Office, Washington, D.C.
- Ms. Angela Rachidi, Research Fellow, American Enterprise Institute, Washington, D.C.
- Mr. Joe Nader, Exec[ut]tive Chef, Levy Restaurants and the Detroit Lions, and volunteer chef for Share Our Strength's Cooking Matters, Detroit, MI
- Ms. Sherri Tussler, Executive Director, Hunger Task Force, Milwaukee, WI

The Means to Climbing the Economic Ladder (http://agriculture.house.gov/calendar/eventsingle.aspx?EventID=2410)

Full Committee: June 10, 2015

- Mr. Patrick Raglow, Executive Director, Catholic Charities of the Archdiocese of Oklahoma City, Oklahoma City, OK
- Mr. Leon Samuels, Executive Director, STRIVE DC, Washington, D.C.
- Dr. Elisabeth D. Babcock, President and CEO, Crittenton Women's Union, Boston, MA
- Mr. Grant Collins, Senior Vice President, Fedcap Rehabilitation Services, Inc., New York, NY

How Our Welfare System Can Discourage Work (http://agriculture.house.gov/calendar/eventsingle.aspx?EventID=2407)

Joint Nutrition (Agriculture) and Human Resources (Ways and Means) Subcommittees: June 25, 2015

- Dr. Casey Mulligan, Professor, Department of Economics, University of Chicago, Chicago IL
- Dr. Eugene Steuerle, Senior Fellow, Urban Institute, Washington, D.C.
- Dr. Olivia Golden, Executive Director, Center for Law and Social Policy, Washington, D.C.
- Ms. Chanel McCorkle, Candidate, America Works, Baltimore, MD (accompanied by Marsha Netus, Director of Operations)
- Mr. Erik Randolph, Senior Fellow, Illinois Policy Institute, Chicago, IL

Developing and Using Evidence-Based Solutions (http://agriculture.house.gov/calendar/eventsingle.aspx?EventID=2402)

Subcommittee: July 15, 2015

- Mr. Jon Baron, Vice President for Evidence-Based Policy, Laura and John Arnold Foundation, Washington, D.C.

- Mr. Jim Weill, President, Food Research and Action Center, Washington, D.C.
- Dr. James Sullivan, the Rev. Thomas J. McDonagh, C.S.C. Associate Professor of Economics, University of Notre Dame and Founder of the Wilson Sheehan Lab for Economic Opportunity, South Bend, IN
- Mr. Jeremy Everett, Director, Texas Hunger Initiative, Waco, TX

Breaking the Cycle (http://agriculture.house.gov/calendar/eventsingle.aspx?EventID=2970)

Subcommittee: October 27, 2015

- Dr. Caroline Ratcliffe, Senior Fellow, The Urban Institute, Washington, D.C.
- Ms. Ruth Riley, Former WNBA Athlete and Olympic Gold Medalist, Granger, IN
- Dr. Eduardo Ochoa, Jr., Department of Pediatrics, University of Arkansas for Medical Sciences, on behalf of Children's HealthWatch, Little Rock, AR
- Dr. Ron Haskins, Senior Fellow, Economic Studies, The Brookings Institution, Washington, D.C.

The National Commission on Hunger (http://agriculture.house.gov/calendar/eventsingle.aspx?EventID=3014)

Full Committee: November 18, 2015

- Mr. Robert Doar, Co-Chair of the National Commission on Hunger, Morgridge Fellow in Poverty Studies, American Enterprise Institute, Washington, D.C.
- Ms. Mariana Chilton, Co-Chair of the National Commission on Hunger, Associate Professor and Director of the Center for Hunger Free Communities, Drexel University, Philadelphia, PA

Addressing Special Populations (http://agriculture.house.gov/calendar/eventsingle.aspx?EventID=3074)

Subcommittee: January 12, 2016

- Ms. Abby Leibman, President and CEO, MAZON: A Jewish Response to Hunger, Los Angeles, CA
- Ms. Erika Tebbens, former military spouse, Ballston Spa, NY
- Mr. Vinsen Faris, Executive Director, Meals-on-Wheels of Johnson and Ellis Counties in North Central Texas, Cleburne, TX
- Mr. Eric Schneidewind, President-Elect, AARP, Washington, D.C.

Examining State Options (http://agriculture.house.gov/calendar/eventsingle.aspx?EventID=3165)

Full Committee: March 2, 2016

- Ms. Stephanie Muth, Deputy Executive Commissioner for the Office of Social Services, Texas Health and Human Services Commission, Austin, TX
- Ms. Stacy Dean, Vice President for Food Assistance Policy, Center for Budget and Policy Priorities, Washington, D.C.
- Ms. Karen Cunnyngham, Senior Researcher, Mathematica Policy Research, Washington, D.C.

The Retailer Perspective (http://agriculture.house.gov/calendar/eventsingle.aspx?EventID=3334)

Full Committee: May 12, 2016

- Ms. Kathy Hanna, Senior Director Enterprise Payments & Store Support, The Kroger Co., Cincinnati, OH
- Mr. Jimmy Wright, Owner, Wright's Market, Opelika, AL
- Mr. Doug Beech, Counsel, Casey's General Stores, Ankeny, IA
- Mr. Carl Martincich, VP of Human Resources and Risk Management, Love's Travel Stops and Country Stores, Oklahoma City, OK

Evaluating Effectiveness and Outcomes in Nutrition Education (http://agriculture.house.gov/calendar/eventsingle.aspx?EventID=3433)

Full Committee: June 22, 2016

- Dr. Kimberlydawn Wisdom, Senior Vice President, Community Health & Equity, Henry Ford Health System, Detroit, MI

- Ms. Susan Foerster, Founding Member, Association of SNAP Nutrition Education Administrators, Carmichael, CA
- Dr. Shreela Sharma, Professor of Epidemiology at the University of Texas, Co-Founder of Brighter Bites, Houston, TX
- Dr. Jo Britt-Rankin, Associate Dean & Extension Professor, Extension Committee on Organization & Policy, Columbia, MO

Evaluating Error Rates and Anti-Fraud Measures to Enhance Program Integrity (http://agriculture.house.gov/calendar/eventsingle.aspx?EventID=3463)

Full Committee: July 6, 2016

- Ms. Jessica Shahin, SNAP Associate Administrator, Food and Nutrition Service, USDA, Alexandria, VA
- Ms. Kay Brown, Director, Education, Workforce, & Income Security, U.S. Government Accountability Office, Washington, D.C.
- Mr. Dave Yost, Auditor of State, Columbus, OH

Improving Innovation and Success in Employment and Training Programs (http://agriculture.house.gov/calendar/eventsingle.aspx?EventID=3511)

Subcommittee: September 13, 2016

- Mr. David Stillman, Assistant Secretary, Economic Services Administration, Department of Social and Health Services, Olympia, WA
- Mr. Pete Weber, Founder, Fresno Bridge Academy, Fresno, CA (accompanied by Kim McCoy Wade, CalFresh Branch Chief, Department of Social Services, Sacramento, CA)
- Mr. Jon Anderson, Deputy Division Director, Office of Family Independence, Division of Family and Children Services, Atlanta, GA

Opportunities for Improving Access to Food (http://agriculture.house.gov/calendar/eventsingle.aspx?EventID=3564)

Full Committee: November 16, 2016

- Mr. Eric French, Director of Grocery, Amazon, Seattle, WA
- Mr. Gunnar Lovelace, Founder and Co-CEO, Thrive Market, Marina del Ray, CA
- Mr. Mike Beal, Chief Operating Officer, Balls Food Stores, Kansas City, KS
- Ms. Pamela Hess, Executive Director, Arcadia Center for Sustainable Food and Agriculture, Alexandria, VA
- Ms. Melinda Newport, Director, WIC/Child Nutrition, Department of Health, Chickasaw Nation, Ada, OK

Appendix B: Description of Federal Nutrition Programs

Below is a list of federally-funded nutrition assistance programs (**) denotes programs within the jurisdiction of the House Committee on Agriculture: [128]

*Supplemental Nutrition Assistance Program***

Provides benefits (through the use of EBT cards) that supplement the food purchasing power of low-income recipients. Benefits vary by household size, income, and expenses (like shelter and medical costs) and averaged $194 per person per month in FY 2017. Administered by USDA FNS.

*Food Distribution Program on Indian Reservations (FDPIR)***

Indian Tribal Organizations (ITOs) and some state agencies administer a food distribution program on Indian reservations and in other Native American communities, with eligibility rules similar to SNAP. USDA purchases and ships FDPIR foods to the ITOs and state agencies based on orders from a list of available foods. These administering agencies store and distribute the food, determine applicant eligibility, and provide nutrition education to recipients. Administered by USDA FNS.

*The Emergency Food Assistance Program (TEFAP)***

Provides food commodities (and cash support for distribution costs) through states to local emergency feeding organizations (*e.g.,* food banks/pantries, soup kitchens) serving the low-income population. Administered by USDA FNS.

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[128] Randy Aussenburg, Kirsten Colello. Congressional Research Service. *Domestic Food Assistance: Summary of Programs.* February 17, 2016. *https://www.fas.org/sgp/crs/misc/R42353.pdf.*

Community Food Projects **

Competitive grants to nonprofit organizations for programs that improve access to locally-produced food for low-income households. Eligibility for grants will vary according to request for applications. Administered by USDA FNS.

Commodity Supplemental Food Program (CSFP) **

Provides supplemental monthly food packages to primarily low-income elderly persons in projects located in 47 states, the District of Columbia, and two Indian Tribal Organizations (ITOs). Administered by USDA FNS.

Senior Farmers' Market Nutrition Program (SFMNP) **

Provides grants to participating states to offer vouchers/coupons to low-income seniors that may be used in farmers' markets, roadside stands, and other approved venues to purchase fresh produce. It is administered by state agencies, such as the Department of Agriculture or Department of Aging. The Federal SFMNP benefit level, whether a household or individual, may not be less than $20 or no more than $50 per each farmers' market calendar year. This operates separately from SNAP. Administered by USDA FNS.

Fresh Fruit and Vegetable Program (FFVP)

Provides grants to schools to purchase fresh fruit and vegetable snacks to be provided during the school day. The Committee authorizes funding for FFVP; the House Committee on Education and the Workforce authorizes the program generally. Administered by USDA FNS.

Special Supplemental Nutrition Program for Women, Infants, and Children (WIC)

Provides supplemental, nutrient-rich foods; nutrition education and counseling; and breastfeeding promotion and support to low-income pregnant, post-*partum,* or breastfeeding women, infants, and children. WIC benefits are redeemable for a list of nutrient-rich foods specific to the participant's eligibility category and medical needs (for example, foods specifically recommended for an anemic pregnant woman). These foods are specified in USDA FNS regulations, although state agencies may further specify. Administered by USDA FNS.

WIC Farmers Market Nutrition Program

Provides grants to participating states to offer vouchers/coupons/EBT to WIC participants that may be used in farmers' markets, roadside stands, and other approved venues to purchase fresh produce. Administered by USDA FNS.

School Breakfast Program (SBP)

Provides Federal cash assistance for elementary and secondary schools that provide breakfast to school children. Federal subsidies currently range from about 30¢ to $2.00 per meal (depending on the type of meal/snack and the income of the recipient, with subsidies higher in Alaska and Hawaii). Total amount of assistance is based on the number of free, reduced-price, and paid lunches served. Administered by USDA FNS.

National School Lunch Program (NSLP)

Provides Federal assistance, in the form of cash and commodities, to elementary and secondary schools that provide lunch to school children. Federal subsidies currently range from about 30¢ to $3.00 per meal (depending on the type of meal/snack and the income of the recipient, with subsidies higher in Alaska and Hawaii). Total amount of assistance is based on the number of free, reduced-price, and paid lunches served. Administered by USDA FNS.

Summer Food Service Program (SFSP)

Provides Federal cash assistance and some commodity foods to local public and private nonprofit "service institutions" running summer youth programs, camps, or other recreation sites that serve low-income children during their summer break or during lengthy school-year breaks. Sites may be schools, camps, community centers, and other organizations. Sponsors receive per-meal/snack subsidies as well as assistance with operating costs. Administered by USDA FNS.

Special Milk Program

Provides public or nonprofit schools or child care institutions that do not participate in other Federal meal programs with a per ½ pint reimbursement for part of the cost of milk served to children/students. Administered by USDA FNS.

Child and Adult Care Food Program (CACFP)

Provides cash subsidies to participating child care centers, family day care homes, afterschool programs, and non-residential adult-care centers for the meals and snacks they serve to children, the elderly, and chronically disabled persons. In child care centers and non-residential adult-care settings, per-meal/snack subsidy payments are the same as those for school meals and child care centers. Family day care homes are reimbursed according to a tiered system. Federal subsidies currently range from about 25¢ to $2.80 (depending on the type of meal/snack and the income of the recipient, with higher subsidies in Alaska and Hawaii). Administered by USDA FNS.

Congregate Nutrition Program

Provides meals to seniors in settings such as senior centers, schools, and adult day care centers. Offers social services such as nutrition education and screening, nutrition assessment, and counseling at meals sites. Provides seniors with opportunities for social engagement and volunteerism. Administered by Health and Human Services.

Home Delivered Nutrition Program

Provides meals to seniors who are homebound. Offers services such as nutrition screening and education, nutrition assessment, and counseling. Administered by Health and Human Services.

Grants to Native Americans: Supportive and Nutrition Services

Provides for the delivery of supportive and nutrition services comparable to services provided in the Home Delivered Nutrition Program (*e.g.*, congregate and home-delivered meals) to older Native Americans. Administered by Health and Human Services.

Nutrition Services Incentive Program (NSIP)

Provides funds to states, territories, and Indian Tribal Organizations to purchase food or to cover the costs of food commodities provided by USDA for the congregate and home-delivered nutrition served during the prior year. Most states choose to receive their share of funds in cash, rather than commodities. Administered by Health and Human Services.

Appendix C: Glossary

Aid to Families with Dependent Children (AFDC): established by the Social Security Act of 1935 as a grant program to enable states to provide cash welfare payments for families with needy children who had been deprived of parental support or care because their father or mother was absent from the home, incapacitated, deceased, or unemployed.

American Recovery and Reinvestment Act of 2009 (ARRA): legislation based largely on proposals made by President Obama, ARRA was intended to provide a stimulus to the U.S. economy in the wake of the economic downturn. ARRA included Federal tax relief, expansion of unemployment benefits and other social welfare provisions and domestic spending in education, health care, and infrastructure, including the energy sector.

Beneficiary Earnings Exchange Record (BEER): a batch exchange that provides earnings data to states. Since its inception in 1988, the BEER system has been reporting wage information from the Social Security Administration.

Children's Health Insurance Program (CHIP): provides health coverage to eligible children, through both Medicaid and separate CHIP programs. CHIP is administered by states according to Federal requirements. The program is funded jointly by states and the Federal Government.

Electronic Benefit Transfer (EBT): an electronic system that allows state welfare departments to issue benefits via a magnetically encoded payment card used in the United States.

Expanded Food and Nutrition Education Program (EFNEP): a nutrition education program implemented by the Cooperative Extension Service since 1969. EFNEP has assisted limited resource families and youth in acquiring the knowledge, skills, and changed behaviors necessary for nutritionally sound diets.

Family and Social Services Administration (FSSA): an agency created to develop, finance and compassionately administer programs to provide healthcare and other social services to the citizens of Indiana in need in order to enable them to achieve healthy, self-sufficient and productive lives.

Food and Nutrition Service (FNS): an agency within USDA working to end hunger and obesity through the administration of Federal nutrition assistance programs including WIC, SNAP, and school meals. In partnership with state and tribal

governments, FNS programs serve one in four Americans during the course of a year.

General Assistance (GA): a state-run safety net of last resort for those who are very poor and do not qualify for other public assistance. Thirty states have General Assistance programs, which generally serve very poor individuals who do not have minor children, are not disabled enough to qualify for the Supplemental Security Income program and are not elderly.

Healthy, Hunger-Free Kids Act of 2010 (HHFK): authorizes funding and sets policy for USDA's core child nutrition programs: the National School Lunch Program, the School Breakfast Program, the Special Supplemental Nutrition Program for Women, Infants and Children, the Summer Food Service Program, and the Child and Adult Care Food Program.

Individualized Family Support Plan (IFSP): a written plan identifying the specific concerns and priorities of a family related to enhancing their child's development and the resources to provide early intervention services to children with disabilities age's birth through 2 years or special education and related services to children with disabilities ages 3 through 5.

Maintenance of Effort (MOE) funds: generally refers to the funds spent by a state to meet a TANF requirement that a state spend at least a specified amount of state funds for benefits and services for needy households each year. These funds may be spent within or outside of the state's TANF cash assistance program.

Medicaid: a joint Federal and state program that helps with medical costs for some people with limited income and resources. Medicaid also offers benefits not normally covered by Medicare, like nursing home care and personal care services.

National Directory of New Hires (NDNH): a database established pursuant to the Personal Responsibility and Work Opportunity Reconciliation Act of 1996. The primary purpose of the NDNH is to assist state child support agencies in locating parents and enforcing child support orders; however, Congress has authorized specific state and Federal agencies to receive information from the NDNH for authorized purposes.

Older Americans Act (OAA): originally enacted in 1965, OAA is legislation that supports a range of home and community-based services, such as meals-on-wheels and other nutrition programs, in-home services, transportation, legal services, elder abuse prevention and caregivers support. These programs help seniors stay as independent as possible in their homes and communities.

Old-Age, Survivors and Disability Insurance Program (OASDI): the official name for Social Security in the United States. OASDI is a comprehensive Federal benefits program that provides benefits to retirees, disabled people, and their survivors.

Public Assistance Reporting Information System (PARIS): a data matching service matching recipients of public assistance to check if they receive duplicate benefits in two or more states. PARIS matches help identify improper payments and minimize fraud and abuse.

Social Security Administration (SSA): an independent agency of the Federal Government that administers Social Security, a social insurance program consisting of retirement, disability, and survivors' benefits. The U.S. Social Security program is the largest such system in the world and is also the biggest expenditure in the Federal budget. One in seven Americans receive a Social Security benefit and more than 90 percent of all American workers are in jobs covered by Social Security.

Supplemental Security Income (SSI): a Federal income supplement program funded by general tax revenues (not Social Security taxes). It is designed to help aged, blind, and disabled people, who have little or no income, and it provides cash to meet basic needs for food, clothing, and shelter.

Temporary Assistance for Needy Families (TANF): a block grant program created in the 1996 welfare reform (to replace AFDC, a program that had provided cash welfare benefits to needy households) designed to help needy families achieve self-sufficiency. States receive block grants to design and operate programs that accomplish one of the purposes of the TANF program. The four purposes of the TANF program are to:

- Provide assistance to needy families so that children can be cared for in their own homes.
- Reduce the dependency of needy parents by promoting job preparation, work and marriage.
- Prevent and reduce the incidence of out-of-wedlock pregnancies.
- Encourage the formation and maintenance of two-parent families.

U.S. Department of Agriculture (USDA): a cabinet-level department that provides leadership on food, agriculture, natural resources, rural development, nutrition, and related issues based on public policy, the best available science, and effective management.

U.S. Department of Health and Human Services (HHS): a cabinet-level department of the Federal Government with the goal of protecting the health of all Americans and providing essential human services.

U.S. Government Accountability Office (GAO): an independent, nonpartisan agency that works for Congress. Often called the "Congressional watchdog," GAO investigates how the Federal Government spends taxpayer dollars.

Workforce Innovation and Opportunity Act (WIOA): legislation designed to strengthen and improve the nation's public workforce system and help get Americans, including youth and those with significant barriers to employment, into high-quality jobs and careers and help employers hire and retain skilled workers.

"We want it to work for the participants. We want it to work for the taxpayer, and that . . . the purpose of this multi-year review . . . to get it right, to try to figure out what the right policies are, how we can make these things work."

Chairman K. MICHAEL CONAWAY, *The World of Nutrition Aid and the Role of Charitable Sector.*

"I have also personally experienced the stigma of being from a low-income family. Childhood hunger and food insecurity crosses many demographics and socioeconomic areas. It is urban, suburb[an], and rural. Hunger is the face of many Americans."

JOSEPH NADER, Ford Field, *Government Duplication and Unmet Needs.*

"One thing military families should never have to worry about is having enough food."

ERIKA TEBBENS, former military spouse, *Addressing Special Populations.*

"Poverty is incredibly complex, and people are poor for a myriad of reasons, but access to quality health care, access to quality education, access to housing. all have a direct impact on outcomes, in terms of utilization of the SNAP program."

JEREMY EVERETT, Texas Hunger Initiative, *Developing and Using Evidence-Based Solutions.*

"Investment by Federal nutrition programs in targeted foods of high nutritional quality, and educational support to assist families in using those optimally, is critical to reducing food insecurity, as well as, avoiding obesity, diabetes and other costly chronic diseases that compromise quality of life."

MELINDA NEWPORT, Chickasaw Nation, *Opportunities for Improving Access to Food.*

"Every day the SNAP program and food banks work in tandem."

KATE MAEHR, Greater Chicago Food Depository, *The World of Nutrition and the Role of the Charitable Sector.*

"The day we don't need food banks is the day we end hunger in America."

Sherrie Tussler, Hunger Task Force, *The World of Nutrition, Government Duplication, and Unmet Needs.*

"I prefer to see SNAP . . . not so much [as] a program, but a pathway . . . that works in a functional way to . . . lift people out of poverty, to achieve greater opportunity, [and] to provide a means for up[ward] mobility."

Congressman GLENN THOMPSON, *Examining State Options .*

"Many people call SNAP a safety net, but for me it was like a trampoline—bouncing my family back into work and a brighter future."

KELEIGH GREEN-PATTON, Former SNAP Recipient, *Role of the Charitable Sector.*

SUBMITTED LETTER BY HON. JAMES P. MCGOVERN, A REPRESENTATIVE IN CONGRESS FROM MASSACHUSETTS

February 14, 2017

Hon. K. MICHAEL CONAWAY,
Chairman,
House Committee on Agriculture,
Washington, D.C.

Dear Chairman Conaway:

In the 114th Congress, the House Agriculture Committee held 18 hearings on the "Past, Present and Future of SNAP." In more than 30 hours of testimony from over 60 experts from across the country, these extensive and instructive hearings resulted in 830 pages of official hearing record from which the Committee compiled a 66 page report, released in December.

I applaud your commitment to creating this comprehensive body of evidence on SNAP but as the summary report was completed without input from the Minority Members, I am writing to emphasize some of the most powerful testimony given before the Committee that I believe should help guide policy decisions in the upcoming farm bill:

SNAP Benefits Should Not Be Cut:

Nearly 50 million Americans, including working families, veterans, seniors and the disabled, struggle to put food on the table. SNAP is a vital tool to help struggling Americans get back on their feet and participation has steadily declined as economic conditions have improved because of its entitlement structure.

". . . the notion that charity helps to support the Government programs is an important concept and it is an important partnership, but it is the Government programs that provide the kind of consistent, stable, and baseline support that these families need, and that charity alone could never be responsive enough."

ABBY LEIBMAN, [MAZON], January 12, 2016.

". . . I am arguing that food stamps are a crucial part of what I call the work support system, and a lot of people work because they can, not just with their own wages, which are often low, but because they get these other benefits, up to around $30,000 or so, they can make their family better off because of food stamps, Medicaid, childcare, and so forth. So the government programs that help them are essential. That is the main point of my testimony."

Dr. RON HASKINS, The Brookings Institution, October 27, 2015.

"We recommend that Congress refrain from making any further benefit cuts, and avoid making any structural changes that would weaken SNAP's ability to respond to increased needs due to economic changes. We recommend that you resist expanded work requirements, particularly on workers 50 plus, who typically take longer to find new permanent employment after being unemployed."

ERIC SCHNEIDEWIND, AARP, January 12, 2016.

"I talked on a number of occasions to Erskine Bowles, to Alan Simpson, to people involved in Domenici-Rivlin, and to the Senators of both parties of the Gang of Six, and they made a specific determination that deficit reduction should not increase poverty or hardship. And they weren't saying that there were no improvements that could be made in these programs, but they were saying that they did not think reducing benefits in these programs was an appropriate source of deficit reduction."

ROBERT GREENSTEIN, Center on Budget Policies and Priorities, February, 25, 2015.

The SNAP Benefit is Inadequate:

On average, SNAP households receive about $255 a month. The average SNAP benefit per person is about $126 per month, which works out to just $1.40 per person, per meal.

"I know everybody is on different sides of this issue politically, but people can't parent well and raise happy, healthy children who are ready to learn, and you can't work well if you are hungry, if you are wondering where your next meal is coming from, or if you had to spend your lunch money taking a cab because you were late for work that morning. It is super frustrating to me that this fundamental thing that is the sort of basis of all human health is even a debate."

PAMELA HESS, Arcadia Center for Sustainable Food and Agriculture, November 16, 2016.

"Your concern for program duplication should be balanced with the knowledge that the Federal nutrition programs do not meet the need. Funding for these programs is wholly inadequate, and the evidence of this is the billions of dollars that private-sector plows into buoying their shortfalls. Food banks, soup kitchens, homeless shelters, and food pantries feed mil-

lions of hungry Americans shorted by these programs. And no matter how reputable, food banks are a scourge on our nation's reputation. We should put them out of business because the grocery store is where food comes from and the most dignified way to get it is to buy it with your wages. The day we no longer need food banks is the day that we end hunger."

SHERRIE TUSSLER, Milwaukee Hunger Task Force, May 20, 2015.

"But I will tell you that if we can keep the Federal nutrition programs strong, then the dollars that we get from private donations can actually help us support those innovative efforts. But right now so many of us are having to buy additional food to ensure that people have food to eat as food programs such as SNAP goes through cuts."

Kate Maehr, Chicago Food Depository, April 15, 2015.

"So the Thrifty Food Plan . . . the basis for which the SNAP benefit—just assumes a very meager diet, and heroic assumptions about how much time families have to cook, shop, and really extreme assumptions about what they are buying, relative to the rest of America. A more realistic food plan, including a low cost food plan, would just make high—more nutritious, healthy diets, put them within reach of families on this program."

STACY DEAN, Center on Budget Policies and Priorities, March 2, 2016.

SNAP Does Not Discourage Work:

About 30 percent of SNAP households have earnings from wages, salaries or self-employment. Of those not working the majority are children, elderly, disabled or were caring for children or disabled family members in their home.

"Somehow we have determined that punishing people with hunger will motivate them towards work. Hunger doesn't motivate. It dulls and it makes people sick."

SHERRIE TUSSLER, Milwaukee Food Bank, May 20, 2015.

"The conclusion of a team of leading researchers who examined all of the research in the field is that SNAP does not pose significant work disincentives, and its effect on the amount that people work is small . . . There also was testimony before the Senate Finance Committee a year or . . . so ago from one of the nation's leading conservative economists, Robert Hall, who is at Stanford and at the Hoover Institution, and he said the data do not seem to support the view that the social safety net is discouraging labor for SNAP."

ROBERT GREENSTEIN, Center on Budget Policies and Priorities, February 25, 2015.

". . . the research bears out that families that have jobs that have unpredictable work hours, or that are seasonal workers, have major income fluctuations, and those income fluctuations are not necessarily accommodated in the SNAP program, so people may lose their SNAP benefits before they have stabilized their income, and are more likely to report hunger."

MARIANA CHILTON, The National Commission on Hunger, November 18, 2015.

Eliminating Work Waivers Hampers State Flexibility and Increases Hunger:

Current law mandates that adults between the ages of 18–50, who are able to work, are limited to 3 months of SNAP out of every 3 years. States can choose to waive this limit and have done so during times of high unemployment.

"I think it is reasonable to have some adjustment during a recession in Federal work requirements. I am not sure I would suspend them, but I would give people a longer time to find a job, for example, would be a reasonable approach."

RON HASKINS, The Brookings Institution, October 27, 2015.

"Yes, in California, we are anticipating the end of the waiver in parts of the state in about eighteen months, and we are engaged in a lot of planning on that because we do think the rule would be very harsh—harshly felt by families. And it is very complicated, frankly, to administer and administer accurately. No, we do not have enough jobs and enough job training and enough job slots."

KIM MCCOY WADE, CalFresh Branch Chief, September 13, 2016.

Creating Innovative, Evidence-Based Programs and Supporting Good Case management is an Investment:

Case management that helps connect those in need with tailored services to move out of poverty can be successful. However, high quality, effective case management for those who need it, requires a well-funded multi-year commitment to families and individuals.

". . . you can't expect programs to be built on evidence of effectiveness if there is no evidence. The most innovative ideas for social programs frequently come from states or local providers. But state and local agencies and private service providers often lack the resources to put these ideas into practice. Thus, we need funds to encourage providers to experiment with new, promising ways to help those in need, and to build strong evidence for innovative programs."

JAMES SULLIVAN, The University of Notre Dame, July 15, 2015.

"Our efforts at the Texas Hunger Initiative demonstrate informed engagement, and are building a foundation for evidence-based solutions. We believe that allocating resources to the Hunger Free Communities line in the farm bill will expand the capacity of informed engagement in public and private partnerships, resulting in greater local coordination, strengthened social networks for low-income Americans. And when public and private partnerships are carefully informed by research and evaluation, stronger networks are likely formed between clients and local organizations, thus building a foundation for increased social capital for low-income families. We believe that this has the potential to reduce the need for long-term Federal assistance."

JEREMY EVERETT, Texas Hunger Initiative, July 15, 2015.

"The families that we work with have a 44 percent earned income gain within the first year, and their tax payments go up by 35 percent. We know, from a return on investment analysis, that the investments we are making in these families are cost effective for the public dollar, and decrease subsidies, and increase tax payments. You are right in saying that we have to expect these interventions to prove their worth, and we have to work with families in a way that is going to be able to create that public value for the interventions that we have."

ELISABETH BABOCK, Crittenton Women's Union, June 10, 2015.

"So the complexity of the interplay between these issues means that Congress needs to take a good hard look at securing the level of benefits at a rate that provides people with financial stability, and is a realistic safety net that allows them to get security and then move off of benefits. For those for whom gainful employment is no longer an option because they are either disabled or they are too senior to work, then we need to think about systems and how those play into other kinds of supports that allow people to live with dignity as they age, and they can provide themselves and their families with the kind of support that they need."

ABBY LEIBMAN, [MAZON], January 12, 2016.

Programs that Provide an Economic Ladder Require Adequate Funding:

Block granted programs provide only flat funding and are not responsive to economic changes. Since 2000, federally funded block grants that pay for critical work supports like housing, job training, maternal and child health and childcare have eroded by 37 percent.

"Families don't just come with one issue. And when a child is sick, we see that there are a lot of things that are going on. It is not just about food, it is also about housing, it is also about income . . . We have to think about other things like childcare supports . . . because if you have more moms who are working at low-wage jobs, if you don't have the childcare to help that backstop, it is really not going to be very helpful for that mom. So there are a lot of interlocking needs that we need to address."

Dr. EDUARDO OCHOA, JR., Arkansas Children's Hospital for Children's HealthWatch, October 27, 2015.

"So I could not recommend more highly the utilization of resources to address transportation issues. After housing, transportation is really the second highest cost center to a struggling family living in poverty or living on low wages. And it is really critically important that we consider those challenges."

DAVID STILLMAN, Washington State Department of Social and Health Services, September 13, 2016.

"Particularly, in the rural communities, transportation is really, really critical because the availability of jobs is constrained. As to child care, it is the single funding issue that we struggle with the most. It is a real problem."
Pete Weber, Fresno Bridge Academy, September 13, 2016.

As this testimony reflects and you have stated, "SNAP is essential in protecting the most vulnerable citizens during tough times. For many it is a vital lifeline to keeping food on the table."

We look forward to working with you to incorporate these expert findings into policy in the 115th Congress.

Sincerely,



Hon. JAMES P. MCGOVERN,
Ranking Minority Member,
Subcommittee on Nutrition,
House Committee on Agriculture.

THE NEXT FARM BILL
(COMMODITY POLICY—PART 2)

TUESDAY, APRIL 4, 2017

HOUSE OF REPRESENTATIVES,
SUBCOMMITTEE ON GENERAL FARM COMMODITIES AND RISK MANAGEMENT,
COMMITTEE ON AGRICULTURE,
Washington, D.C.

The Subcommittee met, pursuant to call, at 10:00 a.m., in Room 1300 of the Longworth House Office Building, Hon. Eric A. "Rick" Crawford [Chairman of the Subcommittee] presiding.

Members present: Representatives Crawford, Lucas, Austin Scott of Georgia, Allen, Bost, Abraham, Bacon, Dunn, Arrington, Conaway (*ex officio*), Nolan, Bustos, Blunt Rochester, David Scott of Georgia, Maloney, Plaskett, Lawson, O'Halleran, and Peterson (*ex officio*).

Staff present: Bart Fischer, Callie McAdams, Matthew S. Schertz, Stephanie Addison, Trevor White, Anne Simmons, Matthew MacKenzie, Mike Stranz, Faisal Siddiqui, John Konya, and Nicole Scott.

OPENING STATEMENT OF HON. ERIC A. "RICK" CRAWFORD, A REPRESENTATIVE IN CONGRESS FROM ARKANSAS

The CHAIRMAN. This hearing of the Subcommittee on General Farm Commodities and Risk Management entitled, *The Next Farm Bill: Commodity Policy—Part 2,* will come to order.

Good morning and welcome to today's hearing. This hearing is a continuation of the series we have been holding over the past month in preparation for the next farm bill. Over the course of the next several months, we will be working to improve upon the 2014 Farm Bill and ensure that the needs of not only American farmers and ranchers are met, but that consumers will continue to benefit from sound and stable farm policy.

Last week we heard from producers of corn, soybeans, wheat, barley, and sorghum about what is and is not working in the 2014 Farm Bill for those crops. This week we will have the opportunity to hear of the perspective of the cotton, rice, peanut, canola, and sugar industries.

As Members of this Committee are aware, these hearings come at a period of time when the farm bill is being tested, and that is exactly the period of time by which they should be judged. Commodity prices are in the tank across the board and have been for several years. Net farm income has fallen 50 percent in 4 years,

the steepest decline since the Great Depression. It is times like these when getting farm policy right is critical for farmers and ranchers. As then-Chairman Lucas was fond of saying, farm bills are not written for the good times. They are written for the bad times, as we are experiencing now.

Last week we heard the message that the farm safety net largely was working as intended and the framework should be left alone. That said, witnesses pointed out additional tweaks, like improving the yields used to calculate ARC guarantees, would be needed to provide a functioning safety net.

While we will hear about what is and is not working, we will also have the opportunity to hear from a crop that was left out of the commodity title in the last farm bill altogether, and that is cotton. We will hear about the effects that this lack of policy has had on the cotton industry and the ripple effect across other crops and rural communities. While Committee leadership at the time warned this could happen, this provides yet another real world example of why we need sensible farm policies in place for all major commodities.

I am glad to see that we have such an outstanding set of panelists here today. Thank you to each one of you for taking the time out of your busy schedules and away from your operations to join us. Your commitment to improving farm policy for all of your fellow producers does not go unnoticed by the Members of this Subcommittee.

[The prepared statement of Mr. Crawford follows:]

PREPARED STATEMENT OF HON. ERIC A. "RICK" CRAWFORD, A REPRESENTATIVE IN CONGRESS FROM ARKANSAS

Good morning and welcome to today's hearing. This hearing is a continuation of the series we have been holding over the past month in preparation for the next farm bill. Over the course of the next several months, we will be working to improve upon the 2014 Farm Bill and ensure the needs of not only American farmers and ranchers are being met, but that consumers will continue to benefit from sound and stable farm policy.

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away from your operations to join us. Your commitment to improving farm policy for all of your fellow producers does not go unnoticed by the Members of this Subcommittee.

With that, I yield to the Ranking Member, Mr. Nolan, for any opening comments he would like to make.

The CHAIRMAN. With that, I would like to yield to the Ranking Member, my friend Mr. Nolan from Minnesota, for any opening comments he would like to make.

OPENING STATEMENT OF HON. RICHARD M. NOLAN, A REPRESENTATIVE IN CONGRESS FROM MINNESOTA

Mr. NOLAN. Thank you very much, Chairman Crawford, and Members of the Subcommittee, for holding this second hearing with respect to commodity policy in the next farm bill. And thank you to the great panel of witnesses that we have here today, and I can't tell you how glad we are that you are here, and we are anxious to hear from you.

There is an old saying in this town that if you don't show up to make your case, why one of two things can happen. One is nobody knows you exist. Worse yet, they know you exist and think you don't care. That is the last thing we want, because the other old saying in this town is that if you are not at the table, you might be on the menu, and we don't want that as well.

So we are about to hear from all of you, including Mr. Rob Rynning from Kennedy, Minnesota. Welcome, Rob. Good to see you here, and welcome to the Subcommittee.

Well, it is abundantly clear from all the numbers and studies that we have seen that economic times in America's farm country are tough, and they are getting tougher. Commodity prices and farm income are down. Debts and cash rents are going up, and loans are hard to come by, and 2017 promises to be more of the same, and we can't have that.

It is also clear that we need a farm safety net that works for all farmers, regardless of which commodities they produce. While we may not grow cotton in Minnesota, we grow a lot of corn and a lot of wheat and sunflower seeds and barley, and of course, canola, which we are going to hear about, I hope. But we know that when one commodity operates under a policy that doesn't work, then it affects and is felt in all other crops in all of the other regions.

This hearing serves as an opportunity for us to learn more about the unique concerns of each commodity producer for their particular crop, and hopefully today's testimony can bring us closer to consensus on what our commodity programs ought to look like in the next farm bill. Because the fact of the matter is that we need to do everything we can to put a stop to these boom and bust cycles that threaten our farmers, threaten our rural communities, threaten our rural businesses, and the many good paying jobs they support all across rural America.

So with that said, I am looking forward to hearing from today's witnesses. Once again, I want to thank Chairman Crawford for holding this important hearing. Mr. Chairman, I yield back the remainder of my time.

The CHAIRMAN. I thank the gentleman, and I would like to recognize our full Committee Chairman, Chairman Conaway, for any opening comments he would like to make.

OPENING STATEMENT OF HON. K. MICHAEL CONAWAY, A REPRESENTATIVE IN CONGRESS FROM TEXAS

Mr. CONAWAY. Well thank you, Mr. Chairman. Mr. Nolan has the market cornered on old sayings around here.

The 2018 Farm Bill is going to be on us rapidly. What I would ask each of you, of the witnesses and their policy arms to get your good ideas in front of the Committee sooner rather than later. You probably have until the fourth quarter, so we need whatever ideas you have legislatively in the mix soon so that we will be able to pull those in.

With that, I am looking forward to the testimony and looking forward to working with each of y'all's groups on crafting that 2018 Farm Bill. With that, Mr. Chairman, I yield back.

The CHAIRMAN. I thank the Chairman. I would also like to recognize the Ranking Member of the full Committee for any comments he would like to make at this time.

OPENING STATEMENT OF HON. COLLIN C. PETERSON, A REPRESENTATIVE IN CONGRESS FROM MINNESOTA

Mr. PETERSON. Well thank you, Mr. Chairman, and thank you for having the hearing, and I thank the witnesses for being here.

I would like to welcome Mr. Rynning, who is from my district, from Hallock, Kittson County. It is not the end of the world, but you can see it from there. He has done a great job of not only representing canola, but other crops in our area, and he was one of those that was instrumental in getting a processing plant up in Hallock for canola.

We have our challenges as we work towards the next farm bill, and I am for one of those, even though we don't grow cotton, I am for getting a fix for cotton, and I am also interested in some other areas as well in terms of seeing what we can do to make sure that the system works going into the future.

So thank you for being here. I am looking forward to your testimony, and I yield back.

The CHAIRMAN. Thank you, Mr. Peterson. The chair would request that other Members submit their opening statements for the record so the witnesses may begin their testimony, and to ensure that there is ample time for questions.

I would like to welcome our witnesses to the table. First, Mr. Ronnie Lee, Chairman, National Cotton Council, Bronwood, Georgia; Mr. Blake Gerard, Chairman, USA Rice Farmers Board of Directors, Cape Girardeau, Missouri; the Honorable Tim McMillan on behalf of the Southern Peanut Farmers Federation, Enigma, Georgia; Mr. Rob Rynning, President, U.S. Canola Association, Kennedy, Minnesota, also on behalf of the National Sunflower Association; and Mr. Jack Roney, Director of Economics and Policy Analysis, American Sugar Alliance, Arlington, Virginia.

One thing I would like to point to your attention, gentlemen, I believe all of you have been here before, but if you will notice the lights in front of you, it is just like a traffic light. When it is green, feel free, keep your foot on the gas. When it turns yellow, get ready to step on it, and when it turns red, slam on the brakes so we can get everybody in, in a timely fashion. I appreciate that.

I would like to first yield to Mr. Austin Scott to introduce our first witness.

Mr. AUSTIN SCOTT of Georgia. I thank you, Mr. Chairman. I want to welcome Mr. Ronnie Lee, Chairman of the National Cotton Council, from Bronwood, Georgia. He is a great farmer, but his real claim to fame is his brother-in-law is a great turkey call maker, and maybe over the Easter break we can go chase some of those overgrown chickens. Thank you.

The CHAIRMAN. Thank you, Mr. Scott, and Mr. Lee, you are recognized for 5 minutes.

STATEMENT OF RONNIE LEE, CHAIRMAN, NATIONAL COTTON COUNCIL, BRONWOOD, GA

Mr. LEE. Chairman Crawford, Ranking Member Nolan, Subcommittee Members, thank you for the opportunity to testify on the policy needs of the U.S. cotton industry. My name is Ronnie Lee. My family and I raise cotton, corn, peanuts, small grains, pecans, and cattle in southwest Georgia, and I own and operate a cotton gin and warehouse operation.

Implementation of the 2014 Farm bill coincided with a time of significant changes in the global cotton market. Shortly after the bill was enacted, cotton prices went down a steep decline, the result of policy changes and challenges, a build up of global stock, lower demand, and reduced exports. Slumping cotton demand is largely the result of tremendous increases in polyester use. Capacity is contributing to artificially low polyester prices in key Asian markets such as China.

This is the global market U.S. cotton must compete against since 75 percent of raw fiber production is exported, with another 15 or 20 percent exported as cotton textile products. Market volatility and mounting economic pressures underscore the critical importance of an improved safety net for cotton farmers. Cotton is the only crop that does not have a long-term price or revenue protection in the farm bill. Current ARC PLC policies in the farm bill are designed to help producers to stand for long periods of price decline and depressed market conditions. While these policies will generally perform well for producers like myself, on our other crops, I remain completely vulnerable to the instability of the cotton market.

The current farm bill introduced fundamental changes in the cotton policy with the STAX crop insurance policy as a core component of the cotton safety net. The move to STAX was done in order to resolve a longstanding WTO case brought by Brazil. Unfortunately, the changing economic landscape and lower market prices reduced the effectiveness of STAX as a means of providing support for cotton producers.

For over a year, the National Cotton Council has been working with Congress to get cottonseed designated as a covered commodity and eligible for ARC and PLC programs. We strongly believe a cottonseed policy is needed now to help provide support to our producers as a bridge until a new farm bill is enacted. Part of this process will need to convert generic base, which is a historic cotton base, back to cottonseed or other covered commodities. The establishment of generic base was intended as a short-term measure,

given the circumstances of the 2014 Farm Bill development, not a long-term policy.

In the next farm bill, for Congress to be able to address the shortcomings in the cotton policy and other areas of the budget and other areas of need, we strongly oppose any attempt to reduce the budget. Given the dramatic decline in farm bill spending, coupled with significant downturn in farm income and generally weak commodity prices, a greater investment in these critical policies for rural America should be in order.

For U.S. textile mills, after a decade of sharp decline, cotton consumption has stabilized since 2008. The stability and expected future growth can be attributed to the continued benefits of the Economic Adjustment Assistance Program, by allowing U.S. mills to make new investments necessary to remain competitive. Continued funding of the program supports a manufacturing base that supports U.S. jobs. The National Cotton Council strongly supports additional investment in MAP and FMD trade promotion programs, the highly successful public-private partnerships that help leverage the industry funds to open and expand export markets.

For the past 3 years, cotton producers have struggled with low prices and high production costs, resulting in financial hardship. It is imperative that the next farm bill bring cotton back to title I so that producers are able to access the same complete set of risk management tools available to other crops.

We look forward to working with Congress and other organizations to pass a farm bill that effectively addresses the needs of all producers of all commodities in all regions of the country. Thank you. I would be pleased to respond to questions.

[The prepared statement of Mr. Lee follows:]

PREPARED STATEMENT OF RONNIE LEE, CHAIRMAN, NATIONAL COTTON COUNCIL, BRONWOOD, GA

Introduction

Chairman Crawford, Ranking Member Nolan, and Members of the Subcommittee, thank you for the opportunity to provide this testimony regarding the current farm bill and the policy needs of the U.S. cotton industry in the next farm bill.

My name is Ronnie Lee, and along with my three sons, we raise cotton, corn, peanuts, small grains, hay, pecans, and cattle in southwest Georgia. We also own and operate McCleskey Cotton Company, a ginning and warehousing operation, along with part ownership in a cottonseed crushing and marketing company.

I serve as Chairman of the National Cotton Council (NCC). NCC is the central organization of the United States cotton industry. Its members include producers, ginners, merchants, cooperatives, warehouses, textile manufacturers and cottonseed processors and merchandisers. Farms and businesses directly involved in the production, distribution, and processing of cotton employ more than 125,000 workers and produce direct business revenue of more than $21 billion. Annual cotton production is valued at more than $5.5 billion at the farm gate. Accounting for the ripple effect of cotton through the broader economy, direct and indirect employment surpasses 280,000 workers with economic activity of almost $100 billion.

In addition to cotton fiber, cottonseed products are used for livestock feed, and cottonseed oil is used as an ingredient in food products as well as being a premium cooking oil.

Current Industry Conditions

As you know, the current economic situation for much of production agriculture is bleak, including for U.S. cotton farmers. The passage of the 2014 Farm Bill coincided with significant changes in the global cotton market. Shortly after the bill was approved, cotton prices began a significant decline, the result of a build-up of global cotton stocks, especially in China, decreased demand, and reduced exports. This led,

in 2015, to the lowest U.S. cotton acreage in over 30 years. While cotton prices and acreage have increased from the lows experienced in 2015, producers are still struggling with prices at levels not adequate to cover all production costs. According to USDA data in 2016, 19 percent of cotton farms are considered either highly or extremely highly leveraged.

To understand the challenges facing cotton farmers, it is important to review the dynamics at work in global cotton demand. USDA estimates world mill use at 112 million bales for the current 2016 marketing year. However, even with very modest growth, world cotton demand remains almost 12 million bales below the peak demand observed in 2006. Slumping demand is largely the result of the tremendous increase in polyester use. During the past decade when cotton mill use fell by 12 million bales, polyester's production capacity, primarily located in China, increased by 145 million bales. Excess production capacity, in many cases fueled by government support, is contributing to polyester prices in Asian markets of approximately 50¢ per pound. While consumers continue to express their preference for cotton products, the tremendous increase in low-priced polyester production has created extraordinary hurdles for increasing cotton demand.

I highlight these issues because of the critical influence of international markets and manmade fiber on the financial conditions of U.S. cotton farmers. Approximately 75% of U.S. raw cotton production is exported, with another 15–20% exported as cotton yarn, fabric of another textile product. Policies that directly affect international production, consumption and trade have a direct bearing on U.S. market prices.

For 2017, USDA is estimating 12.2 million acres planted to cotton, a 21% increase from 2016. This increase reflects several factors, including the availability of seeds with new herbicide tolerant traits, increased water supplies in some regions, and declines in the expected returns of competing crops.

Cotton Policy and the Farm Bill

While cotton acres across the U.S. are expected to recover, the lack of eligibility for the same price and revenue policies as other crops remains a major concern. As you know, these title I commodity policies in the farm bill are designed to help producers withstand prolonged periods of price declines and depressed market conditions. While the Agriculture Risk Coverage (ARC) and Price Loss Coverage (PLC) policies have generally performed well for producers like myself of other crops, I remain vulnerable to further instability in cotton markets.

Under the current farm bill, cotton producers can purchase the Stacked Income Protection Plan (STAX) crop insurance policy. In addition, the marketing loan program was modified so that the loan rate can adjust lower based on average market prices of the prior 2 years. Cotton is the only program crop that does not have any long-term price or revenue protection policy in the 2014 Farm Bill.

Cotton policy in the 2014 Farm Bill was enacted largely in response to a World Trade Organization (WTO) trade challenge brought by Brazil against certain components of U.S. farm policy and select cotton-specific policies. In an effort to avoid further political controversy and trade retaliation, Congress provided STAX as the core safety net for cotton. Unfortunately, STAX has proved inadequate for U.S. cotton growers.

For more than a year now, NCC has been working with Congress and the previous Administration to try to get cottonseed designated as a covered commodity and eligible for the ARC/PLC programs in the 2014 Farm Bill. Cottonseed remains an important co-product of cotton production, along with the cotton fiber. Support can be provided for cottonseed without running afoul of the agreement with Brazil that settled the WTO case and without violating U.S. commitments under the WTO. We strongly believe we need a cottonseed policy in place to help provide support to our producers as a bridge until the new farm bill is enacted, hopefully before the expiration of the current bill in 2018.

While we will continue our short-term efforts related to cottonseed, NCC is also beginning internal discussions on the policy objectives for cotton in the next farm bill. We know that a meaningful safety net for cotton must be included in title I of the farm bill. Better protection in times of depressed markets can take on several forms, and our industry will continue to pursue the best avenue to provide growers adequate protection that is consistent with both our international obligations and the needs of our industry.

Farm Bill Budget Resources

In order for Congress to be able to address the current shortcomings in U.S. cotton policy and to shore up other areas of need in farm policy, we strongly oppose any attempts to reduce the budget for the next farm bill. Further, we urge the Com-

mittee to seek any opportunities to increase the Federal investment in farm policies that ensures the U.S. consumer continues to have the safest, most affordable and secure supply of food and fiber in the world. In the January 2017 Congressional Budget Office baseline projection, the cost of the current farm bill is expected to be more than $100 billion less than estimated when the bill was enacted in 2014. Given this dramatic decline in farm bill spending, coupled with the significant downturn in farm income and generally weak commodity prices, a greater investment in these critical policies for all of rural America should be in order.

Last month, NCC joined 16 other organizations on a letter to the House and Senate Budget and Appropriations Committees stressing the critical need for the Agriculture Committees to have additional budget resources in order to craft a new farm bill. The additional resources are needed to help address the significant holes in the safety net for cotton and other commodities, while maintaining other programs designed to respond to the significant downturn in commodity prices and farm revenue.

Marketing Loan Program

In addition, our industry relies heavily on a properly functioning marketing loan program that helps ensure orderly marketing and flow of cotton to the market. Maintaining the marketing loan policy, with some minor adjustments, is also a priority.

Crop Insurance

A strong crop insurance program is also critical since in agriculture, one thing is for certain, crop losses will occur in some part of the U.S. each year. Annual losses incurred by farmers clearly demonstrate the need for crop insurance protection and the public-private partnership of program delivery. Farmers, their lenders, input suppliers and other stakeholders agree that crop insurance protection should remain a viable, affordable tool for managing risk.

In 2016, 96% of cotton acres were covered by either multi-peril "buy-up" insurance or catastrophic coverage. 88% of these acres were covered by multi-peril insurance. The STAX policy was purchased on over 2.5 million acres covering 26% of total insured acres. Participation in STAX has not been as extensive as initially projected, largely because of extremely low prices, which render the revenue assurance of STAX less beneficial relative to the costs of production.

For this reason, it is imperative that cotton producers have access to the same complement of risk management policies and tools as other producers, including commodity policies in title I, along with crop insurance.

Federal crop insurance provides an effective risk management tool to farmers and ranchers of all sizes when they are facing losses beyond their control, reduces taxpayer risk exposure, makes hedging possible to help mitigate market volatility, and provides lenders with greater certainty that loans made to producers will be repaid. The public-private partnership of program delivery works very well, allowing for timely and outstanding service to producers when they need it the most and providing much-needed jobs across rural America.

While the overall crop insurance program is working well and should be defended, there are a few areas that can be improved. NCC is currently working with the Risk Management Agency (RMA) to improve quality loss provisions that have proved inadequate for many producers in the Southeast region who suffered through extensive rains during the 2015 and 2016 harvest seasons. RMA has been a good partner in identifying and pursuing improvements to this feature of the crop insurance product. We remain hopeful that an improved quality loss provision will be available for cotton crop insurance policies for the 2018 crop. Particularly important in the Southwest region is the ability to insure Enterprise Units by practice, which is permitted in the 2014 Farm Bill. In our view, RMA has not implemented this provision in the manner intended by Congress and should be reconsidered by USDA, and if necessary further clarified in the next farm bill.

Payment Limits and Program Eligibility

Our industry is opposed to any further tightening of payment limits and eligibility requirements, as we believe these policies are already too burdensome and restrictive in light of the size and scale of production agriculture necessary to be competitive and viable in today's global market. In addition, we believe the current definition of 'family member' that is used for actively engaged provisions the farm bill should be broadened to ensure extended family members are not forced out of the family farm simply because they do not fit within the current, unnecessarily restrictive definition for 'family member'. We hope to work with the Committee to address this problematic provision in the next farm bill.

Extra Long Staple Cotton Policies

There are important policy considerations for Extra Long Staple (ELS) or Pima cotton as well. The industry is evaluating the potential for an increase in the loan rate for the ELS loan program in order to better reflect the relative market value of Pima cotton. Since this is a non-recourse loan without marketing loan provisions, there should be little, if any, additional government cost or exposure. Also, the ELS Cotton Competitiveness Program is not currently functioning as intended given the recent shift in the countries that are major producers, importers and exporters of ELS cotton. For the intended objectives of this program to be met, USDA needs to take steps to update the key price data being used. If USDA continues to resist this administrative adjustment, then we will seek to make the modifications in the next farm bill.

Conservation Policies

Conservation programs continue to be extremely popular across the Cotton Belt. Specifically, the Environmental Quality Incentives Program and the Conservation Stewardship Program are both heavily accessed. I commend the Committee for streamlining conservation programs in the 2014 Farm Bill. This will make them easier for the Natural Resources Conservation Service (NRCS) to administer, but more importantly easier for producers like myself to utilize. These programs have become integral parts of many producer's operations and achieve the goal of improving and protecting the environment while also improving our farming operations.

One area that can be improved is exempting NRCS from requiring producers participating in USDA cost-share programs to obtain and keep up to date a System for Award Management (SAM) number and a Duns and Bradstreet (D–U–N–S) number. The SAM number in particular is burdensome because of the yearly renewal requirement. The D–U–N–S number can also be complicated if the number is arbitrarily changed without the producer's knowledge. Many producers, including some in my area, have had payments extensively delayed after they had completed the project because of this paperwork requirement. In addition, many producers may not realize that while obtaining these numbers is a burdensome, timely process, they can obtain these numbers for free, yet inadvertently agree to pay companies who contact them directly hundreds of dollars to obtain the numbers. The SAM system and D–U–N–S requirement were never intended for conservation contracts, and it is our hope that this oversight can be corrected in the next farm bill.

Textiles and Economic Adjustment Assistance Program

After a decade of experiencing a precipitous decline in the amount of cotton used by U.S. textile mills, U.S. mill consumption has stabilized since 2008 due to ongoing assistance provided in the farm bill.

The recent years of stability and expected future growth can be attributed to the continued benefits of the Economic Adjustment Assistance Program (EAAP), first authorized in the 2008 Farm Bill. Recipients must agree to invest the proceeds in equipment and manufacturing plants, including construction of new facilities as well as modernization and expansion of existing facilities. EAAP funds have allowed investments in new equipment and new technology, thus allowing companies to reduce costs, increase efficiency and become more competitive. By allowing U.S. textile mills to make the new investments necessary to remain competitive, the program supports a manufacturing base that supports jobs in the United States.

Trade Promotion Programs

Given the tremendous reliance by our industry on exports of raw cotton fiber and yarn, it is essential that the U.S. agriculture industry have a strong, well-funded public-private partnership to help leverage private resources to expand export markets and grow demand for U.S. agriculture products. A central part of this effort is USDA's Market Access Program (MAP) and Foreign Market Development (FMD) program. Even though the U.S. continues to be heavily outspent by other major agricultural producing and exporting countries, MAP and FMD investments have been flat for more than a decade. MAP and FMD have resulted in a $2.1 billion increase per year in cash farm income since 2002. Agricultural exports in 2014 accounted for $340 billion in economic output and supported 1.1 million jobs. For this reason, we believe it is justified for the new farm bill to invest additional funds in these programs.

The value of U.S. cotton fiber exports exceeds $5 billion annually, along with an additional $3 billion in exports of value-added cotton textile products. Independent studies found that for each dollar spent by organizations like Cotton Council International that partner with USDA to expand and promote exports, there is a $35 return on investment. In direct monetary and in-kind investments, the U.S. cotton in-

dustry invests over $2 for every $1 of MAP funds utilized for export promotion activities. These programs work, and in response our industry stakeholders are investing in their businesses and creating jobs.

Federal Check-off Programs

The U.S. cotton industry, like many other commodities, has a national commodity research and promotion program (check-off program) to allow the industry's stakeholders to combine resources for the benefit of the industry as a whole. The Cotton Research and Promotion Act of 1966 was the first legislation of its kind. It enabled upland cotton producers and importers of cotton textile products, after passing a referendum, to join together to begin addressing competing fibers and re-establishing markets for cotton. Today, every bale of cotton produced and the cotton content of imported cotton products is assessed and those dollars fund a very successful research and promotion program. A recent third-party economic assessment of this program indicated returns to producers and the government of over $7.00 for every $1 contributed over the life of the program. The return on investment is even higher for importers. The Cotton Board's members are appointed by the Secretary of Agriculture to administer and oversee the operation of the program on behalf of all stakeholders. The program itself has significant built-in safeguards to protect this investment. In addition, the Department of Agriculture oversees almost every aspect of the program's operation. These are carefully managed, productive programs that generate positive return for U.S. cotton producers and importers of cotton products at no cost to taxpayers. These types of check-off programs should continue and should not be hamstrung by unnecessary legislative or regulatory provisions that do not contribute meaningfully to transparency but would weaken their effectiveness.

Conclusion

In closing, for the past 3 years, U.S. cotton producers have struggled with low cotton prices, high production costs and the resulting financial hardships. While current cotton futures market prices have increased from year-ago levels, many producers continue to face economic challenges. The projected increase in cotton acreage is largely the result of weaker prices of competing crops and improved expectations for water in some regions that were experiencing severe drought conditions. Therefore, it is imperative that the next farm bill bring cotton back into the title I commodity policy so that cotton is able to access the same full complement of risk management tools as other crops.

NCC looks forward to working with the Committee and all commodity and farm organizations to develop and pass a new farm bill that effectively addresses the needs of all commodities and all producers in all regions of the country.

Thank you for this opportunity, and I would be pleased to respond to any questions.

The CHAIRMAN. Thank you, Mr. Lee.

I am now pleased to welcome Mr. Blake Gerard, Chairman, USA Rice Farmers Board of Directors, from Cape Girardeau, Missouri. Mr. Gerard, you are recognized for 5 minutes.

STATEMENT OF BLAKE GERARD, CHAIRMAN, BOARD OF DIRECTORS, USA RICE FARMERS, CAPE GIARARDEAU, MO; ON BEHALF OF USA RICE FEDERATION

Mr. GERARD. Thank you. Chairman Crawford, Ranking Member Nolan, and Members of the Subcommittee, thank you for holding this important hearing on commodity policies. My name is Blake Gerard, and I am a fourth generation family farmer, and grow more than 2,000 acres of rice and soybeans in southern Illinois in Congressman Bost's district. I am the Chairman of the USA Rice Farmers Board of Directors, and the USA Rice Government Affairs Committee. I am honored to offer my testimony on behalf of the USA Rice Federation.

Rice is grown on 3 to 4 million acres across eight states. The industry as a whole provides jobs and income for more than 128,000 people, 31,000 of those directly in farming. While a small commodity by acreage, we pack a punch, contributing $34 billion annu-

ally to the economy, with the farming sector accounting for $5.6 billion alone.

USDA's most recent forecast for 2017 prices put us at a 10 year low and a 36 percent decline since the 2014 Farm Bill passed. While a variety of factors have influenced this downturn, the actions of major exporting countries and their governments are the most significant. In recent years, we have seen a significant increase in imports of foreign rice, with imports coming primarily from countries that are known to violate their WTO obligations.

Operating costs for rice exceed every other crops covered by the commodity title, projected by USDA to be nearly $1,000 per acre in 2018. Because of specialized infrastructure, field equipment, and soil types needed for rice, it is difficult to economically justify a shift from year to year, so we rice farmers are in it for the long haul. We intend to ride out the storm, but we cannot do so without the safety net that the PLC program provides.

It is safe to say that one of the reasons the majority of rice farming families, and myself, are still in business today is the farm bill safety net, specifically PLC. Ninety-nine percent of long grain acreage and 94 percent of medium grain farms selected PLC. It has provided counter-cyclical assistance when needed the most.

While we feel that PLC was working the way Congress intended, we have recommendations which we believe can make it more effective for rice farmers. We recommend that you consider revisions that would accelerate the delivery. PLC assistance is triggered based on the previous marketing year average, which is calculated and published by USDA more than 12 months after we have harvested our crop. The bills for our input costs don't wait 12 months before coming due. When farmers go to the bank to renew operating lines of credit, it is nearly impossible to predict a year in advance what assistance they may receive. This seriously impacts our ability to forecast a cash flow sufficient to obtain operating financing.

California's rice market has fallen at a more rapid rate than the rest of the country, but they have not received the much needed assistance that PLC could provide. We appreciate inclusion of the multiplier for Temperate Japonica rice to take into account the higher than average cost of production in California. The multiplier currently used to calculate the reference price does not reflect the full cost of production, and therefore needs to be increased.

The statute and regulations that define *actively engaged* in farming for the purpose of program eligibility also remain problematic for rice farmers. These regulations impose an arbitrary cap of three managers per operation, regardless of the size or complexity. USDA's final rule did not protect entities from maintaining family farm status following the death of a lineal family member, such a parent or grandparent, which has resulted in the disqualification of true family members who have an active role in the operation's survival. We request that this Committee revise the statute to provide an exemption within those regulations to protect farm families against unforeseen linkage breaks in their operating structure.

Additionally, a $125,000 payment limit seemed like a farfetched problem when the prices were high in 2013 and 2014. Unfortunately, as market conditions continue to deteriorate, growers are

receiving larger payments and many are close to or at payment limits. It seems wrong to maintain policy that provides full assistance to producers when they experience some losses, but only partial assistance when they really are hit the hardest.

Mr. Chairman, farmers face more risk than any other business. We are dependent on global markets that are often distorted, weather, disease, and any number of other factors could cause our crops to fail and us to go bankrupt. When threats are made to cut funding of policy for the farm safety net, the existence of the full-time family farmer is put into jeopardy. Without a strong domestic support structure, only a small number of truly consolidated operations could survive. I am here to ask this Committee's consideration in not only maintaining our commodity title programs, but strengthening it using our recommendations as you work to reauthorize this important legislation in 2018.

Thank you, and I will be happy to respond to questions.

[The prepared statement of Mr. Gerard follows:]

PREPARED STATEMENT OF BLAKE GERARD, CHAIRMAN, BOARD OF DIRECTORS, USA RICE FARMERS, CAPE GIARARDEAU, MO; ON BEHALF OF USA RICE FEDERATION

Introduction

Chairman Crawford, Ranking Member Nolan, and Members of the Subcommittee, thank you for holding this important hearing to examine the farm safety net. I am honored to have the opportunity to offer testimony on behalf of the USA Rice Federation, the global advocate for the U.S. rice industry.

My name is Blake Gerard. I'm a fourth-generation farmer and grow more than 2,000 acres of rice and soybeans on my family's operation in southern Illinois. I serve as the Chairman of the USA Rice Farmers Board of Directors, Chairman of the USA Rice Government Affairs Committee, and as an active member of other state and national industry-related boards and committees. I am honored to be here today representing U.S. rice farmers.

Rice planting is currently underway on my farm and throughout the rice growing regions in the U.S. and nearly completed in the southernmost regions of Louisiana and Texas. The U.S. rice industry is a multibillion dollar industry that provides jobs and income for not only producers and processors of rice, but for all involved in the value chain. Much of this economic activity occurs in the rural areas of the Sacramento Valley in California, the Gulf Coast region of Louisiana and Texas, up and down the Mississippi River Basin starting in Illinois, down the Bootheel of Missouri, through the Grand Prairie of Arkansas and in the Mississippi Delta region. All combined, these areas plant rice on 3 to 4 million acres on an annual basis.

The U.S. rice industry is unique in its ability to produce all types of rice, from long grain, medium grain, and short grain, to aromatic and specialty varieties. Last year, rice farmers produced a rice crop directly generating $5.6 billion that was reinvested in local economies. This production and subsequent sales of rice generated $34 billion in total value added to the U.S. economy from rice production, milling, and selected end users. The industry provides jobs and income to more than 128,000 people within the U.S. labor force.

Today, about 81 percent of all the rice that is consumed in the U.S. is produced here at home. And, despite significant trade barriers to exports, the U.S. remains the largest non-Asian exporter of rice and within the top five largest exporters worldwide. On average, about 50 percent of the annual rice crop is exported as either rough or milled rice. The top U.S. export markets for rice include Mexico, Canada, Japan, and throughout Central America and the Middle East. Of the rice produced by our fa[r]mers that remains in the domestic market, 53 percent is bound for direct food use, 16 percent is dedicated to processed foods, 15 percent is used to produce beer, 14 percent is for pet food, and the balance is used for industrial purposes.

Beyond the substantial economic and nutritional benefits of rice is the environmental dividend from winter-flooded rice fields that provide critical habitat for migratory waterfowl and other wetland-dependent species. All of the major rice-production areas in the U.S. host important waterfowl activity during winter months. Without rice farming, wetland habitats in the U.S. would be vastly reduced. A loss

of this magnitude would have a disastrous effect on waterfowl, shore birds, and a host of other wetland-dependent species. In the Delta region of Arkansas, Mississippi, Missouri, and Louisiana, at least 70 wildlife species rely on rice fields for habitat. In California, rice fields provide unparalleled habitat for 230 species of wildlife, and provide wintering habitat for some seven million ducks and geese that winter each year in the Pacific Flyway. So critical is this habitat to the flyway that experts estimate we would lose more than one million ducks if California rice acres were cut in half. Rice production areas in Texas correspond with the bird migration corridor known as the Central Flyway, providing important habitat to hundreds of bird species that rely on these artificial wetlands during their migratory journey. The cost of replacing existing rice habitat with managed natural wetlands would be more than $3.5 billion.

State of the Rice Industry

Recent analysis conducted by Texas A&M's Agricultural and Food Policy Center concluded that on average, each rice farmer in the U.S. generates more than $1 million of economic activity in his or her local economy on an annual basis. While rice farming and the associated production and processing industries continue to act as economic drivers in rural communities, many of our growers have been struggling with rice prices at or below the cost of production for the last 3 years. As commodity prices continue to sink, the certainty of remaining in business for many growers is also sinking. Farmers rely on good years to help support them through the bad years. This is especially challenging for young and beginning farmers, who have not yet had an opportunity to build reserves.

When the current farm bill was enacted in early 2014, U.S. rice prices across all grain lengths averaged $16.30 per hundredweight. The USDA's most recent forecast for the 2016/17 prices show an average price of $10.50 per hundredweight—a 10 year low for the industry, and an overall decrease of 36 percent. Even more extreme, California's Temperate Japonica rice was averaging $21.60 per hundredweight for the 2014/15 marketing year, and is now forecast at $13.60 per hundredweight—a 37 percent decline in just 2 years. In addition to the low prices we are witnessing, the rice industry has been severely impacted by natural disasters. Over the last 4 years, our national average yields have taken a significant hit and decreased annually due to extreme flooding or drought throughout the rice-growing regions. The U.S. rice industry is clearly not in a great place due to factors far outside of our control. Weather events will continue to impact our yields and other major rice producing countries, many of which do not abide by World Trade Organization (WTO) rules, will continue to overproduce and artificially depress world market prices for rice. A robust safety net is necessary to protect American farmers from not only extreme weather events but also multiple year price declines.

Trade and Export Factors Influencing U.S. Markets

The industry heavily relies on exports. Approximately 50 percent of our annual crop is exported to more than 120 countries around the globe, accounting for ten percent of global rice trade. These exports are critical to rice farmers, millers, and merchants. The volatility of the global rice export market makes it difficult to project sales beyond several months and the levels of U.S. rice exports have been inconsistent over the last decade, adding to the uncertainty in our markets. We are also seeing a consistent increase of imported foreign rice, growing from five percent to nearly 20 percent over the last 2 decades, putting domestic growers at even more of a disadvantage. These growing imports are mostly originating from our global trade competitors that are frequently in violation of their WTO obligations.

According to a 2015 study on the global competitiveness of the U.S. rice industry by the U.S. International Trade Commission (USITC), rice is considered the most government-interfered with crop in the world. U.S. farmers simply cannot compete with foreign government treasuries, like that of India, Thailand, and Vietnam. Producers in these and other countries overproduce as a result of the lucrative subsidies they are provided that encourage them to plant rice even when the market tells them otherwise, distorting the world market price. Thankfully, last year the U.S. Trade Representative finally initiated two cases against China at the WTO, both involving rice. We appreciate this Committee's recognition of these WTO violations and for holding several Congressional hearings to bring the issue to the forefront. We are confident that the U.S. has a strong case and will win. While these WTO cases take some time to run their course, we are already seeing other bad actors take note of the case against China. Two weeks ago, India, another notorious violator of WTO commitments, requested "observer status" on the case out of concern that the U.S. will soon challenge their illegal subsidies. It is critical that the

U.S. Government continue to go after the bad actors that put American rice growers at an unfair disadvantage and threaten our livelihood.

The USITC report lays out these problems in great detail. The key conclusions are well known to our industry and my fellow producers. It outlined the pervasive extent of foreign government involvement in global rice markets and the high levels of foreign tariffs that keep U.S. rice from competing in those markets. USITC analysts concluded that U.S. rice production would be 1.3 million metric tons (mmt) higher in the absence of global tariffs. Removing foreign tariffs not only leads to higher production in the U.S. but would also increase U.S. exports by slightly more than 1.3 mmt or approximately 25 percent. Please keep in mind that U.S. import duties on rice are essentially zero.

Examples of Export Challenges

The U.S. rice industry continues to face a number of challenges in exporting our safe, nutritious, and cost-effective crop. Several examples include:

- No access to the Cuban market.
  - With the appropriate statutory changes, the U.S. could regain 30 percent of the Cuban rice business within 2 years. That is an estimated 135,000 metric tons of new demand. We anticipate the U.S. share of the market would exceed 50 percent within 5 years, and it could reach 75 percent or more within 10 years with full commercial relations. That is equal to somewhere between $40 and $60 million worth of new demand from Cuba within those first 2 years of lifted sanctions. We are thankful for the efforts of Chairman Crawford along with a number of other Members of the House Committee on Agriculture that sponsored a bill to remove private financing barriers for agricultural commodities with Cuba.
- No access to the Chinese market.
  - The USDA and the Chinese Government have been in negotiations for nearly a decade on a phytosanitary agreement. Finally, in the fall of 2015 they finalized the text with industry support. The Chinese Government has refused to finalize the deal and we need your support to urge the Chinese to sign the protocol and allow us access to this important new market.
- Irregular/non-transparent tenders for rice to be shipped to Iraq.
  - The U.S. State Department worked with the Iraqi Government to sign a Memorandum of Understanding that supports regular U.S.-specific tenders for rice. While we have seen some positive movement, this large export market remains inconsistent and intergovernmental corruption in Iraq often acts a barrier to selling our rice. Iraq at one time was the largest market for U.S.-grown rice but in recent years has been sourcing much of its rice from Thailand—one of the leading, cheating competitors of the U.S. in terms of rice exports.
- Lack of meaningful, quality access to Japan.
  - While the Trans-Pacific Partnership (TPP) trade deal would have provided some new access for U.S.-grown rice to Japan, the real gains were unclear and volume remained below what we felt was fair. The industry sought a higher volume tariff rate quota (TRQ) for U.S.-grown rice going into Japan. We support a bilateral trade deal with Japan that revisits the TRQ level for U.S.-grown rice and provides the additional assurances we need on quality of access.
- Little to no access to the European Union (EU) and the United Kingdom (UK).
  - The U.S. rice market was effectively destroyed because of EU biotechnology policies beginning in 2006 and the market never recorded beyond a small quantity shipped largely to the UK under an existing trade concession. EU duties applied on U.S. rice outside the concession are high but unfortunately they provide favorable trade concessions for our global competitors. USA Rice is seeking substantive market access gains in Europe. That is why we support a U.S.-UK bilateral trade deal once the UK has formally exited the EU in 2018 and why we support returning to talks surrounding the Transatlantic Trade and Investment Partnership.

U.S. International Food Aid Programs

In addition to trade and export challenges, USDA and the U.S. Agency for International Development (USAID) international food aid programs continue to be a tar-

get for cuts and statutory revisions by Congress, the Administration, and others. These international food aid programs have long been a critical component to our diplomatic success. They are supported by farmers, shippers, processors, mills, and humanitarian organizations long known for saving lives in the face of daunting emergency situations and preventing crisis through effective monitoring and response. The programs have an extensive history of measurable successes reducing hunger and malnutrition while also supporting education, democracy, and agricultural development in vulnerable populations throughout the world. This year in particular, our food system is projected to face unprecedented demand, especially in nations across Sub-Saharan Africa and the Middle East.

Rice is one of the primary commodities utilized by a number of these programs, whether it is by direct aid or through monetization. Unfortunately, the Administration's recent budget proposal threatens to reduce or even eliminate that already small market for U.S. rice farmers through cuts in funding. The U.S. rice industry has invested a lot of time and capital into developing fortified rice and rice products recently approved for use in food aid that are aimed at reducing global hunger and malnutrition, particularly in women and children. Despite only serving as a one to five percent share of all rice exports. It is important to the industry that we continue to play a strong role in providing our nation's agricultural bounty to those in need by fully funding the USDA's Food for Progress and McGovern-Dole Food for Education programs and USAID's Food for Peace program.

Export Marketing and Development Programs Are Worth the Investment

Trade and exports are not self-sustaining without regular, strategic marketing of our products. The majority of U.S. agricultural products are promoted globally through the USDA's Market Access Program (MAP) and Foreign Market Development (FMD) program that provide annual allocations to commodity organizations through an extensive application/request process. These programs are vital to both growth and new opportunities for our agricultural exports and have a long track record of measurable success throughout their lifespan.

USA Rice is able to not only effectively utilize our annual allocation, but we contribute $7 in private industry funds for every $1 in Federal funding through MAP and FMD, making them true economic drivers. Unfortunately, funding for these programs through the farm bill has remained flat for a number of years and the rate of increase for our exports are increasing has declined. Without additional funding the programs will become less effective and eventually suffer. We would like to see a significant increase, potentially doubling funding for these programs to help grow agricultural exports amid this turbulent trade atmosphere. We believe providing additional resources will help to elevate commodity prices, thus offsetting the costs of the commodity title.

Increasing Costs for Production

According to USDA's Economic Research Service, the 2018 crop year is forecast to have some of the highest production costs on record—nearly $1,000 per acre for rice. Our operating costs plus labor exceed every other crop covered by the commodity title. To put that into perspective, the production costs forecast for 2018, including labor, are: $679 per acre for corn; $479 per acre for soybeans; $312 per acre for wheat; and $317 per acre for sorghum. Folks may question why rice farmers do not typically choose to grow something else, and the answer is multiple fold. Weather, water availability, and soil type all play a role in whether it is agronomical to grow rice in a region. But, most importantly, it is economics. The initial investments for rice farmers including equipment, infrastructure for irrigation, conservation measures that have been installed, *etc.,* are so specialized that it is difficult to economically justify a shift from year to year.

According to USDA's February Agricultural Prices Report, the Prices Received to Prices Paid ratio in January for food grains, including rice, was at 62.9 percent, down 15 percent from a year ago. With rising input costs and decreasing rice prices, our reserves, if we have them, are going to continue to dwindle for the foreseeable future.

Price Loss Coverage and Other Safety Net Policies

It is safe to say that the reason I am still in business today is because of the safety net provided by the 2014 Farm Bill and, specifically, Price Loss Coverage (PLC). When prices were as high as they were during the last farm bill's development, USA Rice advocated for a safety net to protect us during multi-year price declines (*i.e.,* PLC) instead of shallow losses. We appreciate this Committee's recognition that the farm safety net is not one-size-fits-all and for including PLC, which, by and large, is working as intended. It is this Committee's foresight and work on our behalf that has helped to safeguard much of America's rice industry.

The 2014 Farm Bill allowed growers to choose between PLC and the Agriculture Risk Coverage (ARC) within title I. While a small number of rice farmers elected to use ARC, the vast majority enrolled in PLC. In total, 99 percent of long grain rice farms and 94 percent of medium grain rice farms selected PLC as their safety net of choice.

Rice is unique in that it has different market prices for southern-grown long grain and medium grain rice types and California's Temperate Japonica-type rice. Since the current farm bill has been in place, a small number of insubstantial ARC payments have been made to rice farmers in select counties. PLC has been the primary safety net for rice farmers. Long grain rice prices settled below the reference price after the 2014 and 2015 crop years and growers received the much needed assistance. Southern medium grain rice growers only received support through PLC for the 2015 crop year.

USA Rice appreciates this Committee recognizing a higher than average cost of production for California's Temperate Japonica rice by designating it a separate multiplier for the PLC reference price. Unfortunately, the multiplier that was used to calculate the Temperate Japonica reference price is not sufficient in capturing the full cost of production. California's rice market has fallen at a more rapid rate than the rest of the country while under a drought situation, causing additional challenges without receiving any assistance under PLC.

While, overall, we feel that PLC is working the way Congress intended, the reference price for Temperate Japonica needs to be increased to reflect the higher than average cost of production, incorporating the unique needs of the growing region. USA Rice is working with the California Rice Commission to develop a more accurate accounting of the operating cost for Temperate Japonica using on-farm data so that we can provide the most current and accurate recommendation to this Committee in advance of the farm bill's reauthorization.

We acknowledge the political and budgetary considerations at play in writing the last farm bill, and the subsequent need to shift assistance timing for commodity title benefits until the crop year is fully completed. If triggered, USDA issues PLC assistance to long and medium grain rice growers in the South in November based upon the previous crop year's Market Year Average price. For Temperate Japonica rice growers in California, PLC assistance is issued in February based on the Market Year Average price for 2 crop years prior.

There are multiple problems created at the farm level as a result of this delay. The bills for our input costs ahead of planting season do not wait until a year after the crop is harvested before coming due. When farmers go to the bank after harvest, it is nearly impossible to predict a year and a half in advance what kind of assistance they may qualify for—making it impossible to accurately predict cash flow. That has a big negative impact on the ability of farmers to access capital through financing.

We request that this Committee look into mechanisms to accelerate at least a portion of the PLC assistance which growers are anticipated to receive. I believe that the assistance will be more effective if producers can start utilizing it sooner during the year. More importantly, bankers would be more apt to approve our annual operating loans if the PLC assistance is advanced or accelerated.

Actively Engaged in Farming

Actively Engaged in Farming regulations brought forth a lot of confusion and disruption throughout farm country following the publication of USDA's proposed and final rule in 2015. The industry requested a grace period to allow for growers to meet with their attorneys and actively work to restructure the way they managed their operations. These regulations were burdensome and costly for the affected operations, primarily in the mid-South where rice is most produced. There are, unfortunately, no safeguards in the USDA's final rule that protect entities from maintaining "family farm" status following the death or retirement of a lineal family member, such as a parent or grandparent. It was not the intent of Congress to force family farms out of eligibility as a result of family transitions. As a son, a grandson, and a father, I can truly attest to the importance of estate planning activities to ensure the continued operation and viability of a family's farm. We are requesting that this Committee revise the statute to provide an exemption or safeguard to protect hardworking farm families against unforeseen linkage breaks in their operating structure.

In addition, the regulations should not include a cap on active personal farm managers. Invoking an arbitrary limit of one to three farm managers completely ignores the diversity and unique needs of farming operations across different crops and regions. Southern family farming operations are often larger than three individuals, and are most affected by this limit. While a family operation can have as many farm

managers as required to manage the complexity and scope of the operation, it is irrational to then limit the number of eligible farm managers in similar operations that involve non-lineal family members, friends, or neighbors. The diverse sizes and scopes of farming operations across the nation require different types of expertise and numbers of individuals to adequately manage such operations. A limit ignores economies of scale, the increasing need to achieve efficiencies in agricultural production, and the complexity of such operations.

Adjusted Gross Income and Payment Limitations Should Be Eliminated

USA Rice opposes additional eligibility requirements based on a producer's adjusted gross income (AGI). In fact, we firmly believe that this AGI limit should not exist at all. Farmers need to build up reserves in good times in order to weather bad times. But, an AGI test that excludes farmers from the farm bill in a given year due to the AGI of the farmer in previous years turns this fact of life on its head.

Additionally, a $125,000 payment limit seemed like a farfetched problem when the 2014 Farm Bill was written and prices were higher. Unfortunately, in current market conditions, many growers are at or close to the payment limits. If a farmer is limited at $125,000 and his losses are $200,000 across his operation, there is a serious problem with the effectiveness of the safety net. It seems counterintuitive to maintain policy that provides full assistance to producers when they experience some losses but only partial assistance to those that are hit the hardest and experience deep losses.

Crop Insurance Needs Improvement

Crop insurance has not been as valuable a risk management tool for rice as it has been for other crops and areas. Rice farms are 100 percent irrigated, and on average, our yields are very consistent. Our financial problems occur with higher production costs due to irrigation or as the result of a weather event in the fall that disrupts our harvest and affects the quality of our crops.

Revenue Protection policies work well when prices are high and were increasingly utilized by rice farmers through 2014, but have faced challenges and diminished sales in recent years. Revenue-based insurance uses averages from the Rough Rice Futures Contract in the fall to set the expected price used to calculate revenue. Unfortunately, because rice is a thinly traded commodity in the futures market, in 2015 there was not an adequate amount of activity for RMA to determine an expected price. Therefore, revenue policies were not available for that year and producers were forced to use Yield Protection coverage, which did not provide adequate protection.

Though rice yields do not tend to be as variable as other crops due to our irrigation practices, crop insurance rates remain high relative to other crops. For example, a 75 percent Revenue Protection policy for corn in Floyd County, Iowa on a slightly above average Actual Production History would cost the farmer $9 per acre—that is $1.70 out of pocket for every $100 in coverage. The same policy on rice in Richland Parish, Louisiana would cost $23 per acre—that is $4.87 for $100 in coverage. So in this example, the rice insurance is nearly three times as high as the corn insurance—and this is reflective of the cost across the rice belt. With the price guarantee of $10.30 per hundredweight of rice this year, it is easy to see why standard Revenue Protection insurance is not as useful of a tool as we had hoped it would be for rice farmers.

The 2014 Farm Bill created a county-wide insurance-based policy called Supplemental Coverage Option (SCO) that we had hoped, coupled with PLC in the commodity title, would provide a complementary set of risk management tools for our growers. However, after the product was rated by USDA's Risk Management Agency (RMA), in most counties it was economically infeasible to purchase for most producers.

USA Rice spent several years working with consultants to develop an insurance product that would provide coverage for drastic changes in margins based on rising input costs. This product was finally approved in 2015. However, in the course of its development it was merged with a product designed to cover margins in other crops, and the resulting changes did not meet the needs of the rice industry. Participation in the Margin Protection insurance product have been very low, with the number of policies sold in the single digits last year. For all of our investment and efforts, the product is simply not functioning as an adequate risk management tool. However, this does not mean the concept is without merit. Because of our investments in the initial product structure and the need to cover our margins as input costs rise in the future, we would be very supportive of this Committee looking into ways to revise Margin Protection to be more affordable and to better fit the needs of rice farmers.

Finally, we have made attempts to improve crop insurance for rice farmers through the promotion of a downed rice policy that indemnifies producers for increased harvest costs associated with late-season storms that lay the rice down. This policy has been fairly successful in certain areas but problems with the overall range of the policy persist. As an industry, we plan to continue to work to improve crop insurance coverage and options for rice farmers and will continue to utilize basic coverage options to, at least partially, insure our crop in the event of catastrophic losses due to weather.

Farm Policy Is Necessary for National Security

Our nation's strong farm safety net would not be what it is without all of the pillars that make up farm policy. Agriculture is not a partisan issue. We divide ourselves by region and sector but not by political beliefs. Fortunately, the commodity title and other titles make sure that each of our different sectors and regions have something that works. Without the certainty of this legislation, our already high-risk career would take on a new level of risk.

While some of the factors affecting the farm economy are within the control of the farmers themselves, most of them are not. Illegal and over-subsidizing of rice production by our foreign competitors, phony sanitary and phytosanitary barriers, lack of private financing options, *etc.,* all play into the need and justifications for strong farm policy to protect our basic agricultural infrastructure.

The average U.S. farmer faces more and different risks than any other business we could point to. We are affected by global futures and cash markets, weather, pests and disease, and any number of other factors that could cause our crop to fail and our farms to go bankrupt. We are at the mercy of our bankers who have to be able to justify giving us our annual operating loans and determine if the lenders can absorb the unique risks associated with farming. The business of agriculture is high stakes. Most farmers borrow more money in 1 year than the average family borrows in an entire lifetime.

When threats are made to cut or eliminate funding and policy for the farm safety net, the very existence of the full-time family farmer is put in jeopardy. Without a strong and predictable safety net, only a small number of truly consolidated operations would survive. These would not be the competitive family enterprises we know today.

Please keep in mind that if it were up to us as farmers, we would prefer to prosper solely on the great prices our crops bring at the market. Unfortunately, commodity markets are not always kind, and agricultural markets are distorted by our foreign competitors. The simple fact is that right now our crops are not bringing enough at the market to pay our loans and buy our supplies for next year without the assistance provided by the farm bill.

I am here to ask for this Committee's consideration in not only maintaining our commodity title policies, but strengthening them by using our recommendations as you prepare to reauthorize the farm bill.

I want to again thank you, Chairman Crawford, Ranking Member Nolan, and the Members of the Subcommittee for inviting me here today to provide insight on behalf of the U.S. rice industry.

The CHAIRMAN. Thank you, sir. I appreciate that.

I want to yield to the gentleman from Georgia, Mr. Austin Scott, to introduce our next witness.

Mr. AUSTIN SCOTT of Georgia. Thank you, Mr. Chairman. We have Mr. Tim McMillan representing the Southern Peanut Farmers Federation from Enigma, Georgia, and if you don't know where Enigma, Georgia is, that is in Berrien County, Georgia, and if you don't know where that is, we are capable of governing ourselves.

The CHAIRMAN. I thank the gentleman, and Mr. Tim McMillan, you are recognized for 5 minutes.

STATEMENT OF HON. TIMOTHY E. MCMILLAN, CO-FOUNDER AND CO-OWNER, SOUTHERN GRACE FARMS, ENIGMA, GA; ON BEHALF OF SOUTHERN PEANUT FARMERS FEDERATION

Mr. MCMILLAN. Good morning, Chairman Crawford, Ranking Member Nolan, and Members of the Subcommittee. I am Tim McMillan, and I am a seventh generation family farmer from Berrien

County, Georgia. That is on the other end, Congressman Peterson, of the world. I am testifying today on behalf of the Southern Peanut Farmers Federation, the largest peanut grower organization in the United States.

I want to be clear today that the peanut provisions of the 2014 Farm Bill have provided a safety net for peanut producers. If the Price Loss Program had not been in place, I am afraid many farmers in the Southeast would no longer exist because of the downturn in the farm economy which has plagued us the past 3 years.

The Federation supports maintaining the current PLC program in the 2014 Farm Bill, including these key provisions: the current reference price for peanuts, a separate payment limit as established in the 2002 Farm Bill, and storage and handling provisions.

The 2014 Farm Bill was drafted during a period of high prices. When we compare average prices in 2011 through 2012 through 2016 prices, we see a 39 percent decline in peanut prices. The USDA has projected the net farm income from 2013 through 2017 to decline by 49.6 percent. I see the real impact of these numbers in the faces of my neighbors, my customers, and I hear it in discussions with lenders and our suppliers.

The peanut Price Loss Coverage Program has worked, but peanuts are not sufficient to carry an entire farming operation. Corn and cotton prices have been depressed, and with the lack of a cotton PLC program, more pressure has been placed on growers to plant peanuts by lenders and others. Peanut growers know that a rotation is critical for their cropping system. However, during this period of severely depressed farm economy, many farmers modified their crop rotations in order to survive. As a result, U.S. peanut yield has declined by approximately 13 percent.

Although the increased peanut acreage has impacted yields and the cost of production, peanut acreage during the life of the 2014 Farm Bill is not out of line. During the life of the 2014 Farm Bill, average planted acres were only 16 percent more than the average acres planted during the years 2002 through 2013.

What about the demand for peanuts? Demand has kept pace with the supply of peanuts. U.S. per capita peanut consumption increased 12 percent from 2012 to 2016. Domestic demand and export demand have grown significantly in the last few years. The number of peanuts used for peanut butter has grown 64.4 percent since 2002, and ten percent since 2014.

When we take a closer look at USDA's Foreign Agricultural Services export data, comparing the average exports of peanuts and peanut butter during the 2008 Farm Bill relative to the 2014 Farm Bill, we also see strong growth. Peanut exports increased by approximately 71 percent.

What about the supply of peanuts in the U.S.? In the current market, demand exceeds supply. Given this economic situation, early contract prices for the 2017 crop have been reported in $475 to $550 per ton range. In addition, peanuts have not seen significant forfeitures at USDA. Marketplace indicators suggest there is not an oversupply of peanuts. According to the National Center for Peanut Competitiveness, the peanut program in the 2014 Farm Bill has not led to excessive peanut acreage.

What about the impact of generic acres on peanuts? Generic-based acres are available to any covered commodity in 2014 Farm Bill. The Committee wisely established a program allowing growers to keep these base acres. Without these base acres, the current struggling farm economy would be much worse.

In conclusion, the Federation supports the peanut provisions in the 2014 Farm Bill, and appreciates the opportunity to work with you as we move forward with the next farm bill. Thank you for allowing me to testify today.

[The prepared statement of Mr. McMillan follows:]

PREPARED STATEMENT OF HON. TIMOTHY E. MCMILLAN, CO-FOUNDER AND CO-OWNER, SOUTHERN GRACE FARMS, ENIGMA, GA; ON BEHALF OF SOUTHERN PEANUT FARMERS FEDERATION

Good morning, Chairman Crawford, Ranking Member Nolan, and Members of the Subcommittee. My name is Tim McMillan and I am a seventh-generation family farmer from Berrien County, Georgia. Our farm is a typical diversified row crop farm with peanuts, cotton, cows, timber and some specialty crops. It is an honor for me to be here today before this Committee.

I am testifying today on behalf of the Southern Peanut Farmers Federation (Federation), the largest peanut grower organization in the United States. The Federation is comprised of the Alabama Peanut Producers Association, the Florida Peanut Producers Association, the Georgia Peanut Commission and the Mississippi Peanut Growers Association.

I want to thank this Committee for what you have meant to peanut farm families and communities across the Peanut Belt for many years. You have provided a program that pushed our industry to market our products more efficiently in the domestic and export markets. You encouraged our industry to move from a supply-management program to a market program in the 2002 Farm Bill. Finally, the Price Loss Coverage (PLC) program has assured growers that a safety net program was available when farm economies struggled.

I want to be clear today that the peanut provisions of the 2014 Farm Bill have worked as a safety net for peanut producers. If the PLC program had not been in place, I am afraid many farms in the Southeast would no longer exist because of the downturn in the farm economy which has plagued us the past 3 years. In addition, this bill continues to assure consumers a safe, affordable food supply.

The Federation supports maintaining the current PLC program in the 2014 Farm Bill including these key provisions:

- Current Reference Price for Peanuts.
- Separate Peanut Payment Limit (as established in the 2002 Farm Bill).
- Storage and Handling Provisions.

The 2014 Farm Bill was drafted during a period of high prices. When we compare average prices in 2011–2012 to 2016 prices, we see a 39% decline in peanut prices. Corn, soybeans, wheat and cotton all saw significant drops in prices when comparing the years that the 2014 Farm Bill was developed to 2016 prices.

The U.S. Department of Agriculture projected 2017 net farm income in the U.S. to be $62.3 billion which translates to a 49.6% decline in net farm income since 2013. I see the real impact of these numbers in the faces of my neighbors and hear it in discussions with lenders and our suppliers.

The peanut Price Loss Coverage (PLC) program has worked but peanuts are not sufficient to carry an entire farming operation. Corn and cotton prices have been depressed and with the lack of a cotton PLC program, more pressure has been placed on growers to plant peanuts by lenders and others. For many growers, the only option to survive was to plant more peanut acreage.

Peanut growers know that rotation is critical for their cropping systems. However, during this period of a severely depressed farm economy, many farmers modified their crop rotations in order to survive.

- U.S. peanut yield has declined by approximately 13%.
- Georgia's peanut yield has declined by 14%.
- Southeast average yield has declined by 11%.

Research has shown that with reduced rotation, not only will peanut yields drop but chemical costs increase. The cost of weed control continues to rise as resistant pigweed becomes more widespread, and some of our fungicides are becoming less effective as pathogens mutate and adapt. According to the University of Georgia's National Center for Peanut Competitiveness (NCPC), we have seen a downward trend in peanut yields since 2012.

According to the NCPC, these increased costs of production could make the current reference price ineffective.

Although the increased peanut acreage has impacted yields and cost of production, peanut acreage during the life of the 2014 Farm Bill is not out of line.

- Prior to the 2002 Farm bill, U.S. peanut acreage exceeded 1.6 million acres for several years, in the early 1990's, and exceeded 2 million acres in 1991.
- After we changed the peanut program in the 2002 Farm Bill from a supply management program to a market oriented program, U.S. peanut acreage has exceeded 1.6 million acres.
- Planted acreage of 1.6 million acres is not a new phenome.
- Average planted acres during the life of the 2014 Farm Bill is only approximately 16% more than the average acres planted during the years 2002–2013.

What About the Demand for Peanuts?

It is very important to this discussion to note that demand has kept pace with the supply of peanuts. First, I want to address domestic demand. According to USDA and U.S. Department of Commerce data, U.S. per capita peanut consumption has grown from 6.6 pounds per capita in 2012 to 7.4 pounds per capita in 2016—a 12% increase.

The peanut industry took two major steps to encourage demand. First, the Peanut Institute was created to fund research on the nutrition aspects of peanuts. Second, peanut growers voted to create the National Peanut Board (NPB) through a national check-off program overseen by USDA. As a result of these efforts, consumers in the U.S. and in other countries are increasingly recognizing that:

- Peanuts are heart healthy, fight obesity, reduce the risk of Type 2 diabetes plus have key micronutrients.
- Peanuts by means of Ready to Use Therapeutic Food (RUTF) are also a widely-used tool to fight severe malnutrition in children around the world.

Domestic demand and export demand have grown significantly in the last few years. Utilizing USDA's National Agricultural Statistical Service's (NASS) Peanut Stocks and Processing reports and comparing the first 6 months of the 2016–17 marketing year to a comparable time period for previous marketing years:

- The number of peanuts used for peanut butter has grown 64.4% since 2002 and 10% since 2014.
- Total shelled peanut use has increased approximately 47% since 2002 and 11% since 2014.

When we take a closer look at USDA's Foreign Agricultural Service's (FAS) export data, comparing the average exports of peanuts and peanut butter during the 2008 Farm Bill relative to the 2014 Farm Bill, we also see strong growth.

- Peanut exports increased by approximately 71%.
- Peanut butter exports have grown by 52%.

What About the Supply of Peanuts in the U.S.?

Peanut shellers speak openly about the tight supply of peanuts. Today's peanut prices do not support the concept that the 2014 Farm Bill is causing excessive peanut acreage planting.

As peanut growers entered the 2016 crop year, USDA had published incorrect inventory numbers. Based on the incorrect numbers, the peanut industry assumed that supply significantly exceeded demand which had a negative effect on peanut prices received by farmers, ranging from a $355/ton (loan rate) to approximately $380/ton.

- Based on the reduced prices, the Southeast, the largest region of peanut production in the U.S., reduced peanut planting by approximately 11%.

Once USDA corrected the mistake during the growing season, contract prices for the uncontracted 2016 crop and any unsold 2015 crop in the loan increased significantly to the $450/ton range. Recently, any uncontracted 2016 crop peanuts have seen contracts increase even more. As one major sheller stated in their newsletter

"This will continue to support 2016 crop values as the market is forced to ration supply of quality tons." As of today, demand exceeds supply. Given this economic situation, early contract prices for the 2017 crop have been reported in the $475–$550/ton.

- Peanut shellers are still offering higher 2017 crop contract prices which encourage peanut acreage.
- Shellers would not be offering these types of contracts unless signals from manufacturers and exporters clearly indicate that they need more peanuts for the marketplace.
- These actions are not being driven by the 2014 Farm Bill but instead by the markets and the rules of supply and demand.
- The shellers' actions indicate that the program has not created an excess supply of peanuts in the marketplace.

Peanuts have not seen significant forfeitures at USDA. For the 2015 peanut crop year, the latest data available to the NCPC, approximately 62 tons were forfeited. This translates into approximately .0021% of the total 2015 peanut crop being forfeited. USDA sold those tons at an average price of $363.67/ton which was above the loan rate of $355/ton translating into a *profit* for the government and no cost to the taxpayer. To date, according to the NCPC, there have been no peanut loan forfeitures from the 2016 peanut crop.

From the evidence we see in the marketplace, there is not an oversupply of peanuts. According to the NCPC, "The peanut program in the 2014 Farm Bill has not led to excessive peanut acreage."

What About the Impact of Generic Acres on Peanuts?

As you are aware, the cotton industry opted for the STAX program in the 2014 Farm Bill while cotton producers maintained their generic base acres. These generic base acres are available to any covered commodity in the 2014 Farm Bill. This Committee wisely established a program allowing growers to keep these base acres. Without these base acres, the current struggling farm economy would be much worse.

The United States Department of Agriculture's (USDA) Farm Service Agency (FSA) February 2017 data examined the allocation of generic base acres and updated the program payments for covered commodities planted on these generic base acres.

- For the 2014 crop year, only approximately 58% of the generic base acres were allocated to a covered commodity.
- Approximately 7.4 million generic base acres were not utilized by cotton farmers for the 2014 crop year.
- Approximately 32% of the generic base acres assigned to soybeans.
- 26% of the generic base acres assigned to wheat.
- 19% of the generic base acres assigned to corn.
- 13% of the generic base acres assigned to grain sorghum.
- Only 7% of the generic base acres assigned to peanuts.
- Less than 53% of the 2014 peanut certified acres had generic acres attributed.

Were there significant changes in these planting ratios for the 2015 crop year? The answer is no.

- Approximately 61% of the generic base acres were allocated to a covered commodity.
- Approximately 7 million generic base acres were not utilized by cotton farmers.
- Approximately 90% of the generic base acres were assigned to soybeans, wheat, corn and grain sorghum.
- Only 8.7% of the generic base acres assigned to peanuts.
- Approximately 57% of the 2015 peanut certified acres had generic acres attributed.

Based on USDA deadlines for the 2016 crop year, it is assumed that the 2016 ratios will not differ significantly from the 2015 data. With the generic base acres attributed to the covered commodities of the 2014 Farm Bill, these commodities did receive payments.

- For the 2014 crop, the total payments for the covered commodities on generic acres were almost $149 million.

- For the 2015 crop, the attributed generic base acres generated approximately $444 million in payments for the covered commodities.
- Almost a threefold increase in generic base acres payments to cotton producers from the 2014 crop year to the 2015 crop year.
- Given the depressed commodity prices, the 2016 crop year payments to be received in October 2017 are assumed to be similar to the 2015 crop year payments.

For the 2014 crop, only 27% of all ARC–PLC peanut payments was derived from generic base acres attributed to peanuts. For the 2015 crop year, approximately 33% of the total payments derived from generic base acres attributed to peanuts.

While these payments were attributed to peanuts, in reality, the payments were received by cotton producers who are also peanut producers. Thus, any scoring in terms of the cost of the peanut program should take into account the generic acre impact. As I stated earlier, cotton was not a covered commodity in the ARC–PLC programs. Generic acres, as part of the safety net, allowed cotton producers, who also grew other commodities like peanuts, corn, soybeans, wheat and rice, to participate in some limited manner and stay on the farm. For many farmers, generic base actually made it possible to keep planting cotton on our farms in order to maintain some level of crop rotation. Without this generic acre program, many farmers across the U.S. would have had their farm income, the safety net reduced dramatically. This program has worked at a time when prices were low.

The Federation supports the National Cotton Council's request for USDA to approve a cottonseed program for cotton producers.

Peanut Growers Support Viable Risk Management Tools

The Federation supports the risk management provisions of the 2014 Farm Bill. Congress approved a peanut revenue insurance program in the 2014 Farm Bill. This was a product of the peanut industry working with USDA's Risk Management Agency and crop insurers to develop a tool that worked for producers. Growers are participating in this program.

In conclusion, the Federation supports the peanut provisions in the 2014 Farm Bill and appreciates the opportunity to work with you as we move forward with the next farm bill.

Thank you for allowing me to testify today.

The CHAIRMAN. Thank you, Mr. McMillan.

I would like to recognize Mr. Peterson, the full Committee Ranking Member, for the introduction of our next witness.

Mr. PETERSON. Well I kind of introduced him before, but Rob Rynning is one of my constituents. He does a great job, not only as a farmer, but spending a lot of his time representing people in our part of the world at meetings like this, and so I personally appreciate his involvement and efforts, and I don't know how he gets time to farm, but other than that, welcome to the Committee.

Mr. RYNNING. My brother wonders the same thing at times.

The CHAIRMAN. Mr. Rynning, you are recognized for 5 minutes.

STATEMENT OF ROBERT RYNNING, PRESIDENT, U.S. CANOLA ASSOCIATION, KENNEDY, MN; ON BEHALF OF NATIONAL SUNFLOWER ASSOCIATION

Mr. RYNNING. Thank you, Mr. Chairman.

On behalf of the U.S. Canola and National Sunflower Associations, I want to thank the Chairman and Ranking Member, as well as the Committee for the invitation to appear before you today. I am Robert Rynning, President of the U.S. Canola Association. My brother, nephew, and I farm in the very northwest corner of Minnesota, just a few miles south of the Canadian line, growing canola, barley, wheat, and soybeans. Because minor oilseed producers grow a number of crops in rotation on their farms, I want to note the common areas of agreement between USCA and NSA have with groups affiliated with the statement attached to my testimony. We

also signed a letter to the Senate Budget and Appropriations Committee with 15 other farm groups, outlining in detail a need for additional resources to write the next farm bill.

The U.S. has planted an average of 1.7 million acres of canola and 1.7 million acres of sunflowers over the past 5 years. The majority of U.S. canola production is in the Northern Plains, however, winter canola varieties have been successfully introduced into the Southern Great Plains, and this region has the potential to become another major U.S. production area. Another winter canola production region can also be found in the mid-southern states, with much of this acreage being double cropped with soybeans. The Pacific Northwest also grows both winter and spring canola varieties. The U.S. produced a record 3 billion pounds of canola seed last year, but we will still need to import 68 percent of our expected canola oil consumption and 75 percent of our expected canola meal consumption this year.

The majority of the 2.5 billion pounds of sunflower seed the U.S. produces annually are grown from the Dakotas to the Panhandle of Texas. There are two types of sunflowers grown. Oil sunflowers comprise 80 percent of the production and are grown for high quality cooking oil, or sold as bird food. The remainder is confection seed, which is used in the snack food and bakery markets. Confections receive a premium over oil, causing the season average price of all sunflowers to be higher than other minor oilseeds. Seventy-five percent of the U.S. sunflower oil is consumed domestically, with the remainder exported to Canada, Mexico, and Japan. Confections are very reliant on exports, since ½ of our confection production is exported, mainly to Spain, Mexico, Canada, and the Middle East.

USCA and NSA support continuing the ARC and PLC programs with support payments tied to historical crops bases, and the ability to choose between programs by crop. We also encourage the use of RMA yields first, rather than NASS yields when computing our county yields.

In the 2014 Farm Bill signup, 97 percent of canola-based acres were entered into PLC program. Sunflower-based signup was more diverse with 56 percent into PLC and 43 percent into ARC county. Prices for both crops have fallen 40 percent from their peak, and both have received payments in the 2014 Farm Bill, although sunflower payments have been less, due to confection seed premiums, which increase all sunflower season price. However, for the 2016 crop, confection premiums have declined considerably, and payments for PLC and ARC county are expected to increase.

Although annual planted acres appear stable for canola and sunflowers, there is real concern that core acreage will not be sufficient in the future to sustain infrastructure for those alternative crops. Many producers in the Northern Plains who plant canola and sunflowers have also begun planting soybeans and corn. Per acre cost of seeding canola is $50 more and sunflowers $20 more than soybeans this spring, and soybean acres will increase this year as farmers strive to reduce the overall input costs. Sunflower producers in the prairie pothole region also have the added burden of potential blackbird depredation that can lose a substantial portion of their crop in the fall if large migratory flocks infest their fields.

Beyond the healthy oil both these crops supply, as well as the high quality canola meal used to supplement dairy herd ration, canola and sunflowers also provide needed quality habitat for honeybees as well as wild pollinators. Honeybees support $15 billion of agriculture production in the U.S. through pollinator services, but a major decline in honeybee health has put these benefits at risk. Bee health decline has been linked to several factors, including the lack of suitable habitat due to increased agricultural monocultures, and declining wild spaces. Canola and sunflowers provide ideal habitat and forage for honeybees when they are not being used for pollinator services, and are preferred hive sites by beekeepers. Canola fields bloom a month or longer under ideal weather, providing bees with a good source of nectar and pollen. Sunflowers bloom in late summer, providing habitat and forage in a time when fewer plants are blossoming. Maintaining the acreage of cropland planted annually to these two crops is essential to contribute viably to the honeybee industry, and an increase of just 2 to 3 million acres across the U.S. would have an immediate positive impact on honeybee health. USCA and NSA support the creation of pollinator incentive, include canola and sunflowers in cropping rotations to provide habitat for honeybees and wild pollinators. We are uncertain whether this initiative would be in the commodity title or conservation title, but are willing to work with the Committee to develop such an initiative.

Thank you, Mr. Chairman, for your time and attention. I will be happy to answer any questions the Committee may have.

[The prepared statement of Mr. Rynning follows:]

PREPARED STATEMENT OF ROBERT RYNNING, PRESIDENT, U.S. CANOLA ASSOCIATION, KENNEDY, MN; ON BEHALF OF NATIONAL SUNFLOWER ASSOCIATION

On behalf of the U.S. Canola Association and the National Sunflower Association, I want to thank the Chairman and Ranking Member, as well as the Committee, for this opportunity to represent the views of U.S. canola and sunflower growers. I am Robert Rynning, President of the U.S. Canola Association. I operate with my brother a fifth generation family farm in northwest Minnesota near Kennedy, growing canola, barley, wheat, and soybeans.

Because farmers grow canola and sunflowers in agronomic rotations with a number of other crops on their farms, I want to note the common areas of agreement USCA and NSA have with the groups affiliated with the statement attached to my testimony.* Another area of agreement is the need for additional resources to write the next farm bill as outlined in the March 15 letter to the Senate Budget and Appropriations Committees that USCA and NSA signed along with 15 other farm organizations.

Regarding canola and sunflowers specifically, the U.S. has planted an average of 3.4 million acres of these alternative rotational crops—1.7 million each—the last 5 years.

While the Northern Plains account for the majority of U.S. canola production, winter canola varieties have been successfully introduced in the Southern Great Plains and this region has the potential to become another major U.S. production area. Winter canola production can also be found in the mid-southern states, and much of this acreage supports double cropping of soybeans or other spring-seeded crops. A fourth production area is in the Pacific Northwest, which produces both winter and spring canola varieties. In 2016, the U.S. produced a record 3 billion pounds of canola seed, but for the coming year, the U.S. will still need to import

*__Editor's note:__ the document referred to is entitled *Attachment,* and follows the prepared statement of Mr. Moore (located on p. 799), published in the March 28, 2017, *The Next Farm Bill: Commodity Policy—Part 1,* General Farm Commodities and Risk Management Subcommittee hearing. For purposes of this publication it is not reprinted here.

68 percent of our expected canola oil consumption; and 75 percent of our expected canola meal consumption.

The majority of U.S. sunflowers are produced in the region stretching from the Dakotas to the panhandle of Texas, producing about 2.5 billion pounds of sunflower seed annually. Of the two types of sunflower seed produced, oil-type sunflowers represent approximately 80 percent of production, which is crushed for high quality cooking oil or sold as bird food. The remainder of production is confection seed and is used in the snack food and bakery markets. Confection seed types receive a premium over oil-type which causes the season average price of all sunflower seed to exceed that of other minor oilseeds. Seventy-five percent of U.S. sunflower oil is consumed domestically with the remainder exported to Canada, Mexico and Japan. Exports are extremely important to confection sunflower seed producers as seed and kernel exports represent approximately ½ of the U.S. confection sunflower industry's production. The main markets for confection seed and kernel are Spain, Mexico, Canada and Middle East region.

USCA and NSA support the continuation of the ARC and PLC programs, with support payments tied to historical crop bases and the ability to choose between the programs by crop. We also encourage the use of RMA yields first rather than NASS yields when computing ARC–CO yields. In the 2014 Farm Bill sign-up, 97 percent of canola base acres were entered into the PLC program. Sunflower base sign-up was more diverse with 56 percent entered into PLC and 43 percent ARC–CO. Prices for both canola and sunflowers have fallen 40 percent from their peak and both crops have received payments from the 2014 Farm Bill, although sunflower payments have been less due to the confection-type's price premiums, which increase the all sunflower season average price. However, for the 2016 crop, confection premiums declined considerably and payments for PLC and ARC–CO are expected to increase.

Although annual planted acres appear stable for canola and sunflowers, there is real concern that core acreage will not continue to be planted at levels high enough in the future to sustain the seed and processing infrastructure for these alternative crops. Many producers in the Northern Plains who plant canola and sunflowers have also begun planting soybeans as well as corn. The per acre cost of seeding canola is $50 more (and sunflowers $20 more) than soybeans this spring, and soybean acres will increase this year as farmers strive to reduce overall input costs. Sunflower producers in the prairie pothole region also have the added burden of potential black bird depredation, and can lose a substantial portion of their crop in the fall if large migratory flocks infest their fields.

Beyond the healthy oil both these crops supply as well as the high quality canola meal used to supplement dairy herd rations; canola and sunflowers also provide needed quality habitat for honey bees as well as wild pollinators.

Honey bees support $15 billion of agricultural production in the U.S. through pollination services, but a major decline in honey bee health in recent years has put these benefits at risk. This decline in bee health has been linked to a variety of factors, including the lack of suitable habitat due to increased agricultural monocultures and declining wild spaces. Canola and sunflowers provide ideal habitat and forage for honey bees when they are not being used for pollination services; and are preferred hive sites by beekeepers. Canola fields bloom for relatively long periods; some fields can provide bees with a good source of nectar for a month or longer under ideal weather conditions. Sunflowers bloom in late summer, providing habitat and forage at a time when fewer plants are blossoming. Maintaining the acreage of cropland planted annually to these two crops is essential to the continued viability of the honey bee industry; and increasing the acreage by just 2–3 million acres across the U.S. would have an immediate positive impact on honey bee health.

The USCA and the NSA support the creation of an incentive to include canola and/or sunflowers in cropping rotations to provide habitat for honey bees and wild pollinators. We are uncertain whether this incentive should be in the commodity title or the conservation title, but are willing to work with the Committee to develop such an incentive.

Thank you Mr. Chairman for your time and attention. I will be happy to answer questions the Committee may have for me.

The CHAIRMAN. Thank you, Mr. Rynning.

I now recognize Mr. Jack Roney, Director of Economics and Policy Analysis, American Sugar Alliance. You are recognized for 5 minutes.

STATEMENT OF JACK RONEY, DIRECTOR OF ECONOMICS AND POLICY ANALYSIS, AMERICAN SUGAR ALLIANCE, ARLINGTON, VA

Mr. RONEY. Thank you, Mr. Chairman, Mr. Nolan, Members of the Committee. I am Jack Roney, Economist for the American Sugar Alliance.

The ASA is the national coalition of sugarbeet and sugarcane growers, processors, and refiners. The U.S. sugar producing industry generates 142,000 jobs in 22 states, and $20 billion per year in economic activity.

I would like to summarize my written testimony today by describing why we have a sugar policy and how it is working.

The U.S. is the world's fifth largest sugar producer, and among the world's most efficient. If we are so efficient then, why do we need a U.S. sugar policy? The answer is in the tremendous distortion in the so-called world sugar market.

This chart tracks the world average costs of producing sugar over the past 3 decades. The cost has averaged 19¢ per pound over those years. If I added the world average sugar prices to this chart, what would you expect? Certainly, we would expect prices to average above the cost of production, high enough to keep producers in business. But here is the reality. The so-called world price, the red line, is averaged just 13¢, almost always well below production costs. The 28 year average production cost is nearly 50 percent higher than the average price. With prices so far below cost, how can any sugar producers survive? The answer is in the domestic markets, where most sugar is produced and sold. Governments maintain much higher prices than the world price so that their farmers can stay in business. Only about ¼ of sugar is sold at the world dump price. The remaining ¾ is sold at much higher levels in the countries where the sugar is produced. Foreign governments subsidize their producers so generously, they tend to overproduce. To boost their prices in their domestic markets, these governments export their surpluses. That shifts their domestic surplus problem onto the world market.

Absent subsidies for inefficient foreign producers, the world price would rise to reflect the cost of producing sugar. That is why we support the resolution introduced recently by Congressman Yoho of the Agriculture Committee. This zero for zero approach says that the U.S. will eliminate its sugar policy when foreign countries eliminate theirs. We are ready, willing, and able to compete on a level playing field, free of government intervention.

But to give up U.S. sugar policy without any concessions from foreign subsidizers would be economic suicide for American sugar farmers. Unilateral disarmament is the antithesis of free trade, sending good American jobs to countries still subsidizing.

American sugar policy is working well for American consumers and taxpayers. American consumers prices for sugar are among the lowest in the world, the red bar on this chart. Global average retail sugar prices, the green bar, are 20 percent higher than U.S. prices. Developed country retail prices, the yellow bar, are almost 30 percent higher than U.S. prices. American consumers get a great deal on sugar that is high quality, safe, reliable, and responsibly produced.

American taxpayers get a great deal, too. As instructed by Congress, U.S. sugar policy has run at zero cost to taxpayers for 14 of the past 15 years, and is projected to remain zero cost. The only exception was 2013, when massive volumes of subsidized and dumped sugar from Mexico depressed our market and made it impossible for some producers to repay their operating loans. USDA projects zero costs for sugar policy over the next 10 years. The CBO projects some possible costs several years from now, but this is based on the assumption that Mexico is allowed to resume dumping.

Mexican dumping poses the greatest challenge to sustaining a no cost sugar policy. After Mexico's dumping in 2013, the U.S. ITC unanimously found that Mexico had injured the U.S. industry. The Department of Commerce calculated subsidy and dumping margins that totaled more than 80 percent. Rather than imposing those huge duties, the Mexican and U.S. Governments negotiated suspension agreements in late 2014. These were intended to allow continued sugar trade without Mexican dumping. But the suspension agreements have not been successful, and American producers are still hurting. The two governments are negotiating improvements. We support these efforts, but if they are not successful, we support the imposition of duties on subsidized dumped Mexican sugar.

The American sugar producers have had to endure flat pricing for their sugar for most of the past 3 decades. In real terms corrected for inflation, prices are down 43 percent since 1985. We have lost more than ½ of our beet and cane mills, 57 closures in all. The most recent casualties of Mexican dumping has driven Hawaii out of sugarcane after nearly 2 centuries of high yielding production, and a Wyoming beet mill will close permanently later this year. The remaining sugar producers will have a chance to survive only if: first, the U.S. can implement an adequate response to Mexican dumping; and second, the next farm bill contains a sugar policy that provides a strong economic safety net.

Thank you for your attention and your support for American sugarbeet and sugarcane farmers.

[The prepared statement of Mr. Roney follows:]

PREPARED STATEMENT OF JACK RONEY, DIRECTOR OF ECONOMICS AND POLICY ANALYSIS, AMERICAN SUGAR ALLIANCE, ARLINGTON, VA

U.S. Sugar Policy: Why We Have It and How It's Working

Summary

The American Sugar Alliance (ASA) is the national coalition of sugarbeet and sugarcane growers, processors, and refiners. The U.S. sugar-producing industry generates 142,000 jobs in 22 states and $20 billion in annual economic activity.[1]

American sugar policy is working well for American consumers, food manufacturers, and taxpayers. It can provide an adequate economic safety net for American sugar producers, as long as there is an effective response to Mexican subsidizing and dumping.

The U.S. International Trade Commission, in 2014 and 2015, voted unanimously that the Mexican Government and sugar industry had injured the U.S. sugar industry. The U.S. Department of Commerce calculated subsidy and dumping margins totaling more than 80%. Rather than imposing those duties, the U.S. and Mexican Governments negotiated Suspension Agreements (SAs) to resume duty-free trade, but eliminate harmful dumping.

[1] LMC International, *The Economic Importance of the Sugar Industry to the U.S. Economy—Jobs and Revenues,* Oxford, England, August 2011.

These SAs have proven ineffective. The dumping continues and U.S. refined sugar prices are hovering near loan-forfeiture levels. Hawaii has ceased cane sugar production and a beet factory in Wyoming is about to close. Many other American sugar producers are financially vulnerable.

We are encouraging the U.S. and Mexican Governments to correct the shortcomings of the SAs or, failing that, to impose the subsidy and dumping duties.

As long as an adequate response to foreign subsidies and dumping exists, U.S. sugar policy can function effectively.

Background

The U.S. sugar industry is a major player in the world sugar market. The United States is the world's fifth largest sugar-producing country and is among the most efficient.

The U.S. is the 20th lowest cost among the 95 largest sugar-producing nations. Most of these are developing countries with far lower government-imposed costs for worker, consumer, and environmental protections. U.S. beet sugar producers, mostly in northern-tier states, are the lowest-cost beet producers in the world.[2]

The United States is also the world's fourth largest sugar-consuming country and the third largest sugar importer. We provide guaranteed, essentially duty-free, access to 41 countries. This makes the U.S. one of the world's most open markets to foreign sugar. The amount of duty-free access is determined under the World Trade Organization and other trade agreements to which the United States is a party.

American food manufacturers and consumers depend on a reliable, dynamic, geographically-dispersed domestic sugar-producing industry to provide safe, high-quality, responsibly-produced sugar at a reasonable price. Despite a well-designed sugar policy in the 2014 Farm Bill, the low prices caused by Mexican subsidizing and dumping threaten the economic viability of American sugar producers.

Justification for U.S. Sugar Policy

Since U.S. sugar producers are among the lowest cost in the world, one might ask why the industry requires a sugar policy at all. The answer is found in the distorted, dump nature of the world sugar market.

Foreign governments subsidize their producers so egregiously that many of these countries produce far more sugar than their markets demand. Rather than store these surpluses, or close mills and lose jobs, as the United States has done, these countries dump their subsidized sugar onto the world market for whatever price it will bring. This subsidized dumping threatens further harm to American farmers.

As a result of these dumped surpluses, the so-called "world price" for sugar has been rendered essentially meaningless. Rarely in the past few decades has the world price reflected the actual cost of producing sugar—a minimal criterion for a meaningful market price.

The world price is so depressed by subsidies and dumping that, over the past 28 years, the world average cost of producing sugar has averaged nearly 50% more than the world price (*Figure 1*).[3]

One European market expert noted: "The world market price is a 'dump' price . . . (it) should never be used as a yardstick to measure what benefits or costs may accrue from free trade in sugar."[4]

And researchers at Texas A&M University's Agricultural Policy Center wrote: "Policymakers in the United States have long recognized that the world sugar market is heavily distorted by foreign subsidies and market manipulations and have provided U.S. sugar farmers with some form of safety net for more than 200 years. Major exporters of sugar do not respond to the signals of the world market but rather to the policies of their governments that enable them to export sugar below their costs of production and their own domestic prices."[5]

But how can a world sugar industry exist if the price received for the product is just a fraction of the cost of producing it? The answer is twofold:

1. Only about 20–25% of the sugar produced each year is actually traded at the so-called "world price."

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[2] LMC International, *Sugar & HFCS Production Costs: Global Benchmarking,* Oxford, England, August 2011.

[3] LMC International, *World Sugar Prices* ***vs.*** *Costs of Production,* Oxford, England, March 2017.

[4] Patrick Chatenay, *Government Support and the Brazilian Sugar Industry,* Canterbury, England, April 2013.

[5] Dr. Joe Outlaw and Dr. James Richardson, *Analysis of the Coalition for Sugar Reform Amendments to U.S. Sugar Policy: Potential Effect on Policy and Industry,* Agricultural Policy Center, Texas A&M University, May 2016.

2. The other 75–80% of sugar is consumed in the countries where it is produced, at prices considerably higher than the world price, and higher than production costs.

The International Sugar Organization (ISO) surveyed 78 countries to learn actual wholesale prices—the price producers in those countries receive for their sugar. The ISO documents that, globally, actual wholesale refined sugar prices have averaged 46% higher than the world price over the past decade. Prices in developed countries have been nearly double the world dump market price—averaging 94% higher (*Figure 2*).[6]

This, then, explains how we can have a vast world sugar industry: Governments shield their producers from the world dump market sugar and maintain prices high enough—above the dump market and above production costs—to sustain a subsidized domestic industry and generate and defend jobs.

Further, this explains why we require a U.S. sugar policy—even with American sugar producers among the lowest cost, and most responsible, in the world. Generous domestic pricing encourages over-production in many countries, whose governments then seek to export their surplus. Absent U.S. sugar policy, those subsidized and dumped surpluses would wreck the U.S. market and displace efficient American sugar farmers.

Recent exposure of the U.S. sugar market to Mexican subsidies and dumping provides a disconcerting case in point. And Mexico is by no means unique. Its behavior is typical of foreign sugar exporters who subsidize their exports and shift the burden of their surpluses from their domestic markets onto the world market.

Damage from Mexican Subsidized Dumping

When the NAFTA went into effect in 1994, the Mexican sugar industry was struggling financially and an occasional exporter of small volumes of sugar. In 2001, the Mexican Government expropriated ½ of all its country's sugar mills, rather than allowing them to go out of business. With government help, Mexican sugarcane plantings exploded—up about 60% since NAFTA was signed—though Mexican sugar demand was flat or declining (*Figure 3*).

Mexico became one of the world's largest sugar exporters, with the group of Mexican Government mills by far the country's leading sugar producer and exporter. Virtually all those exports have been aimed at the U.S. market—which opened fully to Mexican sugar in 2008 under NAFTA rules.

Though the Mexican Government recently officially divested itself of its mills, the government remains closely involved in the Mexican sugar industry. In addition to government ownership, Mexican growers and processors have benefitted from Federal and state cash infusions, debt restructuring and forgiveness, government grant programs to finance inventory, exports, and inputs, and a cane-grower payment system that effectively subsidizes exports.[7]

In 2013, Mexican sugar production soared to an all-time high, a stunning 38% higher than the previous year's production. Yet, despite the huge domestic market surplus, Mexico was able to sustain sugar prices higher than in the U.S. How did they manage to balance their market? By dumping their subsidized surplus on the U.S. market. Mexico doubled its exports to the U.S., shipping about 1 million more tons than the U.S. market could bear (*Figure 4*). Mexican exports to the U.S. in 2013 and 2014, at 2 million tons each year, were about 250 times greater than their pre-NAFTA levels.

The subsidized and dumped Mexican surpluses collapsed the U.S. sugar market and caused the first government cost for U.S. sugar policy in a dozen years, as American farmers struggled to repay loans they normally repay fully, principal plus interest.

The U.S. sugar industry filed antidumping and countervailing duty cases against Mexico in 2014, and won. The ITC ruled unanimously that Mexico had injured the U.S. sugar industry and the Department of Commerce calculated subsidy margins of 6–44% and dumping margins of 41–42% (*Figure 5*).[8]

U.S. producer prices plummeted by more than ½ from 2010 to early 2014, recovered somewhat in late 2014, and have fallen by a fourth since then. Mexican subsidized imports continue to harm the U.S. sugar industry despite Suspension Agreements the U.S. and Mexican Governments implemented in late 2014 with the intention of preventing further damage. Much of American sugar production cannot survive under current market conditions.

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[6] International Sugar Organization, *Domestic Sugar Prices—a Survey,* MECAS (15)06, May 2015.

[7] *https://sugaralliance.org/mexican-export-subsidies-injuring-u-s-sugar-producers/4990.*

[8] U.S. Department of Commerce *https://www.usitc.gov/publications/701_731/pub4577.pdf.*

Unfortunately, the SAs are not working as intended. Mexico, basically, has sent the U.S. too little raw sugar and too much refined sugar, relative to U.S. market needs. U.S. cane refiners have been starved for raw sugar to process and refined beet sugar prices are so low that loan forfeitures are a serious threat.

The U.S. and Mexican Governments are working on modifications to the SAs and the U.S. Government will need to impose duties on Mexican sugar if the two sides cannot reach a resolution. American sugar producers are committed to working with our government to find a negotiated solution but it will taking a willing Mexican Government and industry to correct the flaws in the SAs.

How U.S. Sugar Policy Is Working

U.S. sugar policy has had the same structure since the 2008 Farm Bill and, with the exception of the effect of Mexican dumping in 2013, has been a successful policy.

- American consumers and food manufacturers continue to have access to high-quality, safe, affordable, responsibly-produced sugar supplies.
- American taxpayers benefit from a policy than has run at zero cost in all but 1 of the past 14 years and is projected to remain zero cost for years to come if the Mexican dumping problem is resolved.
- American sugar farmers have retained an economic safety net that has helped many, though not all, to survive an extended period of low prices and the catastrophic effects of Mexican dumping.

American Consumer Benefits. With U.S. wholesale prices at or below world average levels, one would expect American consumer prices, too, to be low. They are. World average retail sugar prices are 20% higher than U.S. prices; developed-country prices are 29% higher (*Figure 6*). With a stable U.S. sugar policy and industry, American consumers get a great deal on high-quality, safe, responsibly-produced sugar.

American Taxpayer Benefits. Farm bills have long instructed the USDA to operate sugar policy at no cost to taxpayers by avoiding sugar loan forfeitures. Sugar policy requires USDA to administer U.S. sugar policy to ensure sugar processors can repay their operating loans at principal plus interest.

USDA has consistently met this no-cost requirement, except in 2013 when Mexico dumped subsidized sugar into the U.S. market. USDA took action, as directed by law, to minimize loan forfeitures, taxpayer costs, and long-term harm to American sugar producers.

With Suspension Agreements in effect the CBO projects zero cost as long as the agreements are in place, with modest costs in the unlikely event the SAs, and/or duties, are terminated in 5 years and Mexican dumping resumes. USDA and FAPRI project zero cost over the next 10 years (*Figure 7*).

Sugar policy opponents, led by major sugar-containing product manufacturers, have urged opening the U.S. market to greater quantities of subsidized foreign sugar. But additional, unneeded sugar would threaten USDA's ability to administer a zero-cost policy. The Texas A&M researchers wrote:

> Our analysis leads us to conclude that food manufacturers' reforms would undermine the no cost requirement of the law, resulting in taxpayer costs, jeopardizing the viability of U.S. sugar farmers and processors, and leading to higher sugar costs for consumers as domestic suppliers are lost and the volatile world sugar market is increasingly relied upon to meet domestic demand. Meanwhile, food manufacturers may benefit in the short term from depressed domestic sugar prices but, in the long-run, they would suffer from the loss of what they say they need: a viable, healthy, and geographically diverse supply of domestic sugar.[9]

Sugar Producer Safety Net. With the exception of the year of excessive Mexican dumping, when prices fell below loan forfeiture levels, U.S. sugar policy has provided an economic safety net for American sugar producers. But not for all producers, and there have been numerous casualties.

Since the loan support price was established in 1985 at 18¢ per pound of raw cane sugar, the loan rate has risen only 4%, to 18.75¢. General price inflation since 1985 has been 123%. Real producer prices, corrected for inflation, have fallen 43% since the 1980s.

Producers who could not reduce production costs enough to keep pace with falling real prices for their product have gone out of business. We have lost 57 beet and cane operations—more than ½ of all those operating in 1985. Hawaii has ceased

[9] Outlaw and Richardson, *op. cit.*

growing sugarcane after nearly 2 centuries of high-yielding production that was at the core of Hawaii's economic and social development. Another beet factory, in Wyoming, is expected to close permanently this year (*Figures 8–11*).

More closures would certainly have occurred over time if not for vertical integration by beet and cane growers and investment in biotechnology and other breeding and processing advancements.

Crop Insurance

Crop insurance is an essential risk management tool for beet growers and is usually a requirement by their bankers. Historically, crop insurance has served beet growers with minimal but adequate coverage. However, this past year many beet growers were plagued by low sugar contents in their beets that insurance needed to cover but did not. Beet growers are assessing the problem and will work with the Risk Management Agency (RMA) to find a solution. RMA has always worked well with our growers and we appreciate their attention to our concerns. Beet growers will brief the Committee in the weeks and months ahead to achieve an effective solution.

Louisiana growers are encouraged by changes in the sugarcane policy that will fill a significant hole in coverage in Louisiana. These changes will be effective for the 2017/18 marketing year. Crop insurance policies for sugarcane in Florida and Texas will need to realize large scale improvements before most acres can expect to be covered with adequate buy-up coverage.

U.S. Sugar Policy in the Next Farm Bill

As long as there is an adequate response to Mexican subsidizing and dumping, U.S. sugar policy, in its current form, can continue to be effective for American consumers, food manufacturers, taxpayers, and sugar producers.

The response to Mexican dumping is most likely to take either of two forms:

1. Anti-dumping and countervailing duties, as calculated by the Department of Commerce, that would severely limit sugar imports from Mexico; or,
2. Effective Suspension Agreements, that would permit continued duty-free sugar imports from Mexico, but limit those imports to the amount, and type, of sugar the U.S. market needs, and at minimum reference prices designed to prevent further dumping.

The U.S. and Mexican Governments are attempting to negotiate modifications to the Suspension Agreements that have been in place since late 2014 but that have proven ineffective. We support these government efforts.

Zero-for-Zero

U.S. sugar producers recognize that subsidies and other market-distorting polices must be addressed in order for the world dump market to recover and better reflect free market principles. Therefore, American producers have publicly pledged to give up U.S. sugar policy when foreign producers agree to eliminate their subsidies.

The American Sugar Alliance has endorsed a Congressional resolution introduced by a Member of the House Agriculture Committee, Representative Ted Yoho of Florida. This "zero-for-zero" resolution explicitly calls for the U.S. to surrender its sugar policy when other major producers have done the same.[10]

However, to weaken or surrender sugar policy without any foreign concessions, as some critics of U.S. sugar policy have called for, would amount to foolish unilateral disarmament. We would be sacrificing good American jobs in a dynamic, efficient industry in favor of foreign jobs in the countries that continue to subsidize.

Conclusion

U.S. sugar policy is working well for American consumers, food manufacturers, and taxpayers. U.S. sugar policy can continue to operate at zero cost to taxpayers, and provide a genuine economic safety net for American sugar farmers, as long as Mexican dumping on the U.S. market does not persist.

American sugar producers will work hard for an effective 2018 Farm Bill for all American farmers. And we strongly support U.S. Government efforts to put an end to Mexican dumping of subsidized sugar on the U.S. market.

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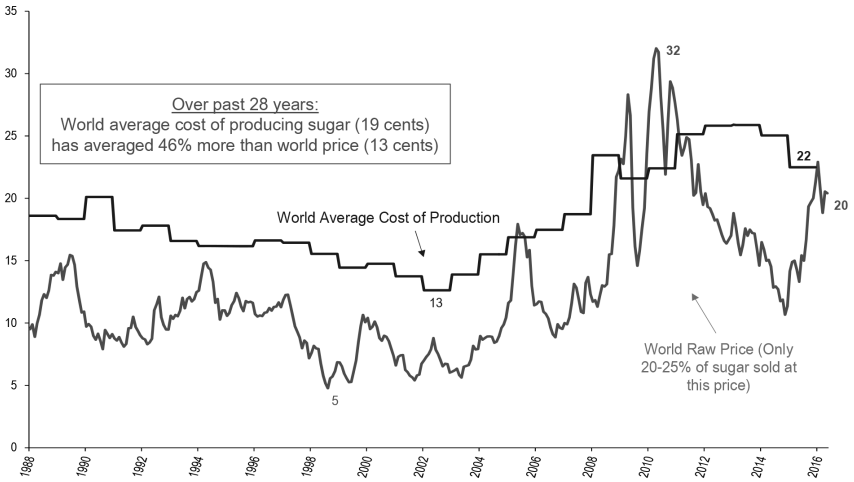
[10] *https://www.congress.gov/115/bills/hconres40/BILLS-115hconres40ih.pdf*.

FIGURES

Figure 1

World Raw Sugar Dump Market Price: Historically Does Not Reflect Actual Cost of Producing Sugar

Cents Per Pound



Sources: World Price: USDA, #11 raw contract, Caribbean ports, monthly average prices, 1970–2017.

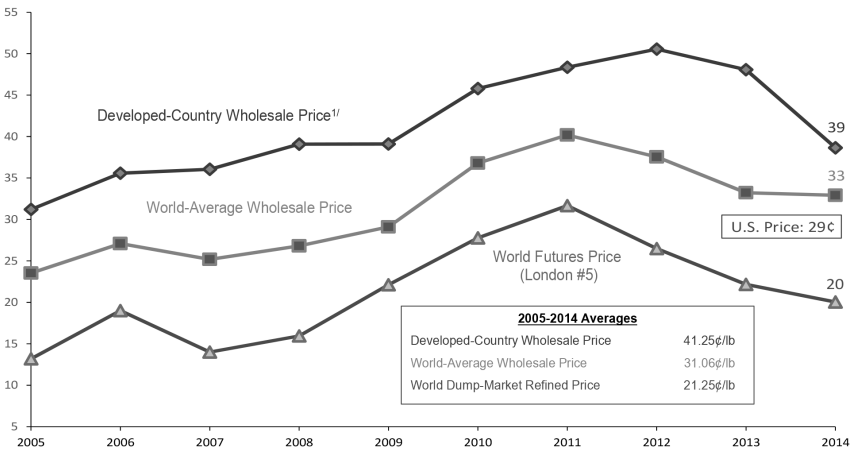
Cost of Production: *Sugar Production Cost, Global Benchmarking Report,* LMC International, Oxford, England, July 2014.

31–P.

Figure 2

World Average Wholesale Refined Sugar Price Nearly 50% Higher than World Dump Market Price; Developed-Country Average Nearly Double

2005–2014, ¢/lb



Source: International Sugar Organization (ISO), *Domestic Sugar Prices—a Survey,* MECAS (15)06, May 2015. A survey of 78 countries, representing 79% of world sugar consumption. U.S. 2005–14 average: 37¢; U.S. February 2017 price: 28.63¢.

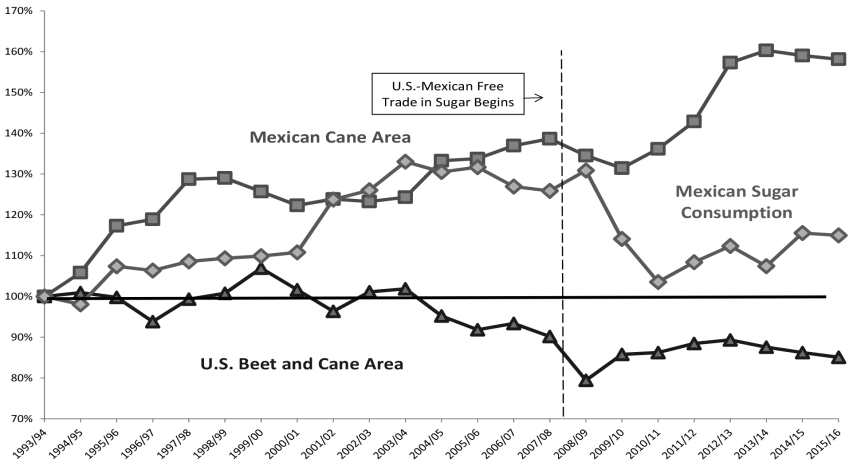
[1] EU–28 and other OECD countries in ISO survey.

10.

Figure 3

Since NAFTA Began: Mexican Sugar Consumption Up 15%; U.S. Sugar Area Down 15%, Mexican Area Up 58%

1993/94=100



Sources: USDA; CONADESUCA. North American Free Trade Agreement (NAFTA) went into effect Jan. 1, 1994; U.S.-Mexican free trade in sugar began Jan. 1, 2008.

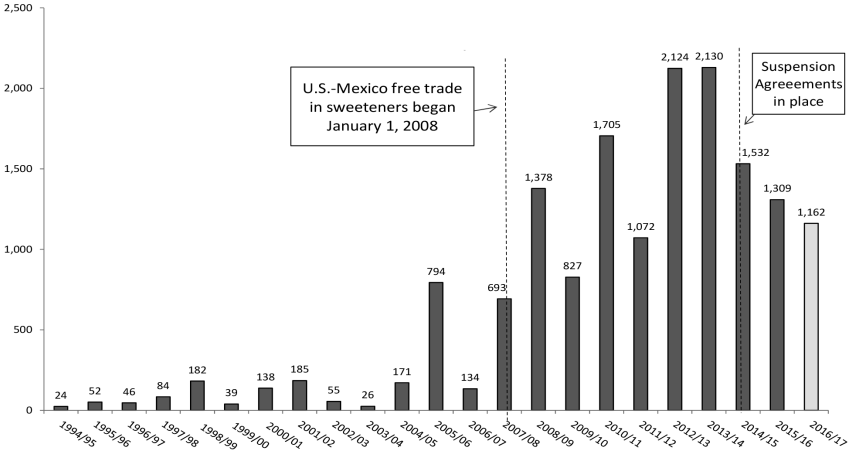
Note: Since 1994, 40 U.S. sugar processing plants have closed. In Mexico, the Mexican Government expropriated ½ the sugar mills in 2001, rather than allowing them to close, and until 2015 owned and operated ⅕ of Mexican sugar mills. Since 2007/08, Mexican domestic sugar demand has fallen 12% because of increased HFCS consumption.

21–2e.

Figure 4

U.S. Sugar Imports from Mexico, 1994/95–2016/17: Unpredictable, Excessive Volumes, 2007/08–13/14

Thousand Short Tons, Raw Value



Source: USDA, Global Agriculture Trade System (GATS) (*http://apps.fas.usda.gov/gats/default.aspx*).

USDA, ERS: Table 24b–2015/16 = forecast; 2016/17 = projection.

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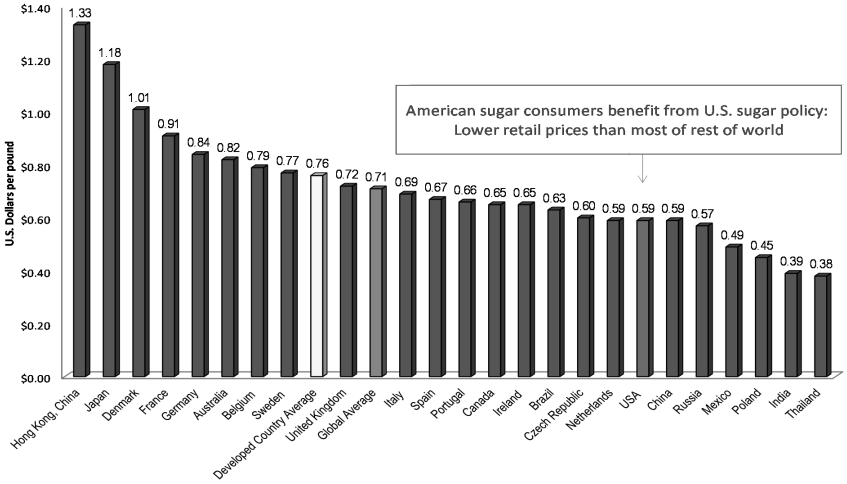
Figure 5

U.S. Anti-Dumping (AD) and Countervailing-Duty (CVD) Cases *vs.* Mexican Sugar

2012/13	Mexican sugar production rises by 38%; Mexican sugar exports to the U.S. double (to 2 million tons); U.S. sugar price collapses.
2014:	
March	U.S. files AD/CVD cases *vs.* Mexican sugar.
May	U.S. International Trade Commission (ITC) preliminary finding, by 5–0 vote, that Mexico has injured the U.S. sugar industry.
August	U.S. Department of Commerce (DOC) finds that Mexico has been subsidizing and imposes preliminary CVDs at 3–17%.
October	DOC finds that Mexico has been dumping (selling below domestic cost of production or prices) and imposes preliminary ADs at 40–47%.
	U.S. & Mexican Governments announce draft Suspension Agreements (SAs) to suspend duties and resume duty-free sugar trade, with Mexican exports to the U.S. no longer to exceed U.S. needs.
December	U.S. & Mexican Governments sign the SAs. Mexico may fulfill 100% of U.S. import needs above trade commitments; reference prices and limit on refined share of imports set.
2015	
March	ITC finds, by 6–0 vote, that the SAs eliminate the injurious effect of Mexican dumping on the U.S. industry.
September	DOC finds final dumping margins of 41–42%.
October	DOC finds final subsidy margins of 6–44%. Combined final subsidy and dumping margins total 48–84%.
	ITC final finding, by 6–0 vote, that Mexico injured U.S. sugar industry.
2016	
October	U.S. Court of International Trade (CIT) denies the Imperial Sugar appeal of the ITC determination that SAs eliminate the injurious effect of Mexican dumping and subsidies.
December	DOC preliminarily determines in an administrative review of the SAs, covering 2015, that some companies may not be in compliance with the SAs and that not all statutory requirements for the SAs are still being met.
	Imperial Sugar appeals the CIT decision to the U.S. Court of Appeals for the Federal Circuit.

Figure 6

Developed Country Average Retail Sugar Price: 29% Higher than U.S.; Global Average: 20% Higher than U.S.



Source: SIS International Research, *Global Retail Sugar Prices,* July 2015, from Euromonitor, International Monetary Fund; 2014 prices.

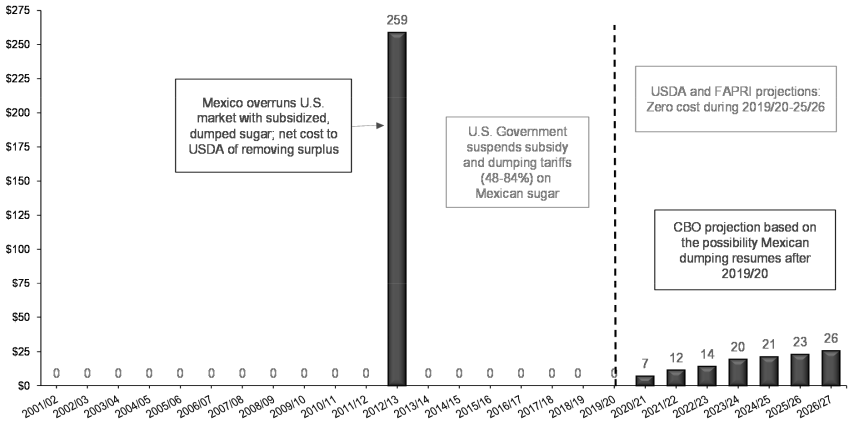
Surveyed countries represent 67% of global sugar consumption. Developed countries include OECD member countries and Hong Kong.

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Figure 7

U.S. Sugar Policy Cost: Zero Net Cost Before Mexican Subsidizing and Dumping; Zero with the Cases/Suspension Agreements (SAs)

CBO Projections, Million Dollars



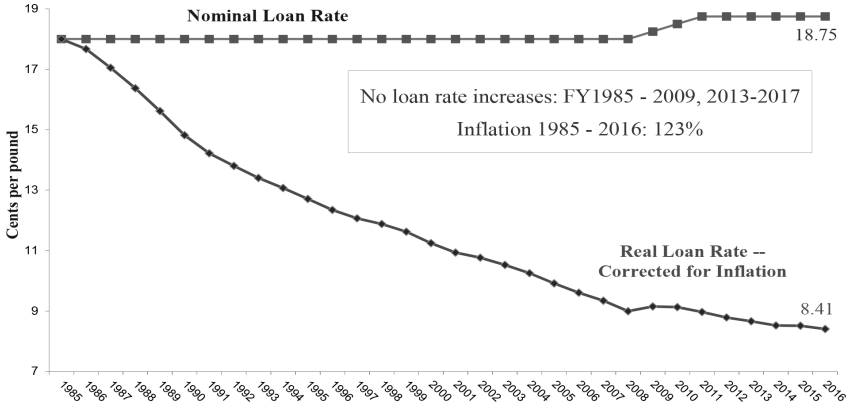
Source: USDA, 2001/2002–2014/15 (2012/13 is net cost for 2012/13–2013/14); CBO, 2015/16–2026/27, January 2017.

FAPRI = Food and Agricultural Policy Research Institute.

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Figure 8

U.S. Raw Sugar Loan Rate: Real Loan Rate Down by 53% Since 1985



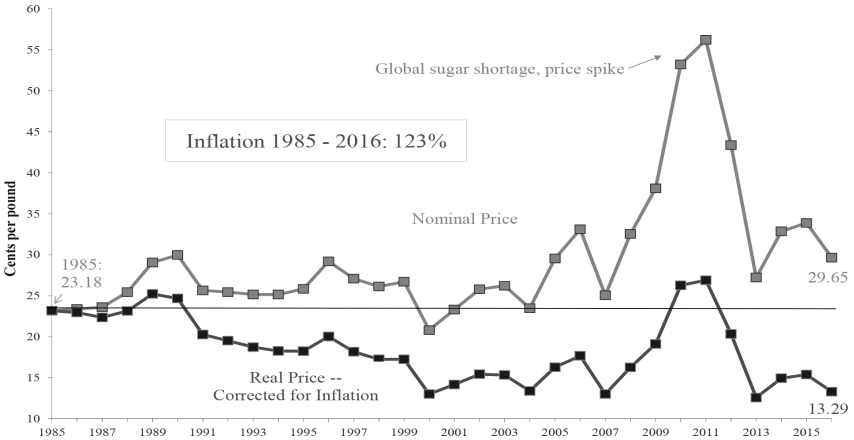
Data Source: Bureau of Labor Statistics—CPI–U. Annual averages, 1985–2016.

Loan rate rose 0.25¢ in FY 2010, 2011, and 2012.

6d.

Figure 9

U.S. Wholesale Refined Sugar Prices: Real Price Down by 43% Since 1985



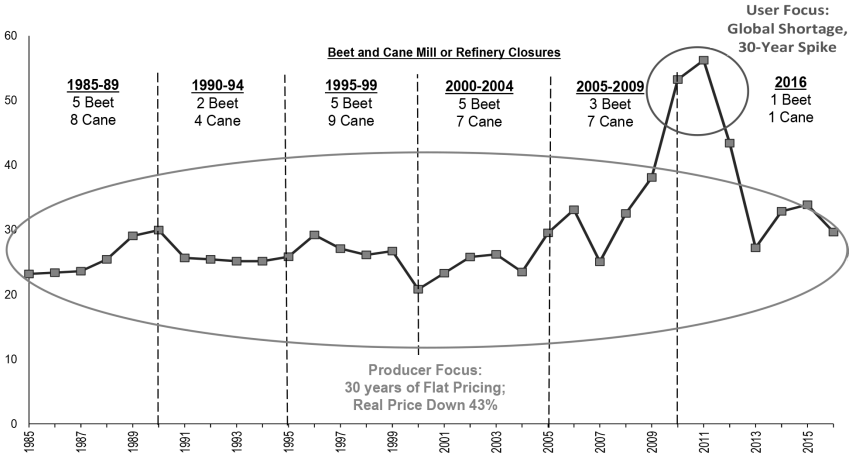
Data sources: BLS—CPI–U. USDA—wholesale refined beet sugar, Midwest markets; annual averages 1985–2016.

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Figure 10

Wholesale Refined Sugar Prices and Sugar Company Closures: Flat Prices for 3 Decades = 57 Closures from 1985 to 2016

Cents Per Pound

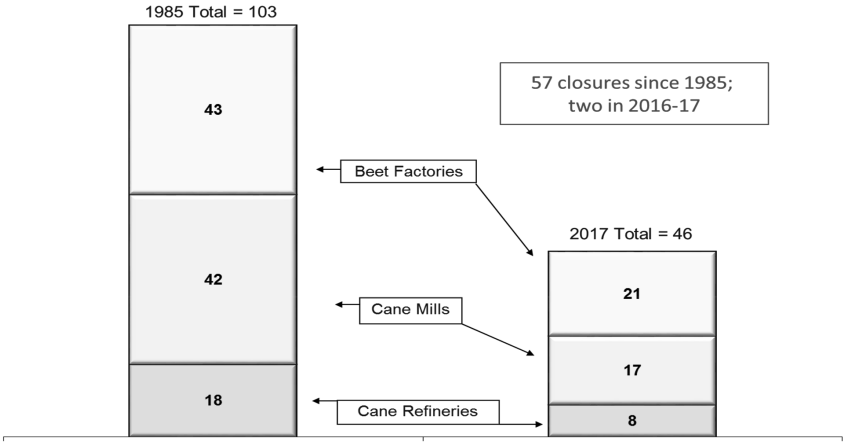


Source: USDA, annual average wholesale refined sugar prices, Midwest markets, 1985–2016. More operations would have closed had farmers not organized cooperatively to purchase independent beet and cane processing and refining facilities. Sweetener user access to domestic sugar would have suffered more.

31–S.

Figure 11

With Flat Sugar Prices Since 1985: More than ½ of U.S. Sugar-Producing Operations Have Shut Down



Source: American Sugar Alliance, 2017.

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The CHAIRMAN. Thank you. I would like to thank the entire panel for your succinct remarks, you were right on time. I appreciate that.

The chair would like to remind Members that they will be recognized for questioning in order of seniority for Members who were here at the start of the hearing. After that, Members will be recognized in order of arrival. I appreciate Members' understanding.

I would like to start with recognizing the Chairman of the full Committee, Mr. Conaway, if you have any questions?

All right. I will recognize myself for 5 minutes.

In general to anybody that wants to respond, if low prices persist, will ARC and PLC in their current forms be a sufficient safety net? And I will start with you, Mr. Lee.

Mr. LEE. I think so, but with some adjustments. For cotton, we are not there, we need to be there.

The CHAIRMAN. Right, I understand. Sure. Mr. Gerard?

Mr. GERARD. As the PLC currently stands with us, our reference price where it is, especially if we could accelerate payment, a portion of the payment a bit, PLC works for rice as is, definitely.

The CHAIRMAN. Okay. Mr. McMillan?

Mr. MCMILLAN. With peanuts we would like to keep the same program that we have now, and that would be sufficient. But we need some companion crops that we can grow, because with peanuts, we have to rotate those crops. And so we need a companion crop like cotton that would have a safety net.

The CHAIRMAN. All right. Mr. Rynning?

Mr. RYNNING. Yes, I believe for both canola and sunflowers, the current framework is very workable and is a good framework. Both organizations are quite happy with the main framework with some tweaking here and here.

The CHAIRMAN. Sure. Mr. Roney?

Mr. RONEY. The sugarbeet and sugarcane farmers are ineligible for ARC or PLC programs because of the fact that it is our processor who puts the sugar under loan. What we need to do is retain our safety net through the non-recourse loan and we can maintain no cost operation of that program, assuming we can resolve the Mexico dumping problem.

The CHAIRMAN. Okay, thank you.

Mr. Gerard, rice producers overwhelmingly elected into PLC, and I have heard from many farmers in my state that in the absence of that policy, a lot of them wouldn't be farming today. In fact, you mentioned one of the little problems that we have with PLC is the delay, and that may be one of the tweaks that we look at. But can you explain why PLC was the program of choice for rice producers?

Mr. GERARD. Yes, sir. Mr. Chairman, PLC works for rice because the reference price is a known. It is a known number. It is something we bank on. The timing is an issue, but beyond that, we have something that we can take to our lender and show that we do have a true safety net. We don't need a subsidy when the markets go down, we can produce a profit, but when we are much below cost of production, we need a safety net that kicks in and PLC has worked for us.

The CHAIRMAN. Is ARC workable at all for rice, in your opinion?

Mr. GERARD. The problem that I see is typical with general commodities, and we are seeing it happen right now. We get into extended periods of over production, global glut, and extended period of low prices. If we are looking back at an average history of average prices, an average price of $10 rice ends up to be a zero safety net. That is the biggest problem that we have with it.

The CHAIRMAN. Understood.

I now recognize the Ranking Member, Mr. Nolan, for 5 minutes.

Mr. NOLAN. Thank you, Mr. Chairman. I just have a question. I would like to ask if each of you would please respond. There is a significant group here within the Congress that would like to see the farm bill separated from the food and nutrition bill when it comes up for consideration before Congress. Historically, we have had a strong tradition of the producers and the consumers joining together and making it possible for us to pass a good bill for both the consumers and the producers. I would be curious if each of you could just real quickly in the remainder of my time share with the Committee your thoughts on whether or not that is a good idea. I will start with Mr. Lee.

Mr. LEE. Well, that is a good question. I can see both sides, but the SNAP program, here is a positive side there for ag and commodities. My main thought is that we have to be able to pass a farm bill, and I don't know that we could do it without being together. I do understand that as a grower and where I am, that you wonder why sometimes, but I do know that that would be difficult.

Mr. NOLAN. Okay. Mr. Gerard?

Mr. GERARD. As Mr. Lee stated, the representation of agriculture in the United States is dwindling and has been over the years, and the ability to pass a farm bill on its own has concerns. We just trust your judgment in how to get the final bill completed. Thank you.

Mr. NOLAN. Well now the McMillan's are big in Minnesota. They own the world's largest private corporation, Cargill.

Mr. MCMILLAN. I will have to check into that and see if they are kinfolks or not.

Mr. NOLAN. You might want to check into that.

Mr. MCMILLAN. I would not be for separating the two out. I think they should go in together. This is a national security issue with our food, and we need to start from the farm and go all the way to consumer with this farm bill.

Mr. NOLAN. Thank you. Mr. Rynning?

Mr. RYNNING. Yes, both organizations I am here to speak for both agree that they should be kept together and that is a smart policy approach. Personally, it is a must. This will be the fourth farm bill I have been involved with, and I know how critical that is to keep the two together.

Mr. NOLAN. Mr. Roney?

Mr. RONEY. Mr. Nolan, we feel very strongly in the sugar industry that we have to keep those two aspects of the farm bill together. American farmers represent, what, only about two percent of the population now, and that coalition with the food consumers is absolutely critical, I believe, to maintaining a strong U.S. agricultural policy.

Mr. NOLAN. Well, in the remainder of my time, I want to thank each of you for your candor on that critically important issue here, and then please forgive me. I will be reading the remainder of your testimony and the questions. I have another committee meeting at this moment, so I am going to have to leave. But thank you for being here and thank you for your very good and candid testimony.

I yield the balance of my time.

The CHAIRMAN. I thank the gentleman from Minnesota. I appreciate you being here, and I recognize the distinguished Chairman emeritus from Oklahoma, Mr. Lucas, for 5 minutes.

Mr. LUCAS. At least you didn't refer to me as the old guy, Mr. Chairman. I appreciate that.

I want to express my appreciation to the panel, not only in your straightforward testimony today, but in the assistance in putting the 2012, that became the 2013, that became the 2014 Farm Bill together. Those of you at the table and your predecessors who worked in that spirit that the Committee did, that strange concept that all commodities in all regions all had to have a safety net together. That proved to be a bit more of a challenge than I would have expected the last time, but at least this time we have a framework to work through.

Mr. Lee, you and my cotton friends, you have a special set of circumstances, and we should never forget that this pressure that cotton was under and this Committee was under because of the WTO case at the time the previous farm bill was put together made us do some things that perhaps we were more hopeful about than has panned out.

But I do believe the Committee at the time tried to provide a parachute, so to speak, if we got into a real jam, and we had difficulties with the previous Administration in getting that implemented. I am more optimistic now with the changes that face us.

But just as the panel has reinforced the point about nutrition and production from the farm to the consumer, those of you who are involved in your groups, let's discuss for just a moment how important it is that all commodity groups work together, and you have relationships and conversations, and many of you farm a variety of things. We had difficulty last time. Do you have the spirit or the feel when you talk to your colleagues now that everyone understands we have to be on the same page this time with the commodity prices generally being ½ what they were 2 years ago? Whoever would like to touch that.

Mr. LEE. And I appreciate the comments. I understand what you are talking about.

I am a cotton farmer, but I am also in peanuts, corn, I grow most of the commodities. I don't grow rice and canola, but I really feel good about where we are today; and hopefully, we have the case behind us, and looking at a new farm bill, if we can figure out how to get cotton to title I, I think we will all be together. I feel that way. I may be wrong, but to get a good farm bill, we have to be together.

Mr. LUCAS. And wouldn't you say, gentlemen, that it is important that the concept of choice be maintained? We discussed briefly here ARC *versus* PLC. Everyone's crop, everyone's farm, everyone's region is a little different, but it is important that we have that ability to pick what is in our best interest, and with a new farm bill, obviously I would assume would reset the clock and everybody can make a choice again. Isn't that a fundamentally important principle? Just whoever cares to speak.

Mr. RYNNING. Yes, that is very clear in the policy discussions at U.S. Canola, and I have been involved somewhat with National Barley Growers. I think that is a very critical portion of this is maintaining the choice. And going back to that it is a farm bill for everyone, all farmers across the country. And we understand the purview of this Committee and the difficulty in coming up with something that fits everyone, and understand that.

Mr. LUCAS. One last question, and again, whoever would care to touch it.

As circumstances have changed between this crop year and last crop year rather dramatically, most of it beyond the control of the producer, tell me what you and your folks back home are saying about the availability of credit to put this next crop in or to be prepared for the coming year? Is it getting tighter? Is it getting more complicated? Is it getting more expensive?

Mr. RONEY. I can take a crack at that. Sugar prices are down 50 percent since 2011, and I think that bankers are looking with great concern at our ability to maintain the safety net. And it becomes critical, I believe, for our bankers to see some sense that there is at least a safety net for our farmers. It is an enormous concern, moving forward, and it is extremely important that the commodity groups stay together on this to sustain as strong a safety net as we can manage.

Mr. RYNNING. Just a quick note. We just had our meeting with our banker and he informed us that it is taking them double the time to review their notes and to go through it with farmers and

explain things. And there are some that are being refused, and yes, it is a critical period right now.

Mr. LUCAS. That just adds to the importance of making improvements in this farm bill and continuing to have a safety net.

With that, Mr. Chairman, I yield back.

The CHAIRMAN. I thank the gentleman, and recognize the gentleman from Georgia, Mr. Scott, for 5 minutes.

Mr. DAVID SCOTT of Georgia. Thank you very much, Mr. Chairman. I want to direct my question to two big crop issues, cotton and peanuts. And but first, let's go to cotton, Mr. Lee.

Last year and a little beyond, we worked very feverishly with you in terms of the cottonseed oil issue. And under the leadership of this Committee and Chairman Conaway, we found a fix. And I want to know if this fix is the way we need to go, and my understanding of this fix is to designate cottonseed as *other oilseed* so that it is available for both PLC and ARC. Is that correct, so that it would be somewhat budget neutral by using generic base acres?

Mr. LEE. Yes, sir. There are two trains of thought there, I guess. The Cotton Council has a proposal to designate cottonseed as *other oilseed* as an administrative fix is what we talked about to start with, but now we think that we have a plan, the Council has a plan to, through appropriations, have an opportunity to convert generic base to cottonseed base, and you could either convert cottonseed base or other commodities.

Mr. DAVID SCOTT of Georgia. I only have 5 minutes, and I want to get to peanuts. What I am after is Georgia is the number two state in cotton production.

Mr. LEE. Right.

Mr. DAVID SCOTT of Georgia. Second only to the great State of Texas. What I want to know is what do you, in a short sentence, what is it that you need us on this Committee to do in the next farm bill to make the cotton folks happy?

Mr. LEE. Okay. We feel to get back in title I, that we have a plan to try to get back into title I before the new farm bill so that we can be at the table in the new farm bill and have a baseline.

Mr. DAVID SCOTT of Georgia. And to get back into title I, what must we do, the Committee.

Mr. LEE. We need to convert generic base back to a cottonseed base, because it was a cotton base. Now we have a plan to convert that and have the opportunity to also convert generic base to other commodities, too.

Mr. DAVID SCOTT of Georgia. Okay.

Mr. LEE. And I am not really answering that right.

Mr. DAVID SCOTT of Georgia. Well that is okay. You know that I had an old professor to tell me one time, sometimes it is not the right answer that matters, but it is the right question that is asked. We will move to make sure we make it happen.

Mr. LEE. Let me just say, we just need you to work with the National Cotton Council and any proposal that you have to get back into title I.

Mr. DAVID SCOTT of Georgia. We will, because you all need help, and I want to move to peanuts right quick.

Mr. McMillan, I must say at the very beginning, when the name Enigma came up, I immediately called the line, one of the most fa-

mous Georgia legislators that made that name, and I believe his name was Bobby Rowan.

Mr. MCMILLAN. That is correct, Mr. Bobby Rowan. That is correct. He ran for governor one time.

Mr. DAVID SCOTT of Georgia. Yes, he did.

Mr. MCMILLAN. Yes, sir.

Mr. DAVID SCOTT of Georgia. I served with him for 28 years in the Georgia Legislature, 8 in the House and 20 in the Senate.

I want to get a comment on that crop rotation situation, and tell us as far as the peanut marketplace, what has been the impact of the 2014 Farm Bill on the peanut industry?

Mr. MCMILLAN. Without the 2014 Farm Bill, the peanut provisions, I wouldn't be in business today. It has been, I want to say a bright spot on our farm is the peanut program. It is not a great program, it is just the best program alternative we have, and that is part of the problem is we don't have any alternatives in the area that I live, other than grow peanuts. And we have been forced to plant peanuts and get out of our rotation just to be able to try to survive.

Mr. DAVID SCOTT of Georgia. Thank you. Thank you, Mr. Chairman.

The CHAIRMAN. I thank the gentleman, and we are going to continue with Mr. Scott in Georgia for 5 minutes.

Mr. AUSTIN SCOTT of Georgia. Thank you, Mr. Chairman.

Mr. McMillan, I want to continue down that path. Just what percentage of the U.S. peanut production do the growers in the federation states represent?

Mr. MCMILLAN. Eighty percent.

Mr. AUSTIN SCOTT of Georgia. Eighty percent, and do the shellers support your farm bill position and the buying points support it as well?

Mr. MCMILLAN. Yes, the Buying Points Association and the Sheller Association is in agreement with us. In fact, I have never seen the peanut industry so unified.

Mr. AUSTIN SCOTT of Georgia. I heard what you said about the lack of a safety net for other crops leading to potentially more peanuts being planted than normally would be. Do you believe that the $530 a ton reference price is the reason for the additional acreage being planted, or do you think it is the lack of options that are available for the farmer?

Mr. MCMILLAN. Congressman Scott, you are on to something there. We do not have many options, but when a farmer makes his planting decision, he is looking at several things. He is looking at the market, he is looking at his rotation, he is looking at the farm program, he is looking at the cost of production. So that farmer, he is looking at several factors when he makes his planting decision.

Mr. AUSTIN SCOTT of Georgia. He is also, in many cases, having to negotiate with his banker on what he is going to plant as well.

Mr. MCMILLAN. That is correct.

Mr. AUSTIN SCOTT of Georgia. Do you believe that we have too many peanut acres in the marketplace today?

Mr. MCMILLAN. No, we do not. The demand and supply is in balance. We have about 800,000 tons of excess peanuts, which really is not excess. That is just a 90 day supply that carries us over into

next year. That is healthy. That is where we need to be for all parts of the industry. And so we do not plant based strictly on the farm policy. It is market and the demand and supply is in good shape right now.

Mr. AUSTIN SCOTT of Georgia. Mr. Lee, Mr. Lucas talked a little bit about STAX and the design and the implementation of it. It was initially designed by the National Cotton Council, but changes were made from that original design during the 2014 Farm Bill, and putting it together. Can you briefly explain those changes that were made, and what effect they had on this crop insurance policy?

Mr. LEE. Yes, due to the case with WTO of Brazil that had been ongoing, the Cotton Council decided the only option we had was crop insurance. We came up with STAX crop insurance, and to get us a safety net for cotton. The problem was that in the process, we had 95 percent coverage and a reference price in the crop insurance. In the process, we wound up with 90 percent and no reference price. We didn't have any coverage for a long time, for a longer turn, downturn in the market. Basically, it has not worked. We had 25 percent use of people taking STAX, because it is just with the low market, it doesn't pay.

So that was our only option at that time, and now we have that behind us and we need to find a way that we think we can get cottonseed back into title I.

Mr. AUSTIN SCOTT of Georgia. If I could, Mr. Lee, and I have heard a lot of cotton growers express that they don't feel like it is worth paying the premium for the coverage.

Mr. LEE. That is right.

Mr. AUSTIN SCOTT of Georgia. Up here, many people would say well why don't they just change and plant a different crop, people from the metropolitan area, so just briefly, in about 30 seconds, can you explain why cotton producers don't just switch planting to another crop, and the impacts on all of the businesses, warehouse ginners through the area?

Mr. LEE. First of all, we have a great infrastructure. As David said, we need a rotation, first. But we have infrastructure. Cotton pickers are $700,000 a piece. Gins, warehouses, it is a huge infrastructure and it has a large ripple effect in the rural economy. We just need cotton in the mix.

Mr. AUSTIN SCOTT of Georgia. Mr. Lee, thank you. My time has expired, but I would just like to remind the Chairman, as you know, if you don't like being dependent on foreign oil, wait until you are dependent on foreign sources of food.

With that, I yield the remainder of my time.

The CHAIRMAN. Amen. I recognize the gentleman from Arizona, Mr. O'Halleran, for 5 minutes.

Mr. O'HALLERAN. Thank you, Mr. Chairman. Mr. Lee, I have a couple of questions. The first one deals with the, as I read here for the programs—I didn't read it right. "For the intended objectives of this program, the Cotton Competitiveness Program, to be met, USDA needs to take steps to update the key price data being used." Then you go on to state, "If USDA continues to resist this administrative adjustment, then we will seek to make the modifications in the next farm bill." Why is there resistance for this adjustment?

You had indicated in your written testimony about the ELS Cotton Competitiveness Program, and for the intended objectives of this program to be met, USDA needs to take steps to update the key price data being used. "If USDA continues to resist this administrative adjustment, then we will seek to make the modifications in the next farm bill." What is the resistance by the USDA on making the adjustment?

Mr. LEE. I think that is to do with the price of pima ELS cotton and the support. The market is much higher than the up and coming, and I don't think it is on a level playing field as it stands, and we need to be competitive of that, and that grade of cotton is growing in other countries as well. We need to be competitive.

Mr. O'HALLERAN. You mention, though, that they are resistant in doing that. Why are they resistant in doing that, USDA?

Mr. LEE. Well, they don't recognize China as an exporter of ELS cotton, and that is part of it. It is a little bit complicated.

Mr. O'HALLERAN. Okay, thank you.

Mr. LEE. I am an upland grower, sir.

Mr. O'HALLERAN. You mentioned that returns on other crops have decreased, and that is leading to increased cotton acres. What crops were you referring to?

Mr. LEE. I don't know why I am having a hard time understanding you. Say that again?

Mr. O'HALLERAN. You mentioned either during your testimony or your written statement that returns on other crops have decreased, and that is leading to increased cotton acres. What crops were you referring to that have been decreased?

Mr. LEE. Have increased?

Mr. O'HALLERAN. Decreased.

Mr. LEE. We have increased peanuts and decreased corn, soybeans, wheat. I don't really follow that question, sir.

Mr. O'HALLERAN. Okay.

Mr. LEE. I am sorry.

Mr. O'HALLERAN. No problem.

For any other witnesses, now that we are entering the fourth year of the 2014 Farm Bill, can you describe how it has affected the rural economy in general? Do you see any differences as compared to the 2008 and previous farm bills? Anybody can take that question.

Mr. RONEY. Mr. O'Halleran, speaking for the sugar industry, we have seen one profound change, and that is that Hawaii has gone out of sugarcane production after producing sugar for about 170 years. That was the direct result of Mexican dumping into our market, and by the same token, all our producers are struggling. Wholesale refined beet sugar prices are off 50 percent over the last several years, and we have a beet mill in Wyoming that will be closing this year. Many of our younger farmers are having trouble being able to stay afloat, being able to get sufficient credit to stay in business.

So there is a great amount of vulnerability in our industry for both beet and cane farmers.

Mr. O'HALLERAN. Thank you, and given my time, Mr. Chairman, I would like to just make a quick statement that I am very concerned about this farm bill as it relates to the ability of our farmers

and growers to be able to compete against dumping and the other pricing mechanisms that other countries are using. I yield back.

The CHAIRMAN. I thank the gentleman, and I recognize the gentleman from Illinois for 5 minutes, Mr. Bost.

Mr. BOST. Thank you, Mr. Chairman.

My question is for Mr. Gerard, if you would. First off, let me start, before I ask this question, because I know you are familiar with my background and where I come from. Living just adjacent but farming in my district, you are familiar that I came from a trucking background, and in that trucking background, I would have the blessing of whenever I ran the business of having my father, my grandfather, it was truly a family business. It was also my uncle and now my brother actually runs that business. I was in that business for 10 years. I loved it for 8. But I didn't realize until your testimony that each one of us try to catch up and each time we are finding out something new if we weren't here for the writing of the farm bill that we are under now.

Can you kind of expand, because you said something and two of us were caught off guard. Can you expand on the concerns that the producers are having with the *actively engaged* regulations, okay, because a lot of people said all of a sudden a member of the family dies, you lose them, now all of a sudden the rules change. Can you expand on that, and then can you describe how important it is that we correct this as we move forward in the new farm bill?

Mr. GERARD. Yes, this is a very critical topic.

I will lay out an example that I can understand. It is pretty simple. If we have, for example, two brothers that are farming and they both have two children, then that is one big family partnership operation. There are six people involved. In the middle of the cropping year, in the middle of July, one of the brothers passes away. That family, that farming operation loses three payment limitations that moment. It adds misery to grief at that point in time. They have structured their whole operation revolving around this, and without intention, their operation has lost $375,000 payment limitation. And that is an issue. You can't plan financial planning and it is a disaster.

Mr. BOST. The next question would be then, the language that we produce in the next farm bill should say some kind of stipulation based on when you first applied, and then it should cycle through based on that, correct?

Mr. GERARD. I agree with you completely. Yes, sir.

Mr. BOST. All right. That is a concern that many of us have, like I said, when you mentioned it in your testimony, there were three of us that were sitting here and it never clicked that the tragedy could happen and to lose a family member for whatever reason, and then all of a sudden those agreements become null and void, not null and void, but really knock you for a loop.

Mr. GERARD. Right, right.

Mr. BOST. And Mr. Chairman, I have no other questions. I yield back.

The CHAIRMAN. The gentleman yields. I recognize the gentlelady from Delaware, Ms. Blunt Rochester, for 5 minutes.

Ms. BLUNT ROCHESTER. Thank you, Mr. Chairman, and thank the panel. I am torn because I have two questions, and I know it

will take up too much time, so I am just going to plant a seed, no pun intended.

Really, what I want to ask about is young farmers and particularly some of the challenges in terms of credit and high land prices. But the question I am going to ask first is one I asked last week, which applies to all commodities, and last week I asked about one of the biggest challenges that we hear for farmers and also the ag economy in general is about market volatility. Did the 2014 Farm Bill, the programs that were enacted, how did they react to price variation? Did the farm programs and crop insurance smooth price volatility for your commodities? That is for the whole panel.

Mr. MCMILLAN. Representative, if it is okay, I would like to address the young farmers.

Ms. BLUNT ROCHESTER. Okay.

Mr. MCMILLAN. Will that be okay?

Ms. BLUNT ROCHESTER. Sure.

Mr. MCMILLAN. Because it is very passionate, and I appreciate that question. It is a concern we have had really for decades getting young people back into farming, because we don't need to lose a generation of farmers.

The reason it is so passionate for me, and one reason I am here today, is I have a 20 year old son who is at University of Georgia majoring in agriculture. But I am also very anxious. I want him to come back to the farm and I am anxious about that because equipment costs, land costs, problems we are having with labor now. I am very concerned of whether he will be able to make it or not. And I know if he didn't have an uncle and a daddy that he could come back to, it would be almost impossible. The only way that he is going to be able to make it is by us giving him a hand up.

Ms. BLUNT ROCHESTER. Got you. Anyone else on either one of those questions?

Mr. RYNNING. Yes, it is a major factor in agriculture is that the established generation has to help out the up coming generation. Sometimes it just becomes too difficult, and that is where you get back to the first question and taking out some of the volatility is, of course, a major job of a farm bill, I believe, anyway. ARC and crop insurance are susceptible a little bit to a long run of lower prices, whereas PLC helps establish a more permanent base, but they both serve their function and serve it well.

Ms. BLUNT ROCHESTER. Thank you. Anyone else?

Mr. RONEY. Congresswoman, from the point of view of the sugar producers, the 2014 Farm Bill provided an excellent safety net program, but we were just overwhelmed by subsidized sugar from Mexico. Sustaining a program very much like what we have will work and will smooth out that volatility, as long as in another venue we can negotiate a better arrangement with Mexico.

Ms. BLUNT ROCHESTER. Thank you.

I go back to the young farmer. I had an opportunity to have a roundtable with farmers in our state in Delaware, and it was one of the issues that most people really were concerned about. And as you mentioned, Mr. McMillan, for their families, for their future, and it is one of the reasons I am glad to be on this Committee.

So thank you so much for your time. I yield back.

The CHAIRMAN. The gentlelady yields. I recognize the gentleman from Florida, Mr. Dunn, for 5 minutes.

Mr. DUNN. Thank you very much, Mr. Chairman, and thank you gentlemen for being here and helping us with this.

My first question is for Mr. McMillan. In your testimony, you stated that Florida's largest peanut grower organization supports the current PLC programming and supports continuing it in the new farm bill. Now some of my producers don't have base. They don't have generic base, or any base. And so what are the potential solutions for them, in light of I heard you say that the peanut farmers are all unified?

Mr. MCMILLAN. This is not a problem for me, but it is a problem for those peanut producers. Those peanut producers have been growing peanuts in the past, and what I would suggest in the next farm bill is that we look at possibly allocating them some base, based on their past cropping history. My only concern is about cost.

Mr. DUNN. What kind of bases do you personally have in your farm, and how did you get those bases?

Mr. MCMILLAN. On our farm, we have peanut base, we have generic base——

Mr. DUNN. Do you have other bases? I don't know.

Mr. MCMILLAN. Yes, sir, we have generic base, we have peanut base, and we have rye and corn base.

Mr. DUNN. Okay.

Mr. MCMILLAN. Those bases were allocated to us over different farm bills going all the way back to 1990. I am not sure, but the different farm bills that we have had, we have been allocated those bases based on our cropping history. Almost in every case that is the way it was allocated. Another way that you can acquire base is if you buy a farm, the bases come with that land. And then we, in 2002, did it kind of the old-fashioned way. In 2002 we were able to buy base. We were allowed to do that, and we were allowed to do that, and we bought base and moved it to our farm.

Mr. DUNN. Can that still be purchased, base?

Mr. MCMILLAN. No, sir.

Mr. DUNN. I actually didn't think it was, I just wanted to check with you.

In the interest of time, let me ask a different question, Mr. Roney, are foreign countries now cutting back on their subsidies and their programs for their sugar producers?

Mr. RONEY. No, sir, they are not, and thank you for asking. There has been a sense that globally we are moving more toward free trade, but that certainly has not been the case in the sugar industry because of the volatility in the work sugar market, and we had prices ½ of what they are now just a couple of years ago. Countries are getting more aggressive about subsidizing and we have had work done that shows Brazil, the biggest exporter in the world, is subsidizing to the tune of $2 to $3 billion per year. Thailand, the second biggest producer, is subsidizing for just under $2 billion a year. India, the second biggest sugarcane producer, is subsidizing $1 to $2 billion per year, so unfortunately, it is getting worse. We seem to be moving further from free trade in sugar than closer to it. And that makes it all the more important that we sustain the U.S. sugar policy's response to those foreign subsidies.

Mr. DUNN. Thank you for that also, Mr. Roney.

Some sugar containing product manufacturers, candy, *et cetera,* they claim that U.S. sugar prices are costing them jobs and consumers would benefit if the sugar prices were lower. Do you see that as true, and if not, can you explain that?

Mr. RONEY. Certainly not, Congressman. When you look at sugar containing product manufacturers, that is one of the strongest sectors of the economy financially. They have grown about 30 percent in the last 10 years or so. They have shed a few jobs in that process, but if production is rising and they are reducing the number of jobs, that is because of automation, mechanization. That is all there is. If you look at a candy bar that in 1985 cost 35¢, it had about 3¢ worth of sugar in it. If you look at a candy bar this year that costs $1.49, it has about 3¢ worth of sugar in it. First, the cost of the sugar is minor in their overall costs for producing that product; and second, what they are paying for that sugar has stayed incredibly stable over the last 30 years. If we gave them the sugar for free, I don't think you would see a candy bar go down in the slightest.

Mr. DUNN. Thank you for that clarification.

Mr. Chairman, I yield back.

The CHAIRMAN. I thank the gentleman, and recognize the gentleman from Florida, Mr. Lawson, for 5 minutes.

Mr. LAWSON. Okay, thank you very much. My questions will center around Cuba. Can you talk about the parts of creating trade market with Cuba around the rice industry? Can you elaborate on the potential increase to U.S. rice industry in dealing with Cuba? I really have some concerns about that because of this new market that is supposed to be opening up. Mr. Gerard?

Mr. GERARD. Yes, sir. At one time, Cuba was our number one export destination for U.S. grown rice. They are very close proximity, as you well know, to the United States, and it is a natural market for USA rice, and I believe we would see a significant increase in demand rather rapidly if trade were opened.

Mr. LAWSON. Okay. I have a question for sugar. Mr. Roney, sugar policy opponents have claimed that they want to modify the sugar policy, not repeal it. What changes they are calling for such as means testing, operating loans for sugar processors penalize sugar farmers?

Mr. RONEY. Thank you, Mr. Lawson, for that question. What is vexing for us is that when our opponents say that they just want to do some minor modifications to the sugar policy and not repeal it, in fact, what they suggested would rip the safety net out from under our producers. A study done by the Agricultural and Food Policy Center at Texas A&M, Professor Outlaw looked at that carefully and decided that looking just at what the sugar policy opponents are proposing, so they would pull out the safety net. It would put a lot of U.S. producers out of business. And ironically, he said that would be a bad practice for consumers in general and for these food manufacturers, because they would have fewer sources of domestically produced sugar for their operations. That is why we really prefer to sustain sugar policy in its current form and maintain a strong safety net as the policy was designed in the last farm bill.

Mr. LAWSON. Okay, and the other question I would have is in Florida, there has been considerable amount of elaboration between sugar and the environmental industry, especially as it relates to the Everglades in Florida having a balance there in terms of the importance of the water supply for south Florida. And it always comes up in an issue, and I want to know from the industry standpoint, how do you feel that the water management districts in those areas have been balancing the relationship between the sugar industry and the protection of the Everglades?

Mr. RONEY. Yes, sir, that is a difficult problem, and one within that problem is that so many of the proponents for the Everglades are really scapegoating sugar. There are millions of people living around that area. There are many other operations, ranching and so on, and vegetable operations, and sugar tends to be scapegoated. But the sugar farmers in Florida have really been using their best agricultural practices and have far exceeded the goals or the targets that were given to them to reduce phosphorus and other runoff. I am optimistic that we can find a balance there and not have to shut down a very efficient important sugar industry in that area that is, in some rural areas around the Everglades, is virtually the only job provider, and work out a balance. I think that the sugar producers are very keen on being good stewards of the land and maintaining clean water and clean environment, and they are fully capable of continuing to achieve that.

Mr. LAWSON. Okay, thank you. I yield back, Mr. Chairman.

The CHAIRMAN. The gentleman yields. I am pleased to recognize the full Committee Chairman, Mr. Conaway. Did you not want to ask any questions? Okay. Then Mr. Arrington is recognized for 5 minutes from Texas.

Mr. ARRINGTON. Thank you, Mr. Chairman, and thank you, panelists. Mr. Lee, good to see you. I enjoyed speaking with you out in my district. You guys know, and I know Mr. Lee does, that I represent the largest cotton producing district in the country, and west Texas and cotton are synonymous. Cotton is king. Cotton is life. And we are in a real crisis. It is a real disaster, and if we let it continue much longer, it will fundamentally alter our economic landscape. And I imagine that there are a lot of rural communities in the Cotton Belt that are similarly situated, and so I come with grave, grave concerns and with a sense of urgency with respect to our cotton producers.

One of our first hearings, I asked an ag economist policy expert could the rationale that was applied by the WTO in the Brazilian case be applied to other commodities, and the answer was yes, it could. My question to you is what would America be, how would we be positioned economically and from a national security perspective if we pulled all of the commodities out of title I? Do you agree with me it would be an epic national security crisis? Just yes, no?

Mr. GERARD. Yes.

Mr. LEE. Yes, sir.

Mr. ARRINGTON. Are you all concerned that the next commodity to be pulled out of the title I on account of WTO or some complaint from another country, maybe Brazil, maybe India, maybe China, that will result in your commodity being pulled out of the safety

net that protects your commodity and your farmers from market volatility?

Mr. MCMILLAN. Yes.

Mr. ARRINGTON. I am very concerned, and I would like, Mr. Lee, if you would just expound a little bit on the seriousness of this crisis, the sense of urgency, and its effect on the broader ecosystem in the Cotton Belt.

Mr. LEE. Well, cotton was singled out, as you say, and we started a long time ago and we gave up different programs along the way. But then in 2014 we gave it all up, I guess, for STAX.

But I am right there with you. I have been in your area. but you only have cotton, basically. We do have other crops, and so therefore, peanuts for one, corn, if any one of those are singled out, it would be tough, really, really tough.

Mr. ARRINGTON. Mr. Lee, I want to implore of my colleagues——

Mr. LEE. We wouldn't survive at all.

Mr. ARRINGTON. I want to implore my colleagues, please help us get cotton back in the farm bill. Please help us get cotton back as a title I covered commodity. It is the only commodity that is not in the farm bill, and we are sucking air. Ag is sick. The farmer is in the hospital. Cotton is in the ICU. Help. And I don't know how much time we have.

So let's talk about China. I appreciate Mr. O'Halleran's perspective and thoughts and comments about market manipulation by countries. It is my understanding that China is the number one cotton producing nation in the world. Is that correct?

Mr. LEE. I think India is now.

Mr. ARRINGTON. Okay. Well they are one and two.

Mr. LEE. China is right up there with them.

Mr. ARRINGTON. Okay, well they are top two. It is my understanding also that China is designated as a developing nation, according to the World Trade Organization, which allows them to subsidize their cotton farmers, much like we support our farmers, maybe even more so, but is that true?

Mr. LEE. That is right. They are subsidizing their growers of twice the price of polyester for the cotton, and as I said earlier, we are having to compete with China and India on the polyester or manmade fibers.

Mr. ARRINGTON. Mr. McMillan, my understanding also, because I represent peanut growers and we have had a mass migration of cotton farmers to the peanut production side, and that has a negative effect on the price and so my question to you is has there been a ripple effect and an adverse impact on the peanut growers on account of cotton being taken out of the farm bill?

Mr. MCMILLAN. There is no doubt we need a companion crop with peanuts, and cotton is something that we grow very well with peanuts for rotation. But right now, the peanut demand and supply is in balance right where we should be, so we have probably had some increase in acreage of peanuts because of cotton, and anytime supply dictates price. But right now with peanuts, we are in a good situation.

Mr. ARRINGTON. I yield back, Mr. Chairman. Thank you.

The CHAIRMAN. The gentleman yields. I recognize the gentleman from Georgia, Mr. Allen, for 5 minutes.

Mr. ALLEN. Thank you, Mr. Chairman, and thank you, distinguished panel, for coming and talking about, I guess, all this depressing news that we are dealing with as far as commodity prices and that sort of thing.

I believe we can all agree that trade and expanding markets are vitally important to the agriculture industry and our products, and we have already touched on the issues in China. My shirt is made of cotton, which probably most everybody in here is wearing a shirt made of cotton, and it probably came from somewhere near China or Asia. We are the big consumer as far as textiles are concerned. We also make the best cotton in the world. The cotton which is mentioned, I don't know about the cotton in India, but I know the cotton in China is not as good as our cotton.

So with that in mind, as far as our trade policies are concerned, Mr. Lee, when we talk about agricultural trade issues and competition from foreign producers, what are the most challenging issues that U.S. cotton producers face globally? In other words, we have the best cotton. We buy most of the shirts. It looks like we could figure that out and say, "Okay, we have an industry over here that we have to protect. How can we do that?"

Mr. LEE. Well, one thing that we have been doing is the program that is public-private that we have helped support the domestic mills, and then so they can add mills or add equipment, increase capacity, create jobs, and we need to continue to do that.

As far as the cotton side, as I said earlier, we are exporting 75 percent of the cotton, 15, 20 percent of the textiles. We need to continue to really be focused on the export markets. Our largest market for——

Mr. ALLEN. Right. As far as the—because we have the next farm bill coming up, cotton is not protected in this farm bill, and you mentioned the cottonseed issue in your testimony. Can we get to the next farm bill without some help here, or I mean, we had the commodity folks in here and they said, "The good news is we don't think prices are going down, but the bad news is we don't think prices are going up." How do we get cotton to the next farm bill?

Mr. LEE. Well first of all, the Council's program or plan is a good plan to get there. My first comment I want to make in what you just said though is that if we wait until the next farm bill, us to grow cotton, we won't get it, any kind of support until the fall of 2020. If we don't get something to bridge us to get to the table as a farm bill——

Mr. ALLEN. Bottom line, something has to be done.

Mr. LEE. We won't have anything.

Mr. ALLEN. Okay, immediately. Okay, and as far as peanuts, Mr. McMillan, you had mentioned in your testimony that you use the PLC program *versus* the ARC program. Why did you choose the PLC program for participation *versus* the ARC program?

Mr. MCMILLAN. I tried to study both of those programs before I signed up, and the reason I chose PLC program is because I was familiar with it. It was very similar to the 2008 Farm Bill. And then we had our land-grant universities who are doing research and trying to figure out what would be best for Georgia farmers, and they were leaning us towards PLC for peanuts.

Mr. ALLEN. And do you believe that the success of PLC, for peanut producers, that we are okay there as far as the future is concerned with folks going to that program?

Mr. MCMILLAN. Yes, sir, the PLC program is what we need for peanuts.

Mr. ALLEN. Okay. All right, well my time has expired. I yield back. Thank you so much.

The CHAIRMAN. The gentleman yields back. I recognize the full Committee Chairman, Mr. Conaway.

Mr. CONAWAY. Well I thank you, Mr. Chairman. Again, gentlemen, thank you for being here today. I appreciate it. You have all highlighted just a couple of things we have to get done in the next farm bill. Communication is a big deal, obviously, and so help us understand the impact that these last 3 or 4 years have had on you in respect to the 2014 Farm Bill was done, things were good enough in agriculture that people actually asked do we really need a safety net for production agriculture, because prices are never going to go down. Well here we are, 2017, 2018 is not anticipated any better. Can you share with us better ways we currently have been saying it, the impact it has, and why we need a farm bill, why you need these programs, and telling your own story since the American consumer enjoys the safest, most abundant, and affordable food and fiber supply in the world. While producers are obviously in favor of a farm bill, SNAP folks are in favor of a farm bill, why wouldn't anybody who eats in America be in favor of a farm bill that delivers in that deal? They go to the grocery store, they get a deal and they don't know it, and they certainly don't know why they are getting a deal on their food. And restaurants are the same way. And so help us understand the impact, the differences between the 2014 back drop and the 2018 Farm Bill is, and why it is so important that we have this farm bill.

So any thoughts you have in making that happen, please start doing that. I want to deputize each one of you to be a part of the messaging system that tries to convince that monster group out there of those of us who like eat why it is in our best advantage to keeping you guys in business. Any thoughts you have on how we distinguish between what was going on in 2014 *versus* 2018 that would help us in our communications with our constituents back home as to why this program does, in fact, work? Anybody on the panel, and then think about that moving forward as you do your jobs.

Mr. LEE. I will start by saying that we have the best story to tell, but we are not able to get it out there? Consumers just don't get it. The subsidies that we get pass through us to the consumer to have cheap food and cheap fiber, and that is a hard message to get out there. But that is the way I see it.

Mr. GERARD. In our case, the PLC program is working for rice the way it was designed. I mentioned a few tweaks we can do, but in defense of this, all of these commodities simply cannot compete with foreign government subsidies, and there are producers all over the world that are producing for a subsidy. They are overproducing as a result of these lucrative subsidies. There is encouragement to plant crops when the market tells them otherwise. That distorts

the world price of commodities and results in costing the American taxpayer money.

Mr. MCMILLAN. The PLC program is also working very well for peanuts, and it is what is really keeping us in our part of the world in business right now. But to answer your question about the farm bills, it not only affects the farmers and keeps them in business, but it keeps your car dealers in town, your restaurants in town. It goes out into the rest of that community. These farm bills are so important, and without those safety nets, I don't think we can stay in business.

Mr. RYNNING. As you alluded, at one time we thought well there was the new paradigm. We don't have to worry about these things, right? A lot of growers felt the same way, do we need this anymore, and the growers themselves have, of course, seen the light blaringly in the last 2 years, 3 years, and the trouble is getting that across to the general public as to how essential these things are. And there are still organizations and groups of people that are saying no, it is not needed anymore, and I definitely strongly disagree with them and will do everything I can to get that word out.

Mr. RONEY. Mr. Chairman, I have had the privilege of working for American farmers in this town for 40 years, and I have been incredibly proud of that. And I have been discouraged at times to see how much the society in general takes agriculture for granted, that we have a wonderful, safe, cheap food supply, and they don't realize what it takes to produce that, how proud we are that we are efficient by world standards, all American farmers, while adhering to some of the highest standards in the world for defending workers and consumers and the environment. And so I would hate to see consumers get a rude awakening if we gave up our agricultural policies, let our farmers go out of business, and became more dependent on foreign food. It would be less dependable. It would be lower in quality. It would be in all likelihood less safe, and I am sure we would have more volatile pricing than we have now.

You are absolutely right. We do have a major message. It has been a battle. I have been witnessing it for decades, but to get across to the American people how good we are at what we do in American agriculture, and how important it is that we have the ability to stay in business and not be put out of business by foreign subsidized producers.

Mr. CONAWAY. Well if the Chairman would indulge a couple more seconds, thank you again. Ronnie has a great story to tell. He just had to tell it over and over and over and over to you. He is sick of telling it. And then you get to tell it a couple more times to make sure that you get your point across.

Something that I discovered recently from Bart Fischer, my economist. If you divided the economic ladder in this country into ⅕, the top 20 percent of the economic ladder, those folks spend more on food, think about that. They spend more on food than the bottom 20 percent makes. As we look at the 2018 Farm Bill, what I am decidedly uninterested in is arbitrarily capriciously raising the cost of food to the bottom 20 percent. The top 50 percent, they don't care what food costs. You can add a couple thousand bucks a year to their food bill and they are not going to notice it, but that bottom 50 percent will, in fact, notice it. You can like the current farm pol-

icy or you can hate the current farm policy, but it delivers the most affordable food supply of anybody, any other developed nation in the world.

And so as we craft these policies and look at the impact it is going to have, the family I am going to have in the front of my mind is a single mom struggling to make ends meet. Her food budget is where she flexes. Her car payment doesn't change and her rent payment doesn't change, but her food budget is where she flexes. If something unexpected comes up in the middle of the month, it comes out of her food budget. I am not interested in making her life any tougher by simply raising the cost of food. And so that is going to be the fight we are going to have. I need to have you at the table fighting, because you have the best story to tell, and frankly, you are the best people to tell it. But the American consumer gets a deal, a really good deal when they go to a restaurant or when they go to the grocery store. That bottom 25 percent spends 35 percent of their disposable income on food. We are not going to raise the cost of food just because we can. You shouldn't do that, and so as we start this path together, I need you guys, all of you, the commodities who are at the table today, the ones last week, and folks who weren't at the table, do the family fight, do all the arm wrestling we need to do before we get there. But once this thing starts forward, you have to go shoulder to shoulder with us to make it happen.

I thank the indulgence of the Chairman. With that, I yield back.

The CHAIRMAN. I thank the Chairman, and I would just like to add, there are some recurring themes here, and I don't know if it was Mr. Lee that pointed this out, but it has come up before and it is important to note that farmers are essentially pass-through entities, and the real beneficiary, as the Chairman indicated, is the American consumer. And so weaving that into your story can go an awful long way to help people recognize the value proposition of why we do what we do here from the standpoint of farm policy.

I would also like to say that we can only control what we do here in the United States. We can't control what other countries do, and so our policy is a response to what is going on in the global marketplace. I dare say there is not a Member in this body that would love to get, and you would probably feel the same way, that you would love to get to a point when we don't have to debate farm policy because it is not necessary anymore. But we can only control what we do, and it is a direct response to what is going on in the rest of the world. As most of you have indicated, whether it be sugar or whether it is cotton in China and India, whether it is the Cuban marketplace, as Mr. Lawson indicated. Our job here is to create a response to the circumstances that are dictated to us in the global marketplace. And at some point in time, maybe we will get to a point where we don't have to have these conversations anymore. But until that time, I appreciate the fact that you have taken your time to come here and share your story with us and be partners with us in doing the best we can to make sure that we do continue to enjoy the safest and most abundant and most affordable food supply on the planet.

Thank you all for being here. Under the Rules of the Committee, the record of today's hearing will remain open for 10 calendar days

to receive additional material and supplementary written responses from the witnesses to any question posed by a Member.

This hearing of the Subcommittee on General Farm Commodities and Risk Management is adjourned.

[Whereupon, at 11:42 a.m., the Subcommittee was adjourned.]

[Material submitted for inclusion in the record follows:]

SUBMITTED LETTER BY DWIGHT STANSEL, PRESIDENT, FLORIDA PEANUT FEDERATION

April 14, 2017

Chairman Crawford:

The Florida Peanut Federation (FPF) is pleased to submit these comments, to be included as a part of the record for your Subcommittee hearing last week, on behalf of our 150+ members.

Our peanut industry here in North Central Florida grew out of the decisions by the government, starting in 1996, to unravel the agriculture commodity supply control mechanisms of the previous 60+ years. After 2002, when peanut quota was purchased by the government from existing quota holders for $.55/lb., at a cost of $1.3 billion, a large number of farmers who held no government allocated crop bases on their farms, begin to grow peanuts for the world market. Many of these farmers were young and getting into agriculture production for the first time. They were encouraged by the provisions of the 2002 Farm Bill to make the investments to start up a brand new industry in their area.

Our farmers witnessed three distinct market cycles from 2002–2014, in which the free market worked exactly as it should with the growers around the nation responding to supply and demand factors. In 2014, with the generic base provisions of the new farm bill going into effect, the peanut market was immediately distorted. With the cotton market at a level below the cost of production and no safety net under the growers, the cotton farmers of the SE immediately began to shift their generic base acres into peanuts and we quickly experienced record production and carry-out levels in the peanut market as those farmers were guaranteed a profit in peanuts through the PLC payments, though the world market dipped way below production cost levels. As a result, our new, young, non-base growers that had started up pursuant to the 2002 Farm Bill, were now left out in the cold, a market below cost of production and no government safety net under them.

Mr. Chairman, I encourage you and your Members, when writing the provisions of title I, to restore the market based provisions of the 2002 Farm Bill so that these young farmers, who responded to the call of Congress then, may continue to grow for a healthy and vibrant world market.

The FPF supports many of the provisions of the peanut title of the 2014 Farm Bill. The title provides for the orderly marketing of the nation's peanut crop. Three key components of the title are necessary for its continued success. They are:

1. A marketing loan of $355 per ton. This allows the producer up to 9 months after harvest to market his crop.
2. Storage and handling fees paid by CCC for forfeited peanuts. This companion piece to the marketing loan ensures that the grower will not be under duress as the loan approaches maturity.
3. Separate payment limits. Peanuts are a unique crop requiring specialized machinery. The other predominant southern crop, cotton, also requires specialized machinery. The high capital outlay for production and harvesting these crops makes the separate payment limit essential to providing a sound safety net for the average producer.

Mr. Chairman and Members of the Committee, while the FPF recognizes the value of the existing peanut title as mentioned above, we feel that we must acknowledge one significant flaw. The financial safety net for peanuts is not for all peanut producers. As was stated in our opening comments, many peanut producers were not growing peanuts prior to the 2002 Farm Bill. South Carolina, East Georgia, Mississippi and North Central Florida each grew a limited number of peanut acres. Peanut base was created from the 1997–2001 production records.

As such, these regions are significantly under based. Peanut base today does not come close to representing the peanut acres being produced.

We ask and encourage the Committee to allocate peanut base to the producers in these areas through a base update of existing base using a 5 year average of acres grown in crop years 2011–2015. Alternatively, we would ask that a reference price be available to all producers based on their current acres planted.

An equitable safety net for all seems the best way to encourage young farmers to enter into agriculture production and to ensure that the nation has an adequate supply of peanuts at a fair, market based price.

Mr. Chairman, we appreciate the difficulty you have before you in writing title I of the 2018 Farm Bill, and look forward to the opportunity to discuss our proposal in greater detail.

DWIGHT STANSEL,

President, Florida Peanut Federation.

SUBMITTED QUESTIONS

Response Submitted by Ronnie Lee, Chairman, National Cotton Council

Question Submitted by Hon. Stacey E. Plaskett, a Delegate in Congress from Virgin Islands

Question. The Agriculture Department announced to Members of Congress last year that cottonseed will not be added to the list of crops eligible for support payments under the Agriculture Risk Coverage and Price Loss Coverage programs. There are scholars in agriculture policy with concerns that such a move could reignite a trade dispute with Brazil, which was settled in 2014. What is your response to them?

Answer. The Brazil cotton dispute focused on policies that have been either reformed or repealed. That dispute has been resolved and is no longer pending. Moreover, the analysis by the WTO dispute panel and Appellate Body concerning the U.S. as a cotton fiber producer and exporter were based on circumstances unique to the global market during the specific period of time under consideration. Those circumstances have changed significantly, and even the outcome of a challenge against the same policies could be different if brought today. Of course, again, those policies have been either reformed or repealed.

Nonetheless, any future WTO challenge against U.S. domestic support, whether for cotton fiber, cottonseed or one of the other current covered commodities, would proceed as a fact-based analysis of the specific policy and market circumstances affecting that commodity at the time the challenge is filed.

There is no reason to expect that cottonseed's eligibility as a covered commodity would justify a WTO challenge any more than another covered commodity. In fact, the U.S. exports on average less than 10 percent of annual cottonseed production and cottonseed is not heavily traded? in the global market. Most U.S. cottonseed is consumed domestically, so it is realistic that there would not be reason or cause for significant concern by other countries from a global trade and market perspective.

Response Submitted by Blake Gerard, Chairman, Board of Directors, USA Rice Farmers, Cape Giarardeau, MO; on behalf of USA Rice Federation

Questions Submitted by Hon. Ralph Lee Abraham, a Representative in Congress from Louisiana

Question 1. Mr. Gerard, Do you believe that crop insurance is the cornerstone of the farm safety net?

Answer. Congressman Abraham—While USA Rice is supportive of the role that crop insurance plays within the farm safety net, for rice it is not the cornerstone. The commodity title, specifically, Price Loss Coverage, is the cornerstone of our safety net because of its ability to provide certainty over multiple years for farmers. The program helps protect us from multi-year price declines and will continue to offer assistance, if needed, throughout the life of the farm bill. Historically, crop insurance has not offered adequate coverage for rice farmers as it does for other crops and other growing regions because of our predictable yields. We would like to continue to work with this Subcommittee to make improvements to crop insurance programs for rice farmers as we approach the next farm bill.

Question 2. Mr. Gerard, you mentioned in your written and verbal testimonies that USA Rice supports accelerating the timing that growers receive assistance. Could you further elaborate on why this would be helpful for rice farmers in particular?

Answer. Congressman Abraham—Currently, if triggered, we receive assistance through PLC in November for the prior crop year. For example, in November of 2016 we received PLC assistance for losses during the 2015 crop year, more than a year delayed. This delay makes it virtually impossible to predict my cash flow and makes accessing capital through my banker even more difficult. While we won't argue that the assistance we receive is effective, we think it would be more effective if we were able to access it sooner in the year to assist us in getting our bills paid on time. Anything the Subcommittee could do to accelerate the timing on at least a portion of our assistance would be much appreciated.

Question 3. Mr. Gerard, you mentioned in your written testimony that you believe AGI limits shouldn't exist at all when it comes to qualifying for title I programs, why is that?

Answer. Congressman Abraham—We are firm believers that what some folks consider a "high" adjusted gross income should not act as a limitation or barrier to re-

ceiving title I assistance when growers experience losses. A limit ignores economies of scale, the increasing need to achieve efficiencies in agricultural production, and the complexity of such operations. I firmly believe that larger than average farms shouldn't be punished for being profitable because at the end of the day, they're economic drivers in their small communities and if they fail, so do the communities. We ask that these arbitrary limits are not lowered even further or that the Subcommittee work to remove them all together.

Response Submitted by Robert Rynning, President, U.S. Canola Association; on behalf of National Sunflower Association

Question Submitted by Hon. Stacey E. Plaskett, a Delegate in Congress from Virgin Islands

Question. With approx. 25 percent of U.S. sunflower production going into export markets, which are important in the Caribbean region, what concerns do you have with the changes to our Administration's attitude toward international trade agreements?

Answer. The majority of U.S. sunflowers are produced in the region stretching from the Dakotas to the Panhandle of Texas, producing about 2.5 billion pounds of sunflower seed annually. Seventy-five percent of U.S. sunflower oil is consumed domestically with the remainder exported to Canada, Mexico and Japan. Exports are extremely important to confection sunflower seed producers as seed and kernel exports represent approximately ½ of the U.S. confection sunflower industry's production. The main markets for confection seed and kernel are Spain, Mexico, Canada and Middle East region. Due to the volume of sunflowers grown in the U.S. for export, continued market access and Free Trade Agreements (FTA) are vital for maintaining and growing U.S. exports markets. With limited ability to grow domestic markets sunflowers like other commodities rely on building new markets to sustain their industry. The National Sunflower Association supports maintaining our current FTA and stands ready to assist both Congress and the Administration in negotiating future trade deals.

THE NEXT FARM BILL

(CREDIT PROGRAMS)

TUESDAY, APRIL 4, 2017

HOUSE OF REPRESENTATIVES,
SUBCOMMITTEE ON COMMODITY EXCHANGES, ENERGY, AND CREDIT,
COMMITTEE ON AGRICULTURE,
Washington, D.C.

The Subcommittee met, pursuant to call, at 2:39 p.m., in Room 1300 of the Longworth House Office Building, Hon. Austin Scott of Georgia [Chairman of the Subcommittee] presiding.

Members present: Representatives Austin Scott of Georgia, Davis, Comer, Marshall, Faso, Conaway (*ex officio*), David Scott of Georgia, Kuster, Plaskett, and Soto.

Staff present: Caleb Crosswhite, John Weber, Josh Maxwell, Stephanie Addison, Anne Simmons, Lisa Shelton, Matthew MacKenzie, John Konya, and Carly Reedholm.

OPENING STATEMENT OF HON. AUSTIN SCOTT, A REPRESENTATIVE IN CONGRESS FROM GEORGIA

The CHAIRMAN. Good afternoon. This hearing of the Subcommittee on Commodity Exchanges, Energy, and Credit entitled, *The Next Farm Bill: Credit Programs,* will come to order.

I know my colleague, David Scott, will be joining us in just a minute, so I am going to go ahead with my opening statement and then I will turn it over to David for his.

Good afternoon, and welcome to today's Subcommittee hearing.

Over the last several weeks, the Agriculture Committee has held a series of hearings in preparation for crafting the next farm bill. Through this, the Committee has examined the overall farm economy, reviewed the safety and soundness of the Farm Credit System, and heard from a broad constituency on nearly all aspects of the farm bill.

These hearings have shown that producers nationwide have been experiencing a steady decline in net farm income over the past 4 years. Due to the current state of the rural economy, access to credit is even more essential to keeping farmers and ranchers producing a safe, affordable, and abundant supply of food and fiber for America and the rest of the world. Thankfully, we have a network of commercial and community banks, USDA loan programs, and the Farm Credit System that each play a crucial role in providing that access.

In addition to providing access to credit, we must ensure that the agricultural credit policies currently in place are working and providing the liquidity producers need to meet day-to-day operating expenses.

Given the downturn in the farm economy and the erosion of cash reserves, securing credit has been a challenge for many, but especially for producers just getting their start. These younger farmers have not been farming long enough to build up reserves for the lean times that inevitably come in production agriculture. The Agricultural Act of 2014 included several provisions to provide opportunities for young, beginning, and socially disadvantaged farmers, including permanent authorization of a microloan program and cooperative lending pilots to meet the needs of smaller projects. For these producers, the Farm Service Agency is the lender of first opportunity and has targeted funding for meeting their credit needs.

More generally, the farm bill authorizes direct and guaranteed loans through FSA that enable farmers and ranchers to gain or continue financing despite volatile commodity markets. The last farm bill eliminated term limits on guaranteed operating loans, which has given FSA and lenders the certainty they need to work together to graduate participants to commercial lending institutions.

However, many farmers and ranchers have been unable to access credit through traditional loans, and FSA loan requests have increased dramatically. According to USDA, as of September 2, 2016, FSA had a backlog of 1,900 approved but unfunded loans, projecting a 30 percent shortfall of funds for the end of the fiscal year.

As we approach farm bill deliberations, we need to prioritize access to credit. Along with a strong farm safety net, including crop insurance, credit availability is a tool we cannot afford to lose, and modern farming requires modern financing. I look forward to a great discussion on the program changes necessary to keep pace with the needs of producers of all sizes.

I thank each of our witnesses for being here today, and I look forward to hearing your testimony.

[The prepared statement of Mr. Austin Scott of Georgia follows:]

PREPARED STATEMENT OF HON. AUSTIN SCOTT, A REPRESENTATIVE IN CONGRESS FROM GEORGIA

Good afternoon, and welcome to today's Subcommittee hearing.

Over the past several weeks, the Agriculture Committee has held a series of hearings in preparation for crafting the next farm bill. Through this, the Committee has examined the overall farm economy, reviewed the safety and soundness of the Farm Credit System, and heard from a broad constituency on nearly all aspects of the farm bill.

These hearings have shown that producers nationwide have been experiencing a steady decline in net farm income over the past 4 years. Due to the current state of the rural economy, access to credit is even more essential to keeping farmers and ranchers producing a safe, affordable, and abundant supply of food and fiber for America and the rest of the world.

Thankfully we have a network of commercial and community banks, USDA loan programs, and the Farm Credit System that each play a crucial role in providing that access.

In addition to providing access to credit, we must ensure that the agricultural credit policies currently in place are working and providing the liquidity producers need to meet day-to-day operating expenses.

Given the downturn in the farm economy and the erosion of cash reserves, securing credit has been a challenge for many, but especially for producers just getting

their start. These younger farmers have not been farming long enough to build up reserves for the lean times that inevitably come in production agriculture. The Agricultural Act of 2014 included several provisions to provide opportunities for young, beginning, and socially disadvantaged farmers, including permanent authorization of a microloan program and cooperative lending pilots to meet the needs of smaller projects. For these producers, the Farm Service Agency (FSA) is a lender of first opportunity and has targeted funding for meeting their credit needs.

More generally, the farm bill authorizes direct and guaranteed loans through FSA that enable farmers and ranchers to gain or continue financing despite volatile commodity markets. The last farm bill eliminated term limits on guaranteed operating loans, which has given FSA and lenders the certainty they need to work together to graduate participants to commercial lending institutions.

However, many farmers and ranchers have been unable to access credit through traditional loans, and FSA loan requests have increased dramatically. According to USDA, as of September 2, 2016, FSA had a backlog of 1,900 approved but unfunded loans, projecting a 30% shortfall of funds for the end of the fiscal year.

As we approach farm bill deliberations, we need to prioritize access to credit. Along with a strong farm safety net—including crop insurance—credit availability is a tool we cannot afford to lose. Modern farming requires modern financing. I look forward to a great discussion on the program changes necessary to keep pace with the needs of producers of all sizes.

I thank each of our witnesses for being here today, and I look forward to hearing your testimony. I will now yield to the Ranking Member for any remarks he wishes to make.

The CHAIRMAN. I will now yield to my friend, and the Ranking Member, Mr. David Scott, for any remarks he wishes to make.

OPENING STATEMENT OF HON. DAVID SCOTT, A REPRESENTATIVE IN CONGRESS FROM GEORGIA

Mr. DAVID SCOTT OF GEORGIA. Thank you, Mr. Chairman. I echo everything that you said. This is a very critical hearing, as we approach the farm bill and make sure we have access to credit where we need it. And so I want to thank this panel of expert witnesses here today. I am pleased to be here to talk about the various issues that we have, in some cases taken far too lightly, and that is adequate credit for our farmers.

When times are good, as they were when we wrote the last farm bill, agriculture credit is an assumption, something taken for granted. But farmers are earning a living from the marketplace, and they simply do not need to leverage themselves as much as they otherwise would.

To tell you the truth, farmers are struggling and they need help. They are struggling under low prices, high inventories. We had a hearing here a few days ago where we talked about the amount of money it takes to invest in producing 1 acre of corn at $680, but the only money they could get back from producing that cost of $680 was $635. They are losing like $50 and $60 per acre every time they plant. That has to change.

Input costs are increasing. Land prices are not decreasing. And with the future of trade unclear at this time, the credit picture for farmers, and this is especially true for beginning farmers, African American farmers, it is not what it should be. And I am very concerned about the scarcity of young farmers. As I keep mentioning, the average age of our farmers is going up now, it is at 60 years of age, and we have young people wanting to get into farming but they don't have the capital. I mean just to get in, an acre of land costs you on an average about $5,000 or $6,000, and just to get a tractor, a decent one, I mean you have to pay $80,000 or $90,000.

It takes money. Access to capital is the biggest challenge beginning farmers face when looking to start their own operation.

And I want to single out Farm Credit and AgSouth for the great job that they are doing, and have been doing, for they have been pioneers on getting out in front and addressing this national crisis of helping beginning farmers with the financial wherewithal to keep our American economy strong, and especially where it counts the most; in agriculture, the food we eat, the clothes we wear, the energy we have, all is agriculture. And when we have this soaring age of average producers, manufacturers in agriculture in the 60 and 50 range, we would be not doing our duty if we do not bring attention to the necessity of making sure that our beginning farmers have that credit that they need.

So, Chairman, I look forward to this hearing, and I want to thank you very much for having it.

The CHAIRMAN. Thank you, Congressman Scott.

The chair would request that other Members submit their opening statements for the record so the witnesses may begin their testimony, and to ensure that there is ample time for questions.

Our first witness is Mr. Douglas Thiessen, CEO, Alabama Ag Credit, Montgomery, Alabama, on behalf of the Farm Credit System. Our next presenter will be Mr. Timothy Buzby, President and Chief Executive Officer, Federal Agricultural Mortgage Corporation, Washington, D.C. Then Mr. Nathan Franzen, President Ag Division, First Dakota National Bank, Yankton, South Dakota, on behalf of the American Bankers Association. Mr. Steve Handke, President and CEO of the Union State Bank of Everest, Everest, Kansas, on behalf of the Independent Community Bankers of America. Mr. Scott Marlow, Executive Director of the Rural Advancement Foundation International—USA, Pittsboro, North Carolina, on behalf of the National Sustainable Agriculture Coalition.

Gentlemen, before we start, the stop light in front of you, green means go, yellow means slow, and red means stop.

Mr. Thiessen, please begin when you are ready.

STATEMENT OF DOUGLAS THIESSEN, CHIEF EXECUTIVE OFFICER, ALABAMA AG CREDIT, MONTGOMERY, AL; ON BEHALF OF FARM CREDIT SYSTEM

Mr. THIESSEN. Mr. Chairman, Ranking Member Scott, and Members of the Subcommittee, thank you for allowing me to testify here today.

I will make one correction. Actually, my last name is Thiessen, and it is okay. But I am Doug Thiessen, I am the CEO of Alabama Ag Credit, headquartered in Montgomery, Alabama.

Alabama Ag Credit makes loans for farmers and ranchers in the lower 40 counties of Alabama. We are a cooperative, owned and governed by our 3,600 customer-owners, and have offices in Demopolis, Dothan, Enterprise, Montgomery, Monroeville, Opelika, Selma, Spanish Fort, and Tuscaloosa.

Alabama Ag Credit is part of the nationwide Farm Credit System. Farm Credit's mission is to support rural communities and agriculture with reliable, consistent credit and financial services today and tomorrow.

Since the full Agriculture Committee just last week held an oversight hearing on Farm Credit, my testimony today will focus on the coming farm bill, especially the credit title.

Last month, the House Agriculture Committee heard testimony from Federal Reserve Bank of Kansas City economist, Nathan Kauffman, who described the outlook for the U.S. farm economy as subdued, with producers realizing a modest increase in financial stress over the past year, and we agree with that. Commodity prices have fallen, while the cost of raising crops has remained high. Many rural crop farmers found profits elusive the past 3 years, and are projecting barely break-even or losses for the 2017 crop year. Cotton farmers are even harder hit, with many now facing multiple years of losses. Forecasters see little chance of a quick commodity price rebound, barring unexpected changes in commodity demand, supply, or both.

Fortunately, the industry balance sheet was mostly strong entering this cycle, after several years of profitable agricultural production. While we have seen debt-to-asset ratios increase slightly in the past 3 years, they remain nearly even with the 30 year average, and far below the levels seen in the mid-1980s. The trend, however, is concerning.

The current cycle in agriculture makes this Committee's work on the next farm bill crucial. We need a strong farm bill to provide a safety net against sustained market downturns. We pledge our support for this Committee's efforts to pass a strong farm bill next year.

We strongly support maintaining and improving the Federal Crop Insurance Program, along with the Agricultural Risk Coverage and Price Loss Coverage programs. These are the heart of a strong farm bill.

Farm Credit believes crop insurance must provide more coverage options for specialty crops, while continuing to serve its traditional commodities constituency. Without the risk protections provided by crop insurance, agricultural lenders would have to tighten underwriting standards, making it harder for farmers to plant crops and replace capital assets. Economic growth would slow, rural communities would suffer.

Robust export markets are vital to a strong economy. Thirteen percent of the U.S. corn crop, 50 percent of the soybean crop, ten percent of cattle produced are shipped overseas. American farmers and ranchers are the most efficient in the world, and will lead the effort to feed a planet of nine billion people by the year 2050.

As the farming economy continues to soften, programs like Farm Service Agency guaranteed and direct lending programs will continue to be important tools for producers, particularly those that are young and beginning.

Like others in the agricultural community, Farm Credit institutions are observing an increase in the costs associated with agricultural production. It is important that FSA direct and guaranteed loan programs have appropriate loan limits. That is why Farm Credit supports Representative Mike Bost's legislation that would increase the FSA guaranteed loan limit to $2½ million.

We recognize increasing the loan limits could have the unintended consequence of having fewer producers served by programs

because the current level of funding does not reflect the actual costs associated with production. To that end, we are also supporting the increase of the level of funding for both FSA guaranteed and direct loans.

Infrastructure that supports rural communities and links them to global markets has helped make the U.S. the unquestioned leader in agricultural production. Our deteriorating infrastructure threatens that leadership position.

Transportation infrastructure improvement is the most obvious need in rural communities, but not the only one. Highways, bridges, railways, locks and dams, harbors, port facilities all need major investments.

Critical needs exist in providing clean water for rural families. Expanding broadband to connect rural communities to the outside world, and enhancing the ability to supply affordable, reliable, secure power for rural America.

The scope of investment is staggering, and that is why Farm Credit helped organize the Rebuild Rural coalition of more than 200 organizations. And all of these organizations are emphatically behind the rebuilding of rural America.

While we don't necessarily have specific proposals, we are prepared to work with the Committee and our partners in the community banking sector to find ways all of us can contribute.

Thank you again for allowing us to testify here today, and I would be happy to answer any of your questions.

[The prepared statement of Mr. Thiessen follows:]

PREPARED STATEMENT OF DOUGLAS THIESSEN, CHIEF EXECUTIVE OFFICER, ALABAMA AG CREDIT, MONTGOMERY, AL; ON BEHALF OF FARM CREDIT SYSTEM

Mr. Chairman, Ranking Member Scott, and Members of the Subcommittee. Thank you for allowing me to testify today on behalf of the Farm Credit System. My name is Doug Thiessen, and I am CEO of Alabama Ag Credit, headquartered in Montgomery, Alabama.

Alabama Ag Credit makes loans for farmers and ranchers in 40 counties in southern Alabama. We are a cooperative, owned and governed by our 3,600 customer-owners, and have offices in Demopolis, Dothan, Enterprise, Montgomery, Monroeville, Opelika, Selma, Spanish Fort and Tuscaloosa.

Since the full Agriculture Committee just last week held an oversight hearing on Farm Credit, I will only briefly describe Farm Credit. My testimony today will focus on the coming farm bill, especially the credit title.

In particular, I'll talk about the importance of a robust farm safety net, the immediate need to expand our export markets, and the challenges many farmers have in securing an adequate workforce. I will also discuss specific credit title topics including the need to modernize FSA loan limits and the challenges rural communities face as they look to rebuilding their infrastructure.

Alabama Ag Credit is part of the nationwide Farm Credit System. Farm Credit's mission is to support rural communities and agriculture with reliable, consistent credit and financial services, today and tomorrow.

Farm Credit is a nationwide network of 77 borrower-owned lending institutions that share a critical mission assigned to them by Congress. These independent, privately owned institutions include four wholesale banks and 73 direct lending local associations, all of which are cooperatively owned by their customers: farmers, ranchers, farmer-owned cooperatives and other agribusinesses, rural utilities and others in rural America.

We have a specific mission, assigned to us by Congress more than 100 years ago, to ensure that farmers and rural communities have a reliable, consistent source of financing irrespective of cycles in the economy or vagaries of the financial markets. Hundred of thousands of farmers around the nation put together a farm operating plan this year knowing that Farm Credit has the financial strength and strong desire to finance that plan and to help them succeed.

There is no Federal funding in Farm Credit. Instead, the four Farm Credit System banks together own the Federal Farm Credit Banks Funding Corporation that markets to the investing public the debt securities that fund the lending operations of all Farm Credit institutions. Diversification of lending portfolios is a source of Farm Credit's financial strength. Through diversification of our lending—by geography, industry, and loan size—Farm Credit manages risk and provides a buffer against the cyclical nature of the industries we serve.

Farm Credit makes extraordinary efforts to support young, beginning, and small (YBS) farmers and ranchers. Each year, the Farm Credit Administration compiles data on Farm Credit YBS lending and reports it to Congress. Based on reports from the Federal Farm Credit Banks Funding Corporation and the Farm Credit Administration:

- Farm Credit made more than 64,000 loans to young producers (under age 36) in 2016 for a total of $9.3 billion. Those are actual new loans originated in 2016. When Farm Credit first began reporting this specific information in 2001, new loan levels were at 33,000 loans to young producers for $3.1 billion.
- Farm Credit made more than 81,000 loans to beginning producers (10 years or less experience) for $12.7 billion in 2016. This is double the number and triple the dollar amount of beginning farmer loans made in 2001 when Farm Credit made 37,000 loans for $4.2 billion to beginning farmers.
- Farm Credit institutions made more than 155,000 loans to small producers (less than $250,000 in annual sales) for $12.2 billion in 2016, a substantial increase from the 114,000 loans for $7.6 billion made in 2001.

To put Farm Credit's lending to small farmers and ranchers into perspective, at year-end 2016 Farm Credit had more than one million loans of all kinds outstanding, and slightly more than 500,000 of those loans outstanding were to small farmers and ranchers.

The numbers above cannot be combined. A single loan to a 25 year old rancher in her third year of ranching with annual sales of $100,000 could be counted in the young, beginning, and small categories. We report this way for two reasons: our regulator requires it and, more importantly, it is the most accurate portrayal of who we serve.

Farm Credit institutions go beyond just providing loans to YBS farmers, in many cases offering special incentives, education, and other support to these producers. Farm Credit organizations nationwide provide training and host seminars on topics such as intergenerational transfer of family farms, risk management techniques, and establishing and maintaining effective business plans.

We engage across the spectrum with those entering agriculture, whether they are focused on conventional, organic, sustainable, local food-related operations, direct-to-retail, or other emerging business models.

As I mentioned earlier, Farm Credit is a customer-owned cooperative. The net income we generate can be used in only two ways: retained within a Farm Credit institution as capital to build financial strength that ensures continued lending, OR passed to customer-owners by way of cooperative dividends, which effectively lowers the cost of borrowing for our customers. For 2016, Alabama Ag Credit returned ½ of its earnings to our customers. That was $7.8 million we returned to customers this spring and was tremendous boost to the local economy. We retained the other ½ to strengthen the organization and ensure we can continue meeting the needs of Alabama farm families.

Farm Credit's mission is as vital today as it's ever been. Farm Credit supports rural communities and agriculture with reliable, consistent credit and financial services, today and tomorrow. Farm Credit's mission is to help these areas grow and thrive by financing critical infrastructure and communication services and providing farmers and agribusinesses with the capital they need to make their businesses successful. Because a steady flow of credit means more jobs and economic growth, Farm Credit is also helping ensure the vibrancy of communities throughout rural America.

Farm Credit's mission extends well beyond the farmgate. Our mission includes financing for farmer-owned cooperatives and other agribusinesses that farmers depend on to succeed. Farm Credit has financed over $5 billion in exports of U.S. agricultural products. We make more than $7 billion in loans for families to buy homes in very rural areas.

Rural infrastructure is also a critical part of Farm Credit's mission. Farm Credit finances more than $27 billion in rural infrastructure, including rural electric coops, rural water systems, and rural telecommunications and broadband providers. These loans improve the quality of life in our rural communities, providing clean

drinking water, broadband for our schools, and reliable energy for rural families and businesses.

Last month, this Committee heard testimony from Federal Reserve Bank of Kansas City economist Nathan Kauffman, who described the outlook for the U.S. farm economy as "subdued," with producers realizing a modest increase in financial stress over the past year. We agree.

Commodity prices have fallen while the cost of raising crops has remained high. Many row crop farmers found profits elusive the past 3 years and are projecting barely break-even or losses for the 2017 crop year. Cotton farmers are even harder hit, with many now facing multiple years of losses. Forecasters see little chance of a quick commodity price rebound barring unexpected changes in commodity demand, supply, or both.

Fortunately, the industry balance sheet was mostly strong entering this cycle after several years of favorable profits in agriculture. While we have seen debt-to-asset ratios increase slightly in the past 3 years, they remain nearly even with the 30 year average and far below the levels seen in the mid-1980s. The trend, however, is concerning.

Depending on geography and land type, the impact of the downturn on farmland values has been mixed. As farmland values rose sharply in the past decade, particularly in areas that produce cash grains, farmers and lenders both became increasingly conservative in leveraging real estate assets. Farmers bought increasingly high-cost ground but largely were using cash generated from higher commodity prices and borrowing less on a percentage basis. For the most part, Farm Credit lenders and commercial banks were unwilling to loan much more than 50 to 60 percent of farmland values in areas where prices had jumped most aggressively. Some even put hard caps on the dollar amount loaned per acre.

Crop input prices, including cash rent, have not yet fallen in step with commodity price declines, squeezing profitability at the individual farm level. While we anticipate adjustments will come, it remains difficult to accurately predict timing. Perhaps the best news for farmers is that interest rates remain historically low, another key difference compared to the downturn in the 1980s. While forecasters predict slightly rising rates over the coming months, those small increases start from an extremely low level. Debt costs are expected to remain low by historical standards.

Similar to the producers we serve, Farm Credit built financial strength in anticipation of this challenging economic cycle. We have been fulfilling our mission for more than 100 years and have deep experience in the inevitable cycles of agriculture. Like most in agriculture, we could not predict with accuracy when this cycle would begin or end. But we knew it was coming, and our institutions prepared for it. We built capital. We loaned conservatively. Today, Farm Credit is financially the strongest it has ever been and is prepared to use that strength to support our customers and fulfill our mission.

We continue to see modest loan growth in both our agricultural and rural infrastructure loan portfolios. The credit quality of our loan portfolio remains high as our members continue to meet their obligations. Credit quality in Farm Credit loan portfolios hit all-time highs during the years of high commodity prices but has now fallen back in line with historical averages. While we anticipate some deterioration in our loan quality as this cycle continues, we are committed to working with our customers.

Our philosophy on credit today is this: we know our customers well, understand and respond to their needs, and work cooperatively with them to analyze and structure our transactions to give them the best chance to succeed.

We have been working for some time to help our customer-owners plan for the current environment. Many of our institutions, including my own, have allocated more resources specifically to work with producers most impacted by lower commodity prices. We are proactively reaching out and helping our customers understand their financial position so they can work through business plans and make good decisions that, hopefully, lead to the most positive outcome for them. We are restructuring debt to spread out payments and are providing other loan structuring options when necessary and appropriate. We are working to make sure that our members have the best information to help them manage costs and strengthen their risk-bearing capacity.

As price forecasts stay low, most producers' only option is to very closely manage the cost structure of their operations. We are seeing many producers eliminate nonessential expenses, scale back expansion plans, and delay new equipment purchases. This is also a time when supporting key tools such as crop insurance, the current farm bill, the renewable fuels standard, and promoting strong export markets has

never been more important to maintaining the viability of the industry. Passage of a strong farm bill next year is essential.

Farm Credit is committed to remaining reliable and supportive of rural communities and agriculture, just as we have for the last 100 years. That means we are staying abreast of industry cycles, identifying risks, and consulting with our customers about them. We know we must be patient and allow time for adjustments, while potentially exploring enhanced controls on terms, collateral, and conditions as appropriate. We continue to have a positive long-term outlook for U.S. agriculture, with the knowledge that Farm Credit's financial strength and expertise position us well to support our customer-owners through industry cycles.

We understand that being dependable does not mean that we can save every operation. It does not mean that we are able to ignore good credit judgment or make credit decisions that are not constructive for the customer-owner or us as a lender. It does not mean that we will undertake undue risk or make all of the adjustments. We and our customer-owners will both need to make adjustments—and we are working hard to take those steps together.

Farm Credit is fortunate that our independent Federal regulator, the Farm Credit Administration (FCA), has deep knowledge of agriculture and considerable experience in the inevitable business cycles our members face. Their ability to look holistically at a customer's operation and understand an individual customer's risk-bearing capacity and equity position will, in many cases, determine whether we can continue with that customer. If the FCA is overly restrictive in its approach, it might tie our hands as we work to help members through this cycle. We are optimistic about the FCA's continued good judgment.

U.S. Farmers and Ranchers Need a Strong Farm Bill

The current cycle in agriculture makes this Committee's work on the next farm bill crucial. We need a strong farm bill to provide a safety net against sustained market downturns. We pledge our support for this Committee's efforts to pass a strong farm bill next year.

We strongly support maintaining and improving the Federal Crop Insurance Program along with Agricultural Risk Coverage and Price Loss Coverage programs. These are the heart of a strong farm bill.

Congress created the crop insurance system through the Federal Crop Insurance Corporation (FCIC) to promote the economic stability of agriculture. A successful public-private partnership, crop insurance is federally regulated and delivered by the private sector to help farmers maintain the country's safe, affordable food supply. Crop insurance is food insurance.

Crop insurance protects farmers and ranchers against financial losses caused by natural disasters (hail, drought, freezes, floods, fire, insects, disease and wildlife) and market disruptions resulting in lower prices for agricultural products. In 2015, USDA's 1.2 million Federal crop insurance policies covered 120 different crops grown on approximately 300 million acres with an insured value of more than $102 billion.

A viable Federal Crop Insurance Program is vital to the flow of credit to farmers and ranchers, particularly young and beginning farmers and ranchers who typically have less collateral and equity.

Given the trend in recent years of lower prices for commodities and declining farmer net income, it is critical for policy makers to maintain a strong farm policy that includes affordable crop insurance.

Participation by producers of all types—small and large—is vital to the safety and actuarial soundness of the crop insurance program. Impairments to the program, such as shrinking the risk pool, could make crop insurance unavailable or unaffordable to producers.

Farm Credit believes crop insurance must provide more coverage options for specialty crops, while continuing to serve its traditional commodities constituency.

Without the risk protections provided by crop insurance, agricultural lenders would have to tighten underwriting standards. The consequence of tighter credit would make it harder for farmers to plant crops and replace capital assets. Economic growth would slow, and rural communities would suffer.

Export Markets Are Vital

Robust export markets are vital to a strong farm economy. Thirteen percent of the U.S. corn crop, nearly 50 percent of the soybean crop, ten percent of the cattle produced in the U.S. Are shipped overseas. American farmers and ranchers are the most efficient in the world and will lead the effort to feed a planet of nine billion people by the year 2050.

We strongly encourage continued efforts to open markets for U.S. farm products. Our producers can compete with any in the world but trade barriers in other countries often tilt the playing field against them. Farm Credit works hard to support our farmers by financing more than $5 billion in exports of U.S. agricultural products. Our private export financing for U.S. exports often competes against financing programs backed by foreign governments. The primary U.S. Government export financing program, GSM–102, has been handcuffed by World Trade Organization rulings, putting U.S. farmers at a disadvantage in some markets.

U.S. Farms Need a Stable Workforce

Farming in America is a growth industry and a world-class example of something America does better than anyone else. The many agricultural products we produce, harvest and process comprise one of the few sectors of our economy in which the U.S. has a trade surplus with the rest of the world.

However, the economic health of food and fiber producers, and the rural communities in which they live, is threatened by the lack of a reliable, stable and legal workforce. Our farmers face growing shortages of legally authorized and experienced workers each year. Jobs in agriculture are physically demanding, conducted in all seasons and are often transitory. This shortage of labor negatively impacts our economic competitiveness, local economies, and jobs. Reforms are necessary to address the agricultural labor shortage.

A common misconception is that agriculture is a low wage paying industry. However, according to the U.S. Department of Agriculture, wages for U.S. fieldworkers rose 36 percent over the past decade through the conclusion of last year's harvest in October, compared with 27 percent wage increases for non-farm employees. Not only is agriculture competitive with other industries in terms of wages, many U.S. jobs are created for each farmworker hired, and those U.S. jobs tend to be year-round jobs. In fact, every farmworker engaged in high-value labor intensive crop and livestock production sustains two to three off-farm but farm-dependent jobs. The activities that occur on domestic farms support not only farmworkers, but also an entire supply chain of transportation providers, input suppliers, processors and consumer retail functions.

Many of those American jobs will be lost if access to agriculture's current workforce is jeopardized without providing a mechanism for future legal workers. The economic health of many rural economies is largely dependent on a strong agriculture sector. Yet the loss of the foreign-born workforce in rural communities will have the same economic impact on those communities as factories closing and moving to other countries.

Farm Credit strongly supports legislative and regulatory proposals to create a workable agricultural guest worker program which assures both seasonal and year-round reliable sources of agricultural workers to support the needs of all of agriculture, and that provides a means by which experienced farm workers can remain on the farm.

Farm Service Agency Lending

As the farm economy continues to soften, programs like Farm Service Agency (FSA) guaranteed and direct lending programs will continue to be important tools for producers, particularly those who are young and beginning. The FSA guaranteed loan programs provide Farm Credit institutions additional flexibility to help customers survive a potentially extended economic downturn. Farm Credit participation in FSA's guaranteed loan program totals $5.1 billion and represents about ⅓ of outstanding FSA guarantees.

In addition, like others in the agriculture community, Farm Credit institutions are observing an increase in the costs associated with agriculture production. The cost of land, equipment and inputs have all increased in the past several years. As producers look to begin agricultural businesses, grow existing businesses or simply sustain their current operations through this downturn, it is important that FSA direct and guarantee loan programs have appropriate loan limits. That is why Farm Credit supports Rep. Mike Bost's BALE Act, H.R. 831, which among other things, would increase the FSA guaranteed loan limit to $2.5 million. This update to the current FSA loan limits reflects the increased cost of agriculture and will allow Farm Credit and other lenders to better partner with USDA to provide needed credit to producers.

Finally, Farm Credit recognizes that increasing the loan limits could have the unintended consequence of having fewer producers served because by these programs because the current level of funding does not reflect the actual costs associated with agriculture production and the need for larger loan limits. To that end, we also support increasing the level of funding for both FSA guaranteed and direct loans.

Rebuilding Rural Infrastructure

American agriculture truly feeds the world and creates millions of jobs for U.S. workers. Our nation's ability to produce food and fiber and transport it efficiently across the globe is a critical factor in U.S. competitiveness internationally. Infrastructure that supports rural communities and links them to global markets has helped make the U.S. the unquestioned leader in agricultural production. Our deteriorating infrastructure threatens that leadership position.

Transportation infrastructure improvement is the most obvious need in rural communities, but not the only one. Highways, bridges, railways, locks and dams, harbors and port facilities all need major investment if we are to continue efficiently getting our agricultural products to market. For example, ¼ of our road system's bridges require significant repair, or cannot efficiently handle today's traffic and many of the 240 locks and dams along the inland waterways are in need of modernization. In addition, critical needs exist in providing clean water for rural families, expanding broadband to connect rural communities to the outside world, and enhancing the ability to supply affordable, reliable and secure power for the rural economy.

The scope of the investment needed is staggering. The Federal Government must continue to play an important role in providing funding. Moreover, Federal investments should increase, but Federal resources likely cannot fill the need entirely. Creative solutions for raising a portion of the funds necessary to close the rural infrastructure gap include combining pair Federal investments, state and local government investments and private sources of capital hold promise.

That is why Farm Credit helped organize the Rebuild Rural coalition of more than 200 organizations representing agricultural producers, rural businesses, rural communities and rural families to advocate for aggressive efforts to meet the unique infrastructure needs of rural communities and agriculture. We have asked President Trump to specifically address rural infrastructure needs as part of his Administration's comprehensive infrastructure renewal efforts. We have been very encouraged by our coalition's discussions with White House and USDA officials who seem to understand rural needs are indicate a willingness to seek creative solutions to the infrastructure problems in rural communities.

We look forward to working with the Administration, this Committee, and others in Congress as the infrastructure initiative takes shape over the next few months.

Rural infrastructure is a critical part of Farm Credit's mission. Our institutions finance more than $27 billion in rural infrastructure, including rural electric co-ops, rural water systems, and rural telecommunications and broadband providers. These loans improve the quality of life in our rural communities, providing clean drinking water, broadband for our schools, and reliable energy for rural families and businesses.

Farm Credit has also partnered with community banks and USDA Community Facilities program to finance needed improvements to vital infrastructure projects, including walk-in health clinics, critical access hospitals, and senior care facilities in rural towns. These projects are just examples of how Farm Credit can do more to support rural communities.

Farm Credit's unique cooperative structure means that the customer-owners who sit on our board of directors are living, working, and raising their families in rural communities. They are deeply invested in the success of those communities and are interested in finding more ways for Farm Credit to contribute to that success.

Farm Credit reverses the normal flow of capital, raising money in urban financial centers and bringing it to rural communities. We believe we can play an even bigger role in rural development, revitalizing rural infrastructure, strengthening the rural economy, and creating good jobs for rural families. While we don't necessarily have specific proposals at this point, we are prepared to work with the Committee and our partners in the community banking sector to find ways that all of us can contribute more to the vitality and success of our rural communities.

Thank you again for allowing us to testify here today. We look forward to working with the Committee on the farm bill and I would be pleased to answer any questions Subcommittee Members might have.

The CHAIRMAN. Thank you, Mr. Thiessen.

Mr. Buzby.

STATEMENT OF TIMOTHY L. BUZBY, PRESIDENT AND CHIEF EXECUTIVE OFFICER, FEDERAL AGRICULTURAL MORTGAGE CORPORATION, WASHINGTON, D.C.

Mr. BUZBY. Chairman Scott, Ranking Member Scott, and distinguished Members of the Subcommittee, thank you for your invitation to appear today to testify on behalf of the Federal Agricultural Mortgage Corporation, commonly known as Farmer Mac.

My name is Tim Buzby, and I am the President and CEO of Farmer Mac. You have already seen my written testimony, so I would like to take this time to provide you with a summary of the testimony, and of Farmer Mac in general.

In response to the financial crisis that gripped agriculture and farm lenders in the 1980s, this Committee and Congress created Farmer Mac as a new source of liquidity and long-term credit for agricultural lenders so that they may provide your constituents with low interest rates on favorable terms, tailored to meet their financing needs and keep pace with farming's capital-intensive environment.

Farmer Mac's role as the secondary market for rural America: We work closely with lenders of all sizes, including commercial and community banks, Farm Credit System institutions, and rural utility cooperative lenders, to offer more financial choices to their rural customers. Since Farmer Mac's creation in 1988, we have helped fund loans to over 76,000 rural borrowers in all 50 states, which has resulted in more than $43 billion of investments in rural America.

These indicators of mission fulfillment have been achieved while Farmer Mac has also demonstrated strong financial performance, and safe and sound operations. We consistently exceed all applicable regulatory capital requirements, and are well capitalized with more than $600 million in core capital, and a Tier 1 capital ratio of 12.7 percent as of December 31. Our low historic credit losses, which equate to about one basis point per year, demonstrates our longstanding focus on sound underwriting and high credit quality. Truly, Congress' vision of creating a vibrant secondary market that benefits rural America has been realized.

I understand that the Subcommittee is interested in discussing ways to improve access to credit for agricultural and rural communities. Farmer Mac was created by Congress to do exactly that.

We have remained steadfast in seeking to fulfill this important mission, however, as stated in my written testimony, some policies related to the rural finance have not kept pace with the way agricultural production and operations have evolved over time, including several provisions of Farmer Mac's charter. For example, the 1,000 Acre Rule is having a limiting effect on the liquidity, capital, and risk management tools that Farmer Mac can provide directly to rural lenders, and indirectly to America's farmers and ranchers.

Under our charter, we are limited in the amount of the loan that we can purchase or guarantee if the land securing the loan is more than 1,000 acres. We have heard from many customers who believe that this restriction is counterintuitive and inconsistent with Farmer Mac's mission of increasing the availability of credit, because it limits the amount of loans for larger operations that generally have

a significant need for capital, while smaller operations with generally lower capital needs have no statutory loan limit.

For the reasons described in more detail in my written testimony, we believe that the elimination of the 1,000 Acre Rule would better reflect current farm ownership sizes and the capital needs of agricultural producers. We request Congress alleviate the adverse effects of this restriction by removing this specific provision in our charter, which will help all types of lenders who request Farmer Mac to purchase or guarantee farm and ranch loans.

Farmer Mac will continue to provide a stable source of liquidity, capital, and risk management tools to help rural lenders meet the evolving and varied financing needs of their customers and your constituents, both in periods of prosperity and in market downturns. With a diverse array of lending products and capital sources, we will remain resolute today and always in our commitment to bringing new, low-cost capital to the agricultural and rural communities that we are honored to serve.

Thank you for this opportunity. I would be happy to answer any questions you may have.

[The prepared statement of Mr. Buzby follows:]

PREPARED STATEMENT OF TIMOTHY L. BUZBY, PRESIDENT AND CHIEF EXECUTIVE OFFICER, FEDERAL AGRICULTURAL MORTGAGE CORPORATION, WASHINGTON, D.C.

Introduction

Chairman Scott, Ranking Member Scott, and distinguished Members of the Subcommittee, thank you for your invitation to appear today to testify on behalf of the Federal Agricultural Mortgage Corporation, which is commonly known as "Farmer Mac." My name is Tim Buzby, and I am the President and Chief Executive Officer of Farmer Mac. I appreciate the opportunity to appear before your Subcommittee today to provide some input on the next farm bill.

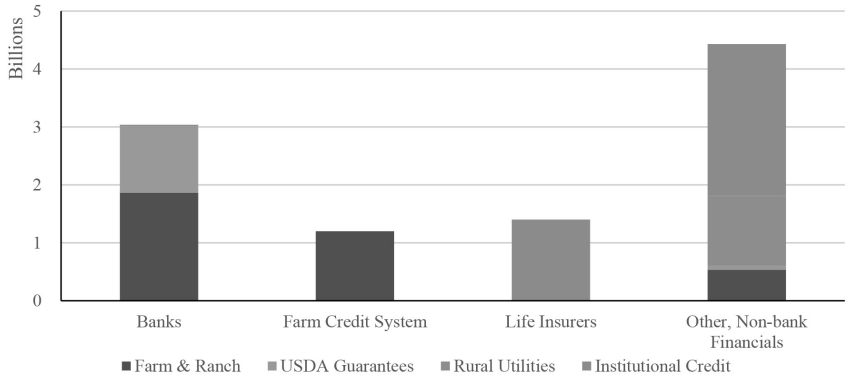
Farmer Mac

Farmer Mac's position at the intersection of Main Street and Wall Street allows us to provide a unique perspective about the current environment for agricultural credit and what might be beneficial to the secondary market in ensuring a vibrant credit environment. Congress has charged Farmer Mac with the mission of providing a secondary market for a variety of loans made to borrowers in rural America, including mortgage loans secured by agricultural real estate, loans made to rural utility cooperatives, and certain loans guaranteed by the U.S. Department of Agriculture (USDA). This secondary market increases the availability of long-term credit at stable interest rates to America's rural communities, including farmers, ranchers, rural residents, and rural utility cooperatives, and provides those borrowers with the benefits of capital markets pricing and product innovation. In Farmer Mac's role as the secondary market for rural America, we work closely with lenders of all sizes, including commercial and community banks, Farm Credit System institutions, credit unions, rural utility cooperative lenders, and insurance companies to offer more financial choices to their rural customers.

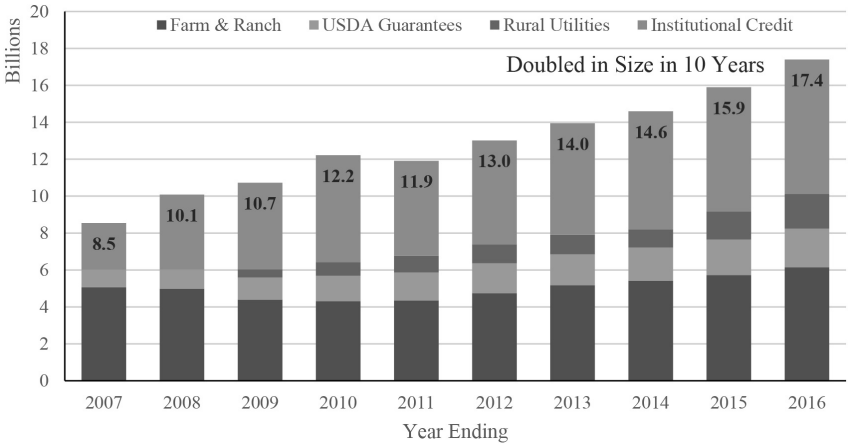
For nearly thirty years, Farmer Mac has played a vital role in financing rural America by helping America's rural lenders meet the evolving needs of their customers, bringing the financial strength, flexibility, and innovation of the secondary market for agriculture right to their customers' farms and ranches. Since Farmer Mac's creation in 1988, over 1,400 lenders across the nation have used Farmer Mac's programs and solutions to increase liquidity and lending capacity while better managing capital, interest rate risk, and credit risk. This translates into Farmer Mac having helped fund loans to over 76,000 rural borrowers in all 50 states for more than $43 billion of investments in rural America since 1988. By working with such a vast network of rural lenders, Farmer Mac introduces more competition, more types of loan products, and efficient funding into the marketplace, which helps your rural constituents receive low interest rates on favorable terms tailored to meet their financing needs and keep pace with today's capital-intensive environment. Farmer Mac has also been successful in encouraging the inclusion of loans for small farms and family farmers in the agricultural mortgage secondary market. In 2016,

46% of loans in the Farm & Ranch line of business were to small farms (less than $350,000 in annual gross farm income) and 96% of loans in the Farm & Ranch and USDA Guarantees lines of business were to family farming operations. The two figures below provide more information about Farmer Mac's growing importance in financing rural America.

Farmer Mac's New Business Volume for the Last 3 Years (2014–2016) by Line of Business and Customer Type



Farmer Mac's Total Outstanding Business Volume by Line of Business



Farmer Mac grew out of the financial crisis that gripped agriculture and farm lenders during the mid-1980s. As this Committee and Congress contemplated solutions to this crisis, it became clear that the rural credit market would benefit from a new source of liquidity and long-term credit that could help provide new risk management tools to lenders and the necessary capital and liquidity demanded by the producers of agricultural commodities and products. That vision and the related solution resulted in the creation of Farmer Mac.

The agricultural credit conditions in the 1980s that led to the creation of Farmer Mac are somewhat different compared to current conditions, but they are similar in many ways. Currently, many producers in several sectors of the agricultural economy have seen significant declines in income and experienced other challenges for the past few years. The existence of a strong, vibrant secondary market continues to be essential because it can still be difficult to attract capital to invest in rural America like it was when Farmer Mac was created. Simply put, rates of return in rural communities are generally not as high as in urban areas, so obtaining capital to meet the lending needs of rural America can be challenging and is often more expensive. Congress has always responded to the unique challenges faced by rural America, which has resulted in tremendous improvements in the lives of your

constituents and Americans in general. Rural Americans provide the food and fiber that all Americans and much of the world relies upon. The legislative initiatives that your predecessors on the Agriculture Committee supported to increase the availability of credit in rural America, such as the Farm Credit Act, the Rural Electrification Act, and the creation of Farmer Mac, were designed to ensure that we as a nation can grow and prosper. As times and business practices change, so can some of these programs to better reflect the current realities of rural finance and the needs of rural borrowers.

Proposals That Could Enhance Farmer Mac's Financing of Rural America

U.S. agriculture represents one of the greatest success stories in America's modern history. In the span of only 50 years, the United States has more than doubled its total agricultural production while substantially increasing efficiency. The share of disposable income spent on food in the country is only about 9.8%—a number that the world at large strives toward. This has been achieved while the share of the population directly involved in agriculture has shrunk to such historically low numbers that each commercial scale farm is responsible for feeding over 200 people. However, although actual agricultural production and operations have evolved over time, some policies related to rural finance enacted through legislation, including several provisions of Farmer Mac's charter, have not kept up with the changing landscape.

"1,000 Acre Rule"

On a near daily basis, Farmer Mac receives requests from lenders of all types to either purchase or provide credit protection for agricultural mortgage loans secured by parcels of land larger than 1,000 acres. Unfortunately, we must reject many of those requests because our charter limits our activities related to those loans unless the loan amount is equal to or less than $12.6 million (an amount that is adjusted annually for inflation). We have heard from many customers who believe that this "1,000 acre rule" is counterintuitive and inconsistent with Farmer Mac's mission of increasing the availability of credit in rural America because it limits the amount of loans for larger operations that generally have a significant need for capital, while smaller operations with generally lower capital needs have no statutory loan limit.

The legislative history of Farmer Mac's charter does not explain the policy reason for this limitation on Farmer Mac's authority to offer the benefits of a secondary market to the lenders and borrowers on loans secured by more than 1,000 acres. However, whatever the original purpose of the limitation was, the most likely reasons for the 1,000 acre rule's inclusion in Farmer Mac's charter no longer apply to the same degree as when Farmer Mac was created and therefore should be removed for the following reasons:

- If the 1,000 acre rule was originally designed as a means of mitigating risk to ensure the safety and soundness of a start-up operation, Farmer Mac now has a demonstrated track record of sustained strong financial performance, sound underwriting, a diversified portfolio, and minimal credit losses that argue against the need for the limitation. Indeed, Farmer Mac is well-positioned to manage the risks associated with higher loan limits for larger operations, with a Tier 1 capital ratio of 12.7% as of December 31, 2016.
- If the original intent of the 1,000 acre rule was to limit the benefits of Farmer Mac's programs available to large farms owned by passive investors outside of rural America, the rule is now preventing benefits from flowing to many large operations owned and operated by individuals and families. Outside and passive investors have not come to dominate agricultural production as once feared, as family farms continue to dominate farm production. Family farms currently make up approximately 97% of all farms, 90% of land operated, and 85% of the value of agricultural production, so most of the tracts of agricultural real estate of more than 1,000 acres are owned by families.
- If the original intent of the 1,000 acre rule was to limit the benefits of Farmer Mac's programs available to very large operations, the limitation is now also preventing benefits from flowing to even mid-size operations because the acreage limit was not indexed to increase over time to reflect changes in the agricultural economy and production practices. When Congress created Farmer Mac, ½ of agricultural production occurred on farms with 589 acres or less. Today, based on USDA's most recent Agricultural Census in 2012, the midpoint cropland farm size has increased to 1,200 acres, meaning that more than ½ of agricultural production takes place in operations that could be adversely affected by the 1,000 acre rule. Elimination of this limitation in Farmer Mac's charter

would better reflect current farm ownership sizes and the capital needs of agricultural producers.

The 1,000 acre rule constraint on Farmer Mac's activities is having a detrimental effect on the liquidity, capital, and risk management tools that Farmer Mac can provide directly to rural lenders and the pricing and product benefits that Farmer Mac can provide indirectly to America's farmers and ranchers. This negative effect applies not only to Farmer Mac's loan purchase and credit protection products, but also to its institutional credit products designed to provide efficient, low-cost wholesale funding advances to rural lenders. Therefore, the elimination of the 1,000 acre rule would also increase the eligible collateral that would facilitate these wholesale funding advances. Congress can alleviate the negative effects of the antiquated 1,000 acre rule by eliminating this limitation in Farmer Mac's charter altogether. This would allow Farmer Mac's board of directors to set overall loan limits without regard to acreage as a part of the company's overall risk management, subject to appropriate oversight by Farmer Mac's independent safety and soundness regulator—the Farm Credit Administration.

Eligible Borrowers

Another simple proposed change to Farmer Mac's charter that would reflect the evolution and current realities of agricultural lending and better serve the needs of rural borrowers is to expand the definition of the borrowers who are eligible to have their loans participate in Farmer Mac's programs. Under Farmer Mac's charter, the company's secondary market activities related to Farm & Ranch loans are limited to the obligations of individuals or private corporations or partnerships. This limited definition of the eligible borrowers for qualified loans does not contemplate other borrowing and land ownership vehicles that have become much more common over time, including family trusts and other business entities and family farming ownership structures such as limited liability companies. In particular, the family trust structure has become a much more common way to own agricultural land and to borrow money secured by that land. Including trusts and other business entities as eligible borrowers for loans included in Farmer Mac's Farm & Ranch line of business would simply recognize the reality that these types of ownership vehicles are widely-used structures now, unlike in 1988 when Farmer Mac was created, and would increase Farmer Mac's ability to serve America's farmers and ranchers.

USDA Guaranteed Loans

Congress revised Farmer Mac's charter in 1990 to authorize Farmer Mac to purchase the guaranteed portions of loans guaranteed by the Secretary of Agriculture under the Consolidated Farm and Rural Development Act (the "ConAct"). The business permitted by this expanded operating authority is known as Farmer Mac's USDA Guarantees line of business, which offers lenders ready access to competitive funding rates available in the capital markets. Lenders can in turn pass those benefits on to borrowers in the form of longer-term rates, lower rates, or both.

At the time of the creation of Farmer Mac's USDA Guarantees line of business, it appears that Congress used the ConAct as a proxy for all the USDA guarantee programs that could benefit rural America and did not envision rural-related loans that USDA might one day guarantee under authority other than the ConAct. Since 1990, USDA has continued to expand the programs it offers to qualified rural borrowers through various programs. However, with Farmer Mac's limited authorities to purchase only the guaranteed portions of loans guaranteed under the ConAct—primarily Farm Service Agency (FSA) loans, Community Facility (CF) loans, and Business & Industry (B&I) loans—Farmer Mac has been unable to provide liquidity to lenders making loans under new and other longstanding non-ConAct USDA programs that benefit rural America. Many rural lenders want to make additional USDA guaranteed loans but need a secondary market for the liquidity it provides. USDA could expand service, lending, and liquidity to rural America through Farmer Mac's secondary market if Congress amended Farmer Mac's charter to authorize the purchase or securitization of the portion of *any* loan guaranteed by USDA. This expanded authorization would include USDA's guarantee programs related to agricultural exports, rural housing, rural utilities, and renewable energy, all of which have the potential to benefit rural America. As with the other two proposed charter updates described above, all types of lenders who use Farmer Mac would both benefit from these proposed changes.

Crop Insurance

As the Committee begins its preparation for the next farm bill, I would also like to point out the importance of Federal crop insurance programs to the agricultural lending community and express Farmer Mac's strong support for this essential part

of the safety net for agriculture. Crop insurance has become the cornerstone of farmers' risk management activities, allowing a very capital intensive industry to make production decisions that include considerable external risk from weather and market vagaries, and achieve the remarkable efficiency and productivity noted earlier. Some key points about the Federal crop insurance programs:

- Crop insurance has undergone a modernization and scaling that parallels production agriculture with total program liability that has grown from about 1.1 million policies with $840 million in premium and $12.8 billion in liability in 1990 to over 2.2 million policies with $9.3 billion in premium and over $100 billion in liability in 2016.
- Crop insurance programs now cover virtually all the commercially important acreage of major row crops, and there are now nearly 200 total different crop policies.
- Farmers' use of crop insurance has moved dramatically toward higher coverage level elections and toward revenue products, further signaling the successful design and deployment of the programs.

The effects of crop insurance are profound both for insured producers and for those beyond the farmgate. For example, in 2012 the eastern Corn Belt experienced a historic drought, and crop insurance worked as intended, largely filling in the deepest gaps and preventing widespread financial disasters while allowing affected farmers to continue in production in future years. Additionally, there were no *ad hoc* disaster payments that year, and very minor spillover effect to lenders and other capital providers. In the absence of crop insurance, it is safe to say that the financial malaise in the drought stricken areas likely would have been of historic proportions. Clearly, lenders rely indirectly, but very importantly, on the coverage provided to their borrowers and would be less able to provide financing in the absence of these critical programs.

In terms of possible designs of safety nets, those studying crop insurance note several positive features including the direct countercyclicality of insurance—it pays when revenues are low and not when revenues are higher thus directly reducing financial risk. Furthermore, farmers have a direct stake or deductible in the program and are induced to continue to improve efficiency and make best management practices along the way while customizing their coverages and unit designs for their own circumstances. Crop insurance coverage also allows meaningful marketing and advance pricing decisions to be made, thereby improving related management practices as well. Finally, and perhaps most importantly, modern crop insurance programs allow farmers to make efficient use of debt, and allow lenders to more confidently lend to an industry in which one of the key risks is related to weather risk outside of the control of the managers.

Social benefits have also been noted related to crop insurance, including the fact that lower risk production systems likely reduce the cost of food to consumers. Crop insurance also has appropriate classification in the World Trade Organization (WTO) support classification system, and most importantly, has preferred attributes relative to *ad hoc* disaster programs which it has largely offset. A final critical point is that crop insurance naturally "scales" relatively easily. As farm sizes have continued to grow, and as the costs of production and capital intensity of agriculture have increased, crop insurance remains proportional to the risks covered by its very design. In this regard, it is a mechanism that is naturally indexed to the changing scale and intensity of agricultural production units, a desirable feature of any program that is intended to continue to serve the agricultural sector as it evolves further toward ever increasing scale and efficiency.

Conclusion

I want to thank you for this opportunity. Farmer Mac serves as an essential bridge between investment capital and main street rural America, and we are honored to collaborate with our customers in helping to build stronger rural communities. Throughout the inevitable agricultural economic cycles, Farmer Mac remains resolute in our commitment to provide financial tools to extend the type of flexible, low-cost financing that is necessary to help allow rural America to adapt, grow, and flourish. Our commitment to our mission has never been stronger or more important at this time when significant portions of the agricultural economy continue to face challenges. Because Farmer Mac does not depend on funding from taxpayers, Farmer Mac's secondary market is one of the few resources that can be brought to bear to help increase the availability of credit in rural America without running up against Federal budget restraints. By updating our charter to recognize the ever-evolving financing mechanisms that facilitate modern farming, we will be better

able to bring the power of the secondary market to our customers and your constituents.

The CHAIRMAN. Thank you, Mr. Buzby.

Mr. Franzen.

STATEMENT OF NATHAN E. FRANZEN, PRESIDENT, AG DIVISION, FIRST DAKOTA NATIONAL BANK, YANKTON, SD; ON BEHALF OF AMERICAN BANKERS ASSOCIATION

Mr. FRANZEN. Chairman Scott, Ranking Member Scott, and Members of the Subcommittee, my name is Nate Franzen, I am President of the Agribusiness Division at First Dakota National Bank in Yankton, South Dakota. We are a family-owned and locally controlled community bank, with $890 million in agricultural loans. We have 19 branches, six loan production offices, and employ 375 people in South Dakota and Nebraska.

I appreciate the opportunity to present the views of the ABA on credit issues in the upcoming farm bill. The topic of today's hearing is very timely. While farm and ranch incomes over the past 5 years have been some of the best in history, there is no question that the agricultural economy is slowing. As a matter of fact, approximately 50 percent of my ag clients lost money this year, compared to 40 percent a year ago.

Despite this, the banking industry is well positioned to meet the needs of U.S. farmer and ranchers. Interest rates continue to be near record lows, and banks have the people, capital, and liquidity to help America's farmers and ranchers manage through any turbulence in the economy. Importantly, with the farm bill in place, farmers, ranchers, and their bankers have certainty from Washington about future ag policy.

In 2015, *farm banks,* defined as any bank with more than 15½ percent of their loans made to farmers or ranchers, increased ag lending eight percent, and now provide over $100 billion in total farm loans. Small farmers rely particularly on banks for funding. Farm banks hold $48 billion in small loans, and $11½ billion of that is micro-small farm loans.

Farm banks are healthy and continue to be forward-looking, growing capital and increasing reserves. This provides flexibility to serve our nation's farmers, and manage risks associated with any downturn in the agricultural sector.

First Dakota National Bank was the first preferred lender in the country, so we have a long history with Farm Service Agency loan programs. Additionally, we have two very unique programs for our farmers. The first is our Beginning Farmer and Rancher Program. It is a 1 year financial education program that sharpens our producers' skills. The second is our Keep Farmers Farming Program, which deals with the challenges producers face, including transition planning and best business practices, and both areas are extremely important to enhance the legacy of today's family farms. I am very proud of these programs.

I would like to thank Congress, especially the Agriculture Committees, for repealing borrower term limits on USDA FSA guaranteed loans in the last farm bill. Banks worked closely with the USDA to make additional credit available by utilizing the Guaranteed Farm Loan Programs.

On the subject of USDA farm loan programs, I believe that Congress needs to consider reforms to the programs; specifically, to raise the cap on these loans due to the rising costs of agriculture, along with modernizing the programs. The USDA FSA loans have allowed farmers to continue to access credit from banks like mine as they grow, ensuring credit access for farmers across the country. This is why the ABA has endorsed Representative Bost's BALE Act which provides a pathway for increasing the limit on FSA loans.

It should be noted that with any increase in loan limits, there needs to be an increase in funding for the loan programs. When funding is not available for these programs, it hurts farmers and ranchers the most as they often rely on the loan programs to run their operations.

Another area of concern is the need for more technology and staff, especially at FSA. With loan officers retiring, and more and more retiring in the future, there needs to be a workforce trained and ready to step in. It is disheartening when an FSA loan officer retires as we lose valuable knowledge and experience. This hurts even more in challenging economic times in rural America. FSA needs the ability to hire good staff. Additionally, there needs to be major updates to technology at USDA. Currently, we have to call a loan officer to ask questions on rates and terms on loans, which could be done online instead. This is slowing down the loan-making process, and adding more work to everyone.

Finally, I need to discuss the importance of Farmer Mac to my bank. We use Farmer Mac as a way to mitigate risk in our portfolio, while helping farmers, especially beginning farmers, get credit. ABA believes that the 1,000 Acre Rule should be eliminated on Farmer Mac loans. Banks like mine are proud of the work we do to support our nation's farmers and ranchers. The agricultural community is a critical part of our economy, and America's banks remain committed to serve it through good times and bad.

Thank you, and I would be happy to answer any questions.

[The prepared statement of Mr. Franzen follows:]

PREPARED STATEMENT OF NATHAN E. FRANZEN, PRESIDENT, AG DIVISION, FIRST DAKOTA NATIONAL BANK, YANKTON, SD; ON BEHALF OF AMERICAN BANKERS ASSOCIATION

Chairman Scott, Ranking Member Scott, and Members of the Subcommittee, my name is Nate Franzen, and I am the President of Agri-Business at First Dakota National Bank in Yankton, South Dakota. First Dakota National Bank is a family owned and locally controlled community bank with $1.5 billion in assets and $890 million in agricultural lending. We have 375 employees and have 19 branch locations and six loan production offices serving South Dakota and Nebraska.

First Dakota National Bank was the first bank to become a Farm Service Agency Preferred Lender in March of 1999 and has been involved in guaranteed and direct loans ever since. But there are two unique agricultural programs that bring me great pride due to their success. The first is our Beginning Farmer and Rancher program. This program was established in 2012 and provides a 1 year educational experience for young and beginning farmers and ranchers. Throughout this yearlong educational program we expose our beginning farmer and rancher participants to leading educators and industry leaders. We do this with one goal in mind: educating and sharpening the skills of our beginning farmers and ranchers to increase their odds of future viability and success. The second program was established in 2013. It is a consulting department within our agriculture division called Keep Farmers Farming. Its intent is to help our farms and ranches deal with the most important challenges they face. These challenges include strategic planning, estate planning, transition planning, best business practices, as well as marketing and risk manage-

ment. We are making a real difference in our Ag industry by helping our farms and ranches enhance their performance and plan for transition and legacy. These two programs will help bring young and beginning farmers and ranchers back to their family operations and keep our family farms and ranches viable for generations to come.

I am also a past Chairman of the American Bankers Association's Agricultural and Rural Bankers Committee. I appreciate the opportunity to present the views of rural bankers on credit issues in the upcoming farm bill.

The American Bankers Association is the voice of the nation's $16 trillion banking industry, which is composed of small, midsize, regional and large banks that together employ more than two million people, safeguard $12 trillion in deposits and extend nearly $8 trillion in loans. ABA is uniquely qualified to comment on agricultural credit issues as banks have provided credit to agriculture since the founding of our country. Over 5,000 banks—over 82% of all banks—reported agricultural loans on their books at year end 2015 with a total outstanding portfolio of over $171 billion.

The topic of today's hearing is very timely. There have been many successes within the 2014 Farm Bill that have directly affected agricultural lenders. However, the agricultural landscaped has changed considerably since the passage of the last farm bill. Agricultural lenders have often been the first group to feel the effects of the changing agricultural landscape, and the role that public policy has played in shaping that landscape.

The agricultural economy has been slowing, with farm sector profitability expected to decline further in 2017 for the fourth consecutive decline. However, farm and ranch incomes for the past 5 years have been some of the best in history. With the 2014 Farm Bill in place, farmers, ranchers, and their bankers achieved a level of certainty from Washington about future agricultural policy. Interest rates continue to be at or near record lows, and the banking industry has the people, capital and liquidity to help American farmers and ranchers sustain through any turbulence in the agricultural economy.

Banks continue to be one of the first places that farmers and ranchers turn when looking for agricultural loans. Our agricultural credit portfolio is very diverse—we finance large and small farms, urban farmers, beginning farmers, women farmers and minority farmers. To bankers, agricultural lending is good business and we make credit available to all who can demonstrate they have a sound business plan and the ability to repay.

In 2015, farm banks—banks with more than 15.5% of their loans made to farmers or ranchers—increased agricultural lending 7.9 percent to meet these rising credit needs of farmers and ranchers, and now provide over $100 billion in total farm loans. Farm banks are an essential resource for small farmers, holding $48 billion in small farm loans, with $11.5 billion in micro-small farm loans (loans with origination values less than $100,000). These farm banks are healthy and well capitalized and stand ready to meet the credit demands of our nation's farmers large and small.

In addition to our commitment to farmers and ranchers, thousands of farm dependent businesses—food processors, retailers, transportation companies, storage facilities, manufacturers, *etc.*—receive financing from the banking industry as well. Agriculture is a vital industry to our country, and financing it is an essential business for many banks, mine included.

Banks work closely with the USDA's Farm Service Agency (FSA) to make additional credit available by utilizing the Guaranteed Farm Loan Programs. The repeal of borrower limits on USDA's Farm Service Agency guaranteed loans has allowed farmers to continue to access credit from banks like mine as they grow, ensuring credit access for farmers across the country.

Entities like Farmer Mac provide another avenue for banks to increase credit availability. By purchasing loans from banks, Farmer Mac allows banks to lower interest rates for their customers and provide better loan products. With the agricultural economy potentially going through some stressful times in the near future, Farmer Mac will need legislative changes. ABA believes the most needed change is the removal of the current 1,000 acre limitation.

We remain concerned with certain areas of the agricultural credit market. In particular, we are worried that the Farm Credit System—a government sponsored entity—has veered away from its intended mission and now represents an unwarranted risk to taxpayers. The Farm Credit System was founded in 1916 to ensure that young, beginning, and small farmers and ranchers had access to credit. It has since grown into a $320 billion behemoth offering complex financial services. To put this in perspective, if the Farm Credit System were a bank it would be the seventh largest in the United States, and larger than 99.9% of the banks in the country.

Our nation's farmers and ranchers are a critical resource to our economy. Ensuring that they continue to have access to adequate credit to thrive is essential for the well-being of our whole nation. America's banks remain well equipped to serve the borrowing needs of farmers of all sizes.

In my testimony today I would like to elaborate on the following points:

- ➢ Banks are a primary source of credit to farmers and ranchers in the United States;
- ➢ The 2014 Farm Bill can be considered a success for its protection of crop insurance, the Conservation Reserve Program (CRP), and the removal of term limits on FSA Guaranteed Loan Programs;
- ➢ The next farm bill will require some changes to FSA loan programs including higher lending limits, enhancements in technology, and addressing the rapid retirement rates of FSA staff. Additionally, changes will need to be put forward on commodity programs and data collection;
- ➢ Farmer Mac is a valuable partner for lenders and the farm bill will need to be a vehicle to improve Farmer Mac; [and]
- ➢ The Farm Credit System has become large and unfocused. It should refocus its mission on helping farmers and ranchers in need of subsidized credit.

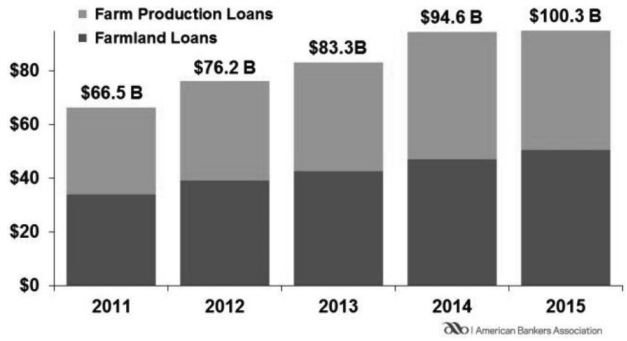
I. Banks Are a Primary Source of Credit to Farmers and Ranchers in the U.S.

For my bank and for many of our members, agricultural lending is a significant component of their business activities. ABA has studied and reported on the performance of "farm banks" for decades and, we are pleased to report that the performance of these highly specialized agricultural lending banks continues to be strong. ABA defines a farm bank as one with more than 15.65 percent farm or ranch loans (to all loans).

At the end of 2016, there were 1,912 banks that met this definition. Farm lending posted solid growth during 2016. Total farm loans at farm banks increased by 5.3 percent to $103.4 billion in 2016 up from $98.3 billion in 2015. Approximately $1 in every $3 lent by a farm bank is an agricultural loan.

Farm Banks Exhibit Strong Local Growth

$ Billions

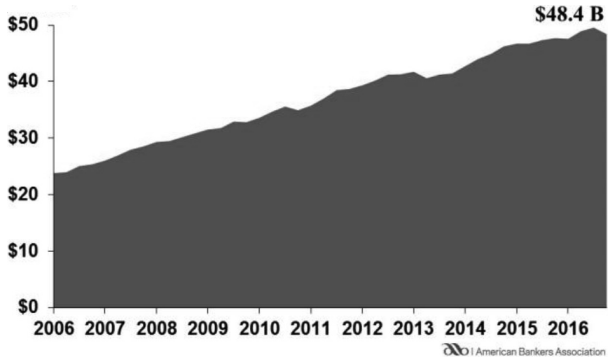


Source: Federal Deposit Insurance Corporation & American Bankers Association Analysis.

Farm real estate loans grew at a faster rate than farm production loans. Outstanding farm real estate loans grew at a pace of 9.2 percent, or $4.5 billion, to a total of $54.0 billion. Farm production loans rose by 1.3 percent, or $641 million, to $49.4 billion. Farm banks are a major source of credit to small farmers—holding more than $48.4 billion in small farm loans (origination value less than $500,000) with $11.5 billion in micro-small farm loans (origination value less than $100,000) at the end of 2016. The number of outstanding small farm loans at farm banks totaled 766,762 with the vast majority—over 495,600 loans—with origination values less than $100,000. Farm banks are healthy and well capitalized and stand ready to meet the credit demands of our nation's farmers large and small.

Farm Banks Increase High-Quality Capital

$ Billions



Source: Federal Deposit Insurance Corporation & American Bankers Association Analysis.

Equity capital—often thought of as the strongest form of capital—at farm banks increased 3.7 percent to $48.4 billion in 2016. Since the end of 2007, farm banks have added $20.9 billion in equity capital, building strong high-quality capital reserves. These capital reserves will enable farm banks flexibility as the agricultural sector adjusts to lower commodity prices—allowing bankers to work with and serve the needs of our nation's famers—and will also act as a buffer, proving insulation from the risks associated with any downturn in the agricultural sector.

One area of concern for farm bankers and their customers has been the rapid appreciation in farmland values in some areas of the country. The run up in farmland values has not been a credit driven event. Farm banks are actively managing the risks associated with agricultural lending and underwriting standards on farm real estate loans are very conservative. The key consideration in underwriting any loan is the ability of the customer to repay regardless of the collateral position in the loan. To further manage risk, we regularly stress test our loan portfolios to judge repayment capacity under different scenarios.

After several years of large increases in farmland values, the consensus view among bankers I know is that the increase in cropland values has slowed. USDA estimates of lower commodity prices for the third consecutive year in 2016 seem to have modestly cooled off the demand for farm real estate. We watch the farm real estate market very closely, as do my customers. In recent years, over ⅘ of the agriculture sector's asset values were held in real estate. USDA estimates a 1.2 percent decline in the value of farm real estate in 2016.

II. The Agricultural Act of 2014 Had Many Successful Components

One success of the 2014 Farm Bill was the continued support of crop insurance programs. Agricultural lenders use crop insurance as a guarantee to help secure financing for operating credit. With crop insurance, a lender has the ability to provide support based on individual producers' proven crop yields. This allows lenders to tailor a loan to a producer's operation and allow for year-to-year adjustments within that operation. Without crop insurance acting as a safety net, producers would be in a much more challenging financial situation in the event of disaster. Crop insurance has allowed lenders to provide the best possible terms for operating loans because it helps to lower the risk for the lender. ABA has been a long-time supporter of crop insurance programs and would like to see the programs expanded to help as many producers as possible.

Another success of the 2014 Farm Bill was the continuation of the Conservation Reserve Program (CRP). CRP is vital in rural areas as it provides another use for land that may be otherwise unsuitable for farming. From a lender perspective, CRP is another tool in the toolbox for landowners to use when they are trying to diversify their holdings. Additionally, CRP can provide a steady stream of income for producers, especially older producers.

I would like to thank Congress, especially the Agricultural Committees, for repealing borrower term limits on USDA Farm Service Agency guaranteed loans in the 2014 Farm Bill. Term limits restricted farmer access to capital, and with the expansion of the farm economy over the past 10 years, there are some farmers who are

not able to obtain credit from banks like mine without a guaranty from USDA. The USDA's Farm Service Agency guaranteed loan program has been a remarkable success. Today, nearly $12 billion in farm and ranch loans are made by private sector lenders like my bank and are guaranteed by the USDA. There are nearly 43,000 loans outstanding—of course some farmers have more than one guaranteed loan, so this number is not to be confused with the number of individual farmers and ranchers, but the numbers of individuals accessing credit under this program is very significant.

This program has grown over the past 5 years, with less than $9 billion outstanding at the close of FY08 to nearly $12 billion today. The loans made by banks like mine under this program are modest in size. The average outstanding guaranteed real estate loan is $439,000 and the average outstanding guaranteed non real estate secured loan is $250,000. Clearly, we are reaching customers who have modest-sized operations, who are in the process of starting their farm or ranch operation, or who are recovering from some sort of financial set-back. Despite the fact that these customers do not have either the earnings or collateral to qualify for conventional credit, losses in the program have been extremely small. Over the last 5 fiscal years losses have ranged from a high of 0.6% in FY10 to a low of 0.3% in FY13. These are extremely low losses—especially for customers who are perceived to be a higher risk than other customers, hence the need for the USDA credit enhancement. Bankers who utilize the guaranteed farm loan programs offered by USDA know what they are doing and work very closely with their farm and ranch customers to properly service these loans. The Farm Service Agency deserves a great deal of credit for administering such a successful public/private partnership. We urge you to continue to support this very worthwhile program.

III. Changes Needed in the Next Farm Bill from a Banker's Perspective

I want to reiterate that the 2014 Farm Bill was very successful from a lender's perspective. However, there are some substantial changes that need to be considered as Congress starts working on the next farm bill.

The most important change that should be made to the next farm bill is an increase to the current loan limit of $1.399 million on FSA Guaranteed Loans. The formula for indexing the programs has not kept up with the increasing costs of agriculture. It is much more costly for a young, beginning or small farmer to get into agriculture, and the guaranteed loan programs need to reflect that reality. ABA has endorsed H.R. 831, the Beginning Agriculturist Lifetime Employment Act of 2017 (BALE Act), introduced by Representative Mike Bost. This legislation would increase the cap on GFOs and GOLs to $3.5 million. We believe this increase is necessary for lenders to be able to help as many producers as possible going forward. The BALE Act would also increase the size of Direct Operating Loans and Direct Ownership Loans from $300,000 to $600,000. This legislation is an important first step to modernizing FSA loan programs.

With any increase to Guaranteed Loan Programs, there will need to be an increase in funding for the programs. It is vital that the necessary funds are appropriated for the programs because there has been a shortage of funds for the past 3 years. These programs continue to create a great public-private partnership between lenders and USDA, and future funding should reflect the strength of programs.

Another step in modernizing loan programs would be upgrading and improving technology. This would create a more efficient and responsive USDA. As I mentioned before, ABA is very involved in FSA Guaranteed Loan Programs, but the lack of basic upgrades to technology has greatly delayed the industry's ability to process loans at an efficient rate. Without simple updates, such as better functioning websites to check on loan balances, we are creating unnecessary work for FSA staff. As we have learned in the banking industry, updating technology can create greater efficiency across an organization, which ultimately benefits our customers.

Along with the changes to the loan programs and upgrades to technology, there needs to be serious consideration for increasing staff levels at FSA. As veteran staff retires, there isn't enough new staff being trained to take over their loan portfolios. This is creating a knowledge gap within FSA loan programs and is making it much harder to turn around loans in a timely fashion. When it comes to financing agriculture, especially operating loans, loans need to be made as quickly as possible so farmers can get back into the field. As the Agriculture Committee is aware, windows for planting or harvesting can close very quickly and our loan programs need to keep pace.

I believe FSA should consider bringing back their interest assistance program. This program helps to buy down the cost of interest for young and beginning farmers, which is timely considering the rising interest environment we are entering. In

the past, the program allowed FSA to buy down as much as four percent of all guaranteed operating loans. If this program were to be reinstated, ABA suggests that the program would be no more than two percent, would be eligible for only beginning and young farmers, and would be eligible for all FSA guaranteed loan programs.

Another issue that should be further examined by the Agriculture Committee is the National Environmental Policy Act (NEPA) regulations that have been put in place for Confined Animal Feeding Operations (CAFO) for FSA loan programs. I fully understand why the regulations have been put in place, but there needs to be serious examination on potential changes to the regulations. Additionally, I have found that the regulations can vary from state to state and county to county, making it very difficult to properly put together the loan. The Agriculture Committee should consider offering changes to the NEPA regulations on CAFOs so lenders can better serve this constituency into the future.

When the 2014 Farm Bill was written and approved, commodity prices were considerably higher than after implementation of the programs. As you are aware, the 2014 Farm Bill required that the producer make a one-time election between Agriculture Risk Coverage (ARC) and Price Loss Control (PLC). This became problematic because while producers were making the election in July 2013, corn futures were over $7 per bushel, with wheat futures being over $9 per bushel. Now, corn is less than $4 per bushel, and wheat is $4.50 per bushel. This dramatic drop in prices could not be foreseen by any producers.

Coupled with the drop in prices, the decision to use county yields instead of state yields should have provided assistance to the individuals most in need when yields were low, but this was often not the case. Instead, due to the variability in National Agriculture Statistics Service (NASS) data, two fields on each side of a county line, may have drastically different payments, with my customers seeing the difference as high as $90 per acre. Additionally, from a lender's point of view, NASS data has not been as accurate as data from the Risk Management Agency (RMA), which led to problems on yield calculations.

While crop prices and a one-time program election were both issues, the timing of payments greatly affected lenders. Payments could not be calculated until the final county yield was determined and the marketing year was complete. This means producers do not receive their payments during the same year in which they planted their crops, and lenders had to deal with the fallout of this timing issue. For example, we are currently completing renewals for our farm customers. We look at their financial progress for 2016 and set their operating lines for 2017. However, we cannot calculate 2016 payments until October of 2017. From a lender perspective, this has caused a real problem with our regulators, as we cannot use a payment that may be received a year later in the profits calculation for this year. Lastly, we should not be making educated guesses on what payment may be received. Instead, there should be certainty within the programs to allow for an accurate calculation.

IV. Farmer Mac Is a Valued Partner for the Banking Industry

Farmer Mac is a valuable tool in the toolbox for agricultural bankers because it provides another avenue for banks to increase credit availability. By purchasing loans from banks, Farmer Mac allows banks to lower interest rates for their customers and provide better loan products. With the agricultural economy potentially going through some stressful times in the near future, Farmer Mac will need legislative changes. ABA believes the most needed change is the removal of the current 1,000 acre limitation. The 1,000 acre limitation was put in place in the 1987 Farm Credit Act and has become outdated with the increasing size and scope of modern agriculture.

ABA also believes there should be a serious discussion about Farmer Mac being able to buy all guaranteed loans from USDA. This flexibility would encourage more banks to be involved in guaranteed loan programs across USDA. It should be noted, that these proposals would not only benefit banks, but also the Farm Credit System, who is our biggest competitor. ABA believes that we need to do everything in our power to help finance all of agriculture, and we are all in this together.

V. The Farm Credit System Is a Large Government-Sponsored-Enterprise That Primarily Serves Large Borrowers at the Expense of Taxpayers

I mentioned earlier in my testimony that the market for agricultural credit is very competitive. I compete with several other banks in my service area, finance companies from all of the major farm equipment manufacturers, several international banks, credit unions, life insurance companies and finance companies owned by seed and other supply companies, to name a few. The most troublesome competitor I face

is the taxpayer-backed and tax-advantaged Federal Farm Credit System (FCS). The FCS was chartered by Congress in 1916 as a borrower-owned cooperative farm lender at a time when banks did not have the legal authority to make long-term farm real estate loans. Over the ensuing 100 years the FCS has received numerous charter enhancements, and has ventured into areas that are not appropriate for a farmer-owned farm lending business.

Today ***the FCS is a large and complex financial services business with $320 billion in assets.*** If it were a bank, it would be the seventh largest bank in the United States. It is tax-advantaged and enjoyed a combined local, state, and Federal tax rate in 2015 of only 4.0 percent (a significant decrease from the effective tax rate of 4.5 percent in 2014). The tax advantages enjoyed by the FCS in 2015 were worth $1.296 billion or 28% of the Farm Credit System's net income in 2015.[1]

The Farm Credit System Is a Government-Sponsored-Enterprise

In spite of their size, profitability, and tax advantages the Farm Credit System presents the same kind of potential threat to the American taxpayer as Fannie Mae and Freddie Mac. As a government sponsored enterprise (GSE) like Fannie Mae and Freddie Mac, the American taxpayer is the ultimate back stop should the Farm Credit System develop financial problems. This reality was formalized in 2013 when the Farm Credit System Insurance Corporation (FCSIC) arranged a $10 billion line of credit "with the Federal Financing Bank, a Federal instrumentality subject to the supervision and direction of the U.S. Treasury—to which the Federal Financing Bank would advance funds to the [Farm Credit System] Insurance Corporation. Under its existing statutory authority, the [Farm Credit System] Insurance Corporation will use these funds to provide assistance to the System Banks in exigent market circumstances which threaten the Banks' ability to pay maturing debt obligations. The agreement provides for advances of up to $10 billion and terminates on September 30, 2014, unless otherwise extended."[2]

We believe the farmers who own stock of the Farm Credit System—and the American taxpayers who back it—deserve a better understanding of what transpires between the Farm Credit System and the U.S. Treasury, but very little information is available to the public. Unlike the housing GSEs which are subject to reform efforts to lessen the taxpayer's exposure, the Farm Credit System seems to be increasing its dependence upon the U.S. Treasury.

Congress created the Farm Credit System as a public option for farm finance when farmers were having trouble getting the credit they needed from non-government sources. The conditions that led to the creation of the Farm Credit System nearly 100 years ago no longer exist, and yet we continue to have a government-assisted, tax-advantaged farm lender providing credit to customers who would be able to easily borrow from taxpaying institutions like mine. In fact, the heavily subsidized credit that FCS lends goes to those who need it least. Despite amendments to the Farm Credit Act of 1980 requiring each FCS lender to have a program for furnishing credit to young, beginning and small farmers and ranchers (YBS), the share of new YBS loans to total new FCS loans continues to ***be dismal***—even as the assets of the System have expanded enormously. Loans to small farmers have steadily dropped over the past several years, with small farm loans declining from a high of 30 percent of total new loan volume in 2003[3] to just 14.1 percent in 2015. Clearly, those who would benefit the most from the highly subsidized credit made available by the FCS are not receiving the benefits that Congress intended them to receive.

Conclusion

The banking industry is well positioned to meet the needs of U.S. farmers and ranchers. U.S. agriculture has begun to adjust to lower commodity prices after enjoying one of the longest periods of financial prosperity in history. USDA projected that at year-end 2016, farm and ranch solvency ratios—debt-to-asset and debt-to-equity ratios—would rise to 13.23 and 15.25 percent, respectively. Even as these measures have increased, each remains low relative to historical levels. During the past few years, while farmers experiences unprecedented high commodity prices and rising farm profits, farmers used their excess cash profits to retire debt and to acquire additional equipment and land. As a result, farmers and ranchers today have the capacity to tap their equity should there be a decline in farm profitability result-

[1] Federal Farm Credit Banks Funding Corporation; *2015 Annual Information Statement of the Farm Credit System;* March 7, 2016. Page F–3.

[2] Federal Farm Credit Banks Funding Corporation; *2013 Annual Information Statement of the Farm Credit System;* February 28, 2014, page 23.

[3] "FCA's Annual Report on the Farm Credit System's Young, Beginning, and Small Farmer Mission Performance: 2013 Results". Office of Regulatory Policy, June 12, 2014 Board Meeting.

ing in diminished cash flows. While no farmer or rancher wants to take on additional debt, the strength of the U.S. farm and ranch balance sheet gives producers options to do so if the need arises.

The banking industry remains cautious as it looks forward to the next farm bill. There is a very real concern that declining commodity prices will negatively affect the farm economy and make credit situations tighter. This is why the banking industry will continue to be involved in the farm bill process and will offer assistance to Congress as it writes the next farm bill. With the changes that have been outlined earlier, the banking industry will continue to help producers be strong into the future. Bankers still see great opportunities in agriculture and they will stand with their partners in agriculture to develop the best farm bill for all.

Thank you for the opportunity to express the views of the American Bankers Association. I would be happy to answer any questions that you may have.

The CHAIRMAN. Thank you, Mr. Franzen.

Steve, at risk of mispronouncing your last name, we will just go with Steve, since I missed two of the last three.

STATEMENT OF STEVEN J. HANDKE, PRESIDENT AND CHIEF EXECUTIVE OFFICER, UNION STATE BANK OF EVEREST; AT-LARGE DIRECTOR, INDEPENDENT COMMUNITY BANKERS OF AMERICA, EVEREST, KS

Mr. HANDKE. That will work, Mr. Chairman. Thank you.

Well, Mr. Chairman, I am Steve Handke. I am President and Chief Executive Officer of the Union State Bank in Everest, Kansas. I am also Vice Chairman of the ICBA's Agricultural Rural America Committee.

Union State Bank of Everest was chartered 116 years ago, still operates out of our main office in Everest, Kansas, a community of 300 people. We manage over $300 million in assets, and serve seven Kansas and Missouri communities. We focus on lending to corn and soybean production because our communities are solely dependent upon agriculture.

Our nation's 5,800 community banks are vital to agriculture as they make a majority of all the farm loans from the banking sector. They also provide approximately 40 percent of all the small business loans. USDA guaranteed farm and Rural Development loans are very important to our bank and our community.

We have heard some say that we are only one normal harvest away from dire conditions in the farm economy. USDA calculates that ten percent of farmers are highly leveraged. Farm real estate debt is projected to peak at $240 billion, which is a historic high.

Community banks have been especially successful at lending to farmers at these historic low interest rates; however, the decline in farm income has stressed the abilities of borrowers to cash flow. Here is what our ag bankers from around the United States that serve on the ICBA's Ag Committee have to say. Most producers are feeling financial stress. Some producers are diverse enough to still be profitable. Many problems have been the result of low commodity prices, high rental rates, living expenses, farm machinery, and health care. Reducing expenses needs to be a focus, but it is difficult. Some costs are negotiated years in advance. Competition for the farmland makes it hard to reduce the land rental rates.

Many farmers have strong equity but not enough working capital and positive cash flow. Some have decided to exit farming, and the demand for debt restructuring or rebalancing of the balance sheets will increase. Bankers are concerned regulators may overreact,

classifying loans with negative cash flows despite strong equity in farmland.

Our recommendations on the USDA credit programs are as follows. First, provide adequate funding. USDA guaranteed loan programs seem to run out of money. There needs to be more flexibility in USDA programs to allow the transfer of funds within USDA for these programs. Second, raise the loan cap volumes. The dollar amounts of these loans or the low volume caps should increase significantly. The guaranteed loan programs have only minimal cost, so any volume limit should be on the high side and not risk of hitting the caps. Third, raise the loan limits. The $1.4 million current limit should be raised to between $2.5 and $3.5 million. This would help bankers restructure loans and work with more borrowers with little, if any, Federal cost. Next, minimize loan origination fees which can discourage use. Next, minimize the paperwork requirements, a problem often cited by our bankers. Next, remove the USDA's recently imposed requirement to have an environmental assessment within the past 12 months prior to refinancing a livestock facility. Provide uniformity when financing loans across state lines, as USDA requirements are often different from state to state. Increase USDA staffing levels to lessen approval times. Allow banks to choose which USDA FSA office to work with to ensure a timely loan approval process. Better software solutions that provide better integration as applications move between the bank and USDA.

One way to help us prevent the next ag crisis would be to alleviate the Farm Credit crunch. Regulators classify farm loans if a farmer misses an occasional payment, even if the farmer has strong equity. Many farmers are cash-poor but land-rich. USDA loans of 90 percent guarantees reduce the amount of loans classifications by 90 percent. This 90 percent reduction ensures the bank has time to work with producers without regulators bringing on 'enforcement action' against the bank. Under the current regulatory environment, if 40 percent of our capital becomes classified with cash flow loans that are loans that do not cash-flow even though farmers have strong equity and assets, we will be pushed under enforcement actions.

In conclusion, yes, we need a strong farm safety net and a strong crop insurance program, both vital to producers and lenders. We also need a very robust USDA Guaranteed Loan Program which can keep thousands of farmers farming into the stressful times ahead.

Thank you. We look forward to working with you.

[The prepared statement of Mr. Handke follows:]

PREPARED STATEMENT OF STEVEN J. HANDKE, PRESIDENT AND CHIEF EXECUTIVE OFFICER, UNION STATE BANK OF EVEREST; AT-LARGE DIRECTOR, INDEPENDENT COMMUNITY BANKERS OF AMERICA, EVEREST, KS

Introduction

Mr. Chairman and Members of the Subcommittee thank you very much for the opportunity to testify today on a topic of great interest to thousands of community banks serving rural America and the banking industry in general.

My name is Steve Handke and I serve as the President and CEO of the Union State Bank of Everest, in Everest, Kansas. I am testifying today on behalf of the Independent Community Bankers of America (ICBA).[1]

Union State Bank of Everest

The Union State Bank of Everest was chartered 116 years ago in 1901 and still operates out of the main office in Everest, a small community of 300 people. Today the bank manages over $300 million in total assets and operates in the fertile agricultural counties of five northeast Kansas communities and two northwest Missouri communities. Fifty percent of our loans are to farmers, primarily corn and soybean producers, although the communities we serve are almost entirely agricultural dependent.

Our bank provides an array of services to the seven communities we serve to satisfy their banking and credit related needs. Our bank is staffed by wonderful employees who work tirelessly to assist the communities we do business in. We live and work with the citizens in these communities and we do whatever we can to enhance their financial livelihoods and quality of life. We know our customers on a first name basis and we strive to build relationships through the individualized, hands-on service we provide to our customers and borrowers. I have been privileged to be one of four bank Presidents to serve over 20 years as the bank's CEO and my family has farmed near Everest for four generations.

The Role of Rural Community Banks

On a broader scale, community banks play an important role in the nation's economy. There are approximately 5,800 community banks in the U.S. Thousands of community banks are in small, rural, and even remote communities. Community banks provide approximately ½ of all agricultural credit from the banking sector. Community banks under $1 billion in assets extend approximately 56 percent of non-real estate loans to the farm sector and 62 percent of the real estate credit. Community banks also provide approximately 40 percent of all small business loans even though they hold only ten percent of banking industry assets. Therefore, I believe it is important the authors of the next farm bill keep in mind the important role that community banks play in agricultural finance and keeping our rural communities healthy and vibrant.

Focus of Testimony

Our testimony touches on the interaction between the current state of the farm economy from a community banker perspective and the necessity of USDA credit programs. My testimony explains how we can help prevent or alleviate a potential farm credit crunch from developing over the next couple of years if continued low commodity prices persist.

Some observers of the ag credit markets have said recently we are only one normal harvest away from dire conditions in the farm economy. Last year we may have dodged a bullet. In 2016 we had a convergence of two important factors that prevented the worsening farm financial situation from escalating more than it did. These factors were a very bountiful harvest in many crop producing areas of the U.S. and significant farm program payments. It is possible that one or both of these factors will not occur this year.

The Current Credit Situation in Rural America

USDA's February farm income forecasts, relative to 2016 levels, projects farm sector profitability measures for 2017 to range from nearly flat to declining. Net cash farm income, one measure of profitability, is forecast at $93.5 billion, up 1.8 percent compared to the 2016 forecast. Net farm income, a broader measure of profitability because it includes noncash values such as inventory flows and economic depreciation, is forecast at $62.3 billion for 2017, down 8.7 percent compared to 2016.

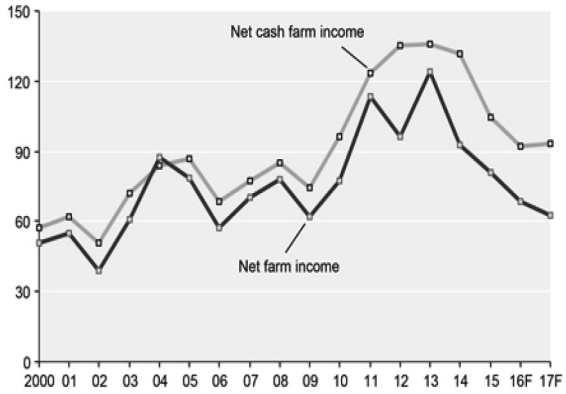
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[1] **About ICBA**

The Independent Community Bankers of America®, *the nation's voice for more than 5,800 community banks of all sizes and charter types, is dedicated exclusively to representing the interests of the community banking industry and its membership through effective advocacy, best-in-class education and high-quality products and services. With 52,000 locations nationwide, community banks employ 760,000 Americans, hold $4.7 trillion in assets, $3.7 trillion in deposits, and $3.2 trillion in loans to consumers, small businesses, and the agricultural community. For more information, visit ICBA's website at* ***www.icba.org***.

Net Farm Income and Net Cash Farm Income, 2000–2017F

$ Billions, Nominal



Note: F = forecast.

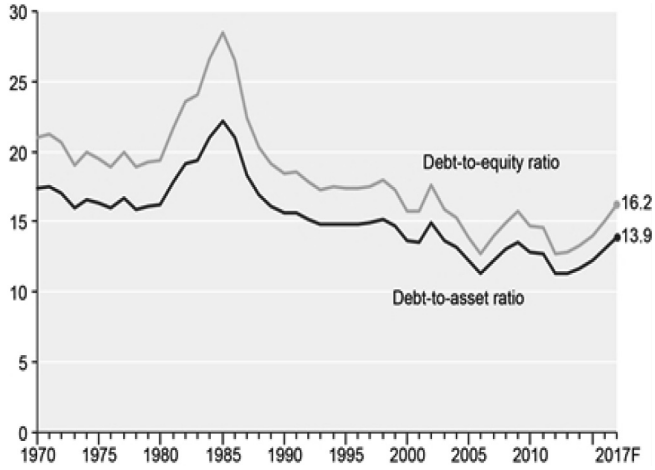
Source: USDA, Economic Research Service, *Farm Income Wealth and Statistics.*

Data as of February 7, 2017.

USDA has also calculated that ten percent of farmers are highly or extremely leveraged. Farm real estate debt in 2017 is expected to reach a historic high of $240.7 billion in nominal terms. An additional contributing factor to the increase in farm real estate debt is increasing use of real estate as collateral to secure non-real estate borrowing. Farm non-real estate debt is expected to continue to increase in 2017. Real debt levels are approaching where they were prior to the 1980s farm financial crisis.

Farm Sector Solvency Ratios, 1970–2017F

Percent



Note: F = forecast; data for 2016 and 2017 are forecasts.

Source: USDA, Economic Research Service, *Farm Income Wealth and Statistics.*

Data as of February 7, 2017.

USDA notes debt is predicted to grow and the value of farm assets is anticipated to decline, leading to an increase in the farm sector debt-to-asset ratio and debt-to-equity ratios. Such trends reflect a modest increase in farm financial risk exposure from 2015. The 2017 debt/asset and debt/equity ratios, if realized, would be the

highest since 2002. Liquidity ratios have weakened over the past several years and working capital has diminished. The 2017 debt service ratio, which measures the share of production available for debt payments, at 0.28 is at its highest since 2002. The times interest earned ratio, which measures the farm sector's ability to meet interest payments out of current net farm income, at 4.4 is at its lowest since 2002.

Community Bank Perspective

Over the last several years, community banks have been able to serve their farm borrowers by providing ample credit at near historically low interest rates. However, the decline in farm income has placed stress on the ability of farm borrowers to cash flow. Higher expected interest rates may add to this stress. ICBA conducted a survey of its Agriculture—Rural America Subcommittee which consists of over 25 bankers from all farm regions of the U.S. Following are some of the findings in response to questions.

Some community banks have as high as eighty percent, possibly more, of their loans made solely to farmer or ranchers. However, in rural communities such as Everest, where my bank is located, the entire community is dependent on agriculture. In these communities all of the banks' lending is entirely related to agriculture.

When asked what the level of financial stress is within their portfolios, in many cases bankers stated that 75 to 100 percent of their producers were feeling financial stress due to low farm prices. In some cases the percentage was much smaller, around ten percent, and was dependent on which commodities were produced as some producers are diverse enough to still be profitable.

Other causes of financial stress included high rental rates, living expenses that are too high relative to farm income, too great of an investment in farm machinery, and other factors such as weather. Healthcare can be a major living expense impacting producers.

When asked if producers could strengthen their financial situation by lowering their expenses, including family living expenses, some bankers indicated this may be possible, although producers have already tightened their financial belts in many cases. Producers are having a hard time trying to reduce input costs such as fertilizer expenses or renegotiating rental rates due to the willingness of other farmers to pay the higher rental rates. Producers are trying to reduce expenses on seed, chemical and fuel costs through pre-payments or changing vendors. Even with these possible reductions, their ability to cash flow will be difficult. Some producers have already locked in expenses for several years into the future.

As producers have moved from expansion mode to survival mode there will be greater demand for debt restructuring such as through extending loan maturities. Many farmers with tight cash flows are using up working capital and are expected to borrow more in the future. Bankers also report an increase in credit demand from producers who are being told by the Farm Credit System (FCS) to look elsewhere for credit.

Due to financial stress and the projected farm financial deterioration over the next couple of years, some farmers have made the decision to exit farming. They have decided to exit due to the expected difficulty of being profitable in the current environment. Most farmers still have adequate to strong equity; however, their working capital and cash-flows are not sufficient to continue operating. While some producers have sufficient capital to withstand losses over the next couple of years, other producers will sell assets like land to remain viable. However, we expect bank regulators will challenge banks who are trying to work with producers if they are projected to have negative cash flows for the next several years despite having a strong equity position. This is where USDA guaranteed loan programs could have a tremendously positive impact as explained below.

Community ag banks would report that many of their farm borrowers are at best breaking even if borrowers have low debt including low carryover debt or have a diversity of commodities including commodities that have a degree of profitability. In the worst position would be young, beginning and small farmers particularly if they have high debt levels or if they have little to no backing from their extended family or their parent's farm assets.

These are the farmers that would be most at risk of having to exit production agriculture. However, if low farm prices continue over the next couple of years we are likely to witness a larger exodus of farmers from agriculture, including larger farmers and ranchers.

USDA Credit Programs

Many banks are using the USDA guaranteed farm loan programs and Farmer Mac to help borrowers restructure debt to get their annual cash needs down. There was much less interest in these programs 3 to 4 years ago at a time when you wrote

the last farm bill. However, things have changed for the worse and these types of programs will have a much greater demand in the years ahead.

Provide Adequate Funding—One issue that seems to regularly occur is that the programs often tend to run out of funding. There needs to be enough flexibility in USDA programs to allow the transfer of funds within USDA to these programs in the event they temporarily run out of funding. Additionally, the authorization for the dollar amount for various loan categories needs to be raised significantly. Some programs, such as the guaranteed operating loan program, are self funding and therefore have no costs. Why should the dollar volume related to these loans be limited?

Bankers report often having loans approved that cannot get funding from USDA. This causes additional stress upon borrowers. Bankers stress that time can be of the essence for many producers who are not able to simply wait for Congress to act by authorizing and appropriating additional funding.

Raise Loan Limits—It is extremely important that Congress raise the lending limits for the USDA guaranteed farm operating and ownership (real estate) programs from the current $1.4 million loan limit to $2.5 million or greater to reflect the higher cost levels of modern day agriculture. There is not a cost for guaranteed farm operating loan program as this program is self-funding based on the origination fee. There is only a very slight cost to the guaranteed farm ownership program. Therefore, Congress could accommodate billions of dollars in additional credit to farm borrowers with only a minimal cost to the Federal Government, ensuring the survival of thousands of family farmers.

Legislation (H.R. 5733) was introduced in the previous Congress by Congressman Bost to raise the loan limits on guaranteed farm loans to $2.5 million to $3.5 million. Our survey showed strong support for these higher loan levels indexed to an inflation adjustment. For some banks serving producers with higher production costs, a $2.5 million loan is their average loan size. The higher loan limits would help producers cope with the higher cost of land, machinery, and other costs. Bankers state the current $1.4 million loan limit is simply too low and it often prevents banks from restructuring loans or causes many farmers to not qualify for guaranteed loans.

The direct loan programs are also a valuable financing tool for many farmers and ranchers, especially younger ones that are buying land. These programs assist the ability of farmers to cash flow and have attractive interest rates benefiting producers over the life of their operation. The programs can help young farmers in either getting started in farming or in transitioning a family farm to the next generation.

If direct loan limits are increased, these programs need to ensure that direct financing from USDA is leveraged with bank financing to ensure larger direct loans don't detract from financing already being provided by banks. Also, since these programs have a 'credit-elsewhere' test this requirement should be tight enough to ensure producers don't shop for credit denials, for example, from money center banks that are not making small farm loans anyway. In addition, many borrowers apparently do not pursue direct loans due to the amount of paperwork they have to fill out. Paperwork requirements should be examined. Additional funding would need to be appropriated to ensure such expansion doesn't undermine existing guaranteed lending.

Other Recommendations for USDA Credit Programs

Bankers in our survey made a number of recommendations to improve USDA credit programs. Some of these suggestions include:

- Minimize origination fees as they can discourage use of the programs;
- Minimize paperwork requirements—a need cited by many bankers;
- Remove the USDA's recently imposed requirement that producers have an environmental assessment within the past 12 months prior to financing a livestock facility;
- Provide lenders flexibility when financing USDA loans across state lines as the requirements often differ, making use of the programs much more difficult in these instances;
- Important to increase USDA staffing levels to providing more lending staff which will decrease approval times for direct and guaranteed loans;
- To free up USDA staff, reduce taxpayer expense, and reduce wait times for farmers, crop reporting needs to be done through private crop insurance agents instead of requiring double reporting through agents and USDA personnel;

- Allow banks to choose which USDA–FSA office to work with to help ensure a timely loan approval process and minimize any loan approval issues in certain counties; [and]
- Improve requirements for loss settlements in the case of borrower liquidation.

Farmer Mac Recommendations

We are aware that Farmer Mac has three technical changes they would like to make to their charter. One change deals with the eligibility of farms organized as family trusts; a second change deals with Farmer Mac's ability to purchase the guaranteed portion of USDA guaranteed loans not under the ConAct of 1972; and the third provision would remove an arbitrary loan limit for loans of less than 1,000 acres. Based on our understanding of these provisions, we believe community banks would be supportive of these changes. We would be happy to discuss these changes further with the Committee.

One Way To Help Prevent a Farm Credit Crisis

We have heard from bankers that regulators are now very closely scrutinizing bankers' ag loan portfolios during examinations. Since stressful times in agriculture may persist for several years, it is important regulators not over react and put unnecessary pressures on ag lenders. Ag lending is often cyclical in nature with good times followed by bad times and good farm lenders know how to weather the normal ups and downs of agricultural markets. As has been said, many of the best loans are made in difficult times.

For example, regulators typically require banks to keep a list of farmers who didn't make all scheduled payments on their loans, regardless of the amount of their equity. If regulators see the farmers' names a second time in a subsequent exam, they will tend to classify the loan. If the volume of these loans reaches forty percent of bank capital, then the bank will be placed under a so-called 'enforcement action.' My bank has $30 million (10%) capital. If we have $12 million in classified farm loans, we would be subject to an enforcement action. These loans could be classified even if the producer has a huge amount of equity as can often be the case. Producers can often be land rich and cash poor. Yet, their loans could be classified if the producer has missed an occasional payment.

I read recently where the Federal Reserve Bank of Kansas City said thirty percent of farmers cannot make all of their payments. It would not take many farm loans, at approximately $1 million in size or greater, for a bank's classified loans to reach forty percent of their capital.

A solution to this potential dilemma for the bank is to make these loans as USDA guaranteed loans. With a $1 million loan, a ninety percent USDA guarantee would reduce the amount of a loan classified by the regulator from $1 million to $100,000—a ninety percent reduction in the amount that counts against the bank's capital.

Banks fear that regulators may over-react to the downturn in commodity prices and begin classifying loans. Having a much expanded, robust and well-financed guaranteed loan program could remove pressures on banks to withhold financing from many farm customers, thus significantly helping to avoid a farm credit crunch.

This Subcommittee and other Congressional committees may want to conduct a hearing with banking regulators to discuss how they will deal with stress in the farm economy to be sure they have the insight they need to deal with future agricultural credit issues.

Conclusion

Congress has the power to help avoid a farm credit crisis. Yes, we need a strong farm safety net for commodities and we need a strong crop insurance program—both vital to producers and lenders. But we now need to also elevate the status of USDA guaranteed lending programs in the next farm bill. Things have changed in the farming sector and not for the better. We need to stop thinking about USDA guaranteed lending programs as a less important add-on to the farm bill and begin thinking about it as a major tool, along with commodity programs and crop insurance, to keeping thousands and thousands of farmers in business in what may be severely stressful times ahead.

Thank you for holding this hearing. ICBA and the community banking industry looks forward to working with you in writing the next farm bill.

The CHAIRMAN. Thank you, Mr. Handke.

Mr. Marlow.

STATEMENT OF W. SCOTT MARLOW, EXECUTIVE DIRECTOR, RURAL ADVANCEMENT FOUNDATION INTERNATIONAL—USA, PITTSBORO, NC; ON BEHALF OF NATIONAL SUSTAINABLE AGRICULTURE COALITION

Mr. MARLOW. Good afternoon. Thank you for the opportunity to testify today.

My name is Scott Marlow, and I am here on behalf of the Rural Advancement Foundation International, the National Sustainable Agriculture Coalition, and our partners across the country who work one-on-one with farmers in crisis to help them stay on the farm and in their homes.

Based in Pittsboro, North Carolina, RAFI works from the very local to international levels on policies and markets that promote sustainable, socially just family farms. But today, I am representing our Farm Advocacy Program which provides in-depth financial counseling to 100 farmers per year facing financial crisis. RAFI staff members have had the privilege of serving diverse farms ranging in size from 2 acres to 20,000 acres since the 1980s.

Past witnesses have explained why the current situation differs from the farm crisis of the 1980s. While we may not have reached the upheaval of the 1980s, I assure you that the fact that it was worse then is cold comfort to the many farm families who are struggling to make ends meet now.

We at RAFI are seeing a different picture. We are seeing a significant increase in calls this winter, along with an increase in both the severity and the level of frustration of those calls, especially from commodity farmers who have been turned down for their operating loans.

My first point to you is that the numbers about farm income and foreclosure rates represent families that are struggling to stay afloat, to care for their land, and to find a way to bring their kids back to the farm. We know the toll financial stress takes on farm families. Increased rates of substance abuse, depression, divorce, and suicide are all tied closely to the availability of credit. As you deliberate the next farm bill, I urge you to remember the families behind the numbers, and the devastating impact on rural America that the financial crisis leaves.

In times of financial duress, USDA loans take on added importance, and three things must be true for these loan programs to be effective. There must be sufficient funding to meet the current and projected demand, there must be enough people to administer these programs, and those people must administer the programs well.

Right now, we are working with 15 farm families whose loans have been approved but are waiting on funding. A farm does not wait on politics. The seed does not wait, and the weeds and the bugs do not wait. And I cannot stress enough how critically important it is that credit programs are administered in a timely way, and that USDA farm loan programs have access to the funds they need and when they are needed.

Some lenders have urged you to increase FSA loan limits across the board. We urge you to resist that idea. And in recent years there have been excess demand for FSA financing at the current loan caps, and the average loan size for both direct and guaranteed loans is far below the current loan cap.

Across the country, FSA offices are woefully understaffed. In one district in North Carolina, just three loan officers are servicing 280 existing loans, and approximately 85 new loan applications across 14 counties. It doesn't matter how much loan funding is made available if FSA doesn't have the capacity to administer these loans in a timely and effective way.

We work with many caring and skilled people within USDA, and are proud to partner with both FSA and Farm Credit, but we must also acknowledge the powerful role that FSA lending offices play in determining the success or failure of a farm, and the responsibility that role entails. It is critical that Congress and the Administration make clear that the abuse or discrimination in the administration of Federal programs will not be tolerated.

With low commodity prices, farmers will struggle with loan feasibility, and there are several steps Congress can take to extend loan feasibility in USDA loan programs, including funding the Interest Assist Program for guaranteed loans, and extending the loan term limits. But the greatest benefit that farmers can receive to address loan feasibility is a profit. For many mid-scale farmers that means connecting to consumers or markets in new ways, and brining a greater share of the food dollar back to the farm. For instance, between 2007 and 2012, a time of record high commodity prices, farms that sold into direct markets had a significantly higher survivability rate than those who did not, at all scale levels. The bankers before you will no doubt confirm the importance of a diversified portfolio to weather these difficult times, and to allow our rural communities to thrive, farmers must also have a diversified portfolio. Farm families have the creativity and drive to bring entrepreneurship onto the farm, if only we invest in them.

It is also important to understand the interconnection of credit programs with other USDA programs. Crop insurance is absolutely key to lending but doesn't cover all crops, and rarely covers income from high value, direct, or specialty markets. USDA grants, like the Value-Added Producer Grant Program, reduce the borrowing burden on the enterprise and increase lender comfort with the investment, leveraging private capital. Conservation programs create assured income or assets that can be borrowed against, while improving soil health. But these programs must be funded and they must work together to encourage entrepreneurship.

In our experience, many of the issues that you will consider in the next farm bill boil down to the fact that most production agriculture in our country today does not provide enough of a return on investment to pay for production costs, living expenses, and still invest in the future of the farm. For farmers to bring their sons or daughters back to the farm, for them to care for their farmland, and provide the food and fiber we need for a growing population, they must have the opportunity to develop innovative enterprises. And as you consider the many different programs and titles in the upcoming farm bill, I encourage you to look closely at how they interact with access to agricultural credit, and the ability of farmers to stay in business and develop new innovative enterprises. And with the help of other innovative programs, USDA credit programs can once again fuel agricultural entrepreneurship that will be the lifeline for our future agricultural economy.

That concludes my opening statement, and thank you very much.
[The prepared statement of Mr. Marlow follows:]

PREPARED STATEMENT OF W. SCOTT MARLOW, EXECUTIVE DIRECTOR, RURAL ADVANCEMENT FOUNDATION INTERNATIONAL—USA, PITTSBORO, NC; ON BEHALF OF NATIONAL SUSTAINABLE AGRICULTURE COALITION

Agricultural Credit: Setting the Stage for the Next Farm Bill

Subcommittee Chairman Scott, Ranking Member Scott and Members of the Subcommittee, thank you for the opportunity to testify regarding the state of agricultural lending and the importance of farm credit programs to our nation's farmers and rural communities. My name is Scott Marlow, and I am here today on behalf of the Rural Advancement Foundation International (RAFI), our partners in the National Sustainable Agriculture Coalition, and our partners across the country who work one-on-one with farmers in crisis to help them stay on the farm and in their homes.

About RAFI

RAFI is a nonprofit organization based in Pittsboro, North Carolina. We work from the very local to the international level on policies, markets and communities that promote sustainable, socially just family farms. But for this afternoon, I am representing our Farm Advocacy Program, which provides in-depth financial counseling to farmers in financial crisis, and assistance for individual farm families to help them navigate the complex world of agricultural lending regulations, lending institutions and Federal programs. RAFI staff members have responded to farmers' calls since the Farm Crisis of the 1980's, and have had the privilege of serving farms ranging in size from 2 acres to 20,000 acres, representing the full diversity of agriculture in our home state of North Carolina and across the southeastern United States. In addition, approximately 40 percent of our cases each year focus specifically on planning for the great challenge of bringing the next generation back to the farm. We are also privileged to be a part of a network of farm advocates from across the country, connected through Farm Aid and their 1–800 Farm-Aid crisis hotline, that provide similar services to farmers in need.

In our work with individual farm families, it has become clear that for mid-scale farms to thrive, they need to access markets and products that allow them to increase their return on investment by bringing more of the food dollar back to the farm, and connecting to consumers in new ways. To us this is a core strategy for addressing farm survival, especially in these times of low commodity prices. To that end, RAFI also provides technical assistance and funding to farmers to spur entrepreneurship in order to respond to or develop new markets. Our programs foster creativity and entrepreneurship within rural communities rather than adopting prescriptive solutions. In other words, we work from the understanding that farmers and rural folks are innovative, smart and entrepreneurial and their creativity is a critical asset in solving the complex problems before us.

While Not the 1980s, Farmers Are Still in Crisis

I am here today to talk to you about the credit needs of those farm families who are currently in or headed into crisis, as well as the unique credit needs of farmers who are creating new or alternative enterprises to ensure the viability of their farm into the future. Several who have testified before me, both today and in previous hearings, have talked about the projections for farm income in the near future. Though I won't take the time here to repeat these underlying assumptions, it is important to note that net farm income for 2017 is expected to be down another 8.7 percent from 2016—a drop of 50 percent since the high water mark in 2013.

While median farm household income is projected to increase slightly over the next 2 years, median household income from farming is expected to drop from a net loss of $765 in 2015, a net loss of $1,328 in 2016, to a net loss of $1,437 in 2017. Once again, it will become even more important in the future that farm families continue to work off the farm to subsidize their farming habit.

Past witnesses to the Committee have taken great lengths to explain why the current situation differs from the farm crisis of the 1980's that so many in the farm sector lived through. While we may not have reached the great upheaval of the 80's farm crisis, I assure you that the fact that it was worse then, is cold comfort to the many farm families who are struggling to make ends meet.

We at RAFI are seeing a different picture. Our calls are up, especially from commodity farmers who have been turned down for their operating loans. The severity and sense of frustration of those calls have increased. Our partners at Farm Aid

are seeing a significant increase in calls this winter, with a 27 percent increase year to date over the same time period and an increase in the severity of the calls. No matter how we measure the severity of the need, whether the number of farmers or the level of crisis of the call, this year is significantly worse than last year.

My first point to you is that these numbers represent families that are struggling to stay afloat, to care for their land and their families, and to find a way to bring their kids back to the farm. Their hope is that they can show their kids that, rather than leaving the farm for a better life, that farming **is** the better life. With the current income projections, we know the toll financial stress takes on farm families. While each community and farm is different, we know that this type of farm economic downturn is accompanied by an equivalent increase in rates of substance abuse, depression, divorce and suicide—all tied closely to the availability of credit. Recent studies show stunning increases in suicide and other "deaths of despair" in rural communities since the early 2000s. As you continue to hear reports about farm income and foreclosure rates, I urge you to remember the families of the farms behind the numbers, and the devastating impact on Rural America that the financial crisis leaves.

Improving FSA Loan Programs

We have seen repeatedly that in times of financial duress, USDA Direct and Guaranteed loans take on added importance, both in their continued existence, and in how they are implemented. Three things must be true for these loan programs to be effective. First, there must be **sufficient funding** in the programs to meet the current and projected demand. Second, there must be **enough people** to administer these programs at the county level. And, finally, those people must **administer the programs well.** Two of the three, sufficient funding and sufficient staffing, are up to Congress. Both are inadequate at this time and will fall further short if changes are not made.

Timely Funding: Right now, we are working with 15 farm families whose loans have been approved, but are waiting on funding. In fact, farm loan programs have run out of funding repeatedly in recent years, leaving farm families waiting on loans and being forced to take steps to be able to farm during the delay—like credit card debt or delaying paying other bills—that significantly harm the feasibility of their loans over time. A farm does not wait on politics. The seed does not wait, and the weeds and the bugs do not wait. When a loan is delayed, the family cannot farm in a timely way, or is forced to find funding through alternate means like high-interest credit cards that will only exacerbate their financial situation. I cannot stress enough how critically important it is to farmers that credit programs are administrated in a timely way, and that USDA farm loan programs have the flexibility to access the funds they need when they are needed.

Loan Limits: Some lenders have urged you to increase FSA loan limits across the board as you consider the next farm bill. We strongly urge you to resist that idea. Any policy changes proposed relating to the appropriate cap on Federal loan amounts should be measured against current program usage and demand, historical funding levels, and performance targets with respect to lending to beginning farmers and other under-served customers.

The loan limits on Direct Farm Ownership Loans, for example, have not been adjusted since 2008, while farmland real estate values have increased by 40 percent over that same time. Taken together with the fact that FSA has not obligated all of the available funding for these loans in recent years, Congress should seriously consider increasing these limits to provide new and beginning farmers a better chance to get started in areas with high real estate values.

However, for all other FSA loan programs, there has been excess demand at the current statutory loan caps in recent years. Demand for loan funding was especially high in 2016, and required an additional emergency appropriation to address the significant backlog of farmers seeking FSA financing to cover year-end operating expenses. We don't expect 2017 to be any different from last year, and FSA faces a real threat of running out of loan funding again this year unless Congress provides additional funding. The only loan program that did not expend all of the appropriated funds in FY16 was Direct Farm Ownership loans.

In addition to the excess demand for FSA financing at the current loan caps, the average loan size for both direct and guaranteed loans is far below the current statutory loan cap. In other words, demand is quite high for loans far below the current caps and that is unlikely to change.

These trends illustrate how important FSA financing is for small and mid-sized family farms, beginning farmers, minority farmers, and others who are not well served by commercial credit. If loan caps are increased across the board in the next farm bill in order to accommodate the needs of the largest farms—those with the

best chance to find private sources of credit and capital—family scale farms, including beginning and socially disadvantaged farmers, will ultimately feel the brunt of the impact and face fiercer competition for a limited pool of Federal loan funding. Those borrowers deserve to be the focus of your concern.

Additionally, statutory target rates for beginning and socially disadvantaged farmers are currently not being met across all loan programs—with guaranteed lenders performing the most poorly. While FSA direct loan programs have met their statutory targets for beginning farmers in recent years, private lenders receiving guaranteed loan funding have been unable to meet their statutory targets since the target participation rates were put in place by Congress in 1992. This strongly suggests that any increases to guaranteed loan limits will benefit the largest operations at the expense of family scale and beginning operations, who face a much more difficult time securing financing in the commercial credit market. Any increase to guaranteed loan limits will mean that private lenders will only be further away from meeting their targets.

In order to extend scarce funds, USDA lending does and should leverage lending from private banks, acting as risk mitigation for private loans, rather than providing the entire loan package. To increase the loan limits would ultimately reduce the number of farmers served with limited loan funds. In addition, we are very concerned that increased limits would encourage beginning farmer investment in very large single-use facilities that leave them over-leveraged and dependent on single markets, placing all of their family's assets at risk as collateral.

FSA Capacity: Across the country, Farm Service Agency offices are woefully understaffed. In one FSA district office in North Carolina, just three loan officers are servicing 280 existing loans and approximately 85 new loan applications across 14 counties. Our understanding is that this is not unusual across the system. The programs that county staff are administering are more complicated and the loan applications more difficult now than they were just a decade ago, especially with the growing interest from diverse farmers who are walking into the doors of FSA for the first time. FSA staffing has not kept pace with the tremendous growth in demand for FSA loan financing. Since 2008, FSA's total loan volume has increased by 30 percent, while staffing capacity has remained relatively flat. What's more concerning is the estimated 40 percent of current FSA loan officers who are nearing retirement in the next several years. It doesn't matter how much funding is made available for FSA loans if FSA doesn't have the capacity to administer these loans in a timely and effective way.

We work with many caring and skilled people within USDA, from the counties up. They deserve our support. But we must also acknowledge the powerful role that lending officers play in determining the success or failure of a farm, and the responsibility that this role entails. It is critical that Congress, along with the Administration, make clear that abuse or discrimination in the administration of Federal programs will not be tolerated, and to maintain clear processes for such abuse, if and when it happens, to be redressed with accountability for the action. I wish that such redress was unnecessary at this time, but that is not our experience out in the field.

Addressing Loan Feasibility

With low commodity prices, farmers will struggle with loan feasibility. There is just not enough of a return on investment to pay back the loan. One of the tools that USDA loan officers could use to increase marginal loan feasibility is the Interest Assist program. In this program, the loan officer can buy down the interest rate of a guaranteed loan by three percent if the reduced costs make the loan feasible. The program exists, and funding this program is a cost effective way to extend loan feasibility. I urge you to speak with your colleagues on the Appropriations Committee about funding this important tool.

With long-term low prices and widespread natural disasters, we must also extend the term limits on both direct and guaranteed loans, not just guaranteed loans. Statute and regulations already require that farmers seek credit from private sources before receiving FSA loans and assuring that they will return to private credit as soon as plausible. In this farm financial environment, there is simply not enough profit to expect that farmers devastated by natural disasters or market upheaval would have the ability to recover sufficiently in the time allotted for direct loans. I urge you to make adjustments in the new farm bill.

In addition to the eroding farm financial condition, changes in commodity programs in the 2014 Farm Bill had the unintended consequence of making it more difficult for lenders to include Federal commodity payments in income projections, further eroding loan feasibility calculations. ARC and PLC payments cannot be counted on in income projections because they are calculated after the season based

on overall market prices, and lenders do not have the ability to predict these payments.

Similarly, the availability of crop insurance is inextricably linked to the ability to secure credit, and can create a real barrier to accessing credit when crops or enterprises have either ineffective crop insurance policies or no policy at all, as is the case for many of the farmers we work with in the southeast and is true in other regions as well. And while conservation programs help farmers build soil health, they can also create guaranteed cash flow and bring assets that can become part of loan feasibility or collateral. I therefore urge you to maintain and increase funding in the new farm bill for the farm bill conservation programs.

The greatest benefit that farmers can receive to address loan feasibility is a profit. Our current credit and risk management programs primarily support large-scale commodity and livestock operations, all of which at this point are not realizing a significant return on investment. And as long as credit is targeted solely to these areas, then farmers will not be able to generate enough income to bring the next generation back to the farm. In essence, if we only lend the way we've lent, then farmers will continue to be stuck in enterprises that do not bring enough profit back to the farm to support the next generation. What we desperately need are programs that mitigate risk for entrepreneurial activities that allow farmers to tap into new markets and generate more profit. It will be these value-added enterprises that will become the cash flow that farmers so desperately need to support the other parts of their enterprise.

In this way, every issue that you will consider in the next farm bill is affected in some way by the ability of farmers to access credit to make a profit. Credit programs are inextricably linked to bringing the next generation back to the land, farmland preservation, conservation, and national security. In our experience, these issues often boil down to the fact that most of production agriculture in our country today does not provide enough of a return on investment to pay for production costs, living expenses and still invest in the future of that farm—whether it is bringing back the next generation or investing in the health of the soil. For farmers to bring their sons or daughters back to the farm, for them to care for their farmland and provide the food and fiber we need for a growing population and with a dwindling natural resource base, they must have the opportunity to develop enterprises that bring more of the food dollar back to the farm—and that opportunity requires credit.

The loss of farms, especially mid-scale farms of the middle, is not new. A running joke in my line of work is that if things keep going the way they are going, then one guy is going to farm the whole country and his wife will still have to work in town to buy groceries. And I beg the forgiveness of the Committee for the gender stereotype, especially considering that a vital and growing portion of farmers are women. Early in my career, longer ago than I care to admit, I walked a farm in Northampton County, North Carolina with a farmer who was a good bit older than the average age of farmers back then. He described to me the 11 families that in his youth made a living from the land that he now farmed by himself. Some of those 11 families lived in the poverty and exploitation of sharecropping. Others did not. But the land that supported 11 families now barely supported one, and there was not enough net income from the farm to bring his son back until the farmer retired. That story always brings to my mind *Isaiah,* chapter 5, verse 8: "Woe to those who join house to house, who add field to field, until there is no more room, and you are made to dwell alone in the midst of the land."

In difficult times, it is important to look at the bright spots, and we see many. Bringing more of the food dollar back to the farm means connecting to new markets with new products in new ways. The bankers before you will no doubt confirm the importance of a diversified portfolio. To weather these difficult times, and to allow our rural communities to thrive, farmers must also have a diversified portfolio. Farm families have the creativity and drive to bring entrepreneurship onto the farm, if we invest in them. Part of that investment is loans to enterprises that a few years ago might have sounded a little crazy. It is also understanding the interconnection of credit programs with other USDA programs. Crop insurance is absolutely key to lending, but doesn't cover all crops, and only rarely covers income from direct or specialty markets. USDA grants, like the Value-Added Producer Grant (VAPG) program, reduce the borrowing burden on the enterprise and increase lender comfort with the investment, leveraging private capital. VAPG is a stellar program that increases market returns for farmers and deserves increased direct farm bill support in the new farm bill. Conservation programs create assured income or assets that can be borrowed against while improving soil health. But these programs must be funded, and must work together to encourage entrepreneurship.

The only way that we as a nation are going to move the needle on beginning farmers, land transition, and farm viability is to find a way to add more value to the

farm. And in order to do that, aspiring farm entrepreneurs must have access to credit programs that encourage, rather than discourage, value-added agriculture, diversification, entrepreneurship, and innovation.

I know that much of the testimony you have heard has been dire, including mine, and I would like to end with a hopeful story. Last week I spoke with Neil Moye in eastern North Carolina. Years ago, his family realized that their turkeys and hogs and row crops would not bring in enough income for them to bring their son back into the operation. Their answer, which I am sure would give all of you pause, was to build a dairy. With the help of a Value-Added Producer Grant, they were able to borrow the money to build a bottling plant. Their son has now returned to the farm and the milk from their Simply Natural Creamery is sold through their farm store and through over 150 stores in their area. Last September, Hurricane Matthew brought devastation to much of eastern North Carolina, and many of their friends were concerned about how the Moyes weathered the storm. They struggled, but not in the way you would expect. For over a week they worked 24 hours a day because their milk was the only milk available to their community, and the communities around them, and was the only milk on the grocery store shelves.

At a time when farm income is low, and projected to remain low into the near future, I encourage you to invest in the hard work and entrepreneurship of our farm and rural families. As you consider the many different programs and titles in the upcoming farm bill, I encourage you to look closely at how they interact with farm credit, and the ability of farmers to stay in business and develop new, entrepreneurial enterprises to address an environment of low commodity prices. With the help of other innovative programs, USDA credit programs can once again fuel agricultural entrepreneurship that will be the lifeline for our future agricultural economy.

Mr. Chairman and Ranking Member, that concludes my opening statement and I am happy to answer any follow up questions you might have now or later for the record.

The CHAIRMAN. Thank you, gentlemen.

The chair would like to remind Members that they will be recognized for questioning in order of seniority for Members who were here at the start of the hearing. After that, Members will be recognized in order of arrival. I appreciate Members' understanding.

I know Congressman Scott had to leave to chair another meeting, but plans to come back.

Gentlemen, all of you spoke about timeliness at the USDA. It would be very helpful if you would encourage your Senators to go ahead and have the vote so that our Secretary of Agriculture could be seated prior to the Easter break. And if you could help with that, I would be very thankful, and I think it would be in your best interests. I don't think there are any questions about the votes, the votes are there, it is just a matter of delays that are, quite honestly, from other things, I guess. Obviously, the management of the agency depends upon having a leader at the agency. I think you will be happy with Governor Perdue. I think you will find him to be a good, honest man and hard worker, that understands the issues, both from a banking standpoint and from a production agricultural standpoint.

You mentioned the 1,000 Acre Rule, Mr. Buzby, and then others mentioned it: 1,000 acres in Tift County may cost $4 million, but 1,000 acres in Iowa would cost significantly more than that. Even in the State of Georgia, county by county it would vary greatly depending on which county you were in. Where did the 1,000 Acre Rule come from? Are there financial caps as well tied to the 1,000 acres, and if so, what are those caps?

Mr. BUZBY. My written testimony outlays some possible theories as to why the 1,000 Acre Rule was put in place. We are not exactly sure what it was. And the way it is written is if a farm is greater

than 1,000 acres, the amount of loan that could be made on that farm is capped at $12.6 million currently. Using Ranking Member Scott's math of $6,000 an acre at 1,000 acres, all of a sudden you are at $6 million, and as you get to a 2,000 acre farm, 3,000 acre farm, and beyond, pretty quickly that $12.6 million gets eclipsed.

If you think about the typical size of farms, when Farmer Mac was created more than 25 years ago the average size of a farm was roughly 600 acres in the United States. In 2012, that number was 1,200 acres. Pretty quickly you have more than ½ of the farms in the country that may be ineligible for the Farmer Mac program.

If you also move to other commodities, not typical row crops, but you look at almond orchards, vineyards, and other areas where the value per acre is many multiples of that pretty quickly there are a number of customers that we are unable to serve.

One of the big concerns is for small lending institutions, whether it be a community bank or another financial institution, as farms grow and they outgrow their bank, those institutions look to Farmer Mac for assistance, and when we are unable to help, sometimes those customers end up going elsewhere.

The CHAIRMAN. Mr. Thiessen, from your testimony I gathered, obvious support for the farm safety net, crop insurance, and exports, I am very concerned about trade agreements and potential retaliation, infrastructure, all are important to the farmers. Farmer Mac is also extremely important to the farmers in Alabama. This morning we heard from folks about the need for a fix to the cotton program. After the 2014 Farm Bill, the STAX Program fell short for many producers. From your perspective as a lender, how dire is the need for an adequate safety net for cotton producers?

Mr. THIESSEN. Being that my board is comprised mainly of producers and farmers and ranchers from across the territory, my last board meeting, one of my board members used the word *dire* himself, and he is a cotton farmer. I would simply say over the last 3 or 4 years, they have gone through most of the equity that they had built, the profits, the liquidity that they had, and today you are looking at a very serious situation in Alabama, as well as elsewhere.

The CHAIRMAN. I know many of the cotton producers that I have talked with don't feel like it is even purchasing the product.

In your testimony, most of you described the need to increase both guaranteed and direct loans. For you, Mr. Franzen, how has the shortage of funds within the Guaranteed Loan Program affected your lending ability? Do you believe that one is more valuable than the other? How do you use direct loans as a lender?

Mr. FRANZEN. Yes, as I mentioned, we were the first preferred lender with FSA in March of 1999, and we use that program very heavily. It is very important to us to manage our risk through downturns in the ag cycles, and to keep farmers of all sizes and all ages financed.

It is hard to say which is more important, the limits or the funding. They go hand in hand. We need to have adequate funding for the guarantee programs. As a couple of others mentioned, when funding isn't available, the loans are approved but sit and wait and can't be closed. And so those farmers know they have a loan com-

ing, but they just don't know when. And that is real problematic, as you can imagine.

The loan limit issue is an issue as well though. And I can speak to several young and beginning farmers in our area that we serve that will get up against those limits, and it limits our ability to keep them funded as they are trying to build that valuable core equity and liquidity in the early years of their agricultural career. I would say both the increase in limits and assurance that funding is in place is vital.

The CHAIRMAN. Thank you for that. I know from a timing standpoint the loan has to come before the planting season. And again, it would be very helpful if we could get them.

Mr. HANDKE. Mr. Chairman, could I add onto that?

The CHAIRMAN. Yes, sir, briefly.

Mr. HANDKE. We would just encourage Congress to set those boundaries high for funding. Hopefully, the Appropriations committees will take your lead. But what we are saying is please don't make us as bankers make those hard choices on who would win—who would get the funding that they would need to continue farming, particularly as these programs have very minimal costs. Very little expense to the government for guaranteed loan programs, but they give us vast amounts more of time and resources to work with farmers, and it is going to take three, four crops, and the current regulatory environment will not allow us to do that.

The CHAIRMAN. I made notes of your comments about the enforcement actions. And certainly, whichever area you are in, if that commodity that is one of the keys to your banking success is the loser that year, then obviously that could lead to that enforcement action. I made notes of that from your testimony.

Gentlemen, thank you. I apologize for going beyond.

Ms. Kuster from New Hampshire, 5 minutes.

Ms. KUSTER. Thank you very much, Mr. Scott. The prerogative of the chair. Thank you, and thank you to all of you for being with us today.

I am from New Hampshire and represent smaller farmers in New England, and we have had a great deal of discussion about access to credit as a critical tool for farmers in New England. For most of the producers, the startup costs of acquiring the land, the machinery, the animals can reach, in our world, over $1 million. I know for parts of the Midwest and West that is a lowball number. But credit programs offered through USDA have helped many of our farmers accomplish their dreams, so I want to continue to work with you to have a successful program.

We have been particularly concerned about what is happening to our dairy industry. We have talked about this in other hearings, but the Margin Protection Program was not successful, we had a drought, we have had issues with Canada and New Zealand and Europe. And in any event, since the beginning of 2016, 19 dairy farms went out of commercial dairy operation. And just to give you a sense, that is out of a total of 120, so this has been a real problem for us with our dairy farmers.

My question for the whole panel, whoever wants to jump in. Dairy producers are struggling with low prices. What I am wondering is that we now know that dairy will have high beginning

stocks and higher than expected milk production in 2017. Can you speak to what stress you are seeing in the dairy industry, if any of you have experience with that?

Mr. FRANZEN. Certainly. In our part of the world in central South Dakota and the center of the Midwest we are seeing an expansion of dairies. We have a situation where we have very good access to dairy-quality feed, and so that is attracting some dairies. We understand some of the stress you are talking about.

Ms. KUSTER. Maybe we could just get the feed a little closer to New England?

Mr. FRANZEN. There you go. There you go. That has been helpful for us, and it is why we have seen some dairies migrate to us. It is trying to be more efficient in access, lower their cost of feed. But at least prices have stabilized recently, and we are hoping that stays the case, but you raise valid points, valid concerns.

Ms. KUSTER. Anyone else, any thoughts with your experience?

Mr. MARLOW. We are also seeing a great deal of stress in the dairy industry, and we work with more of the mid-scale farms that are a bit smaller than what was referenced before. What we are seeing is dairy is one of the places where being able to move into value-added markets is extremely important.

Ms. KUSTER. Yes.

Mr. MARLOW. The ability to move into either on-farm bottling, cheese-making, other ways of getting into local markets. And we see that as being absolutely a deal breaker in terms of dairies in our area, that if they are not able to do that, they really are not being competitive over time. A lot of USDA programs are extraordinarily important for their ability to do that; things like the reference before to the Value-Added Producer Grants, or other grants, are critically important, as well as looking at crop insurance and other types of ways of having risk mitigation for higher-value markets.

Ms. KUSTER. We have seen that as well, the value-added, we have one dairy, a young woman with unbelievable pudding, but also cheeses, yogurts, *et cetera.*

One more question. Farm income is projected in 2017 to be ½ of what it was in 2013. We are seeing increasing farm debt, decreasing liquidity, and farm debt-to-assets level climbing. Are farmers going to have access to the credit they need to get a crop in the ground for this upcoming season?

Mr. HANDKE. I might respond to that. There was an interesting presentation from Dr. Boehlje from Purdue. Those numbers are actually masked somewhat by the fact that we had some once in a lifetime crops in the U.S. last year, plus there was a higher level than expected government payments, neither of which are likely this year. It could be worse than that.

Also, looking at net farm incomes, you are pulling in a lot of the smaller farms that have significant off-farm income sources. In the larger production section of agriculture they would probably be worse.

Ms. KUSTER. Well, that is a cheerful outlook.

Anyone else?

Mr. FRANZEN. Yes. Unfortunately, I tend to agree. We are right at a real interesting point in much of agriculture across the coun-

try. If we wouldn't have had the bumper yields that many of us have referred to, it would have been much worse. I mentioned 50 percent of our clients lost money this past year, and the outlook, I am a cup-half-full guy so I am hoping prices rally a little bit and give us some margin, but really realistic outlook doesn't give us much hope for that. We are in a sustained period of tight margins, and every program is going to be real important and be real necessary.

Ms. KUSTER. Well, we certainly appreciate your advice, going forward, and we will all try to abide by, first, do no harm, as we move forward with the farm bill.

So thank you.

The CHAIRMAN. Mr. Comer.

Mr. COMER. Thank you, Mr. Chairman. And I want to thank you all for not only being here, but for what you do. I am a farmer from Kentucky. I was a director of a community bank for 12 years, so I worked with a lot of family farmers in our area to help them obtain financing. I am a customer of Farm Credit Services. I owe them a lot of money, so hopefully I am in decent standing with them. And then when I was getting started in farming I got an FSA loan. I appreciate all that you do. I know it is a challenging endeavor to help farmers get access to credit, because farming doesn't have your typical business model and your typical predictable cash flow projections like most industries. I appreciate what you are doing.

I have a few questions. Mr. Marlow, when funds for FSA loans run out, which that happens a lot, what other options do producers face? Are there any short-term financing options?

Mr. MARLOW. What we see very frequently is people moving to either delaying the paying of other bills, that can be healthcare bills, household bills. We see moving to credit card debt, which can be extraordinarily destructive.

Mr. COMER. Yes.

Mr. MARLOW. One of the things that we are very concerned about is that as those gaps can go weeks or months, that the steps that families have to take in between to be able to farm in the meantime, because the season doesn't wait, that really damages their ability to come back and have the loan feasibility, because they are driving up credit card debt, other forms of debt, other forms of unsecured debt. That delay can be quite disastrous.

Mr. COMER. Yes. Mr. Handke, did I pronounce that right? I am from a small town, I pronounce everything wrong.

Mr. HANDKE. You did very well, yes.

Mr. COMER. All right. Agriculture, as I mentioned earlier, is different from every other industry, however, regulators don't often see it through the same lens. Within our jurisdiction, what steps can this Committee make to encourage regulatory flexibility to allow lenders to work with farmers on restructures through these rough times, with commodity prices where they are?

Mr. HANDKE. Well, you bring up a very good point. And because of the difficulties in the commercial banking sector in 2009 and 2010, the regulators are very nervous about being called on the carpet for this impending ag credit issue. But they are using the same

tools they used for commercial credit, which they are now applying to ag, and they are two different business models.

Mr. COMER. Right.

Mr. HANDKE. Commercial real estate is a different asset class than a farm. But what that also means is that if they classify these not on equity, but on cash flow, then banks are going to rapidly accumulate volumes of classified assets. Now, regulators think in terms of your next exam. That is 18 months, maybe a year. They want something done. Farmers work their way out of these problems in, like I said, over two to three crops. There is a discourse between the time that we need to either have to exit a substandard loan, or rehabilitate, and we may not have that chance. And there is only one tool on my desk right now to accomplish that, and that is USDA guaranteed loans.

I started my banking career around the time of the 1985 Farm Bill, in about 1984, and if it had not been for the guaranteed farm program our bank may not have survived. I wouldn't be sitting here today, because it immediately reduces that classified asset by 90 percent, and then we get the time to work with those producers through crop two, crop three.

Mr. COMER. Right. Real quickly, this question will be for anyone on the panel. Are there any regulations that we can undo to make it easier for farmers, especially beginning farmers, to have access to credit? Specifically regulations like Dodd-Frank, would that make a difference, the repeal of Dodd-Frank, would that make a difference in access to credit? Anyone?

Mr. FRANZEN. Certainly, the regulatory burden has been a challenge for banks. To speak to a couple of specifics, one of the challenges we have out in the rural landscape is just rural housing loans. Dodd-Frank has really made it challenging for us to lend a family money for their home out of town, out in the country, for a couple of reasons. Certainly, one of them is finding a qualified appraisal can be very, very challenging. And then the other is, as residential lending regulations have been incorporated into Dodd-Frank, they have been written for W–2 earners; folks that bring home a wage. They have not been written very well for self-employed businesspeople like farmers and ranchers. And so that has been an extreme challenge for us.

The other one that is worthy of noting are the challenges that USDA has today with the NEPA regulations, the NEPA rules, that has really slowed down the process of getting a loan closed. And if we have a young farmer that is trying to put up a finishing barn for swine, for example, or any other type of animal feeding facility that qualifies, has really slowed that process down, and makes it very challenging to get those loans in place and funded.

Mr. COMER. Okay.

Thank you, Mr. Chairman.

The CHAIRMAN. Ms. Plaskett, I apologize, 5 minutes.

Ms. PLASKETT. No problem. Thank you so much, Mr. Chairman. And thank you, gentlemen, for coming and testifying this afternoon, and presenting your views on Farm Credit policy as we consider the next farm bill.

I was reading through some of the written testimony, and, Mr. Thiessen, is it, Thiessen?

Mr. THIESSEN. Thiessen.

Ms. PLASKETT. Thiessen. I was really interested in the discussion you have about the Farm Credit's mission in rural infrastructure, and that the Farm Credit finances more than $27 billion in rural infrastructure, including rural electrical co-ops, water systems, rural telecommunications, broadband.

This is a question really for any of the witnesses. I have heard also a bit about the Rebuild Rural effort. Can you describe to me the role that Farm Credit and the banks can play in this investment in our rural infrastructure?

Mr. THIESSEN. Well, and I will start, the infrastructure authorities that lie within Farm Credit, primarily lie within an organization called CoBank, and to the extent in my institution, headquartered in Montgomery, Alabama, if I ever see that there are needs in rural communities, I can immediately contact my sister institution and they are very quick to respond. In essence, we are all in this together, trying to help support rural communities.

But they do have authorities that help them with rural water infrastructure.

Ms. PLASKETT. Right.

Mr. THIESSEN. Like you said, rural utilities, broadband——

Ms. PLASKETT. Which do you find the most that people are requesting? What areas do you find the most need in some of these rural communities?

Mr. THIESSEN. Well, I am going to give you one particular answer, but I will actually tell you I will research that with CoBank and get you a specific answer.

Ms. PLASKETT. Okay.

Mr. THIESSEN. In my world, with the farmers that I help and the rural people that I help, you do hear a lot of the connectivity, broadband. I have farmers that can literally sit in Montgomery and turn their irrigation systems on 4 hours away, and monitor how effective that that is. On rural infrastructure, we have been asked before about water treatment facilities, but we will get you further information from CoBank.

Ms. PLASKETT. Got it. Okay, great. Thank you.

And the discussion also about water, antiquated water systems in some areas, those can lead to really disastrous consequences for communities. Some of our communities are struggling to update water infrastructure, and you talked a bit about the Farm Credit's role in providing financing for this type of infrastructure. In the Virgin Islands where I live, one of the islands, St. Croix, is primarily flat and has a lot of agriculture, and it is really trying to dispense water throughout the island. But on the island of St. Thomas, we also have a lot of tiered farming, and farmers that are farming actually in the hills and in the mountains, and trying to create water systems there can be really difficult for them. Do any of you have any suggestions or ways that you see that some of the Farm Credit funding can be supportive of that?

Mr. THIESSEN. Well, I guess that one is to me too.

Ms. PLASKETT. It is me and you here.

Mr. THIESSEN. Absolutely. And I tell you, I am going to have to probably defer to that one as well to my sister institution. Again, they have the expertise, the CEO testified in here last week about

those very ideas. To the extent, in areas like what you are talking about, always get people to band together you will always find much greater successes in some of those outcomes.

Ms. PLASKETT. And that is the one thing that we are really looking at right now is in terms of cooperatives.

But, Mr. Franzen, I know you want to say something.

Mr. FRANZEN. Yes, Congresswoman, just a comment from a banking industry perspective. Financing infrastructure is challenging, it is low-rate terms and usually long-term fixed rates required to make them feasible, and so in the banking industry, they become challenging to underwrite. But one of the ways we could make enhancements to allow us to take a more active role is through Rural Development guarantees, and then making sure that those guarantees are saleable to Farmer Mac, that would give the banking industry the ability to also participate at a greater level.

At our bank, we have done a little infrastructure financing, but it is always through bonded projects so they have to have a bond associated with it.

Ms. PLASKETT. Got it. May I ask, when you bring this up about the banking, I know that there has been a new accounting rule on banks. FASB has one, particularly, in effect of community banks in rural areas. They released new accounting standards that require community lenders to look forward, foreseeable future, and consider all losses that may happen to a loan in question, and to book those losses. Have you seen this, and do you have an opinion on how this may affect some of our rural farmers?

Mr. FRANZEN. Yes, it is probably too soon to have a strong opinion on that. We have——

Ms. PLASKETT. But we can, we are Members of Congress, we always have an opinion. I don't know why you don't have one. Even for something that we don't know anything about. But you haven't been able to determine anything as yet?

Mr. FRANZEN. We have had to, on a few loans, look forward with that FASB ruling, but again, it hasn't had a significant impact at this point for our bank.

Ms. PLASKETT. Thank you so much, Mr. Chairman, for your indulgence.

The CHAIRMAN. Thank you, ma'am.

Mr. Marshall.

Mr. MARSHALL. Yes. Thank you, Mr. Chairman.

My first question for Mr. Handke. I see your tie is yellow, and was wondering, when purple and orange are together, which team do you root for?

Mr. HANDKE. I am a seasonal fan.

Mr. MARSHALL. Very——

Mr. HANDKE. Purple in the fall and gold in the basketball season.

Mr. MARSHALL. Okay. All right. Well, hang in there with me.

I will stick with you, Mr. Handke. Certainly, the conditions for agriculture in my community of Great Bend look pretty tough, and it is getting worse the further west I get. You are more north central Kansas. I assume that is wheat and some soybeans probably. You say you are a harvest away from a dire condition. How is this coming harvest looking for you guys?

Mr. HANDKE. Well, we have decent moisture right now, but this downturn has basically been precipitated by commodity prices, so I don't think there is, again, I like to quote Dr. Boehlje because he has said agriculture is characterized by sudden spikes and earnings, and then long periods of resource reallocation. There is no reason to believe we are not in a long period of resource allocation to adjust to lower ethanol fuel exports. We are in a long period of readjusting the balance sheets. And farmers, they like to store wealth in their balance sheet, on their land particularly, so being able to use these USDA guarantees to solve these cash-flow problems, that is going to be so important. But, we manage until our next regulatory report.

Mr. MARSHALL. Yes, the bigger problem I am hearing back home is more their operating loans——

Mr. HANDKE. Yes.

Mr. MARSHALL.—and I shouldn't ask a question that I don't know the answer, but do the operating loans, do they ever work with the Farm Credit. the FSA and that stuff, or do they never react to each other? Mr. Franzen?

Mr. FRANZEN. Yes. For operating loans, you input a guarantee on an operating loan as well, guaranteed loans apply to both farm ownership, real estate, or operating.

Mr. MARSHALL. Okay. Sorry, I didn't know that. I am going to stick with you, Mr. Franzen. I am really intrigued with some of your young farmers programs you have going on. And certainly, if I have learned anything on this journey, that farming is a very much a business, a small business. All the problems that any small business owner has, farmers have those as well. Health care is 1/6 of their cost, and on and on and on.

Tell me a little bit more about your program, what is working, what is not working, what can we do to empower you?

Mr. FRANZEN. Yes, well, I appreciate the question. And it has been a real rewarding program for us. What we really try to do is just increase the financial literacy of young farmers out there so that they can be as proactive as possible when they deal with these cycles that come in agriculture. And those of us that have been in agriculture a while know that they come on a regular basis, these cycles. And so we work very closely with that.

Actually, the second program I talked about, our Keep Farmers Farming Program, came right out of our Beginning Farmer Program, and it was trying to match up the generations, and help them work through transition effectively so that their farm can stay in the family from generation to generation. And we were very worried, and still are, as the average age of farmers rises, which was talked about earlier, how do we make sure that we get those farms transitioned to the next generation as effectively as possible so that we don't lose more farms just because of lack of planning and lack of understanding of the tools that they have.

Mr. MARSHALL. Okay. I am going to stick with you, Mr. Franzen. You mentioned something about working with FSA and the number of upgrades and interaction. When we had the big prairie fires very recently in Kansas, 600,000 acre, 5,000 cattle, tens of millions of dollars of loss, one of the problems is that just the number of FSA workers aren't as many as they used to be, and it has really

slowed down the process, are they ready and willing? What type of problems are you encountering with the FSA?

Mr. FRANZEN. Yes. About the time the last farm bill was written, we had the devastating blizzard in South Dakota that is somewhat comparable to the fires that you just experienced, and thank goodness for the Livestock Indemnity Program that FSA has to offer. But you are right, staffing is a big concern and that is why we mentioned it in our testimony. With so many FSA employees now eligible for retirement, and especially in maybe a tougher economic cycle time, we are worried about retirees continuing at a heavy pace and not having the staffing levels behind it. And that is going to create some challenges if the funding isn't in place and a big priority made on it.

Mr. MARSHALL. I am going to jump in, a quick question to Mr. Handke. You made a nice list of to-do, things we could do to improve them, I think was your testimony.

Mr. HANDKE. Yes.

Mr. MARSHALL. Is that something new, have you presented those types of problems before to this type of committee, is it getting worse, is it getting better? And I have used all my time, sorry. Do you want to go ahead and answer?

Mr. HANDKE. I think this list is a recommendation from the bankers that serve on our committee, so it is difficult to get at an historical perspective, but looking forward, these are the things we would like to see addressed in this new farm bill with the ag credit title issue.

Mr. MARSHALL. Thank you.

I yield back.

The CHAIRMAN. Mr. Soto, for 5 minutes.

Mr. SOTO. Thank you, Mr. Chairman.

And now for the other side of the country. I represent the central Florida area, and we are predominantly a citrus and cattle-producing area. Citrus has been taking a huge hit, as many of you may know about. We are down 70 percent production over the last 10 years.

And so my first question was what kind of lending programs do we have in place or can we put in place to encourage replanting and to have our citrus growers hang on as we grapple with this greening issue?

Mr. THIESSEN. Well, and I will jump in. Not living that far away, we have Farm Credits that are down there that have explained the greening issue that you do have. I will actually find that information out for you and provide that back to the Committee, since that is not something that I particularly deal with, but because we are connected with Farm Credit down there, I promise you there are issues or resolutions to many of those problems.

It is not just yours, to the extent we have other issues, whether it be in Alabama or all across the country, we all have ways with which we are trying to deal with credit, get cash flows down during these times, even in the situation you have described, lengthen out terms, use equity, get working capital back in peoples' hands. Those are things that we are doing everywhere, and I am sure we are doing them down there too.

Mr. SOTO. Well, it would be great to have some feedback on some things you would like to see in our farm bill.

Now, on the cattle lending, how is cattle ranch lending going so far nationwide, and are there any tweaks we should be making?

Mr. FRANZEN. In the cattle business, I would make a couple of comments. We have a strong cattle influence in our part of the country. Cattle feeding, the finishers of cattle have had a tough couple of years. Matter of fact, I mentioned the losses in our portfolio, some of the most substantial are in the cattle feeding business. Fortunately, the first quarter of this year is looking a little brighter, so hopefully they can start to have some opportunity again, but they have some big holes to dig out of because of the challenges the last 2 years.

The cow/calf industry on the other side was——

Mr. SOTO. Which is what we do best.

Mr. FRANZEN. Which is what you do. I have a client that sells a lot of bulls down to Florida, so I have some familiarity. It was very strong a year ago, and is now rapidly falling off in prices as well. Calf crops this year are coming in close to ½ the value of a year ago, so there is some significant strain coming in on that business as well.

Mr. SOTO. This is more a question, and this is one we asked to another group the other day. With profits being very limited, is it more of a supply or demand problem, or a little bit of both that we are experiencing?

Mr. FRANZEN. I will give my opinion, and I am sure others will too. It is primarily a supply problem, in my opinion. And if you look at the data demand for ag products around the globe is still strong, but we have had bumper crops in most sectors of agriculture and we are swimming in supply. And so it is always agriculture's challenge, right, the yields we talked about saved us. Well, they saved us this year in some years, but they compounded the supply problem that is really the root cause of the longer-term issue we are dealing with here. Somebody else needs the drought, other than an American farmer, hopefully, and we will fix that. But that is the only way.

Mr. THIESSEN. If I may, all of that makes absolute sense. That is one of the reasons that we encourage you, working with the Administration, to deal with export markets, open up more global markets so we can have an impact on demand then as well.

Mr. MARLOW. And what we are seeing in terms of the other side of the demand is a very rapidly growing demand for specialty meats coming out of, and we are hearing constantly from small and mid-scale farmers who are cattle farmers that their access to slaughter and access to processing is a huge problem, they are having to transport animals a very long way in order to get access to slaughter, but are able to get into much higher-value markets, growing markets, either both wholesale and direct retail, especially in areas like where you have that proximity to larger-scale markets.

Mr. BUZBY. As Farm Credit does, Farmer Mac lends all around the country, and just in this brief hearing we have heard about cattle, we have heard about cotton, dairy, corn, soybeans, citrus, the problems are widespread throughout the country in agriculture

right now. And it was Nate that said, last year was a tough year but yield saved it. Next year is going to be an even tougher year, regardless of where yields go. The availability of credit to farmers is very important, whether that comes from the banks, Farm Credit insurance companies, or other financial institutions.

Mr. SOTO. Thank you.

Mr. HANDKE. Where we are seeing that diversity too is sometimes you have one sector cycling up, like cow/calf when cash grain is going down, but we seem to all be cycling down, you are not going to be able to average like maybe we have in some of the past years.

Mr. SOTO. Thank you. And I yield back.

The CHAIRMAN. Mr. Faso, 5 minutes.

Mr. FASO. Thank you, Mr. Chairman.

Mr. Buzby, you mentioned in your testimony that you supported the change in the 1,000 Acre Rule, and I am wondering, how long has that rule been in effect?

Mr. BUZBY. Farmer Mac was created in the late 1980s, and it has been in place ever since the original statute was drafted.

Mr. FASO. And does the rest of the panel agree that that would be a beneficial thing to lift that limitation on 1,000 acres?

Mr. HANDKE. Absolutely. We are an active Farmer Mac participant, and that would be very helpful. As he said, as these farms have grown, the median size has doubled. It appears to be outdated.

Mr. FASO. Yes.

Mr. FRANZEN. We would agree as well. Yes, it is very important. As we have said, to get through down cycles, we need all the tools we can, from FSA guaranteed lending, to Farmer Mac, and other tools to manage our risk.

Mr. THIESSEN. And Farm Credit is looking at this as we speak. We have concerns about structural issues, but at the end of the day, if you will give us a chance, we will come back to the Committee with what our concerns are.

Mr. FASO. Okay.

Mr. MARLOW. And we have concerns about increasing the limits significantly. We have concerns that, as we have heard today, we frequently run out of funding, that when you increase those limits that means fewer, larger loans. We are very concerned that there be enough funding, and that it is more important that everyone who needs it has availability to it, rather than just it covering everything. What we see very frequently is FSA directing guaranteed loans used as a part of a loan package, rather than having to cover the entire package. And so they can be used as a base, but it is critically important that that base is available to everyone who needs it, and in a timely way.

Mr. BUZBY. If I could just clarify that the issue that we have talked about quite a bit, the other panel members, about the FSA loan limit, which is roughly $1.4 million, and raising that limit and what impact that might have on small farmers, that is a different issue than the loan size limit for a Farmer Mac loan.

Mr. FASO. Sure. And I recognize that. The region I represent in the Catskills and Hudson Valley in New York State, we have a lot of smaller farmers, and I am just wondering if there is a certain

geographic disparity in terms of that need as you see it to raise that 1,000 acre limitation, because my concern would be, to some degree, what Mr. Marlow was saying, that I wouldn't want to crowd out the ability of smaller farms' operations to participate.

Mr. BUZBY. And we certainly wouldn't want to do that either. We have had a focus for many years on small, beginning, and young farmers. Currently about ½ of the loans in Farmer Mac's portfolio are to *small farms,* defined as gross income of less than $350,000. It is really looking at serving all farmers, both small and large.

Mr. FASO. Could you provide the Committee with information as to the geographic dispersal of those loans as well around the country?

Mr. BUZBY. Certainly.

Mr. FASO. I would be certainly interested in hearing it.

And one thing Mr. Marlow said just a moment ago piqued my interest because we have a lot of cattle operations that have arisen in the last few years in the Hudson Valley, and I do hear from people about the difficulty of getting processing facilities, and the length of time and the distance that they often have to travel. And I am wondering have any of you looked at the question of financing for those processing facilities, and whether there is an overall need for those, or is this something that might strictly be limited to my part of the country?

Mr. MARLOW. We are seeing that the need for that kind of processing is across the board. And when you are talking about a smaller scale farm, it is obvious from what we are talking about in terms of prices, that those commodity markets are not something that is going to be sustainable for a small-to-mid-scale farm. And so looking at both the financing and other issues that can cover that infrastructure that moves between the farmer and the market, but also looking at in terms of access to credit the crop insurance for specialty crops and for higher-value markets, like the Whole Farm Revenue Crop Insurance Policy, which is fairly new, these things are geared more towards allowing smaller, more diversified operators to get into credit and to be able to borrow. And being able to extend the safety net into specialty crops, higher-value markets, the types of things that are going to be more important in your district, is a very important part of the process as we move through the farm bill.

Mr. FASO. Yes, I agree. I mean it is interesting because I have operations that send their product down to Chelsea Market in Manhattan and they are selling strip steaks for $30 a pound. And, of course, no one in my district would pay that but down in Chelsea Market they will. And so it is really important that we nourish and allow to prosper this thriving agricultural sector, these small processors, new processors, a lot of young farmers coming in. I appreciate the panel's testimony here today.

And with that, Mr. Chairman, I yield back.

The CHAIRMAN. Thank you.

Gentlemen, all of you mentioned technology and the need to update the technology at the USDA. I want to invite you to all give this Committee specific recommendations in writing that we can submit to our new Secretary, as soon as Mr. Perdue is confirmed, and certainly we will be happy to work with you on that issue.

I know Mr. Scott is in a Financial Services meeting. As you know, votes pushed this meeting into others, and we are close to having votes again. I want to thank you for your testimony and the role that you play in not just the agricultural economy, but in the rural economies throughout the country.

And with that said, under the Rules of the Committee, the record of today's hearing will remain open for 10 calendar days to receive additional materials and supplementary written responses from the witnesses to any question posed by a Member.

This hearing of the Subcommittee on Commodity Exchanges, Energy, and Credit is adjourned.

[Whereupon, at 3:54 p.m., the Subcommittee was adjourned.]

[Material submitted for inclusion in the record follows:]

SUBMITTED LETTER BY ROGER JOHNSON, PRESIDENT, NATIONAL FARMERS UNION

April 4, 2017

Hon. K. MICHAEL CONAWAY,
Chairman,
House Committee on Agriculture,
Washington, D.C.;
Hon. AUSTIN SCOTT,
Chairman,
Subcommittee on Commodity Exchanges, Energy, and Credit,
Washington, D.C.;
Hon. COLLIN C. PETERSON,
Ranking Minority Member,
House Committee on Agriculture,
Washington, D.C.;
Hon. DAVID SCOTT,
Ranking Minority Member,
Subcommittee on Commodity Exchanges, Energy, and Credit,
Washington, D.C.

Dear Chairman Conaway, Chairman Scott, Ranking Member Peterson, and Ranking Member Scott:

Thank you for holding today's hearing entitled, *The Next Farm Bill: Credit Programs.* As you are well aware, the current state of the farm economy requires robust access to credit. As this Committee works towards the drafting of a new farm bill, ensuring that the credit programs match the current and future needs of farmers and ranchers is particularly important.

Economic indicators of farm and ranch health have continued to erode from the highs experienced in 2013. Since that peak, net farm income has declined by 50 percent, putting significant stress on agricultural operations. If uncorrected, this multiyear downward trend will do even greater harm to family farmers than what we have already witnessed. The U.S. Department of Agriculture (USDA) projected financial liquidity measures, including working capital, are forecasted to weaken again in 2017. National Farmers Union (NFU) is concerned over increases in nonperforming loans, decline in real estate values, higher collateral requirements, weaker debt-to-asset ratios, increased rolling of short and medium-term debt into long-term debt, and high demand for Farm Service Agency (FSA) loans.

When credit markets tighten demand for FSA loans increases. We have witnessed demand spike over the last 2 years. As of March 28th, FSA had made 19,696 loans for a total of roughly $2.9 billion. Current lending levels have FSA on track to match last year's record spending, when FSA ran out of money and had a severe backlog of applications at local offices. As an example, guaranteed ownership loan demand increased by $500 million.

Last year's continuing resolution (CR) provided FSA additional flexibility to meet increased demand from 1 fiscal year to the next. FSA is running out of money provided by the last CR and is now requesting permission to utilize the flexibility granted last year. The core problem is that the portfolio needs additional resources to meet demand. As this Committee looks to the next farm bill, NFU urges you to keep this increasing demand for agricultural credit in mind.

In addition to increased demand, NFU also urges this Committee to examine current loan limits. NFU supports increasing individual limits for FSA loans. Our members' attention is particularly focused on the direct loan portfolio. Current limits of $300,000 are no longer adequate and are not reflective of the costs of operating or owning a farm. Within the guaranteed portfolio, our members support a modest increase in the lending levels to better align with current market conditions. All of our support for increases is predicated on additional funding for the entire loan portfolio. Increasing the individual limits without increasing overall funding levels would end up doing more harm than good.

Another important consideration for this Committee is the current state of FSA loan office capabilities. Serious investments into updating FSA's information technology tools are required. Basic abilities, like checking loan balances online, do not exist. Additionally, in 2019, 40 percent of FSA loan officers will be eligible for retirement. Should there be widespread retirements among the 1,100 staffers within FSA's loan division, the ability to service existing loans will be severely eroded.

An important part of the next farm bill will be to build off the beginning farmer progress made in the last farm bill. There is strong demand for new and innovative credit programs that are responsive to the needs of beginning farmers. Our beginning farm members benefited from the higher microloan limits and the loosened administrative requirements for eligibility. Since inception, FSA has made 25,070 Direct Operating Microloans for a total of $574.5 million and 274 Direct Farm Ownership Microloans for a total of nearly $10 million. In the context of the current farm economy, demand for these programs will continue to grow and funding levels will

need to be more robust. Protecting existing and expanding future credit options for beginning farmers is essential.

Our members have shared stories of private loan officers creatively working to provide needed credit. At the same time we have heard other situations where our members, despite having strong debt-to-asset ratios, are increasingly challenged to obtain operating credit without selling off assets. As this trend continues, FSA loans will be more important than ever. Ensuring FSA has the necessary tools is critical for the continued viability of distressed farm operations.

As financial indicators continue their slow decline, the work of this Committee becomes ever more important. NFU appreciates the Committee taking the time to better understand credit conditions and programs vital to producer health. We look forward to continuing our work with this Committee for the benefit of America's farmers and ranchers.

Sincerely,



ROGER JOHNSON,
President, National Farmers Union.

SUBMITTED LETTER BY HON. JIM MATHESON, CHIEF EXECUTIVE OFFICER, NATIONAL RURAL ELECTRIC COOPERATIVE ASSOCIATION

April 3, 2017

Hon. AUSTIN SCOTT,
Chairman,
Subcommittee on Commodity Exchanges, Energy, and Credit, House Committee on Agriculture,
Washington, D.C.;

Hon. DAVID SCOTT,
Ranking Minority Member,
Subcommittee on Commodity Exchanges, Energy, and Credit, House Committee on Agriculture,
Washington, D.C.

Dear Chairman Scott and Ranking Member Scott:

Thank you for holding this week's hearing on credit programs as you work toward the next farm bill. On behalf of the over 900 rural electric cooperatives that make up the National Rural Electric Cooperative Association, I would like to submit this letter in support of policies that would improve credit programs under your Subcommittee's jurisdiction.

As you know, the 2008 Farm Bill provided Farmer Mac with the authority to include in its secondary market activities loans made by cooperative utility lenders to rural cooperative utilities. Cumulatively through the end of 2016, Farmer Mac has purchased nearly $1.5 billion of utility loans, provided just under $1 billion of credit protection on utility loans, and provided over $5 billion of wholesale financing to cooperative rural utility lenders. As a direct result of the 2008 Farm Bill, rural electric cooperatives and their consumer owners benefit through low interest rates on favorable terms, passing along those savings to their members, and your constituents.

Farmer Mac is instrumental in providing capital for rural America through several methods, including a Farm & Ranch portfolio of agricultural real estate holdings, a portfolio of USDA guaranteed loans, and through rural utility financing. We understand that Farmer Mac, like most financial institutions, is mindful of the diversification of the sources of its business as part of its overall approach to risk management. Therefore, we believe that growth in some parts of Farmer Mac's business could also lead to growth in others as Farmer Mac strives to maintain balance and diversity in its overall portfolio.

Farmer Mac's charter currently limits the size of an eligible farm or ranch mortgage loan to $12.6 million (adjusted for inflation) for loans secured by more than 1,000 acres of agricultural real estate. Since Farmer Mac's creation in 1988, the farming and ranching community has obviously grown to incorporate larger operations, and this limit has severely limited Farmer Mac's support for this industry. Farmer Mac is requesting that its charter be updated to reflect today's farming and ranching operations so that the company can determine appropriate loan amount and acreage limits as a part of its overall risk management.

NRECA supports this request not only because it is a reasonable adjustment for today's farming economics, but because by removing this burden, Farmer Mac will

more easily be able to grow its entire portfolio in support of rural America. This could lead to growth in the rural utility portion of its business and bring more benefits to rural electric systems.

To be sure, NRECA's members' first priority is to deliver affordable and reliable electricity to their members. However, as you well know, rural electric cooperatives are more than just utilities. They are the engines of rural economies and their members, many of whom are farmers, ranchers, and others involved in agriculture experiencing stresses in their operations. NRECA supports efforts such as this proposal by Farmer Mac to assist borrowers in alleviating these stresses in a safe and sound manner.

Thank you for your consideration.

Sincerely,



Hon. JIM MATHESON.

CC:

The Honorable K. MICHAEL CONAWAY.

The Honorable COLLIN C. PETERSON.

SUBMITTED STATEMENT BY COALITION OF AGRICULTURAL MEDIATION PROGRAMS

Dear Chairman Scott and Members of the Subcommittee:

The Coalition of Agricultural Mediation Programs (CAMP) appreciates the opportunity to submit testimony on behalf of the 40 USDA certified state agricultural mediation programs. CAMP serves as the voice for the state programs to enhance their effectiveness in supporting agriculture across the United States.

CAMP respectfully requests your support in the following three areas:

- Expansion of cases covered under the USDA Agricultural Mediation Program.
- Reauthorization and designation of funding for the program as mandatory under the farm bill.
- Funding levels to match the increase in the number of state programs and anticipated increase in demand for mediation services.

Context and Background

The U.S. increasingly relies on foreign countries for its food. In 2015, the U.S. trade deficit in fresh and processed fruits and vegetables totaled more than $11 billion.[1] At the same time, the agricultural workforce continues to age: the average age of farmers has increased from 50.5 to 58.3 years over the last 30 years.[2] If the U.S. hopes to have a semblance of agricultural independence, Congress needs to support effective tools that help farmers and ranchers resolve credit problems, secure access to arable lands, and develop transition plans to keep ag lands in agriculture.

The Agricultural Mediation Programs are especially well suited to help address these issues. Congress created the state-certified program in 1988 in response to the 1980s credit crises as part of the Agricultural Credit Act of 1987. Since their inception, these programs have functioned as Federal/state partnerships to provide a confidential, neutral forum to discuss and resolve complex agricultural loan and credit issues. USDA and state funding allow trained mediators to provide these services free of charge for eligible cases. The mediations take place in a confidential and non-adversarial setting, outside the traditional legal process of foreclosure, bankruptcy, appeals and litigation. Mediation allows people to develop their own solutions tailored to the uniqueness of their situation. Mediated settlements benefit the entire agricultural economy, including producers, lenders and creditors.

Each year, the USDA mediation programs help agricultural producers, creditors and USDA agencies resolve thousands of cases, including USDA adverse decisions and other disputes. Most cases involve farm loans or credit problems, such as denial of loan applications, restructuring, and foreclosures. Producers can fall behind on farm loan or credit payments for any number of reasons, including depressed com-

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[1] Johnson, R. (2016). *The U.S. Trade Deficit Situation for Fruit and Vegetable Products* (CRS Report RL34468). Washington D.C.: Congressional Research Service.

[2] USDA National Agricultural Statistic Survey (2014). *2012 Census of Agriculture Highlights. Farm Demographics—U.S. Farmers by Gender, Age, Race, Ethnicity, and More.* ACH 12–3.

modity prices, equipment repairs, labor shortages, and poor harvests due to weather or agricultural pests. Financial problems can cascade; with a poor credit history or negative cash flow, banks, USDA's Farm Service Agency (FSA) and other creditors may refuse to issue further credit. Unable to qualify for a farm loan and unable to pay back creditors, the producer may feel like there are no options left other than to give up on farming. This scenario is especially common for small-scale farmers, which make up nearly 90 percent of all farms in the U.S.[3]

Agricultural economists have forecast decreased farm revenue across many sectors of the agricultural economy for 2017. According to USDA, "net farm income . . . is forecast at $62.3 billion ($54.8 billion after adjusting for inflation) for 2017, down 8.7 percent compared to 2016. The calendar year 2016 net cash farm income and net farm income forecasts are $91.9 billion and $68.3 billion, down 12.2 percent and 15.6 percent from their respective 2015 levels."[4] Agricultural mediation programs across the country have observed an increase in loan delinquencies for both FSA and commercial lenders' loans. Not surprisingly, both USDA and agricultural economists anticipate an increased need for mediation program services in FY17 and FY18. Additional information about CAMP and the USDA Agricultural Mediation Program is provided in *Exhibit 1.*

The following outlines potential steps Congress could take to enhance the overall effectiveness and efficiency of the Agricultural Mediation Program.

Expand Covered Cases To Meet Evolving Needs of the Agricultural Community

Over the past several years, CAMP has been working with USDA to expand the types of cases that programs can mediate under the program. The original focus of the program was on adverse USDA lending decisions, but Congress has expanded the scope on several occasions to meet evolving needs of the agricultural community.[5] USDA also has added covered cases through the administrative process.[6] The current list includes: farm loans, credit issues, adverse decisions on USDA programs, wetlands determinations, rural water loan programs, rural development loans, grazing on national forest system lands, pesticide issues, and such other issues as the Secretary of Agriculture considers appropriate. Since the last expansion of services, over 10 years ago, the complexion of agriculture has changed dramatically.

Due to the price of land, many farmers, especially young farmers, turn to leasing because they cannot afford to purchase land outright. These leases are critical to the farming operations but disagreements can arise between the parties concerning the terms of the lease. With many farmers approaching retirement age, there is an increasing need for assistance with family farm transitions, which can involve complex family dynamics and financial issues. In addition, suburban encroachment on farmland has led to many conflicts between farmers and neighbors; disputants often turn to local hearing boards or state courts, which can be costly and time-consuming.

USDA has encouraged CAMP to work with Congress because the agency believes it cannot add these issues without Congressional authorization. USDA's Office of General Counsel has interpreted the statute to require that; (1) any additional issues added must be under USDA's jurisdiction, and (2) both parties be "covered persons" under the statute. As a result, all but one of CAMP's many suggestions to add covered cases have been turned down. Just before leaving office, Secretary Vilsack signed a memorandum approving organic certification as a covered case for the mediation program. The memorandum is currently on hold pending approval from the new Secretary, once confirmed.

CAMP believes the agricultural community would benefit by allowing the state agricultural mediation programs to work on lease issues, family farm transitions, and right-to-farm cases. While the list of potential suitable issues for mediation is significantly larger, CAMP has identified these three areas as the highest priority for immediate expansion. Additional justification for including these cases is provided in *Exhibit 2.*

CAMP also proposes that each state program be authorized to tailor its program to meet the needs of its agricultural community. For example, in some states, right-

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[3] USDA, Economic Research Service, *Farm Income and Weight Statistics,* as of February l7, 2017.

[4] *2017 Farm Sector Income Forecast,* USDA ERS.

[5] USDA Reorganization Act of 1994 and the Grain Standards Act of 2000, adding wetland determinations, conservation compliance, rural water loan programs, grazing on National Forest System lands, pesticides, and other issues the Secretary considers appropriate.

[6] USDA Departmental Regulations 4710–001 April 6, 2006, adding rural housing loans, rural business loans, crop insurance.

to-farm issues are a high priority, while other states need mediation between GMO and non-GMO farmers. Ideally, the Secretary of Agriculture in each state should be able to designate additional issues that the state can cover under its program. This flexibility would require minor amendments to the statute to clarify that the issue only has to be under the general jurisdiction of USDA, only one party needs to be a covered party under the statute, and in addition to the USDA Secretary of Agriculture, the participating state's Secretary of Agriculture can add covered cases for that particular state. See *Exhibit 3.*

Reauthorize the Program and Designate Funding as a Mandatory Expenditure Under the Farm Bill

Authorization for the Agricultural Mediation Program was included in the last farm bill and expires in 2018. This program meets critical needs of the agricultural community and should be reauthorized through 2023.

With few exceptions, over the past 10 years, USDA issued the grants to the agricultural mediation programs during the second quarter of the fiscal year. For example, over the last several years, grants for the first continuing resolution have arrived in mid-February. Some state programs are associated with universities or state departments of agriculture, but most are administered by small nonprofit organizations, which cannot dip into other revenue sources while awaiting grant funding. As a discretionary expenditure within the farm bill, the delay in funding will re-occur each year because OMB will not transfer grant funding to USDA when the first continuing resolution is passed. Operating a high-demand program without funding is not possible. Many programs are forced to choose between taking out loans, not paying staff for extended periods of time, or temporarily closing down, which results in services not being available to producers some times of the year.

To deliver grant funding in a timely manner, the USDA agricultural mediation program should be designated as a mandatory expenditure under the farm bill. This would result in grants being issued closer to the beginning of the fiscal year. Farmers face enough uncertainty due to weather and commodity prices. They should have mediation services available when they need them.

Increase Funding To Match the Expansion in the Number of State Programs

Under the statute, funding for the agricultural mediation program is capped at $7.5M. Since 2000, the program has expanded from 25 states to 40 states, a 60 percent increase (*Exhibit 4*). For many years, funding levels kept pace with the growth in the number of programs. However, funding has dropped considerably since 2014 despite the continued increase in programs. The Senate Appropriations Sub[c]ommittee on Agriculture, Rural Development, Food and Drug Administration, and Related Agencies proposed increasing funding for the agricultural mediation program for FY17 from $3.4M to $3.9M. We believe this budget would enable the 40 state agricultural mediation programs to provide mediation services necessary to help the agricultural community work through these challenging times.

Thank you for your favorable consideration of these issues.

EXHIBIT 1

USDA Certified State Agricultural Mediation Programs

Benefits of Mediation:

- Mediation provides a confidential forum to discuss complex issues.
- Mediators are neutral. They do not make decisions. They help parties find solutions.
- Mediation builds strong working relationships with producers, lenders and government agencies.
- Decisions are made rapidly by involved parties, reducing government involvement.
- Mediation supports stability and diversity in rural economies.

Growth:

- The number of states with a USDA Certified State Agricultural Mediation Program has grown from 15 to a total of 40 states in 2016.

Key Components and Issues:

- **Neutrality.** Mediation programs are neutral in practice as well as in perception. Agricultural producers and USDA program participants must have confidence that the program settles disputes in a fair manner.

- **Confidentiality.** Confidentiality is vital to the integrity and success of the mediation process. Without it, participants may be apprehensive or unwilling to discuss personal financial and emotional matters.
- **Autonomy.** USDA certified mediation is a state and Federal partnership. Congress authorized this program as a grassroots effort to help deal with disputes unique to each state's agriculture.

Background:

- In 1988, Congress authorized USDA to help develop and participate in Certified State Farm Mediation Programs under the USDA Farm Loan Mediation Program—part of the Agricultural Credit Act of 1987.
- In 1992, Congress increased Federal matching funds to 70 percent in support of state programs.
- In 1994, Congress expanded the program under the USDA Reorganization Act, authorizing USDA to offer mediation as part of the informal appeals process on adverse decisions on USDA farm program issues.
- Mediation programs assist agricultural producers, their creditors and various USDA agencies to address agricultural credit problems, USDA adverse decisions and other disputes. The programs do this in a confidential and non-adversarial setting outside the traditional legal process of foreclosure, bankruptcy, appeals and litigation.

CAMP Mission Statement

The purpose of the Coalition of Agriculture Mediation Programs (CAMP) is to serve as a presence and voice for the use of mediation in rural disputes. CAMP serves as a clearinghouse and forum for sharing ideas; examining commonalties and differences; and for enhancing decisions about the conduct of rural mediation programs.

Participating States

Alabama, Arizona, Arkansas, California, Colorado, Connecticut, Florida, Georgia,* Hawaii, Idaho, Illinois, Indiana, Iowa, Kansas, Maine, Maryland, Massachusetts, Michigan, Minnesota, Mississippi, Missouri, Montana, Nebraska, New Hampshire, New Jersey, New Mexico, New York, North Carolina, North Dakota, Oklahoma, Oregon, Pennsylvania, Rhode Island, South Dakota, Texas, Utah, Vermont, Virginia, Washington, Wisconsin, and Wyoming.

EXHIBIT 2

Potential Additional Covered Cases

Agricultural Lease Issues

Overview: Leasing of land, equipment, and other farm assets can be a vital part of a farm's overall financial strategy. Farmers unable to purchase land because of high land values, limited access to capital, or lack of suitable land turn to leasing. This approach can be a cost-effective way for new farmers to get started and for established farmers to expand. Increased lease restrictions or loss of a lease can negatively affect a farm's cash flow, ability to service debt, and long term viability. In some cases, resolving a lease dispute has been the key to USDA Farm Services Agency making or restructuring a loan for a producer.

Example 1: *Mission Farms operates a grain farm on 1,000 acres, ¾ of which is leased from a local businessman. After seeing commodity prices double, the farmer's landlord said the rent would increase by 65%. Such an increase would significantly reduce the farm's profits, but losing access to the land would be even worse. Through mediation, the parties were able to agree on, and structure, a rental rate more in line with local market conditions, thus preserving the continued viability of the farm operation.*

Example 2: *John Bailey has leased 30 acres from a farm widow for the last 20 years. During this time, he's developed the farm into a successful fruit and vegetable operation, establishing it as a source for high quality products at local farmers' markets. He recently invested in and opened an onsite farm stand to further expand direct market sales. Shortly before renewing his 10 year lease, John's landlady passed away. Her children, long removed from the farm, were inclined to let the lease expire and cash out. John suggested he and the family discuss some options with a mediator first. Through the mediation, a solution was found: the family would pursue*

*Application submitted to USDA, pending authorization.

selling the farm's development rights and then sell John the farm at its lower preserved value, under the condition that John shoulder the work for moving the preservation application forward.

Farm Transition Issues

Overview: Farm/ranch families often face the challenge of how to pass on the agricultural enterprise from one generation to the next. Transition issues may include: land division, asset and debt distribution, responsibility for repayment of farm loans, farm viability, managing interests and responsibilities of off-farm heirs, and intergenerational conflict and responsibilities.

Unresolved family and business conflicts often complicate the process when FSA is considering loan applications. Family and business restructuring can have direct and significant impacts on debt management and producers' ability to manage USDA credit, USDA program obligations, and other agricultural credit. Issues can include FSA Beginning Farmer Loans, limited resource loans, guaranteed loans, or direct loans for the producer who is taking over the operation. Resolving disputes and developing business plans help FSA make loans to eligible farmers. Resolving issues collaboratively, rather than through litigation, has the potential to keep farms viable. In many states, FSA Farm Loan Program personnel, farm financial consultants, human services consultants, and commercial bankers report that family farm transition mediation is an essential service.

Example 1: *The owners of the Smith Family Farm developed an estate plan years ago and it is common knowledge that the farm will pass on to their son who farms with them. The son has never had any farm equity, but he works side by side with his parents. Suddenly, the father has an unexpected health setback and accumulates substantial medical bills. The only way the parents see to recoup the money needed is to sell part of the farm. The farming son would have to pay top dollar to purchase the property, but the only collateral he has is a farm truck. The parents won't cosign a loan because they need the cash, not more debt. The parents sell a portion of the farm to someone else. His sweat equity is worth nothing and his ability to secure a loan is negligible. With the help of financial counseling and mediation, the son was able to develop a plan to restructure loans and work out a leasing agreement with a neighbor who was interested in buying the adjoining fields.*

Example 2: *The owners of Jones Family Farm have not developed a farm transition plan. With several on- and off-farm heirs to consider, the family has a complicated situation. The Jones want to develop a plan that ensures the farm stays in operation, but they must also find a way to provide retirement income for the older generation. Other issues include the farm's operating loans, the transfer of farm assets to the next generation, and consideration of off-farm heirs and spouses (whose income and interests will impact the process). The family decides to use a mediator to help them discuss the issues and develop a plan that meets everyone's needs.*

Right to Farm and Farmer/Neighbor Nuisance Issues

Overview: As rural areas are developed into residential communities, farmers increasingly encounter neighbors who are unfamiliar with and unsympathetic to typical and essential farming practices. New residents might complain about farm noise, hours, dust, pesticide application, manure management, odors, runoff, irrigation practices, fences, or newly constructed buildings. Local governments' familiarity with the normal sights, sounds, and smells of agriculture also may diminish. Conflicts can arise with municipal ordinances, such as fence height limits, impervious cover limitations, prohibitions on specific farming activities, and restrictions on farm building lighting, signs, ingress/egress, and parking.

In addition to neighbors complaining about farm operations, farmers might be impacted by neighbors' activities, including trespassing, noises that disturb livestock, feeding animals without permission, and damage to fences or boundary issues. Some agricultural communities have enacted state and local Right to Farm (RTF) regulations in response, hoping to promote agriculture and protect responsible farms from nuisance complaints and overly restrictive local regulations.

Disputes that escalate into community conflicts involving multiple stakeholders can last several years as decisions are appealed and lawsuits filed. Associated legal fees can have a negative impact on a farm's viability, access to credit, and ability to pay debts. Protracted disputes can cause irreparable damage to relationships in the community. Mediation enables farmers to limit time and money spent on hearings and litigation and can help parties maintain or restore relationships and prevent future conflicts.

Example 1: *Heyward Farm has been operating as a dairy farm for six generations. After an adjacent parcel was developed, new residents started complaining about early tractor noise, activity on weekends, unbearable odors and flies, and con-*

cerns about manure runoff in yards where children play. The neighbors filed a complaint with the local agricultural board, which normally would have triggered a long and costly public hearings process, but the parties decided to try mediation. Through mediation, the parties were able to express their points of view. The neighbors gained a better understanding of how the farm operated and enough concerns were addressed that the formal complaint was withdrawn and lawsuits were avoided.

Example 2: *Hope Vineyards decided to expand its business in two phases. Phase one, planting an additional 40 acres of grapes, was completed without incident. Phase two, expanding the winery production facilities with a new 9,000² ft. building, ran into barriers with the township. The zoning officer said the building was too high, might not be permitted in the zone, had an improper setback, required paved parking, and needed full site plan review. Through mediation involving the farmer, town, and local agricultural board, an agreement was reached that gravel parking and a more limited site plan review would suffice, saving the vineyard thousands of dollars and allowing it to build the new facilities.*

Summary of Benefits of Mediation

- Conflict resolution to promote continued farm viability.
- Risk management to avoid escalation of conflict.
- Litigation mitigation.
- Direct impact on current and prospective credit stability.
- Better management of farm capital.
- Preservation of positive local relationships.

EXHIBIT 3

Proposed Amendments to 7 U.S.C. §§ 5101 and 5106, relating to Agricultural Mediation Programs.

Proposed new text is [*italicized*] proposed deletions are shown in **~~strike-through~~**. The proposed amendments occur only in 7 U.S.C. §§ 5101 and 5106. Sections 5102–5105 have been omitted for brevity.

Title 7—Agriculture, Chapter 82—State Agricultural Loan Mediation Programs

7 U.S.C. § 5101 (2015)

§ 5101. Qualifying States

(a) In general

A state is a qualifying state if the Secretary of Agriculture (hereinafter in this subtitle referred to as the "Secretary") determines that the state has in effect a mediation program that meets the requirements of subsection (c).

(b) Determination by Secretary

Within 15 days after the Secretary receives from the Governor of a state a description of the mediation program of the state and a statement certifying that the state has met all of the requirements of subsection (c), the Secretary shall determine whether the state is a qualifying state.

(c) Requirements of state mediation programs

(1) Issues covered

(A) In general

To be certified as a qualifying state, the mediation program of the state must provide mediation services to persons described in paragraph (2) that are involved in agricultural loans (regardless of whether the loans are made or guaranteed by the Secretary or made by a third party).

(B) Other issues

The mediation program of a qualifying state may provide mediation services to persons described in paragraph (2) *so long as at least one eligible person is* **~~that~~** **~~are~~** involved in one or more of the following issues under the *general* jurisdiction of the Department of Agriculture:

(i) Wetlands determinations.

(ii) Compliance with farm programs, including conservation programs.
(iii) Agricultural credit.
(iv) Rural water loan programs.
(v) Grazing on National Forest System land.
(vi) Pesticides.
(vii) Agricultural lease issues
(viii) Family farm transitions
(ix) Farmer neighbor conflicts
~~(vii)~~ *(x)* Such other issues as the Secretary *or the state Secretary of Agriculture of the state of the authorized mediation program* considers appropriate.

(2) Persons eligible for mediation

(A) In general

Subject to subparagraph (B), the persons referred to in paragraph (1) include—

(i) agricultural producers;
(ii) creditors of producers (as applicable); and
(iii) persons directly affected by actions of the Department of Agriculture.

(B) Voluntary participation

(i) In general

Subject to clause (ii) and section 503, a person may not be compelled to participate in mediation services provided under this Act.

(ii) State laws

Clause (i) shall not affect a state law requiring mediation before foreclosure on agricultural land or property.

(3) Certification conditions

The Secretary shall certify a state as a qualifying state with respect to the issues proposed to be covered by the mediation program of the state if the mediation program—

(A) provides for mediation services that, if decisions are reached, result in mediated, mutually agreeable decisions between the parties to the mediation;
(B) is authorized or administered by an agency of the state government or by the Governor of the state;
(C) provides for the training of mediators;
(D) provides that the mediation sessions shall be confidential;
(E) ensures, in the case of agricultural loans, that all lenders and borrowers of agricultural loans receive adequate notification of the mediation program; and
(F) ensures, in the case of other issues covered by the mediation program, that persons directly affected by actions of the Department of Agriculture receive adequate notification of the mediation program.

(d) Definition of mediation services

In this section, the term "mediation services", with respect to mediation or a request for mediation, may include all activities related to—

(1) the intake and scheduling of cases;
(2) the provision of background and selected information regarding the mediation process;
(3) financial advisory and counseling services (as appropriate) performed by a person other than a state mediation program mediator; and
(4) the mediation session.

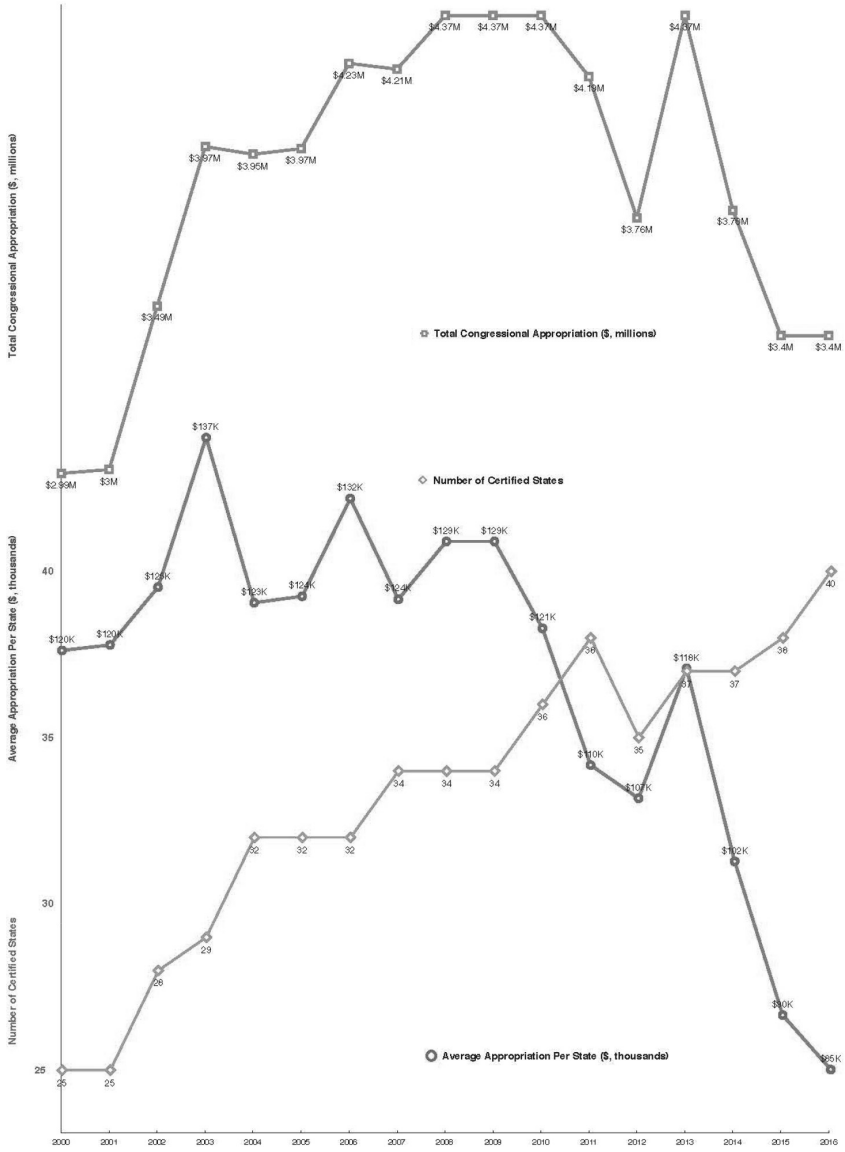
7 U.S.C. § 5106 (2015)

§ 5106. Authorization of Appropriations

There are authorized to be appropriated to carry out this subtitle $7,500,000 for each of the Fiscal Years 1988 through ~~2018~~ *2023*.

EXHIBIT 4

USDA State Agricultural Mediation Grants



THE NEXT FARM BILL

(THE FUTURE OF INTERNATIONAL FOOD AID AND AGRICULTURAL DEVELOPMENT)

WEDNESDAY, JUNE 7, 2017

HOUSE OF REPRESENTATIVES,
COMMITTEE ON AGRICULTURE,
Washington, D.C.

The Committee met, pursuant to call, at 10:00 a.m., in Room 1300, Longworth House Office Building, Hon. K. Michael Conaway [Chairman of the Committee] presiding.

Members present: Representatives Conaway, Thompson, Goodlatte, Lucas, King, Gibbs, Austin Scott of Georgia, Crawford, Hartzler, Denham, LaMalfa, Yoho, Allen, Rouzer, Abraham, Kelly, Marshall, Bacon, Faso, Dunn, Arrington, Peterson, David Scott of Georgia, Costa, Walz, Fudge, McGovern, Vela, Lujan Grisham, Kuster, Nolan, Bustos, Maloney, Plaskett, Adams, Evans, Lawson, O'Halleran, Panetta, Soto, and Blunt Rochester.

Staff present: Ashton Johnston, Bart Fischer, Caleb Crosswhite, Callie McAdams, Rachel Millard, Stephanie Addison, Liz Friedlander, Matthew MacKenzie, Troy Phillips, Nicole Scott, and Carly Reedholm.

OPENING STATEMENT OF HON. K. MICHAEL CONAWAY, A REPRESENTATIVE IN CONGRESS FROM TEXAS

The CHAIRMAN. Good morning. Let's get started.

I am going to ask Congressman Scott to start us off with a brief prayer.

Austin.

Mr. AUSTIN SCOTT of Georgia. Thank you, Mr. Chairman.

If I may, before I say the brief prayer, I keep these words in my pocket. It is from a song from Sidewalk Prophets. I will just read them real quick: "Be strong in the Lord. Never give up hope. You are going to do great things, I already know. God has got his hand on you, so don't live life in fear. Forgive and forget, but don't forget why you are here. Take your time and pray. Thank God for each day. His love will find a way. These are the words I would say."

If you will bow your heads with me just very briefly. Lord, we thank you so much for the many blessings you have given us. We know our country has a special place. You have been so generous to us. We just pray that we would continue to find the ways to give back to those in the world that may not be as fortunate as we are. We ask that you bless this meeting, bless the leadership of this country, and bless those who are here to help move this world in

a direction that would be pleasing to you. In Christ's name we pray. Amen.

The CHAIRMAN. Thank you.

This hearing of the Committee on Agriculture entitled, *The Next Farm Bill: The Future of International Food Aid and Agricultural Development,* will come to order.

Good morning and thanks to all of you for joining us this morning. Before we get started, I want to extend our condolences to our friends at Didion Milling. John Didion testified before the Committee in September 2015 about the important work they are doing in milling grain into specially designed food aid products. Unfortunately, 1 week ago today, Didion Milling experienced a catastrophic explosion that took the lives of three of their employees and injured several others. Our thoughts and prayers go out to the folks affected by this tragedy.

As we begin our work today, this hearing builds on the work that the Committee did last Congress to extensively review international food aid and agricultural development programs. At the time, I was adamant that discussions about potential reforms to the programs occur during the development of the next farm bill, and that time has arrived. This hearing is also particularly timely, given the recent release of the Administration's budget proposal, which calls for drastic cuts to international food aid programs and the elimination of funding for both McGovern-Dole and Food for Peace Programs.

I know we will hear from several of you today about the shortsightedness of such a proposal, and I tend to agree. Americans are big-hearted folks who love seeing the U.S. flag on donated rice and other U.S. commodities. As my colleague Chairman Aderholt noted, there should be no shame in using taxpayer dollars to buy American food from American farmers to send overseas to those who literally have nothing else to eat, especially when the proposed alternative, providing cash-based assistance, can result in hard-earned taxpayer dollars being misappropriated or going directly to our agricultural competitors. International food aid programs not only contribute to jobs in the United States in the agriculture sector, but they also create American jobs in the manufacturing and maritime sectors as well. Eliminating such programs seems to be contrary to the role of any robust America first policy.

While less drastic than proposed elimination of these programs, I also fear the continued efforts to chip away at the core of food aid programs and to increasingly turn them into cash-based assistance programs will ultimately erode the alliance of domestic agriculture and maritime supporters that have long advocated for these programs. That said, I recognize, as the President does, that there are efficiencies to be gained within our food aid and ag development programs. In the near term, as we approach the next farm bill, we take seriously the task of looking for ways to enhance the programs in a way that will build consensus and support their ongoing role of American philanthropy and U.S. agriculture.

Finally, while there are always emergency needs, the budget constraints we face are real. In the long run, these constraints will require us to increasingly focus on helping other countries make structural changes to better assist their own populations. I look for-

ward to hearing from each of our witnesses today on how we can achieve these goals.

[The prepared statement of Mr. Conaway follows:]

PREPARED STATEMENT OF HON. K. MICHAEL CONAWAY, A REPRESENTATIVE IN CONGRESS FROM TEXAS

Good morning and thank you all for joining us.

Before we get started, I wanted to extend my condolences to our friends at Didion Milling. John Didion testified before the Committee in September 2015 about the important work they do in milling grain into specially designed food aid products. Unfortunately, 1 week ago today, Didion Milling experienced a catastrophic explosion that took the lives of three employees and injured several others. Our thoughts and prayers are with all those affected by this tragedy.

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That time has come.

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I know we will hear from several of you today about the shortsightedness of such a proposal. I tend to agree. Americans are big hearted folks who love seeing the U.S. flag on a donated bag of rice.

As my colleague Chairman Aderholt noted, there should be no shame in using taxpayer dollars to buy American food from American farmers to send overseas to those who literally have nothing else to eat—especially when the proposed alternative, providing cash-based assistance, can result in hard-earned taxpayer dollars being misappropriated or going directly to our agricultural competitors.

International food aid programs not only contribute jobs in the U.S. agricultural sector, but also create American jobs in the manufacturing and maritime sectors. Eliminating such programs seems contrary to the role they play in a robust "America-first" policy.

While less drastic than the proposed elimination of these programs, I also fear that continued efforts to chip away at the core of food aid programs, and to increasingly turn them into cash-based assistance programs, will ultimately erode the alliance of domestic agriculture and maritime supporters that have long advocated for these programs.

That said, I recognize, as the President does, that there are efficiencies to be gained within our food aid and ag development programs. In the near-term, as we approach the next farm bill, we take seriously the task of looking for ways to enhance the programs in a way that will build consensus and support for their ongoing role in American philanthropy and U.S. agriculture.

Finally, while there will always be emergency needs, the budget constraints we face are real. In the long run, these constraints will require us to increasingly focus on helping other countries make the structural changes needed to better assist their own populations.

I look forward to hearing from each of our witnesses today on how we can achieve those goals. I now yield to my Ranking Member, Mr. Peterson for any comments he may have.

The CHAIRMAN. And I now yield to my friend, Mr. Peterson, for any comments he would like to make.

Collin.

OPENING STATEMENT OF HON. COLLIN C. PETERSON, A REPRESENTATIVE IN CONGRESS FROM MINNESOTA

Mr. PETERSON. Thank you, Mr. Chairman.

We are here today to continue the Committee's work ahead of the next farm bill.

I welcome today's witnesses to the Agriculture Committee.

The United States, for more than 60 years now, has led the way in providing food for those in need around the world. Through partnerships with private organizations, millers, and shippers, we have delivered more than $80 billion in domestic product, benefiting hundreds of millions in need around the world since World War II. These facts and the testimony we will hear today illustrate the importance of these programs.

As trade deals continue to dominate the discussion, it is worth pointing out that 11 of our top 15 trading partners in 2017 were once recipients of U.S. assistance. Unfortunately, the budget put forward by the Administration would completely eliminate two key U.S. assistance programs, the Food for Peace Program and the McGovern-Dole Program. I would urge the Administration and Members of Congress to consider today's testimony and to look to the work that we did as part of the last farm bill to improve these programs when considering potential budget cuts.

I hope our witnesses will be able to share some examples of program successes but, also, as we approach a new farm bill, any areas that might be in need of improvement and what changes, if any, we should consider within the next farm bill.

So, again, I thank the Chairman and look forward to today's testimony and yield back.

The CHAIRMAN. The gentleman yields back.

I want to thank our witnesses today for coming to our hearing.

We have, first, Mr. Ron Suppes, wheat producer from Dighton, Kansas?

Mr. SUPPES. Yes. Dighton, Kansas.

The CHAIRMAN. Dighton, Kansas.

All right. On behalf of U.S. Wheat Associates; Ms. Margaret Schuler, Senior Vice President of the International Programs Group, World Vision, Inc.—U.S., here in D.C.; Ms. Navyn Salem, Founder and Chief Executive Officer of Edesia Nutrition, Kingston, Rhode Island; Mr. Brian Schoeneman, Political and Legislative Director here in D.C. with Seafarers International Union, AFL–CIO, and on behalf of USA Maritime; and Dr. Thomas Jayne, University Foundation Professor, Michigan State, Kalamazoo, Michigan, on behalf of the Farm Journal Foundation.

I apologize if I butchered your names too badly. I am from west Texas, and we have very limited pronunciation talents.

Mr. Suppes, you will begin, 5 minutes.

Mr. DENHAM. Mr. Chairman, a point of order, if I may. It appears that these fine USAID products here may require a napkin. If Members are so apt to follow Mr. Marshall's lead here, napkins may be in order for today's hearing.

Mr. MARSHALL. Thank you, sir.

The CHAIRMAN. He is wearing it, as opposed to eating it? Is that what you are telling me?

Mr. Suppes, you are recognized for 5 minutes.

STATEMENT OF RONALD J. SUPPES, DRYLAND WHEAT AND SORGHUM PRODUCER, DIGHTON, KS; ON BEHALF OF U.S. WHEAT ASSOCIATES

Mr. SUPPES. I appreciate your introductions on food aid. Between you and Mr. Peterson, I don't think I need to give my speech. You have taken all my talking points.

The CHAIRMAN. Yes. But I would still like to hear from you, though, just for the record.

Mr. SUPPES. At any rate, I would like to thank you, Chairman Conaway, Ranking Member Peterson, and all the Members of this House Agriculture Committee for allowing me some of your time to talk to you.

I am from western Kansas. I am a farmer. My name is Ron Suppes. I farm equal distance from Oklahoma, Colorado, and Nebraska. During my lifetime, I have had a lot of opportunities to represent farmers, both Kansas and U.S. wheat farmers. But on no occasion has there been a more paramount topic that we need to address. And that is food security. This is a topic I think we can all agree on.

You probably can't see what I am holding in my hand. But I assure you that it is something that all respective Kansas wheat farmers don't leave home without. It is a little bit of wheat seed.

Wars have been fought over this little seed. Lives have been lost. Countries have fallen because of lack of food. Food aid was designed to help curtail such happenings.

The United States continues to be the world leader for food donations, and these programs give us farmers a reason to be proud. The wheat I grow is doing good halfway around the world. I recently had the opportunity to learn more about the important work by visiting Food for Progress projects in Tanzania. The Hard Red Winter wheat my family produced may well have gone to the country receiving wheat from a food aid program. I speak directly to the value of these programs to the United States and to the participating farmers.

Food aid continues to matter. In the long-term, it helps generate good will in other countries, a sentiment I saw firsthand in Tanzania. These programs also involve a significant amount of wheat, a fact not lost on Kansas farmers with full grain bins and more wheat piled on the ground from last year's historic harvest. We have enough surplus that no one should be going hungry.

In the marketing year 2015/16, we sent almost 600,000 metric tons or 22 million bushels of Hard Red Winter as food aid. That makes almost ten percent of last marketing year's exports, and only Japan, Nigeria, and Mexico imported more Hard Red Winter. A significant portion of these donations went to Ethiopia because the country was facing famine. And 8,000 miles away, wheat farmers in Kansas were helping prevent starvation.

Monetization is an important food aid tool. The value of monetizing a commodity goes beyond the important development work it funds. Monetization creates local business opportunities and increases food availability. A supplementary benefit of these programs is the good will they foster, which can build relationships with future trade partners. Being able to go to Tanzania and talk

to the NGO groups left me with a better understanding of how monetization works.

Talking to farmers and other participants of the program gave me the feeling that we were doing food aid through monetization in the correct manner. I visited four of the projects funded by wheat monetization in the country and talked to the project participants. These people aren't looking for charity but for a way to build a better life for their families and communities, and the programs aren't based on handouts. Each participant has to have skin in the game. By helping encourage agricultural development in Tanzania, we are spurring economic growth, which means Tanzania is more likely to be a stronger trading partner in the future. It is vital that the U.S. continue to fund food aid programs overseas.

Farmers are unique stakeholders in the international food aid conversation, and we have been loyal partners and advocates of these programs for over 60 years. I want to see us continue our trend of excellence in providing food aid to the countries that need it most.

Mr. Chairman, your leadership in this area is appreciated. And I applaud this Committee's efforts to recognize the valuable role that the agriculture industry plays in international food aid.

There is still so much work to feed our growing worldwide population. But, we are on the right track, and the U.S. continues to be a strong leader in helping hungry populations around the world.

Thank you for allowing me to submit testimony this morning.

[The prepared statement of Mr. Suppes follows:]

PREPARED STATEMENT OF RONALD J. SUPPES, DRYLAND WHEAT AND SORGHUM PRODUCER, DIGHTON, KS; ON BEHALF OF U.S. WHEAT ASSOCIATES

Chairman Conaway, Ranking Member Peterson, and Members of the Committee,

As a wheat farmer from Dighton, Kansas and a Past Chairman of U.S. Wheat Associates, food aid is a topic of deep interest to me, and I recently had the opportunity to learn more about smart American generosity by visiting USDA Food for Progress projects in Tanzania funded by wheat monetization. The Hard Red Winter (HRW) wheat my family produced may very well have gone to Tanzania, or to another country receiving wheat from a food aid program, so I can speak directly to the value of these programs to the United States and to American farmers in particular.

Wheat in Food Aid

The wheat industry has been a strong partner in U.S. food aid for more than 60 years, and American farmers take great pride in being able to share their bounty with people most in need. More wheat is used in U.S. in-kind aid than any other commodity, averaging 40 percent of the total. It is also the most popular commodity for monetization. It is a versatile product and of key dietary importance—bread products are staples in diets around the world. Wheat is the source of 20 percent of the world's caloric intake and provides 20 percent of protein for the world's most vulnerable four billion people.

The United States continues to be the world leader of in-kind food aid donations and total development assistance, and maintaining these programs gives us farmers a reason to be proud—the wheat I grow is doing good halfway around the world. Food aid has changed a lot since the Office of Food for Peace was created over 60 years ago by President Eisenhower (a Kansan, I might add). Now we have a range of tools available that can be used in more nuanced ways and to best fit the needs of each situation. Food for Peace does a great job of getting U.S. commodities in large quantities to populations that need them. McGovern-Dole, another program with a Kansas founder (are you sensing a theme here?), works with smaller quantities of food but targets school feeding and improving nutrition for children, and as we all know, children are the future. Then you have programs like Farmer to

Farmer, that bring farmers and other experts to communities overseas to provide short-term technical assistance.

Food aid continues to matter for several reasons. In the long-term, it helps generate goodwill in other countries, a sentiment I saw firsthand in Tanzania. But in the short-term, these programs also involve a significant amount of wheat, a fact not lost on Kansas farmers with full grain bins and more wheat piled on the ground from last year's historically high harvest. Moving toward more cash or local and regional procurement in title II programs would impact U.S. farmers and hurt a vulnerable population. While these tools have a place in foreign assistance programs, U.S. commodities play an important role in helping regions unable to produce wheat and other commodities on their own due to drought, conflict or other circumstances. We have enough surplus that no one should be going hungry.

In Marketing Year 2015/16, we sent almost 600,000 metric tons (MT), or about 22 million bushels, of HRW as food aid. That makes up almost 10% of last marketing year's HRW exports, and only Japan, Nigeria, and Mexico imported more HRW. Total wheat donations last year were over 700,000 MT, about 26 million bushels, and ranked as a top ten destination. In addition to HRW, the U.S. sent Hard Red Spring, Soft White, and Soft Red Winter wheat overseas as food aid. Creating markets isn't the point here, but we can't discount the size of those donations. A significant portion of these donations went to Ethiopia because the country was facing famine. 8,000 miles away, wheat farmers in Kansas were helping Food for Peace prevent starvation. According to the World Food Program, four countries are currently at risk of or experiencing famine now, the worst crisis seen since World War II; in a time of wheat surplus and low prices, U.S. commodities remain a vital tool to fight hunger.

Monetization as a Powerful Tool in Agricultural Development

Monetization is a food aid tool that provides necessary commodities to food-insecure areas and benefits development programs by generating funding from the sales of donated U.S. commodities. The long-term value of monetizing a commodity goes beyond the important development work it funds. Monetization creates local business opportunities and increases food availability. It can also give local small- and medium-sized buyers a competitive advantage because it is priced comparably to what a large buyer would pay. Well timed monetization deliveries can help stabilize food availability all year, which also helps reduce local market price volatility. Finally, monetizing U.S. wheat helps stimulate local milling industries—providing an economic engine and valuable employment opportunities.

U.S. Wheat Associates also works with NGOs to make sure that wheat monetization does not disrupt any existing commercial markets. Wheat as a commodity is a good fit in many countries because there is limited domestic production, if any. Countries near the equator typically must import wheat anyway, so wheat monetization doesn't disrupt markets for domestic farmers.

A supplementary benefit of these programs is the goodwill they foster, which can build relationships with future trade partners. In fact, historically, monetized commodities into South Korea and the Philippines introduced those markets to U.S. exports, and now they're both top ten markets for U.S. wheat. More recently, monetized U.S. wheat introduced the benefits of superior quality milling wheat to one of Ethiopia's larger flour mills. In a traditionally price-driven market, this positive experience demonstrated an opportunity for future U.S. wheat imports and generated funding for a local agricultural development project. The money from the monetization, along with the bran byproduct from the milled wheat, went to ACDI/VOCA's Feed for Enhancement for Ethiopian Development project, where the bran was a key ingredient in the livestock feed concentrates used by the people who benefit from the project.

Monetizing commodities to fund projects can yield results that simply giving cash does not. Thanks to monetization through title II funding, Mozambique grew from two mid-sized mills in the 1990s to more than seven in 2015. This is because, more than commercial or cash interactions, monetization transactions have less restrictive payment terms, allowing millers time to build capital with longer payment periods. Additionally, the mills were able to conduct transactions in their local currency when access to foreign currency was limited. The monetization programs allowed the mills to produce better quality wheat flour with readily available U.S. wheat, and because U.S. Wheat Associates followed up on those wheat purchases with technical support to millers and bakers in the country. These benefits are all on top of the developmental gains to the country from the original NGO project the sale funded.

Food for Progress and Tanzania

In Tanzania, I saw how the Hard Red Winter and Hard Red Spring wheat monetized there allowed the miller purchasing the wheat to pass along savings to their poorer customers. I also visited four of the projects funded by wheat monetization in the country. These projects are versatile and fully embody the Food for Progress program's devotion to building commercial capacity in agriculture. Two of the projects, run by Global Communities and Small Enterprise Assistance Funds, targeted small and medium-sized enterprises so that they could better expand and work with smallholder farmers. The other two projects, run by Catholic Relief Services and FINCA International, focused on working directly with farmers to enhance their production and, even more importantly, help connect them with markets for their product.

These people aren't looking for charity, but rather for a way to build a better life for their families and communities. I could not farm without access to credit, which these farmers and agribusinesses often lack. Even when they're successful, agriculture is considered too risky by lenders, so any growth has to come from saved capital. These projects help overcome that challenge by providing credit to farmers as well as training and market connections. By helping encourage agricultural development in Tanzania, we're ultimately spurring economic growth, which means Tanzania is more likely to be a stronger trading partner in the future. And the tangible presence of U.S. wheat in that equation is a symbol that cash can't match. It is vital that the U.S. continue to fund food aid programs overseas.

Monetization programs are a powerful tool for agricultural development overseas, but USDA's Food for Progress program is severely hindered by a transportation cap that hasn't increased to match rising transportation costs. If the $40 million transportation cap was raised, we would be able to help more farmers and agribusinesses in developing countries.

Wheat Industry Working Together on Food Aid

The wheat industry has adopted the following resolutions, which represent the full range of tools available to U.S. agencies and PVOs. These resolutions clearly reflect a priority on choosing the right tool to address a given instance of food insecurity, rather than blanket support of in-kind food aid. These principles thoroughly capture the industry's commitment to food aid and its belief that these programs are vitally important. Those principles are:

- Promote wheat as a nutritious component of international food aid.
- Support funding of P.L. 83–480 Title II food assistance programs at $2.5 billion, the full amount authorized by law.
- Support a strong, flexible U.S. food aid program that contains both in-kind donations and monetization.
- Support funding and implementation of local and regional procurement programs through the Foreign Disaster Assistance Act and USAID.
- Support USDA administration of Food for Progress.
- Encourage an increase to the Food for Progress Transportation Cap and efforts to mitigate the effect of Cargo Preference rules on cost recovery calculations.
- Support the U.S. Government's agricultural development initiatives as a supplement to existing emergency and non-emergency humanitarian assistance programs such as P.L. 83–480 Title II programs.

Conclusion

Farmers are unique stakeholders in the international food aid conversation, and we've been loyal partners and advocates of these programs since they started. I want to see us continue our trend of excellence in providing food aid to the countries that need it most. I want to be able to tell my grandchildren that wheat from my farm is helping food-insecure populations in rural Sub-Saharan Africa develop their agricultural infrastructure. And I want our industry to be able to continue working cooperatively with millers and NGOs in other countries who see the extensive value of U.S. wheat donations.

This is a year when the U.S. wheat farmer has been a world leader in producing a surplus of wheat. It is a year when the U.S. needs to be a world leader in helping provide for this in need with these ample supplies. When blessed with good fortunes and yields, it is an obligation to help provide for those who cannot provide for themselves. It is a humanitarian issue, and food security is the answer to achieving stability around the world.

Mr. Chairman, your leadership in this area is appreciated, and I applaud this Committee's efforts to recognize the valuable role that the agricultural industry

plays in international food aid. There's still so much work to do to feed our growing worldwide population, but I think we're on the right track, and the U.S. continues to be a strong leader in helping hungry populations around the world. Thank you for allowing me to submit testimony for this timely hearing.

Sincerely,

RON SUPPES.

The CHAIRMAN. Thank you.

Ms. Schuler, 5 minutes.

STATEMENT OF MARGARET SCHULER, SENIOR VICE PRESIDENT, INTERNATIONAL PROGRAMS GROUP, WORLD VISION, INC.—U.S., WASHINGTON, D.C.

Ms. SCHULER. Chairman Conaway, Ranking Member Peterson, and Members of the Committee, thank you for the opportunity to testify before you today on U.S. international food aid programs. Your continued leadership and focus on these programs is critical, especially noting the unprecedented level of famine and near famine-like conditions currently present in four countries around the world.

My name is Margaret Schuler, and I am the Senior Vice President for International Programs at World Vision. Prior to assuming this position last month, I served as the Regional Vice President in East Africa, a region currently in the grips of one of its worst food crises in decades. I have been on the ground in places like South Sudan where millions of vulnerable people, mostly women and children, are in a day-to-day fight for survival. These are lives turned upside down by violence, who fled searching for safety. In many cases, families watched their children die along the way. But once they reached their destination, it was often generous food assistance from the U.S. Government that allowed their remaining children to survive.

As a mother, these stories break my heart. Yet, I feel a sense of hope for the future when people can access the valuable nutrition they require, oftentimes renewing their dignity and hope for the future. After all, wanting your children to be healthy and thrive is one of the great equalizers in this world.

Days before I left East Africa, I declared a multi-country hunger emergency at World Vision's highest level of alert. Today, 25 million people are at significant risk in four countries of that region: Somalia, South Sudan, Ethiopia, and Kenya.

As we respond to these crises in East Africa and around the world, World Vision remains grateful for the support of the U.S. Government to address global hunger needs, including the additional funding provided through the Fiscal Year 2017 omnibus for emergency famine relief.

However, as we look at Fiscal Year 2018 and the Administration's recent budget proposal, we remain deeply concerned by the recommendation to zero out funding for both the Food for Peace Program and the McGovern-Dole International Food for Education and Child Nutrition Program.

Famines don't recognize fiscal years. We must do everything we can in the moment to keep pace with increased and growing needs both in humanitarian and development settings. And, therefore, we urge Congress to continue to robustly fund Food for Peace and

McGovern-Dole. Food security programming builds more prosperous and stable societies and is fundamentally aligned with America's role as a global leader. These programs are essential to shaping a world where our national interests will thrive. Proposals to eliminate funding for these critical accounts will have life-and-death consequences for the poorest people in the world and will threaten America's own safety and security in the process.

While we continue to advocate for strong funding, we also stand as ready partners to improve foreign assistance so it saves more lives and uses taxpayer dollars wisely. Therefore, World Vision recommends the following measures in the upcoming farm bill:

First, continuing this Committee's strong support for the multi-year, multi-sector funding of the development food assistance activities, including a minimum of at least $350 million each fiscal year. I have personally been involved with these title II development programs for almost 20 years. I cannot overstate how important they are to millions of people. We view this safe box programming as critical in our efforts to help countries tackle the root causes of poverty by putting people on the path to self-reliance. World Vision acknowledges the critical need for emergency food aid this year. But we also believe funding for these long-term development programs must remain a priority in the next farm bill, as they help to prevent and mitigate future food emergencies and the need for emergency assistance.

Second, eliminating the minimum monetization requirement under the Food for Peace Program and support use of the Community Development Fund and 202(e) funding within Food for Peace non-emergency development programs.

Third, continuing to provide food aid implementers discretion in using various food aid modalities, including cash transfers, vouchers, and local and regional procurement in addition to U.S.-sourced commodities.

Fourth, affirming the Food for Peace strategy of focusing on host-country government reform which addresses root causes for poverty and food insecurity by helping people hold their governments accountable to spend U.S. assistance and domestic resources effectively and make it sustainable.

World Vision understands program improvements are difficult to make, as evidenced by our evolving position on the practice of monetization. But as we reviewed this practice further in our programming and considered it alongside other food aid options, we concluded there are often more effective processes available that would ultimately serve more communities and serve them better.

Last, I want to reiterate that your leadership counts. We have made tremendous progress in our fight against hunger. And because of that effort, the number of hungry people has dropped by 200 million since 1992.

Thank you, again, for allowing me to testify today. Food assistance programs are some of the most effective programs when measured by the number of people helped per U.S. dollar spent, and we cannot walk away from the poorest and most vulnerable by eliminating lifesaving programs.

I would be happy to answer any questions you have.

Thank you.

[The prepared statement of Ms. Schuler follows:]

PREPARED STATEMENT OF MARGARET SCHULER, SENIOR VICE PRESIDENT, INTERNATIONAL PROGRAMS GROUP, WORLD VISION, INC.—U.S., WASHINGTON, D.C.

Chairman Conaway, Ranking Member Peterson, and Members of the Committee, thank you for the opportunity to testify before you today on U.S. international food aid programs. Your continued leadership and focus on these critical programs is more important than ever, especially noting the unprecedented level of famine and near famine-like conditions present in four countries.

I testify before you today as the Senior Vice President for International Programs with World Vision—U.S. Prior to assuming this position last month, I served as the Regional Vice President of World Vision in East Africa—a region currently in the grips of one of its worst food crises in decades.

I have been on the ground in places like South Sudan, where millions of vulnerable people—mostly women and children—impacted by the violence and crisis in that country, have fled their homes and often have a day-to-day fight for survival. People whose lives were turned upside-down by the violence and who fled searching for safety. In many cases, families watched their children die along the way, but once they reached their destination, it was often generous food assistance from the U.S. Government that allowed their remaining children to survive. Days before I left the region, I declared a multi-country hunger emergency at World Vision's highest level of alert. Today, 25 million people are at significant risk in four countries of the region: Somalia, S. Sudan, Ethiopia and Kenya.

Throughout my remarks today, I hope to address the importance of U.S. international food aid programs, but also highlight the lives of individuals most impacted by hunger in this region and around the world. I will conclude by providing policy and program recommendations based on World Vision's experience implementing food security programs in nearly 100 countries around the world.

World Vision Partnership

World Vision is a Christian relief, development, and advocacy organization serving millions of children and families. Our 45,000 employees are dedicated to tackling the root causes of poverty and injustice.

World Vision—U.S. has more than one million private donors in every state and Congressional district, partners with over 16,000 churches in the United States, and works with corporations and foundations. We are motivated by our Christian faith to serve every child in need and their family; those of any faith, or none. We partner with faith leaders throughout the world, equipping them to meet the needs of their communities.

We are part of a global World Vision Partnership, which last year implemented more than $2.6 billion in programming to help children, families and communities through international relief, development, and advocacy assistance. Although private donors support much of our work, the U.S. Government is an invaluable partner. We leverage this partnership to reach many more vulnerable children and ensure that the precious resources of the American taxpayer are prudently used to promote and protect the well-being of children and communities abroad.

World Vision's Approach to Food Security Programming

World Vision joins the international community and other partners in seeking to achieve the global goal of ending hunger by 2030. In pursuit of this hunger-free world, World Vision works alongside families to help smallholder farmers to produce their own food and improve their livelihoods, through increasing their access to markets. However, when disasters such as drought or conflict occur, World Vision provides emergency food assistance to ensure children and communities receive life-saving and nourishing food.

Food assistance is one of the critical global safety nets that supports the most vulnerable families in managing shocks like disasters, while empowering them to become more resilient against future food insecurity, and other drivers of poverty.

In our work, World Vision ensures its programming promotes dignity, fosters innovation, and is effective in creating lasting change. World Vision develops tailored and diverse responses based on local contexts. Our food assistance programming includes the distribution of U.S. as well as locally and regionally procured food commodities, cash transfers, and vouchers, which allow hungry families to purchase food and other essential household items. Additionally, World Vision implements school meals programs, and resilience building programming such as cash or food for work or assets.

World Vision's Food Security and Livelihoods team draws upon a group of technical experts who ensure quality food assistance programs in nearly 40 countries, often combining various programming modalities and services to best meet the needs of impacted communities. World Vision operates food assistance programs in partnership with the United Nations World Food Program (with whom we are the largest implementing NGO partner), USDA, USAID, and other partners.

Four Looming Famines and East Africa Food Crisis

With four famines possibly being declared this year, the world is currently in the midst of its worst humanitarian crises since 1945. As noted earlier, famine was officially declared in parts of South Sudan, while people face starvation in Somalia, Nigeria and Yemen. In Ethiopia and parts of Kenya, drought is contributing to growing food insecurity. In just the past year alone, the rate of global acute food insecurity increased by 35 percent, a massive increase from 80 million people in 2015 to 108 million today.

Currently, the majority of global humanitarian need is driven by civil conflicts, instability, and unresolved political disputes. The famine in South Sudan is largely a man-made catastrophe and in Somalia, the humanitarian crisis is a result of the combined effects of the drought and ongoing conflict. In recent years, World Vision has worked in 39 of the 56 Organisation for Economic Co-operation and Development (OECD) declared fragile states, and we remain committed to scaling up interventions that prove effective in supporting countries as they transition out of fragility towards greater stability and lasting peace. All of the East African countries affected by the food security crises are among the fragile states as identified by the OECD. These fragile states are an increasing focus of World Vision's global strategy to help promote peace, end extreme poverty, and limit the impacts of disasters—all elements that bear on U.S. national security and economic interests.

In East Africa, a region characterized by high levels of fragility and vulnerability, the current food crisis is affecting over 25 million people, requiring urgent, life-saving assistance. More than 3.5 million children under 5 are acutely malnourished, and 844,900 children are severely malnourished, with an estimated 14.4 million people in need of health assistance. Most of those affected live in rural areas and depend on agriculture and/or livestock for their food and income. In Kenya, South Sudan, and Somalia, certain areas have already reached, or are approaching, famine levels. At the same time, the number of people escaping conflict and hunger is dramatically increasing across the region with more than 3.3 million refugees, 59 percent of whom are children, fleeing into neighboring countries. Many of the refugees are from South Sudan, seeking refuge in Uganda, Kenya and Ethiopia. Uganda is now hosting over one million refugees, nearly 900,000 of whom are from South Sudan. This is the largest refugee population in all Sub-Saharan Africa.

The immediate needs in this crisis are clear—we must get food and nutritional support in the region quickly and scale up efforts by donor governments and the international community to respond. We know the U.S. Government cannot do it alone, but its leadership inspires and promotes the actions of other donors. And, we also cannot ignore the long-term impact of malnutrition, particularly in children and pregnant mothers. Should we fail to address this crisis soon, not only will we witness more deaths from hunger, but we will see an increase in stunting in children that will have long-lasting detrimental impact on the mental and physical development of children and the economic and social development of communities.

While emergency funding is critical in this immediate crisis, the longer-term solution is programs that build more resilient, productive and economically productive rural communities. A core strategy to achieve this objective is supporting smallholder agriculture development, including through programs such as the Food for Peace's Development Food Security Activities.

FY17 Omnibus and Famine Supplemental

Thanks to Congressional leadership, including from Members of this Committee, $990 million in emergency famine relief, including $300 million for Food for Peace in war-torn South Sudan, Somalia, Yemen and Nigeria, was recently included in the FY17 omnibus bill.

World Vision joined with partners and other stakeholders to advocate for this additional funding and we now seek to ensure these resources are distributed and allocated in a timely and efficient manner to the regions and people in greatest need. We seek to work with this Committee to ensure expeditious and effective implementation of the additional funding, especially the resources directly appropriated to Food for Peace.

The Administration's FY18 Budget Proposal

As it relates to international food aid programming, the Administration's FY18 budget request released on Tuesday, May 23rd included a series of problematic proposals including: a zeroing out of both Title II, Food for Peace (with any funding for emergency food aid shifted into the International Disaster Assistance Account (IDA), and the McGovern-Dole International Food for Education and Child Nutrition program.

World Vision joins with our partners and strongly opposes these recommendations, which propose eliminating and/or severely cutting effective, life-saving funding that help create a safer and more secure world. Furthermore, the FY18 request from the Administration includes funding for emergency food needs within the International Disaster Assistance (IDA) account, yet the Administration also proposes to reduce IDA from $3.2 billion to $1.65 billion. When comparing the FY18 request to FY16, the cut to IDA is ten percent. Factoring in the elimination of Title II Food for Peace (although the Food for Peace office appears to remain and emergency food aid assumed to be now funded from IDA), the cut to IDA when comparing FY16 to the FY18 request is about 48 percent.

At a time of historic and unprecedented need, when close to 1.4 million children could die this year from famine-like conditions according to UNICEF, we urge Congress to continue to robustly fund the Food for Peace program (both emergency and development programs) and McGovern-Dole International Food for Education and Child Nutrition program in FY18. The International Disaster Assistance account must also be funded at FY17 or levels or above which includes the Emergency Food Security Program.

The Administration's budget proposal reframes the purpose of the International Affairs Budget, noting that "international programs help to advance the national security interests of the United States by building a more democratic, secure, and prosperous world." The goal of the budget appears to focus more assistance on national security-aligned interests, as opposed to long-term development or anti-poverty initiatives, but in the view of World Vision, these are not mutually exclusive priorities.

Food security programming builds more prosperous and stable societies, and is fundamentally aligned with America's global leadership. These programs are essential to shaping a world where our national interests will thrive. Disproportionate cuts to these accounts will not make the world safer. In fact, according to a recent report published by the Chicago Council on Global Affairs, in 2007–2008, destabilizing rises in food prices produced widespread social unrest and toppled governments in Haiti and Madagascar and conflicts over food policy and prices are also linked to the Arab Spring in 2011. Proposals to eliminate funding for these critical accounts will have life-and-death consequences for the poorest people in the world, and will harm America's own safety and security in the process.

Last, as World Vision seeks to ensure greater efficiency and effectiveness in the U.S. international development and humanitarian assistance programs, we stand as ready partners willing to improve foreign assistance so it saves more lives, builds resilience, and reduces poverty. To this end, we affirm our openness to identifying reforms to improve programming (we're all in this as partners together), but not when it means fewer lives saved, or turning our backs on what we know works.

As such, we are aware of the Administration's interest related to ongoing reform efforts pertaining to the activities of USAID's Office of Foreign Disaster Assistance and the Office of Food for Peace. As these efforts evolve, we affirm the role of Congress and the relevant authorizing committees in overseeing and leading any reform efforts to our international development and humanitarian assistance programs, and support continued stakeholder engagement including with the private-sector and NGOs.

Title II Food for Peace Program

Since 1954, Food for Peace (FFP) has enabled the United States to reach more than four billion people with food assistance. As the largest U.S. Government food aid program, Food for Peace Title II includes emergency response that distributes food to people in the grips of natural disasters, conflict, and other food security crises. Food for Peace also provides funding for non-emergency, development programs that reduce poverty and build the capacity of beneficiaries to feed themselves.

Between 2010 and 2015, FFP programs reached an average of 52 million people in 50 countries per year. In addition to meeting food needs, Food for Peace fosters stability and builds resilience in regions that might otherwise pose possible national security risks.

FFP's development programs are particularly important in efforts to end hunger, as they go beyond the "free hand out" paradigm by addressing the root causes of

food insecurity. Development Food Assistance Activities uses a multi-sectoral approach—inclusive of key areas like resilience, nutrition, and livelihoods—that puts whole communities on a sustainable path towards self-reliance. Projects are typically 5 years in length, which give implementers enough time to achieve real results, like revitalizing a watershed or making a lasting impact on farmers' skill sets. Food for Peace development programs primarily serve the poorest communities, using income levels, stunting rates, and other indicators of extreme poverty to direct resources to the countries and communities most in need. World Vision is the lead implementer of three Food for Peace development projects in Zimbabwe, Ethiopia, and Bangladesh.

The 2014 Farm Bill established funding for development programming at $350 million per year with the authority to increase this funding to 30% of overall Food for Peace appropriations with the remainder of funds supporting emergency activities. We view this "safe box" programming as critical in our efforts to help countries tackle the root causes of poverty, by putting people on the path to self-reliance. Additionally, as part of our efforts to promote nutrition and food security, according to the FY17 Congressional Budget Justification, development food assistance was the second largest source of funding for nutrition programming in U.S. assistance, accounting for $87M in the FY 2017 request.

World Vision acknowledges the critical need for emergency food aid this year, but we also believe funding for these long-term development programs must remain a priority in the next farm bill, as they help to prevent and mitigate future food emergencies and the need for emergency assistance. To further illustrate, Congress appropriated close to an additional $1 billion to meet emergency needs in FY17. To draw that funding from development programs would have completely depleted funding for development programming, undermining existing multiyear investments, and leaving these beneficiaries vulnerable to reversing back into poverty.

Food for Peace in Zimbabwe and Haiti

In Zimbabwe, World Vision through the *Enhancing Nutrition, Stepping up Resilience and Enterprise (ENSURE)* (*http://www.wvi.org/food-assistance/ensure-zimbabwe*), a USAID funded program, empowers poor, rural households in Manicaland and Masvingo provinces to become more food-secure. In Fiscal Year 2016, 4,682 persons were trained in disaster preparedness (130 percent of target met), 107 community assets—like dams, irrigation schemes and gardens—were created or rehabilitated (445 percent of target met), and 217 producer groups were supported in goat and poultry value chains (238 percent of target met). To this end, the quality of food consumption, especially of children under 23 months as well as pregnant and lactating mothers, was significantly enhanced, breaking the intergenerational cycle of malnutrition and poverty.

During the massive El Niño-induced drought in Zimbabwe last year, World Vision received a $19 million cost modification to our title II-funded ENSURE program. This flexibility provided by the U.S. Government enabled us to quickly respond to the rapidly increasing food deficits experienced by households in the east and southeast of the country, some of the hardest hit by the drought, with more than 18,000 metric tons of U.S. commodities. Through this cost modification we provided a supplemental feeding ration to more than 313,000 people who were affected by the drought. Additionally, this also protected early gains made by the development program, by ensuring that many households were able to protect assets they had generated through U.S. Government assistance, instead of selling them off, thereby adding to their longer-term resilience. World Vision and the families with whom we are engaged greatly appreciate this flexibility and the rapid response it allowed.

In Haiti, another development food assistance program, Kore Lavi is supporting 18,150 households with monthly food vouchers in five out of the ten departments across the island. The program is being led by CARE and the Government of Haiti, in partnership with WFP, Action Against Hunger and World Vision, with funding from USAID. This 4 year long program has the goal of strengthening the Haitian national social safety net and improving the food security and nutritional status of vulnerable populations.

In addition to the ongoing voucher program, Kore Lavi was reinforced with a "crisis modifier" from USAID following the impact of *Hurricane Matthew* (*http://wvi.org/food-assistance/article/planting-seeds-hope-among-ruin*). For 3 months after the hurricane, some 1,100 families received 3,000 Haitian Gourdes (the equivalent of U.S. $50) per household, per month. This crisis modifier injects emergency funding into existing development programs to rapidly address emerging humanitarian needs.

In the words of one beneficiary, a young widow named Dachena, "[t]he program is really helpful for the boys and me. It has allowed me to feed them better with

the rice, beans, oil and vegetables that I buy," and "I have observed an improvement in their physical health and energy. They are gaining some weight." For families like Dachena's, cash transfer programming and emergency crisis modifiers have been a life-line. Furthermore, they have protected development gains by enhancing resilience made in disaster prone areas with high levels of vulnerability, and in this way, help to address the humanitarian-development divide.

Food for Peace and Private Sector Linkages

World Vision, together with its private-sector and NGO partners, have also developed innovative approaches to link food-insecure farmers to suppliers and buyers. Under the USAID Food for Peace TOPs learning platform, World Vision provided training on market linkages to four USAID Food for Peace Development Food Assistance Activities and one USAID Niger Economic Growth funded project. As part of our collaboration with the TOPS learning platform and with support from USAID, World Vision produced the *Integrating Extremely Poor Producers into Markets Field Guide* (*https://agrilinks.org/library/integrating-extremely-poor-producers-markets-3rd-edition*). The Field Guide includes a set of over 20 tools for market development professionals to use in order to strengthen the commercial relationships between food-insecure and extremely poor farmers with private-sector suppliers and buyers. These commercial market linkages with the private-sector provide sustainable business relationships that will last well beyond the life of the USAID funded project.

Food for Peace, Social Accountability, and Good Governance

World Vision's Bangladesh Nobo Jatra Food for Peace Development Food Assistance Activity is seeking to address underlying causes of chronic food insecurity through advocacy and government reforms. By engaging local authorities through this social accountability approach, Nobo Jatra is working with farmers and government agricultural staff to identify agricultural service delivery gaps—using social auditing, community services scorecards, and "town-hall style" interface meetings for citizens with service providers and government officials.

Citizen feedback on services will be used to advocate for governance reform across the target ministries of health, water and sanitation, and agriculture. Citizen monitors and committees will work with government officials to monitor progress and address gaps through ongoing advocacy. Food for Peace's adoption of social accountability as a top line objective in its new global strategy issued last year—along with World Vision's own pioneering of this kind of work—has the potential to revolutionize these already successful programs by integrating bottom-up, people-driven governance reforms, which improves public services and keeps corruption in check.

The McGovern-Dole International Food for Education and Child Nutrition Program

The McGovern-Dole International Food for Education and Child Nutrition Program provides the donation of U.S. agricultural commodities to reduce hunger and malnutrition and promote literacy and primary education in food-insecure countries. For highly vulnerable communities, there is an incentive for parents to send their children to school as they receive the dual benefit of access to both education and nutritious food. For girls, the program has shown an increase in school attendance, driving literacy and educational attainment and helping to institute greater gender balance.

McGovern-Dole has reached 40 million children with food at school and it is currently active in 24 countries. As implementers of the McGovern-Dole Food for Education, World Vision is particularly focused on the long-term sustainability of the program, and engaging host governments to ensure the program continues beyond the duration of the grant. World Vision implements these programs in Mozambique and Nicaragua.

Food for Education: Mozambique

World Vision is implementing a Food for Education project in Mozambique known as "Educating Children Together." The aim of the project is to improve the literacy of school-aged children in grades 1–7, increase the use of health and dietary practices, improve the quality of literacy instruction, and student and teacher attendance. Across the two districts in which World Vision currently implements Food for Education, 8,000 metric tons of food are being used to feed 64,000 beneficiaries, improving food security, and boosting school attendance especially among girls. Literacy rates have also improved from two percent at the inception of the project to about 35 percent because of USDA interventions. In most cases, the lunch provided through this program is the only meal these children receive all day. Further, the food provided is fortified with much needed micronutrients.

The USDA Local and Regional Procurement (LRP) program, made permanent by the 2014 Farm Bill, is intended to be used in conjunction with McGovern-Dole programming to fill in nutritional or food availability gaps for targeted populations through purchasing of locally sourced food that will help transition management of school feeding to local governments. World Vision received a $2 million award in 2016 to implement an LRP project under the current McGovern Dole Food for Education project in Mozambique. The project leverages the resources, skills and partnerships built with 43 farmer groups to supplement school meals with beans, groundnuts and orange fleshed sweet potatoes in 43 target schools.

In FY16, the project experienced a pipeline break because the commodities from the U.S. did not arrive on time. During this period, 64 schools out of the 150 target schools received 114 metric tons of locally sourced food such as maize, beans, groundnuts, sweet potatoes and vegetables (cabbage, lettuce, onion, tomatoes, *etc.*) for school meals before the arrival of the imported Corn Soya Blend (CSB+). This was, and remains, an effective and efficient way to promote dietary diversity and demonstrate sustainability.

Food for Education is designed to ensure that school meal programs can, after a transition period, be transferred to a national or local government to operate on its own. Indeed, the success of World Vision's McGovern-Dole program in Mozambique demonstrates the importance of partnerships with the Government of Mozambique and farmer groups to strengthen the local supply chain. World Vision views LRP as critical to the sustainability of school lunch programs. These efforts empower local farmers to grow the quality and quantity produce needed for school lunches. Additionally, LRP spurs investment in food processing industries, and often results in the procurement and the promotion of culturally appropriate food commodities. As a result of this collaboration, a sustainable school feeding model has been developed, resulting in nutritional gains for nearly 64,000 children, and it also supports the Government of Mozambique efforts to stimulate its own market development.

Recommendations

World Vision promotes public policy initiatives and legislation that advance efficient food security and nutrition programming. As Congress works on the Agricultural Act of 2018, World Vision urges the enactment of the following policy recommendations that will further ensure the greatest number of beneficiaries are reached in an effective, efficient, and culturally-sensitive manner.

Improving Food Assistance Programs in the Farm Bill of 2018

- Support and advance the increased use of various food assistance modalities including cash, food vouchers, food commodities, and local and regional procurement in Food for Peace and McGovern-Dole Food for Education.
  - Considering the estimated 70 million people across 45 countries in need of emergency food assistance during 2017, World Vision recommends lowering or eliminating the current requirement that mandates 100 percent of food aid be grown in the United States, additional modalities can be used including locally and regionally procured (LRP) commodities, vouchers, and cash transfers—whichever is the most efficient option.
  - An initial LRP pilot project conducted by USDA through the 2008 Farm Bill found that use of LRP commodities allows the U.S. to feed more people quicker and at a lower cost. Additionally, as described above, the LRP program in Mozambique is encouraging local governments to assume responsibility for school lunch programs, while also building the capacity of local farmers. We anticipate the government will be better able to take the program over when funding of the grant ends, ensuring the sustainability of the initial gains achieved.
- Provide discretion to food aid implementers on the use of various food aid modalities.
  - While a range of various food assistance modalities exist, there is no "right" intervention. In consultation with donors, World Vision believes implementers, who often have the most adequate and up to date knowledge on current conditions, should have discretion over the type(s) of modalities used in its food aid programming.
  - Before selecting a modality/modalities to be used in food aid programming, a comparison of all options should be considered and evaluated based on the following factors: appropriateness based on market conditions, feasibility and likelihood of success, objectives of the program, and the overall cost of the intervention.

- World Visions supports and uses U.S. grown commodities in its food aid programs when local markets are not functioning or there is insufficient food available to meet the local food need. When local market conditions are favorable and adequate quantities of food are available, local commodities can be purchased and then used in country or regional response efforts. We also utilize cash transfers which allow qualifying beneficiaries to purchase food and other household items in local markets and vouchers as a form of cash based transfers that are used when there is a perceived risk of transferring cash or if there is a need to ensure people receive a specific type of food.

- Eliminate the minimum monetization requirement and support use of the Community Development Fund and 202[(]e[)] funding within Food for Peace non-emergency, development programs.
  - Under current U.S. law, at least 15% of non-emergency food aid funding must be made available to qualifying nongovernmental organizations (NGOs) for monetization.
  - Due to costs associated with monetization, including current U.S. law that requires using more expensive U.S. cargo ships for transportation of U.S. commodities, World Vision recognizes monetization can often be an ineffective practice.
  - Community Development Funds (CDF) are a portion of Development Assistance funding that complement Food for Peace Title II development programming.
  - CDF funds should continue be used to support community-level development activities so that title II non-emergency monetization is not undermining other U.S. Government efforts to boost local agriculture production and local markets. This will ensure title II development programs are using U.S. taxpayer money as efficiently as possible to build self-reliance in food-insecure communities.
  - The 2014 Farm Bill increased the amount of Food for Peace funding available to 202[(]e[)] allowing USAID to expand the use of these funds to include cash-based food assistance, when appropriate, in recipient countries where a title II program is already operating. World Vision supports both the use of 202[(]e[)] funds, as well as Community Development Funds, allowing our programs to avoid using the costly, and time-consuming process of monetization.

- Eliminate Cargo preference.
  - Cargo preference is a law that requires at least 50 percent of the gross tonnage of all government generated cargo, meaning food procured, furnished, or financed by the U.S. Government, to be transported on privately owned, U.S.-flag commercial vessels. Often, food aid can be shipped on non-U.S. vessels at much lower rates, resulting in more beneficiaries being served through additional resources being spent on food and not shipping costs. World Vision urges Congress to consider eliminating or reducing the minimum tonnage of food aid to be shipped on U.S. flagged vessels.

- Leverage crisis modifiers in Food for Peace with more frequency and depth to enhance resilience to shocks and protect development gains in agriculture, food security and livelihoods
  - USAID has pioneered the use of crisis modifiers to quickly inject emergency funds during crises into existing development programs. These funds allow partners to respond rapidly to address humanitarian needs, reducing livelihood and other development losses.
  - Crisis modifiers are agile and respond quickly to changing needs. Emergency food aid is used to reach vulnerable beneficiaries, and once these needs are met, often a return to the original development activities in the area is resumed.

- Further leverage good governance and social accountability programs in Food for Peace and McGovern-Dole Food for Education to empower vulnerable and disadvantaged populations to improve their own food security through more transparent and responsive public and private institutions. World Vision affirms the Food for Peace strategy of focusing on host country government reform which addresses root causes of poverty and food insecurity by helping people hold their own governments accountable to spend U.S. assistance and domestic resources effectively and make it sustainable. The World Vision Development

Food Assistance Activity in Bangladesh mentioned earlier illustrates the impact of this critical Food for Peace program component.

- ◦ World Vision's Citizen Voice and Action programming has been highlighted above in our Food for Peace programming which serves as an effective model in promoting social accountability and good governance. By facilitating relevant, tangible and high quality civic education on government policies and planning for food security, WV supports civil society with the knowledge and confidence to engage with local government officials on whether and how government programs and policies are effective.
- ◦ Through simple but compelling social accountability approaches, World Vision is helping community leaders, farmers, and other stakeholders to identify their key priorities and needs, while facilitating local and national platforms for them to address these priorities directly to key decision makers in government.
- ◦ World Vision's evidence-based best practices in this area, addressing root causes and supporting greater self-reliance, combined with Food for Peace strategy and practice—both supporting communities to engage directly with their governments over the most fundamental need of food security—are a strategic combination. Social accountability—or citizen-state engagement—is now an 'operational model' helping Food for Peace and its partners to achieve better governance and sustainability for food security, including in fragile states. Emerging World Vision research is showing that this work increases state legitimacy in fragile contexts, thus mitigating cycles of ongoing conflict that threaten food security.

- Further invest in development food assistance programming in fragile contexts through Food for Peace.
  - ◦ Much of the humanitarian need today has been driven by civil wars, instability, and unresolved political disputes including in South Sudan and to some extent in Somalia. By intervening in fragile states before they become failed ones, future famines and food insecurity crises can be averted.
  - ◦ Implement innovative and flexible approaches to addressing wide-spread extreme poverty and vulnerability, including through adopt multi-year, flexible funding.

Conclusion

At World Vision, our organization's theme this year is life in all its fullness, as Christians, as people of faith we take this prophetic call seriously, its central to our mission and all we do.

World Vision will remain focused and dedicated, alongside many partners, in responding to the immediate needs of affected communities throughout East Africa and beyond. But the window of opportunity to avert a larger catastrophe is rapidly closing. We believe that if governments including the U.S., international donors and humanitarian actors all act swiftly, we can prevent this crisis from worsening, but the time to act is now. If we don't, we will have failed in living out our American values, and for many of us, our Christian call to care for the least of these.

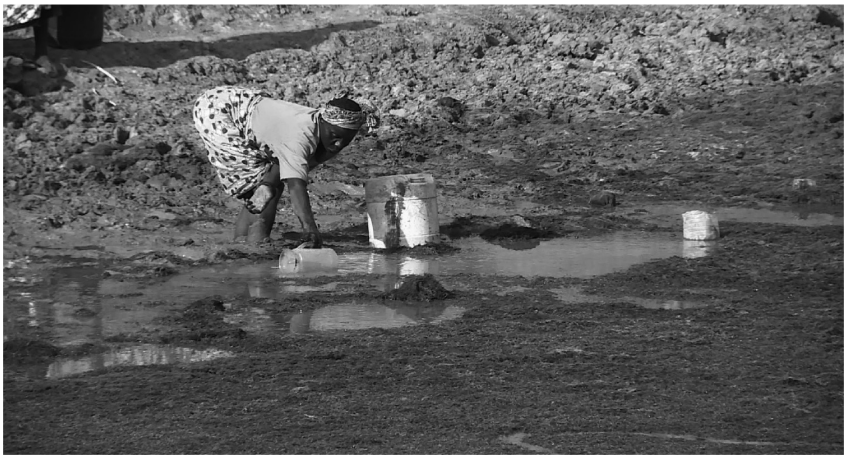
We hope that Congress and this Committee will reject the Administration's budget proposal related to food aid programming and continue to provide strong leadership and advocate for the funding and programs that are needed to respond to this crisis. Additionally, we stand ready as partners to work with the Committee to make improvements to our food aid programs, so that the can better meet the needs of the world's most vulnerable populations, while ensuring greater peace and stability around the globe. We also urge Members of this Committee to demonstrate strong support for the International Affairs Budget as discussions around 2018 appropriations begins.

Thank you for the opportunity to testify today.

APPENDIX

World Vision East Africa Hunger Response Situation Report No. 5

25 May 2017



Key Highlights

- Vulnerable populations in Somalia, southeastern Ethiopia, and northern Kenya continue to face life-threatening acute food insecurity, following delayed and erratic seasonal rains across the Horn of Africa, according to the Famine Early Warning Systems Network (FEWS NET).
- Despite an unprecedented scale-up in donor contributions to address the humanitarian crisis and prevent Famine[*] in Somalia, additional relief assistance is urgently needed. The late onset of seasonal rains, increased malnutrition levels, and the ongoing cholera outbreak—all of which are compounded by humanitarian access constraints—are immediate challenges to be addressed.
- Severe drought has dried up water resources in half of Kenya's 47 counties. An estimated three million people lack access to clean water. Hygiene promotion activities and the rehabilitation of water points, boreholes and water trucks are urgently required, including in schools and health clinics. Poor sanitation and shortage of safe drinking water is leading to an increase of waterborne diseases, especially among children under age 5.
- 5.5 million people in South Sudan are severely food-insecure. The onset of the rains has added a set of natural barriers, making it difficult to reach people in need of assistance. The total number of people in need of humanitarian and protection services is 7.5 million.
- World Vision has received 37 percent of its desired funding of an appeal for $110 million USD. While this money has enabled a response to some of the most affected communities, the need is far much greater and urgent. The unmet sum of over $69 million USD is urgently needed to scale up humanitarian assistance in the four countries. Kenya remains the lowest funded at 0.04 percent.

Situation Highlights



25M are in crisis and need humanitarian assistance.

$110.3M[**] required for humanitarian assistance.

3.5M children under 5 are acutely malnourished.

844,900 children are severely malnourished.

14.4M people require health assistance.

* Famine: 'A catastrophic food shortage affecting large numbers of people due to climatic, environmental and socioeconomic reasons,' UN DHA, *Glossary of Humanitarian Terms,* 2008.

[**] All financial figures in U.S. dollars.

Humanitarian Situation Overview

Ethiopia: Humanitarian requirements have increased with at least 2.2 million people needing food assistance, in addition to the 5.6 million relief food beneficiaries identified at the beginning of the year. A scaled-up response is critical in curbing the spread of an Acute Watery Diarrhoea (AWD) outbreak within Somali and other at-risk regions. The region is the worst affected by the current outbreak of AWD, accounting for 91 per cent of the reported cases.

Kenya: More than 2.6 million Kenyans are severely food-insecure and this number is rapidly rising. Many pastoralist households are experiencing crisis levels of acute food insecurity (IPC Phase 3). During the lean season (July to September) many families will experience emergency acute food insecurity (IPC Phase 4), just one step away from famine. High levels of malnutrition are also prevalent across the arid and semi-arid lands. Three sub-counties report Global Acute Malnutrition rates of 30 percent, double the emergency threshold. An estimated 553,000 children under age 5 and pregnant and lactating women will require Blanket Supplementary Feeding in five counties over the next 6 months.

Somalia: The humanitarian situation continues to deteriorate and the possibility of famine in 2017 persists. Acute malnutrition is on the rise across the country, increasing the risk of diseases. UNICEF projects that over 275,000 children face or will suffer life-threatening severe acute malnutrition in 2017. Major disease outbreaks such as AWD/cholera and measles are spreading.

South Sudan: South Sudan is the world's fastest growing refugee crisis. Among those seeking safety in Uganda, Sudan, Ethiopia, Kenya, the Democratic Republic of the Congo (DRC) and the Central African Republic (CAR) are around one million children. According to the latest report from OCHA, 1.9 million people are internally displaced while 1.7 million South Sudanese refugees are living in foreign countries.

What World Vision Is Doing

Ethiopia

392,130 people reached with livelihood assistance.

84,510 people reached with health and nutrition services.

75,400 people reached with WASH services.

138,220 people reached with direct food assistance.

Kenya

202,680 people reached with livelihood assistance.

2,940 people reached with health and nutrition services.

8,580 children reached with protection and education assistance.

21,500 people reached with WASH services.

Somalia

57,645 people reached with livelihood and food assistance.

100,020 people reached with health and nutrition services.

1,380 people reached with protection and education services.

175,700 people reached with WASH services.

South Sudan

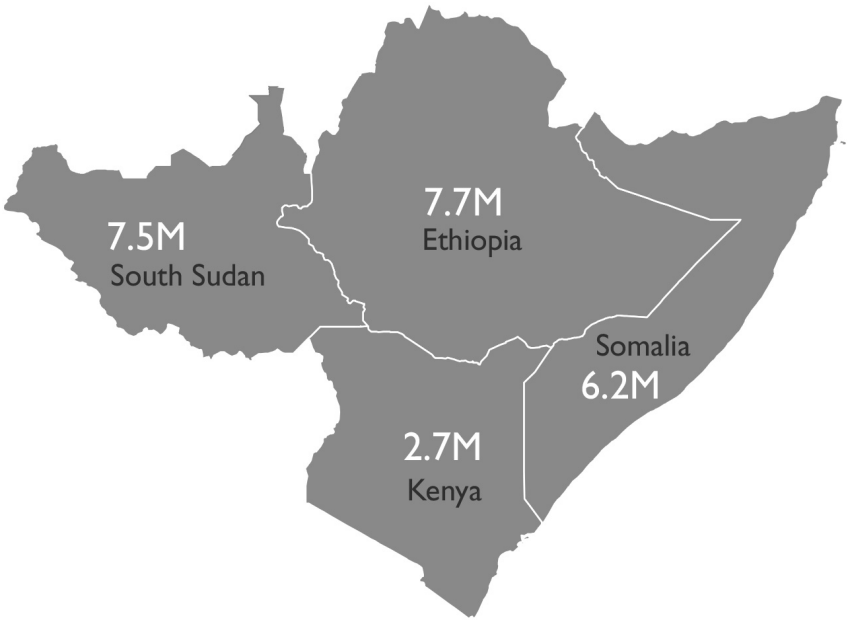
187,590 people reached with livelihood and food assistance.

83,625 people reached with health and nutrition services.

28,750 people reached with education and protection services.

167,500 people reached with WASH services.

People In Need of Assistance



2.7 million people targeted for humanitarian assistance.

>1.5 million people reached with humanitarian assistance.

Response Highlights

840,045 people reached with livelihood and direct food assistance.

271,095 people reached with health and nutrition services.

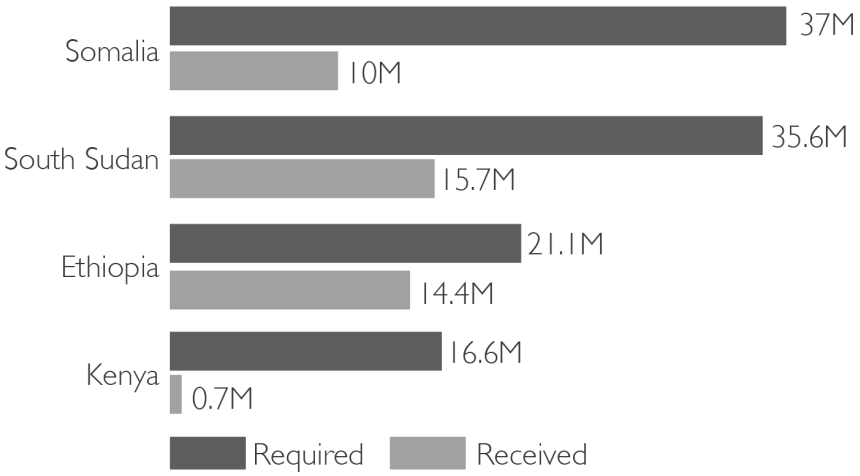
440,100 people reached with water, sanitation and hygiene.

38,710 children reached with child protection and education interventions.

30,034 people reached with shelter and non food items interventions.

Gaps and Funding Requirements

(in millions U.S.$)



110.3M **required for hunger crisis response.**



World Vision Humanitarian Donors and Partners

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The CHAIRMAN. The gentlelady's time has expired.

Ms. Salem, 5 minutes.

STATEMENT OF NAVYN SALEM, FOUNDER AND CHIEF EXECUTIVE OFFICER, EDESIA INC., KINGSTOWN, RI

Ms. SALEM. Thank you, Chairman Conaway, Ranking Member Peterson, and the Members of the Committee.

My name is Navyn Salem, and I am the Founder and CEO of Edesia, a social enterprise on a mission to treat and prevent malnutrition for the world's most vulnerable populations.

From my office in North Kingstown, Rhode Island, I can look out and see thousands of boxes run on conveyor belts outside my office on the factory floor with a familiar USAID logo and a message from the American people. This message, which my team of 70 has helped spread to 50 countries, holds real meaning. Inside this miracle food packet, next time, I will provide napkins, includes peanuts from Texas and Georgia; milk powder from Pennsylvania, New York, Indiana, and Michigan; vegetable oil from Kentucky and Maryland; vitamins and minerals from Illinois and New Jersey. What the American farmers and ranchers sow and reap, what the American plants have processed with utmost regard for quality is carried across state lines from hard-working American truckers to my factory in Rhode Island so that my team can take every ingredient and turn it into an alchemy of lifesaving, ready-to-use therapeutic food, or RUTF, that has the power to save lives.

Allow me to share a brief story with you. A year ago, I was in a health clinic in rural Liberia passing by mothers sitting on wooden benches waiting their turn to see the doctor. The Ebola outbreak had just ended, and a semi-sense of normalcy was returning. A young mother entered the clinic with a baby so small I thought she wasn't real. I pulled her out of a long line of patients waiting to be checked by healthcare workers and placed her on a scale. She was 7 months old, and she weighed 7 pounds. This is the same weight as my daughter, Mia, was the day she was born. The little girl's name was Surprice, and she was quickly diagnosed with severe, acute malnutrition. Someone in her condition is too malnourished to be treated with basic foods. I handed her this RUTF packet with the USAID logo on it. After a few bites, everyone in clinic watched her perk up right before our eyes. And it was that miracle that I have witnessed so many times in rural clinics all over Africa.

With a solution so simple this little girl was given life and renewed hope. And thanks to the combined efforts of American farmers, manufacturers, transporters, Edesia, and USAID, she may just grow up to be one of Liberia's next leaders.

I am not the typical face of a nonprofit. I solve problems through business and set goals that are sustainable, measurable, and scalable. I run a world-class, advanced manufacturing, state-of-the-art, 83,000$^{2\prime}$ plant that creates jobs. We are laser focused on innovation and determined to save the lives of those suffering from malnutrition. We have purchased over a hundred million dollars of agricultural commodities from 15 states. We are the largest international exporter in our state. My team is busy working 24 hours a day to make life possible.

Since 2010, these collective efforts have helped reach over five million malnourished children in partnership with the USDA, USAID, UNICEF, and the World Food Programme, agencies which heroically deliver this critical food aid and assistance in some of the hardest to reach, most inhospitable places on Earth.

It was this week 70 years ago, June 5, 1947, that George Marshall delivered a powerful speech. He said: "Our policy is directed not against any country or doctrine, but against hunger, poverty, desperation, and chaos. Hunger and insecurity are the worst enemies of peace." His words rang true, and they ring ever true now. After World War II, it was France, Italy, Germany that suffered from drought and extreme hunger. Today, as we gather for this hearing, catastrophic famines are looming in Yemen, Somalia, South Sudan, and Nigeria. Extreme hunger and malnutrition threaten the stability and nations of our world.

If we want to fight terrorism, feeding people is one of the most effective tools that we have to spread peace and stability. Products like RUTF not only save lives, but they build the brain trust of the next generation so that these children have the tools to study in school, to become productive members of their community, and to be our collective future. When I see a box of RUTF from Rhode Island sitting in a dusty clinic in Liberia, I am proud. I am proud because it reflects the best of American agriculture, manufacturing, and ingenuity. We in this room hold the power to continue this heroic work, which for millions of malnourished children is a matter of life and death. With strong, decisive leadership, you as Representatives of the American people, can show the world that there is no smarter way to put America first than by helping to feed the world's most vulnerable populations.

I urge you, Members of this distinguished Agriculture Committee, to do everything in your legislative power to safeguard international food aid, including Food for Peace Title II Program. It is a true and meaningful gift from the American people.

[The prepared statement of Ms. Salem follows:]

PREPARED STATEMENT OF NAVYN SALEM, FOUNDER AND CHIEF EXECUTIVE OFFICER, EDESIA INC., KINGSTOWN, RI

Introduction

As the Founder and CEO of Edesia and a private citizen, I appreciate the opportunity to submit testimony to the United States Agriculture Committee Hearing for the *Next Farm Bill: The Future of International Food Aid and Agriculture Development.* I would like to thank the Members of this Committee for their commitment to food security and agricultural development, both here and abroad. The robust U.S. agricultural supply chain and food aid programs make businesses like mine, and the impact they make, possible. Edesia [1] is a Rhode Island-based nonprofit social enterprise and manufacturer that works in partnership with the U.S. Government to promote global stability and national security for America by supplying evidence-based, lifesaving nutritional support to vulnerable children worldwide. International Food Aid is a critical part of the U.S. economy and an important tool for our national security—it is an America first policy.

Let me begin by sharing a story with you that I believe well illustrates why I am here and why your continued commitment to food security and agriculture development is so critical to creating a world of hope and security for all Americans. A year ago I was in a health clinic in rural Liberia, passing by mothers sitting on wooden benches waiting their turn to see the doctor. The Ebola virus outbreak had just

[1] *https://www.edesianutrition.org/*.

ended and a semi-sense of normalcy was returning. A young mother entered the clinic with a baby so small I thought she wasn't real.

I pulled her out of the long line of patients waiting to be checked by the healthcare worker. The little girl's name was Surprice. I unbundled her from her mother's back and placed her on the scale. She was 7 months old and weighed only 7 pounds, the same weight as my daughter was at birth.

Surprice had severe acute malnutrition. I handed her a packet of ready-to-use therapeutic food, commonly known as Plumpy'Nut, a lifesaving and revolutionary fortified peanut paste, specifically designed to treat severely malnourished children, that does not require refrigeration or the addition of water. It can reach the most remote villages because of its 2 year shelf life and its simplicity allows mothers to treat their children at home, freeing up critical hospital beds and healthcare resources.

The foil packet I gave to Surprice was marked with the USAID logo and the message "Gift of the American People." Those were not empty words. They held real meaning. Inside were peanuts from Texas and Georgia, milk powder from Pennsylvania, New York, Indiana, and Michigan. Vegetable oils from Kentucky and Maryland. Vitamins and minerals made in Illinois and New Jersey. What the American farmers had sewn and reaped and what the American processing facilities had processed with utmost regard for quality, was carried across state lines by hardworking American truckers to the Rhode Island factory so that my team of 70 could turn every ingredient into an alchemy of lifesaving ready-to-use therapeutic food—so that this one little girl in Liberia could have *her* chance at life. After a few bites of the fortified peanut paste, Surprice started to perk up and breathe easier right before our eyes. We no longer felt so worried because we knew this little girl was going to make it.



That is what we do at Edesia. With the help of American farmers, manufacturers, and transporters, we strengthen the fabric of our world one malnourished child at a time. There are 28 million pounds of American agricultural products that go into our lifesaving efforts each year. Through our work, we have infused well over $100 million dollars into the U.S. economy.

Edesia and Our Products

Millions of children throughout Africa, Asia, Latin America, and the Middle East are dying needlessly from severe acute malnutrition—a completely preventable condition caused by a lack of adequate nutrients in the diet—and this crisis is having an immediate and lasting adverse impact on the stability of entire regions. The reality of something so unimaginable in this day and age was what led me to start Edesia to tackle this problem while creating jobs for my state and throughout the supply chain.

Since our first USAID grant helped Edesia launch operations in 2010, we have manufactured enough lifesaving peanut-based ready-to-use therapeutic and supplementary foods to help reach over five million malnourished children in 50 countries in partnership with USAID/USDA along with UNICEF and the World Food Programme, whose every day heroic efforts to deliver aid and assistance in some of the hardest-to-reach, most inhospitable places on our planet mostly go unsung.

In any given year on our planet there are over 35 million children throughout Africa, Asia, Latin America, and the Middle East quietly suffering from some form of acute malnutrition that will either rob them of life or of their true potential. They desperately need innovative solutions, including the kind of evidence-based, ready-to-use therapeutic and supplementary foods we make in our factory. Only 20% of that need is being met, not due to lack of capacity, but due to lack of funds and adequate programming.

GDP, Emerging Markets, and Global Security

The World Bank estimates that malnutrition reduces the GDP of countries by as much as ten percent. This is not *why* we help save lives, but the productivity increase is certainly a critical part of what we do. Higher GDP leads to stronger markets for American products. High-income countries are the biggest consumers of America's high-value agricultural and food products, but demand is increasing at a robust 16% pace in lower-middle-income and low-income countries.[2]

While rising global economies expand markets for American goods; hunger, food insecurity, and malnutrition are concurrently linked to violence, conflict, migratory activities, and potentially radicalization leading to political instability that ultimately affects the United States.[3] Ending malnutrition is fundamental to fighting terrorism. A healthy, well-nourished child stays in school, stays out of the clinic and out of trouble, and gives back to his or her family, community, and world in significant *and positive* ways.

In a February 2017 letter, 120 retired military generals, from all branches of the armed forces, wrote to Congressional leadership in support of diplomacy and international aid and development.[4] They spoke out strongly that military inventions are not enough to confront the crisis facing our nation and that the best way to keep our military's men and women out of harm's way is to support stability in vulnerable regions abroad.

Edesia-U.S. Government Partnerships

In 2010, Congress allocated $10 million to USDA's Foreign Agriculture Services for a Micronutrient-Fortified Food Aid Pilot Program (MFFAPP) intended to work with the public and private-sector to develop new nutritional products. Edesia partnered with the National Soybean Research Lab and a food factory in Haiti to develop a specialized food for school children who otherwise did not have access to hot lunch due to lack of water or cooking facilities.

USAID commissioned Tufts University in 2011 to evaluate how to improve upon the nutritional aspects of their food aid baskets through the Food Aid Quality Review.[5] They found that putting nutrition at the heart of the food aid agenda enhanced the impact and credibility of USAID title II programming. This included an emphasis on products that are "fit-for-purpose," such as ready-to-use foods and fortified blended foods (ex: corn-soy blend) for the treatment and prevention of mal-

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[2] Andrea Durkin. March 2017. *Growing Markets, Growing Incomes: Leveraging Trade Facilitation for Farmers.* Chicago Council on Global Affairs. *https://www.thechicagocouncil.org/sites/default/files/leveraging_trade_facilitation_farmers_march17.pdf.*

[3] Cullen S. Hendrix. April 2016. *When Hunger Strikes: How Food Security Abroad Matters for National Security at Home.* Chicago Council on Global Affairs. *https://www.thechicagocouncil.org/sites/default/files/Report_When_Hunger_Strikes_1604.pdf.*

[4] *http://www.usglc.org/downloads/2017/02/FY18_International_Affairs_Budget_House_Senate.pdf.*

[5] Webb, Patrick, Beatrice Lorge Rogers, Irwin Rosenberg, Nina Schlossman, Christine Wanke, Jack Bagriansky, Kate Sadler, Quentin Johnson, Jessica Tilahun, Amelia Reese Masterson, Anuradha Narayan. 2011. *Improving the Nutritional Quality of U.S. Food Aid: Recommendations for Changes to Products and Programs.* Boston, MA: Tufts University.

nutrition, in addition to the standard bulk commodities that are required to feed the general population during times of need. While these enhanced nutritional products may be costlier per pound, their positive impact on specific measurable nutrition outcomes that add to the resilience of communities makes them a smart investment with a high rate of return.

Edesia has since 2010 participated in the farm bill-authorized, International Food Relief Partnership (IFRP) program. This program provides shelf-stable products to predominately faith-based groups assisting especially vulnerable populations. In this climate of austerity, we ask the Members of the House Agriculture Committee to protect these vital programs in next farm bill.

President's Budget and National Security

While not a directly in the scope of this Committee, I wanted to take the opportunity to address the President's proposed budget. The White House budget proposal that requests removal of funding from Title II Food Aid of the Agricultural Trade Development and Assistance Act of 1954 (Public Law 83–480) is in opposition to the humanitarian nature of the American people and will result in job losses here in America. We can be both America First and responsible global citizens. Financial contributions generously provided by the American people and authorized by Congress support the critical work the humanitarian sector and government are doing, through Food for Peace, to further America's mission abroad.

The world is currently in the midst of the worst cluster of humanitarian disasters in recent memory, putting over 20 million people at risk. With a famine declared in South Sudan and Somalia, Nigeria, and Yemen headed in the same direction, on top of the ongoing conflict and crisis in Syria, continued financial support of food aid and humanitarian assistance, and strong leadership from the United States is needed now more than ever. We saw support from Congress for the FY 2017 budget, and we hope to see that support continue in the budget for FY 2018 and with the reauthorization of the 2018 Farm Bill. Humanitarian aid is good for recipients, as well as the citizens of the United States, as it provides both jobs and economic development here, future trading partners abroad, and improved global security.

Hunger has the power to threaten the stability of nations. After WWII, it was France, Germany, and Italy that suffered from drought and extreme hunger. Today it is Yemen, Somalia, and Nigeria where terrorism grows amid hunger. If our goal is to fight terrorism, then feeding people is one of the most effective tools we have to spread peace and stability and thereby keeping U.S. national security interests at the forefront of our agenda.

For decades, humanitarian aid and food aid have garnered bipartisan support from Congress and the White House. It was this week 70 years ago that George Marshall delivered a powerful speech. He said, "*Our policy is directed not against any country or doctrine but against hunger, poverty, desperation and chaos. Hunger and insecurity are the worst enemies of peace.*"

His words rang true then and they ring ever true now. With global food insecurity at all-time high levels—the highest since World War II—this is nowhere near the time to pull away from the American tradition of compassion and striving toward a better world for all. Ending malnutrition *is* how the world gets stronger, safer, and more resilient.

Conclusion

As the CEO of a U.S. social enterprise, I solve problems through business in ways that are sustainable, scalable, and measurable. Edesia creates jobs, is laser-focused on innovation and determined to save the lives of those suffering from the deadly consequences of conflict, drought, and natural disasters. For over 70 years, humanitarian aid and food aid have garnered bipartisan support from Congress and the White House, who understood not only the moral imperative of these actions, but also the important national security benefits and the increased economic opportunities that are created for our farmers, manufacturers, and transporters. We, as Americans, need to continue demonstrating strong, decisive leadership in this area and show the world that Americans do not turn their back on human suffering.

A failure to act now could lead to not only an increase in hunger and malnutrition but also to greater worldwide instability and insecurity that will cost us far more in the future. With strong U.S. leadership, we can consolidate the gains made in the past decade and accelerate progress toward the elimination of extreme hunger and malnutrition, to benefit both the United States as well as the world, especially its most vulnerable people.

Members of this distinguished Committee, I urge you to do everything within your legislative power to safeguard and shield the funding that, as a true and meaningful gift of the American people, is powerfully helping American farmers, manufacturers,

and transporters put food on their tables while it also does the critical work of healing the wounds of our world that so desperately need mending.

In summary, we ask that this Committee preserve the positive benefits of international food aid through:

- Authorizing a farm bill that includes Food for Peace and McGovern-Dole.
- Acknowledging that science-based, high-impact commodities hold a crucial place in food aid, in addition to staple commodities.
- Maintaining fit-for-purpose products, like ready-to-use foods and fortified blended flours, that effectively treat malnutrition in vulnerable populations.
- Continuing to support research that positions the U.S. as a leader in innovative products and advanced manufacturing.

Thank you again for providing me the opportunity to testify, and thank you for holding this hearing—the support and involvement of the agricultural community has been and will continue to be crucial in keeping these important programs running. Please do not hesitate to contact me if the Committee has any questions or would like further information as you continue the 2018 Farm Bill process.

Edesia's New State-of-the Art 83,000$^{2'}$ Factory



Edesia Uses 100% American Commodities



Boxes of RUTF Ready-To-Ship to Somalia



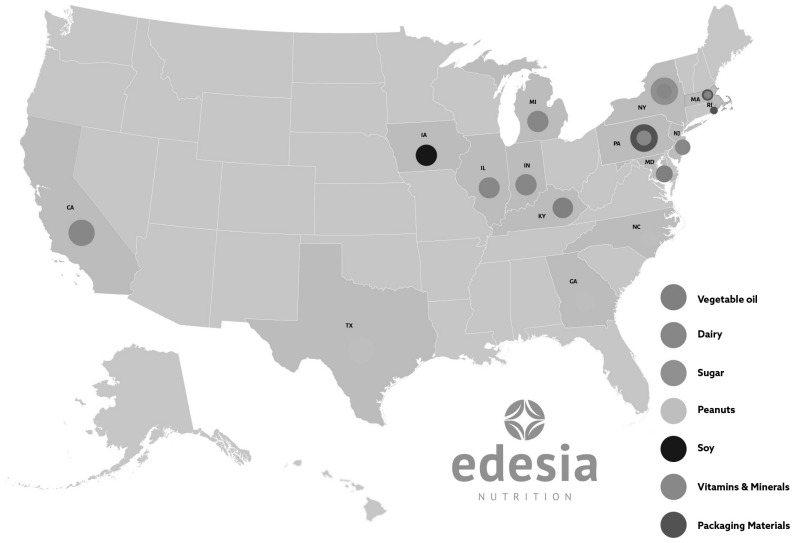
Box of USAID Procured RUTF in Liberia Clinic



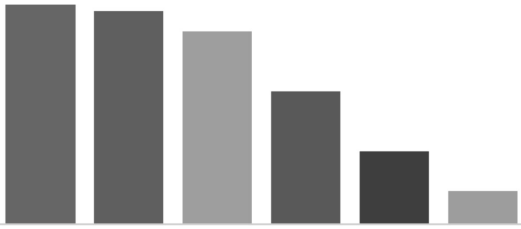
Before and After Treatment With Ready-To-Use Therapeutic Food



Edesia's Procurement 2017—by U.S. State



Edesia's Agricultural Procurement 2017



	lbs
Vegetable Oil	7,275,180
Dairy	7,054,720
Sugar	6,393,340
Peanuts	4,409,200
Soy	2,425,060
Vitamins & Minerals	1,102,300

The CHAIRMAN. Thank you, ma'am.
Mr. Schoeneman, 5 minutes.

STATEMENT OF BRIAN W. SCHOENEMAN, J.D., POLITICAL AND LEGISLATIVE DIRECTOR, SEAFARERS INTERNATIONAL UNION (AFL–CIO), WASHINGTON, D.C.; ON BEHALF OF USA MARITIME

Mr. SCHOENEMAN. Thank you, Chairman Conaway, Ranking Member Peterson, and Members of the Committee, for allowing me the opportunity to testify before you today. My name is Brian Schoeneman, Legislative Director for the Seafarers International Union, AFL–CIO. I am here today representing USA Maritime, a

coalition of American vessel owners and operators, trade associations, and maritime labor.

President Trump announced in his inaugural address his Administration would adopt an America first policy following two simple rules: Buy American and Hire American. Those words resonated deeply for those of us in America's maritime industry, whether it was striking the first blow for independence on the high seas in 1775, braving German torpedoes in 1942, or Somali pirates in 2009, or even the natural dangers of the sea each and every day, America's merchant mariners, some of whom are with us in the audience today, have always answered our nation's call to bring supplies to our soldiers, commerce to our partners, and food, like Navyn talked about, to hungry people.

America's humanitarian aid programs have always put America first. From the beginning, these programs represented the best ideals America had to offer. American food, grown in American soil and harvested by American farmers, is shipped through American ports on vessels crewed by American mariners to feed millions of hungry people, all through the generosity of the American taxpayer. This partnership has kept these programs strong for over 60 years.

Yet, despite that strength, for the last decade or more, these programs have been subjected to a protracted campaign to eliminate the very thing that has made them so successful: Americans.

USAID, along with foreign think tanks and their fellow travelers, have done everything in their power to take America out of American food aid. Well, everything except American money. Claiming the need for added flexibility and efficiency, these so-called food aid reformers have twisted these programs. Not so long ago, the single biggest cost in the P.L. 83–480 Food for Peace Program was food. Today, according to the GAO, food and ocean transport represent slightly more than ⅓ of the total outlays for P.L. 83–480. Added flexibility has resulted in less food aid and more cash giveaways, food vouchers, and foreign commodity purchases, all using money intended for buying and shipping American food. This is wrong. Congress should put an end to it.

I can't put it any plainer than this: Food aid is essential to the American merchant marine. It is one of the largest sources of cargo for our fleet today. We have seen what happens when we lose that cargo. In 2012, Congress reduced the percentage of food aid reserved for American flag ships from 75 percent to 50 percent. At the same time, USAID has been diverting money away from the purchase and shipment of U.S. commodities. The direct result has been the loss of 25 ships, that is the equivalent of ¼ of our fleet, since 2011. But more important than the ships, which are easily replaceable, you give me enough money, I will buy you a ship today, is the loss of jobs. These losses represent the equivalent of over 2,400 seafaring jobs. America depends on its merchant marine to support our warfighters overseas. And without a merchant marine, we would be held hostage to foreign interests in any future conflict.

The same can be said for our foreign commerce. Our merchant mariners are a vital national and economic security asset. And food aid and cargo preference help keep those mariners working in

peace time so that they are available in wartime. Without them, we cannot defend this country. It is that simple.

The men and women you see with me today are apprentices from the Paul Hall Center for Maritime Training and Education, Piney Point, Maryland. They are about to embark on a new career in the maritime industry. Many of these men and women are veterans. All of them are patriots. And all of them, if they end up sailing deep sea, at some point, will carry food aid. It is inevitable. We owe them a debt of gratitude for their service, not the casual slander we often see in food aid reform debates. Just yesterday, a Senate Foreign Relations Committee staffer referred to them, to my face, as greedy and deserving of no empathy in these conversations; they are merely an inefficiency to be removed. He was wrong. These apprentices represent the future of the merchant marine and our country, and they deserve to be treated with respect, not accused of greed or of starving children simply because they want to serve their country at sea and get paid a living wage to do it.

American farmers and mariners have been the backbone of advocacy in support of these humanitarian aid programs for years. We have long warned that cutting us out of these programs would lead eventually to their repeal. And what has happened? For the first time in history, the President of the United States is openly calling for the elimination of Food for Peace and McGovern-Dole. This would be a disaster for America's farmers and mariners and for hundreds of thousands, millions of people, hungry people, around the world. The next farm bill, you all should reject the calls for elimination of these programs and return them to their America first roots. Congress should roll back the added flexibility USAID has abused. It should consider whether USAID is even the most appropriate agency to continue implementation of these programs.

The USDA has run these programs for many years, and we were very pleased with our support from them. And we would love to see these programs back in the USDA. I would like to thank you all for allowing me to speak before you. I am happy to answer any of your questions.

[The prepared statement of Mr. Schoeneman follows:]

PREPARED STATEMENT OF BRIAN W. SCHOENEMAN, J.D., POLITICAL AND LEGISLATIVE DIRECTOR, SEAFARERS INTERNATIONAL UNION (AFL–CIO), WASHINGTON, D.C.; ON BEHALF OF USA MARITIME

Good morning, Chairman Conaway, Ranking Member Peterson, and Members of the Committee.

I thank you for conducting this hearing and for giving me the opportunity to testify. I would also be remiss if I did not thank all of you for your continued support of the U.S. Merchant Marine, the American farmers, and our international food aid programs. I am testifying today on behalf of USA Maritime. USA Maritime includes American vessel owners and operators, trade associations, and maritime labor, and is committed to ensuring that the United States Merchant Marine continues to sail, protecting America by supporting our warfighters, enhancing our economy through trade, and providing good-paying jobs to tens of thousands of Americans across our country. USA Maritime stands to ensure that we, as a nation, are not soon wholly dependent upon foreign interests to connect our economy to the world.

President Trump announced in his inaugural address that "a new vision will govern our land. From this moment on, it's going to be America First." [1] The President

[1] President Donald J. Trump, Inaugural Address (Jan. 20, 2017).

announced his desire that his new Administration "follow two simple rules: Buy American and hire American." [2]

For the United States Merchant Marine, these are words that resonate deeply. The men and women of the United States Merchant Marine have been putting America first for our entire existence. It was American merchant mariners, angered by British threats to bombard Machias, Maine, for no other reason than the residents were unwilling to load a cargo of lumber destined to be turned into British barracks in Boston, who struck the first blow for American liberty and independence on the high seas in 1775.[3] Fully a year before the Declaration of Independence, these Merchant Mariners risked their lives to defend what would become the United States of America.

To put it simply—America's mariners have been putting America first even before there was an America. Throughout the decades and centuries that followed, American mariners would continue to risk their lives, braving British men-o-war, Confederate commerce raiders, German torpedoes, and the inherent dangers of the high seas to bring supplies to our soldiers, commerce to our partners, and food to hungry people around the world.

In peace and war, the United States Merchant Marine has answered America's call and we have always put America first. Unfortunately, when it comes to America's international food aid programs, too many of our colleagues and friends in previous Administrations, and even some Members of this House, have signaled they do not agree with this approach.

As the House begins its deliberations on the next farm bill, we urge the House Agriculture Committee to ignore the siren calls for "greater flexibility" from the so-called "food aid reform advocates" who would like to fundamentally change our international food aid programs from what they are today—reliable, time-tested, and transparent U.S. commodity donation programs—into yet more foreign cash giveaway programs that the American people do not support and will not continue to fund. In fact, recent polling by Rasmussen indicates that 57% of Americans view the level of foreign aid the U.S. Government will give in this fiscal year alone as already too much.[4]

What has made America's in-kind food aid programs, including our flagship P.L. 83–480 Food for Peace program,[5] different has been these programs' "America first" approach to foreign aid.[6] American agricultural commodities, grown in American soil and harvested by American farmers, are shipped through American ports on vessels crewed by American mariners to feed the hungry people of the world, all as a result of the generosity of the American taxpayer. America remains the single largest donor of international food assistance, giving over $2.5 billion in aid annually.[7]

Over ½ of that, roughly $1.5 billion, is funded through the Food for Peace program.[8] Food for Peace is overseen by the United States Agency for International Development (USAID), while the Food for Progress [9] and McGovern-Dole [10] programs are overseen by the United States Department of Agriculture (USDA) Foreign Agricultural Service (FAS).

Under America's cargo preference laws,[11] at least ½ of all civilian agency cargoes, including title II commodities, must be shipped on U.S.-Flag vessels. These laws

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[2] *Id.*

[3] *See generally,* 1 Gardner Weld Allen, *A Naval History Of The American Revolution* 8–10 (1913).

[4] RASMUSSENREPORTS.COM, *Most See U.S. Foreign Aid As A Bad Deal for America, http://www.rasmussenreports.com/public_content/politics/general_politics/march_2017/most_see_u_s_foreign_aid_as_a_bad_deal_for_america* (last visited June 1, 2017).

[5] Agricultural Trade Development and Assistance Act of 1954, Pub. L. No. 83–480 (1954), amended by the Food, Conservation, and Energy Act of 2008, Pub. L. No. 110–246 (2008).

[6] In Secretary of State Tillerson's recent speech to State Department employees, he stated that translating "America first" into our foreign policy would be America first for national security and economic prosperity. No other program under State's control translates this vision like Food for Peace. Remarks of Rex. W. Tillerson, U.S. Secretary of State (May 3, 2017), available at *https://www.state.gov/secretary/remarks/2017/05/270620.htm*.

[7] U.S. Gov't Accountability Office, GAO–17–224, *International Food Assistance: USAID Has Controls for Implementation and Support Costs But Should Strengthen Financial Oversight* 1 (2017). [hereinafter 2017 *GAO Report*].

[8] *Id.*

[9] Food Security Act of 1985, Pub. L. No. 99–198, Title XI, § 1110, 99 Stat. 1354, *codified as amended at* 7 U.S.C. § 1736o (2017).

[10] Farm Security and Rural Investment Act of 2002, Pub. L. No. 107–171, Title III, § 3107, 116 Stat. 295, *codified as amended at* 7 U.S.C. § 1736o–1 (2017).

[11] *See* Military Cargo Preference Act of 1904, as codified at 10 U.S.C. § 2631 (2017), and Cargo Preference Act of 1954, as codified at 46 U.S.C. § 55305 (2017).

make up a critical part of the Federal Government's mix of laws and programs designed to ensure that the United States maintains a merchant marine capable of carrying a portion of our waterborne commerce. This has been the official policy of the Federal Government since 1936,[12] but it has long been a cornerstone of American national defense.

Thanks to the strong domestic constituency that supports Food for Peace—America's farmers, mariners, and the private voluntary organizations that oversee implementation of these programs in various countries around the globe—this program has enjoyed strong and consistent support in Congress and in past Administrations. For more than 60 years, this domestic support has shielded Food for Peace from harsh spending cuts and efforts to significantly change the program.

Despite our best efforts, however, the "food aid reform" community has been moderately successful in its efforts to undermine the simple formula that has made Food for Peace a success for over 60 years—sending American food overseas on U.S.-Flag vessels. Knowing it could not essentially change a popular program that continues to work as it was intended, it has adopted a "death by a thousand cuts" strategy, diverting more and more funding away from the core mission of the program in the name of "flexibility" that already exists in other Department of State programs under the Foreign Assistance Act or Global Food Security Act.

For example, the 2014 Farm Bill again increased funds that can be diverted for "Section 202(e)" administrative and overhead costs.[13] USAID took that expanded authority and used it primarily to fund cash, voucher, and foreign commodity purchase programs.[14] This has led to a major increase in these administrative and overhead costs within the Title II Food for Peace program. In FY 2011, 202(e) costs were approximately $180.7 million.[15] In FY 2015, 202(e) rose sharply, to $288.5 million, a 62% increase in less than 5 years.[16] At the same time that USAID is using 202(e) administrative funds to support these cash and voucher projects, it is diverting massive amounts of funding away from U.S. commodity purchases to "internal transport shipping and handling" (ITSH) accounts and using these funds to support cash, voucher, and foreign commodity purchase programs contrary to the requirements of the Food for Peace Act.[17] Further, GAO found that USAID has failed to collect detailed information such as receipts or other documentation to determine where all of this 202(e) and ITSH funding is even going.[18] As GAO noted: "Cash transfers and food vouchers are associated with different risks than U.S. in-kind food assistance, such as risks related to the potential diversion of cash, counterfeiting of food vouchers, and diversion of food voucher reimbursement funds." [19]

Over the 5 year period between FY 2011 and 2015, 202(e) and ITSH funding accounted for 44% of all Food for Peace funding, according to GAO.[20] Yet USAID's own submission for the record before the House Appropriations Committee indicated that as of 2015, 202(e) and ITSH costs, which do not even include ocean shipping costs, now account for nearly 60% of all the P.L. 83–480 Title II Food for Peace funding—close to $800 million of the program's $1.3 billion in outlays.[21] Of the funding appropriated for Food for Peace, only 25% of it, roughly $332 million, is used to purchase U.S. commodities and $106 million is spent on ocean freight costs, or 8.2% of the total funding outlays for Food for Peace.[22]

This is where we are today. Food for Peace sees only 35% of its funding going to the purchase and ocean shipment of American-grown commodities, while almost ⅔ of the program is spent on nebulous administrative costs, cash handouts, vouchers, and foreign commodity purchase programs, all of which have other funding mechanisms elsewhere within USAID's control. Using the generous but limited flexibility Congress gave it in the 2014 Farm Bill, USAID has converted too much

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[12] *See* Merchant Marine Act of 1946, 46 U.S.C. § 50101 (2017).

[13] 2017 *GAO Report* at 6.

[14] *Id.* at 12, noting that "[o]bligations of 202(e) funding for cash transfers, food vouchers, and local and regional procurement in Fiscal Years 2014 and 2015 constituted 75 percent and 96 percent, respectively, of the additional authorized 202(e) funding that the agency utilized for those years."

[15] *See Hearing on Agriculture, Rural Development, Food and Drug Administration, and Related Agencies Appropriations for 2016 Before the Subcomm. On Agriculture, Rural Development, Food and Drug Administration and Related Agencies of the H. Comm. on Appropriations,* 114th Cong. 1232–34 (2016). (responses of USAID to written interrogatories from Subcommittee Chairman Aderholt).

[16] *Id.* at 1232.

[17] 2017 *GAO Report* at 33–34.

[18] *Id.* at 23.

[19] *Id.* at 35 n. 59.

[20] *Id.* at 8.

[21] *Supra* note 15 at 1234 (FY 2015 data).

[22] *Id.* Notably, only approximately ½ of this cargo is allocated to U.S.-Flag vessels.

of Food for Peace from a time-tested, transparent, reliable in- kind program that promotes economic development at home, assisting both the agriculture and maritime sectors, into a backdoor cash giveaway program that GAO has concluded in multiple reports lacks appropriate oversight. In light of these failings, and their apparent absence in USDA-run programs, now may be the time to consider restoring more authority to USDA for overseas humanitarian assistance.

Maritime industry proponents of Food for Peace have long decried the constant watering-down of America's food aid programs, arguing that by weakening the use of American-grown in-kind aid shipped on U.S.-Flag vessels, the "food aid reform" community would damage Food for Peace's credibility and domestic popularity.[23] We are generally shouted down by those interests, accused of starving children and lining our pockets with U.S. taxpayer dollars.[24] Our response has invariably been that by removing American agriculture and maritime interests from Food for Peace, the "food aid reform" community would be undermining the future stability of these programs by destroying their natural domestic constituency, and that eventually they would be viewed as unnecessary, unsustainable spending with no domestic benefit. That, coupled with the fact that Europe and other nations are lagging significantly behind the United States in their humanitarian assistance programs,[25] it would be increasingly difficult to justify to the American taxpayer giving away so much money when other nations are not paying their fair share.

This is exactly what has happened.

For the first time since the program's creation in 1954, the President of the United States has openly advocated for the elimination of the Title II Food for Peace program, and the McGovern-Dole program along with it.[26] Using the same argument that the "food aid reform" community has been making over the years, the President's budget would dismantle Food for Peace and McGovern-Dole, indicating that these needs could be better met through the International Disaster Assistance (IDA) Account—while at the same time calling for cuts to that account.

This would be a disaster for America's farmers and mariners, and would have a direct, damaging impact on American national security.

We urge Congress to oppose the elimination of Food for Peace, oppose the elimination of McGovern-Dole, and oppose efforts from the "food aid reform" community to fundamentally alter the Title II Food for Peace program—a program that still partially continues to work as intended, providing economic benefits to American farmers, millers, mariners, longshoremen, and transport workers, while ensuring that life-saving food makes its way into the hands of needy people across the world. Finally, we would urge Congress to review whether USAID is the most appropriate agency to continue oversight and implementation of these programs, "given the continued, unresolved lapses GAO has noted, and the comparative absence of concerns with USDA's handling of these programs throughout most of their history."

It is difficult to understate the importance of food aid to the United States Merchant Marine. While some in the "food aid reform" community have attempted to downplay the importance of food aid to the maritime industry,[27] those in the industry understand its critical importance as one of the largest sources of government-impelled cargo available to U.S.-Flag vessels today. The Maritime Administration (MARAD) has made it clear[28] that changes made to cargo preference in the Moving

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[23] *See generally, Joint Hearing on U.S. International Food Aid Programs: Transportation Perspectives Before the Subcomms. on Coast Guard and Maritime Transportation of the H. Comm. on Transportation and Infrastructure and Livestock and Foreign Agriculture of the H. Comm. on Agriculture,* 114th Cong. 1 (2015) (statements of Phillip J. Shapiro and Brian W. Schoeneman) [hereinafter *Joint Food Aid Hearing*].

[24] *See, e.g., Reforming Food Aid: Desperate Need to Do Better: Hearing Before the H. Comm. on Foreign Affairs,* 114th Cong. 5–6 (2015) (statement of Christopher B. Barrett, Cornell University). Dr. Barrett stated at the hearing that Congressional support for cargo preference represented "the trade [of] 11 or 12 children's lives for a single job."

[25] 2017 *GAO Report, supra* note 7.

[26] *Office of Mgmt. & Budget, Major Savings and Reforms, Budget of the U.S. Government Fiscal Year* 2018 73 (2017).

[27] *See, e.g., Reforming Food Aid: Desperate Need to Do Better: Hearing Before the H. Comm. on Foreign Affairs,* 114th Cong. 5–6 (2015) (statement of Christopher B. Barrett, Cornell University.

[28] *Joint Food Aid Hearing* (statement of Paul N. Jaenichen, Administrator, Maritime Administration, U.S. Department of Transportation). Administrator Jaenichen testified that the U.S.-Flag international fleet declined from 106 to 78 in 2015, with the decline corresponding directly to MAP–21. He went on to state that the loss of preference cargo has had a "dramatic effect" on the maritime industry, and is the primary cause of the U.S.-Flag fleet's decline over the last 7 years.

Ahead for Progress in the 21st Century Act of 2013 (MAP–21),[29] which reduced the percentage of food aid cargoes reserved for the Merchant Marine from 75% to 50%, have reduced the U.S.-Flag international fleet from 106 vessels in 2011 to 81 as of May 1, 2017.[30]

This is a devastating blow to our national defense sealift capability.

The Consolidated Appropriations Act of 2014[31] required MARAD to prepare a report to Congress on the current and future impacts of reductions in government-impelled cargo on the U.S. Merchant Marine as a result of changes to cargo preference requirements, including those made as part of MAP–21 and reductions to P.L. 83–480. The report, which was transmitted to Congress on April 21, 2015, paints a clear picture—without cargo preference, most of the U.S.-Flag fleet would disappear and the reductions in food aid cargoes have had a real, meaningful impact on the decline of the merchant marine.[32] Over the last decade, food aid has made up more than half of the preference cargo tonnage carried by U.S.-Flag carriers—more than even Department of Defense cargoes which, unlike food aid, are subject to a 100% cargo preference requirement.[33]

We have seen a major drop in the amount of food aid cargo carried by the U.S.-Fleet, with total cargo amounts dropping 77% from 2000 to 2013. In 1999, 103 American ships carried 6,361,000 gross tons of food aid cargo, both pre-packaged and bulk. In 2013, the fleet dropped to 76 ships, carrying only 1,070,000 tons of food aid.[34] Although some critics have wheeled forward various theories questioning the role of food aid cargoes in sustaining the merchant marine,23 the correlation between the decline of food aid tonnage and the decline of our fleet is undeniable.

Since 2010, the size of the U.S.-Flag fleet has dropped by 23%, from 99 vessels to 81, and that number is expected to continue to drop unless something is done to strengthen the cargo base.[24]

More important than the loss of the ships, however, is the loss of peacetime merchant mariner jobs—and the mariners who work them. Amidst all the discussion about ships and cargo, it is easy to forget (and those who are most critical of cargo preference always do) the most important aspect of the American Merchant Marine—what makes the merchant marine fundamentally American—are the men and women who crew these vessels.

These men and women, some of the most highly trained and skilled mariners in the world, are the heart of our merchant marine. They are the one irreplaceable asset in any discussion of maritime policy. These are the same men and women who willingly brave the dangers of the sea, who sail into combat zones with military cargo, or pirate-infested waters with critical, life-saving food aid, who helped evacuate Manhattan Island on September 11, 2001, and who provided the critical sealift necessary to support our warfighters in every American conflict from the earliest days of the Revolution to *Operations Enduring Freedom* and *Iraqi Freedom.* While a ship may be bought in a day, it can take years to train and certify a merchant mariner.[35]

Our mariner pool is already at the breaking point, and General Darren McDew, commander of the United States Transportation Command (USTRANSCOM), has testified at multiple hearings in the House and Senate that we do not have the number of mariners necessary to meet the sealift requirements of a Desert Shield/Desert Storm-sized military response abroad.[36] The resulting loss of ships due in no

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[29] Moving Ahead for Progress in the 21st Century Act, Pub. L. No. 112–141 § 100124, 126 Stat. 915 (2012).

[30] *U.S. Mar. Admin., United States Flag Privately-Owned Merchant Fleet Report* 1 (2017). MARAD produces this report monthly; it then posted on its website and may be retrieved at *https://www.marad.dot.gov/consolidated_20170501/*.

[31] Consolidated Appropriations Act of 2014, Pub. L. No. 113–76, § 169, 128 Stat. 598 (2014).

[32] See *U.S. Mar. Admin., Report for Congress on the Impacts of Reductions In Government Impelled Cargo on the U.S. Merchant Marine* 2–3 (2015).

[33] *Id.*

[34] *Id.*

[35] For more in-depth analysis on the difficulties in replacing merchant mariners *see generally Joint Hearing Testimony, supra* note 23.

[36] *See Joint Hearing Testimony, supra* note 23. General McDew stated in his comments before the two subcommittees that the mariner pool is "on the very hairy edge of being able" to sustain immediate sealift requirements, and would not be able to meet sustained requirements beyond the first 4 to 5 months of a conflict. This sustainment also does not include potential casualties or losses. *See also Hearing on the State of the United States Transportation Command Before the Senate Armed Services Committee,* 115th Cong. 1 (2017) (statement of General Darren W. McDew) and *Hearing on the Current State of U.S. Transportation Command Before the House Armed Services Committee,* 115th Cong. 1 (2017) (statement of General Darren W. McDew).

small measure to the reductions in food aid has resulted in the loss of approximately 1,000 mariner jobs since 2010 alone.[37]

Supporting the military has been fundamental to the American Merchant Marine for its entire existence. For example, since 2009, privately owned U.S.-Flag commercial vessels and their civilian U.S. citizen crews have transported more than 90% of the sustainment cargo needed to support U.S. military operations and rebuilding programs in Iraq and Afghanistan.[38]

Ensuring that we have an adequate mariner pool to crew the privately owned U.S.-Flag international fleet (which includes vessels enrolled in the Maritime Security Program (MSP)[39] and non-MSP vessels), our government fleets (including the civilians who crew vessels of the Military Sealift Command), and our reserve fleets (including the Ready Reserve Force and the National Defense Reserve Force) has been the fundamental purpose of Federal maritime policy in modern times and we are dangerously close to failing to achieve that purpose.

Without the cargoes made available under cargo preference through Food for Peace and related foreign aid programs, it is clear the U.S.-Flag fleet would continue its decline and the pool of mariner jobs needed to provide the necessary mariners for national security needs would dry up. Food aid is a critical component of America's strategic sealift program. It is vital that Congress continue its steadfast support for in-kind food aid and cargo preference as part of our Federal support for the Merchant Marine.

Furthermore, it is critical that any changes made to Food for Peace in the farm bill go towards returning the program back to its roots—as an in-kind, America-first program fueled by American commodities shipped on American vessels crewed by American mariners—and away from the cash giveaway, voucher, and foreign commodity purchase programs that USAID has carved out of Food for Peace. USAID has abused the added discretion it was given in the 2014 Farm Bill for 202(e) and we would urge Congress to rescind the intrusion of these programs into Food for Peace. At the same time, USAID should be directed to introduce greater oversight and financial accountability to the 202(e) and ITSH accounts, including capping both of them at a more responsible percentage of the overall title II program and limiting ITSH to the support of U.S. in-kind food aid, so that the bulk of Food for Peace funding goes where it is supposed to go—getting wholesome American commodities to those facing the worst food insecurity. Finally, we would urge Congress to review whether USAID is the most appropriate agency to continue oversight and implementation of these programs, given the continued, unresolved lapses GAO has noted, and the comparative absence of concerns with USDA's handling of these programs throughout most of their history.

The maritime industry stands ready and willing to continue our 60 year partnership with Congress and the agricultural community to make our foreign food aid programs a continued success. As always, we are willing to work together to find better solutions to speed up deliveries, reduce costs and promote greater efficiency in our international food assistance programs. What we will not do, however, is sit back and allow the misguided good intentions of the "food aid reform" community to permanently destroy these programs. They do too much good for too many people at home and abroad and they must be preserved.

The CHAIRMAN. Thank you, sir.

Dr. Jayne, 5 minutes.

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[37] *MARAD Impacts Report* at 8.

[38] *Hearing on the Maritime Administration's Fiscal Year 2016 Budget Request Before the Subcomm. on Coast Guard and Maritime Transportation of the H. Comm. on Transportation and Infrastructure,* 114th Cong. 2 (2015) (statement of Paul N. Jaenichen, Administrator, Maritime Administration, U.S. Department of Transportation).

[39] 46 U.S.C. §§ 53101–53111 (2017). The Maritime Security Program is a jointly administered Defense Department and Maritime Administration program of 60 militarily useful and commercially viable ships. In exchange for a yearly stipend payment of $5 million designed to help offset, but not completely cover, the increased cost of maintaining a vessel under the U.S.-Flag, the Department of Defense has access to the ships, mariners and intermodal networks of all the contracted companies. The MSP fleet is the backbone of the U.S.-Flag international fleet, but it can only function in conjunction with government-generated cargo, including defense and food aid. Without cargo, the vessels in the program are not commercially viable and would not be sustainable, even if stipend payments were significantly increased.

STATEMENT OF THOMAS S. JAYNE, PH.D., FOUNDATION PROFESSOR OF AGRICULTURAL, FOOD, AND RESOURCE ECONOMICS AND CO-DIRECTOR, ALLIANCE FOR AFRICAN PARTNERSHIP, MICHIGAN STATE UNIVERSITY, KALAMAZOO, MI; ON BEHALF OF FARM JOURNAL FOUNDATION

Dr. JAYNE. Yes. Mr. Chairman, Ranking Member Peterson, Members of the Committee, thank you for holding this hearing today on the next farm bill and the future of international food aid and ag development. Much of my statement today will reflect policy recommendations that appear in a brief that I coauthored in work that the Farm Journal Foundation has commissioned and released earlier this year. It is on the web. I am not going to go into too many details on recommendations now because of the time.

But, my basic message, Mr. Chairman, is very simple. It is that U.S. agricultural development assistance is in the U.S. national interest. It creates jobs in the U.S. and win-win situations both here at home and overseas. I am going to divide this into two pieces.

I would first like to explain all of the various ways in which that win-win occurs and why it is in the United States' interests to continue to promote U.S. ag development assistance; and second, to go into a little bit about how taxpayer money spent on this could be actually made more effective and create actually greater win-wins for the U.S. and for our partners overseas.

First of all, why should the United States use taxpayer money to promote agricultural development in developing regions like Africa? Well, as most of you, I am sure, know, the population growth in the world over the next several decades is going to occur basically outside our borders. Africa is a place right now that is growing rapidly. The population in Africa today is one billion. But in 30 years, it is going to be two billion people and account for 24 percent of the world's population. This is where the demand for agricultural products is growing most rapidly. And so it is in our interests to convert those two billion people from food aid recipients into people who have the purchasing power to demand food and to encourage greater stability in the world and greater trade and investment between developing regions and ours. The potential for job growth over the next decade in the U.S. agribusiness and farm growth is very clear. All of the research evidence that has been done on this points it in the direction that it is very much in our interests to promote agricultural development in developing countries.

Nigeria, a country that used to be a big food aid recipient, now is the third largest importer of U.S. wheat; Ghana, is in the top ten rice importers of U.S. products; and Angola, is the fourth largest importer of broiler meat from the U.S. These are just examples of how U.S. agribusiness and farmers can benefit from rising incomes in the third world.

So now why is it in our interests to promote agriculture? Why agriculture in particular? Well, in regions like Africa where 70 percent of the population is engaged in farming, the best way to promote income growth, most effectively, is to help develop those 70 percent of the population so that they have a little bit more money in their pockets. And when they start spending that money, they are spending it on all manner of non-farm goods as well as food. And this is what accelerates the transition of developing countries

from agrarian societies into non-farm diversified economies that are more plugged into world trade. And so the potential here for win-wins with U.S. agribusiness and farmers cannot be overemphasized.

A second major advantage to promoting U.S. ag development assistance is because it promotes peace and stability. And many of the prior speakers have emphasized this. I recall hearing General Mattis on a television program about 2 or 3 weeks ago talk about how effective each dollar spent on U.S. ag development assistance can actually avert the need for five times more money on bullets and military expenditures down the line to quell civil unrest down the road. And it can also avert the need for humanitarian disaster assistance to a much greater proportion. It could be money well spent from the standpoint of promoting peace and stability and averting future costs that the U.S. might need to incur.

The third reason why it is a win-win for us is because it promotes soft power. It projects soft power around the world for the United States. Many of you understand that the good will that is created by U.S. assistance cannot be overemphasized. China certainly understands this well too. And you might know that about a thousand Africans each year are educated in Mandarin and then, after they become fluent in Mandarin, are brought back to China to participate in advanced-degree training in China. Then they come back to fill high-level positions in African governments and in the private-sector in Africa. And, as you can imagine, the influence that those people have in determining future trade relations, future private-sector investment, and so forth, is going to be quite significant.

So we wouldn't want to wake up 10 years from now finding that many of our opportunities to invest in Africa and to derive benefits from trade relations in Africa are locked up from us because of foresight of other countries to develop these inroads while we don't do that.

So there are three reasons. And, by the way, if you go to——

The CHAIRMAN. Dr. Jayne, I am going to have to ask you to summarize, you are way over time.

Dr. JAYNE. Okay. All right. Thank you very much, Mr. Chairman.

[The prepared statement of Dr. Jayne follows:]

PREPARED STATEMENT OF THOMAS S. JAYNE, PH.D., FOUNDATION PROFESSOR OF AGRICULTURAL, FOOD, AND RESOURCE ECONOMICS AND CO-DIRECTOR, ALLIANCE FOR AFRICAN PARTNERSHIP, MICHIGAN STATE UNIVERSITY, KALAMAZOO, MI; ON BEHALF OF FARM JOURNAL FOUNDATION

American Investment in Global Food Security

Mr. Chairman, Ranking Member Peterson, Members of the Committee, thank you for holding this hearing today on, *The Next Farm Bill: the Future of International Food Aid and Agricultural Development.* I appreciate the opportunity to provide testimony on U.S. Agricultural Development efforts and its potential to sustainably promote food security, rising living standards, the development of markets and trade, and more stable and secure nations in developing regions around the world.

I am Thomas Jayne, University Foundation Professor of Agricultural, Food, and Resource Economics at Michigan State University and Co-Director of the *Alliance for African Partnership.* Much of my statement today will reflect policy recommendations which appear in a brief that I co-authored, in work that the Farm Journal Foundation commissioned and released earlier this year, on the subject of human and institutional capacity-building for African agriculture and its benefits to

the United States. Two other policy briefs were also commissioned and released by the Foundation earlier this year on the topics of agricultural research and agricultural trade technical assistance. These papers were commissioned to provide recommendations on how U.S. agriculture can more effectively improve living standards in developing areas while simultaneously benefitting U.S. agriculture and agribusiness more generally. Fundamentally, I believe that these three briefs demonstrate the great value that U.S. investments in agricultural development provide to the American people, and that U.S. Agricultural Development and Research investments should continue to be fully funded.

In this written testimony, I will first provide evidence that agricultural growth in Africa accelerates broad economic growth and represents a win-win for both Africans and Americans, especially U.S. farmers and agribusiness. Second, I argue that in order to capitalize on these win-wins for the U.S. and for Africa, U.S. development assistance needs to emphasize the sustainable development of African agricultural institutions—the same types of organizations that U.S. farmers benefited from so greatly in our own country. Third, I provide some specific recommendations to enable U.S. development assistance to effectively achieve these win-win outcomes.

Promoting Agricultural Development in Africa Is In the U.S. National Interest

U.S. investments in development builds markets and trade, contributes to rising living standards, promotes stability, and creates win-wins for host countries and US interests. According to USAID, 43 of the top 50 consumer nations of American agricultural products were once U.S. foreign aid recipients. One of these countries, Indonesia, has gone from being the largest recipient of USDA food assistance just ten years ago, to becoming the United States' ninth-largest export market for agricultural, fish and forest products. In fiscal year 2010, the United States exported $2.3 billion worth of agricultural goods to Indonesia, a six-fold increase over the course of a decade. Similarly, South Korea, once a major US aid recipient is the 6th largest importer of US agricultural products in 2016, importing US corn, meat, and other commodities (USDA).

Africa is going to be the next big growth market for U.S. agriculture and agribusiness. This is because of the region's rapid population growth, income growth, and urbanization. Roughly 70% of Africans are currently engaged in agriculture. But this statistic is declining swiftly as the region develops. Success in promoting agricultural productivity will provide millions of African farmers with more income, which they spend in the local economy, raising the demand for goods and services in the non-farm economy. In this way, and just as it has in Europe and the USA over the past 150 years and more recently in Asia, agricultural productivity growth generates new jobs and new investment in agribusiness and in the broader economy, contributing to a transformed and diversified economy in which the majority of people live in urban areas and are in non-farm jobs.

The data presented in the tables in the Annex shows the following: (1) because of rapid population growth, food imports into Africa are almost certain to continue to rise dramatically; this will especially be the case with continued strong economic growth, as this causes more rapid urbanization and transition of the labor force from farming to non-farm activities; (2) the rate of economic growth in Africa will continue to be tied to the performance of its agricultural sector; and (3) strong agricultural growth in Africa and the broader income growth that it generates, will accelerate the rate of food imports, and most of the main food imported into Africa are crops exported by North American agribusiness. With the exception of South Africa, the region's agricultural exports (mainly tea, cocoa, coffee, cotton, tropical fruits, and cut flowers) generally do not compete with U.S. farmers.

To summarize so far:

1. Agricultural productivity growth is at the heart of Africa's economic transformation. With nearly 75 percent of poor people in developing countries living in rural areas, growth in the agriculture sector has been found by the World Bank, on average, to be at least twice as effective in reducing poverty as growth in other sectors. Over the past 15 years, African governments that have effectively promoted farm productivity growth have enjoyed faster rates of poverty reduction, higher rates of labor productivity in the non-farm segments of the economy, and a more rapid exit of the labor force out of farming. Because the economies of most African countries still depend largely on the performance of agriculture, public investments in agricultural productivity growth will be an important component of an effective youth employment strategy. Young people between 15 and 34 years of age account for roughly 60 percent of Africa's labor force. Often considered more of a burden than a benefit, Africa's youthful workforce could open up a wide range of economic

opportunities in farming, in the downstream stages of agrifood systems and in the broader non-farm economy, with the right mix of policies and public investments toward agriculture.

2. Africa's economic growth is in the United States' economic and national security interests, for the following reasons:

- Sub-Saharan Africa imports roughly $45 billion of food products annually—7 times more than it did in 2000. The region's food imports will continue to rise rapidly, especially if the region continues to develop as it has recently. By 2050, sub-Saharan Africa will contain 2.1 billion people—23 percent of the world's population compared to 12 percent today. Rapidly rising population and incomes in Africa will increase the demand for a safe, affordable, and sustainable global food supply. U.S. farmers and agribusiness can help themselves by helping Africa to meet its rapidly growing food needs, by investing in the region's agrifood systems, and by supporting a sustainable and efficient global food system.
- Data from USDA's Foreign Agricultural Service confirms that sub-Saharan Africa is one of the fastest-growing regions for U.S. agricultural exports. Looking forward, middle class growth in Sub-Saharan Africa is expected to grow by more than 80 percent by 2022, and will lead all regions, except South Asia, in growth of food sales, which are expected to increase by nearly 60 percent over the next decade. 2016 export figures from USDA show that Nigeria is now the third-largest U.S. wheat market, Angola is the four-largest broiler meat market, and Ghana ranks as one of the top ten U.S. rice markets.
- In addition to creating U.S. export opportunities, sustainable agricultural development in Africa also promotes political and economic stability in the region, contributing to U.S. national security. It is increasingly understood that effective U.S. development assistance programs will avert the need for subsequent and more costly military and disaster response expenditures. Ultimately, a country that can ensure adequate food for its people is more likely to be politically stable. Retired military leaders in the U.S. agree. On 27 February 2017, 120 retired three and four-star U.S. military generals and admirals sent a letter to Congressional leadership to share their "strong conviction that elevating and strengthening diplomacy and development alongside defence are critical to keeping America safe."

Toward More Effective U.S. Development Assistance Programs

While the evidence is clear that promoting agricultural growth in Africa is in the U.S. national interest, the realization of these win-wins will require that U.S. development assistance is actually effective in promoting agricultural growth. U.S. development assistance must therefore be as effective as it can possibly be to have its desired effects. Fortunately, there is plenty of evidence to guide us. Those who oversee development programs need to recognize how dramatically the socioeconomic and political landscape in Africa has changed over the last several decades. There are at least three major differences to be taken into account:

- First, many more Africans today possess job expertise related to agrifood systems, both in the public and private-sectors, than 25 years ago. Many were educated internationally, possess valuable technical skills, and can operate effectively in their countries given superior knowledge of local culture and connections with centers of local power. Many are eloquent spokespersons and advocates for African agriculture and are capable of influencing their own governments' investments and policies. An effective U.S. strategy toward African agricultural development will engage African professionals more than in the past.
- Second, African governments increasingly insist that international support be guided to build their own public R&D, extension, and policy analysis institutes. They increasingly disapprove of, and are frustrated by, foreign development funds setting up parallel channels that compete with the mandates of their own public agricultural institutions.
- The U.S. (and westernized countries more generally) are now facing greater competition from very different forms of development assistance, namely from China. China is today investing major economic, political and social capital into Africa to build markets for Chinese business. And it is starting to pay dividends. Each year, China trains over 1,000 prominent Africans in Mandarin, many of whom subsequently travel to China to obtain advanced graduate degrees in various subjects. Upon their return to Africa, these Chinese-trained professionals assume high-level positions in African governments and the private-sector, and may look favourably at future alliances and business ventures

with Chinese firms, much as U.S.-trained African professionals did in the 1970s and 1980s before their numbers were sharply curtailed starting around 1990. See *https://en.wikipedia.org/wiki/Confucius_Institute* and *https://en.wikipedia.org/wiki/Hanban* to get an appreciation of the extensive ways in which Chinese educational and development organizations are influencing the political and economic environment in a rapidly growing and developing region that constitutes potentially valuable growth markets for U.S. business.

Strengthening the U.S. Approach: **A New Model of Technical Assistance**

How can U.S. agricultural development assistance more effectively help achieve Africa's agricultural development vision? We know what institutions have helped U.S. agriculture become among the strongest such sectors in the world over the past 150 years—national agricultural research and extension systems (*e.g.,* USDA, extension service), policy institutes and think tanks (*e.g.,* ERS, foundations, institutes), science-based land grant universities producing and extending new technologies and know-how to farmers, agricultural training colleges and vocational schools. Strengthening those same types of institutions in Africa can help to sustainably launch their agricultural sectors as well.

Building agricultural institutions all over the world has entailed three components: talented people with technical skills, facilities (lab equipment, budgets for field trials and other recurrent costs) and operations management.

Of all types of agricultural expenditures, spending on research and development is among the most crucial to growth, yet most African agricultural research systems are woefully under-funded. Their weaknesses constrain the pace of agricultural productivity growth in the region. Asian farmers benefit from the fact that their governments spend over eight times more annually on agricultural R&D on average than African governments. Not surprisingly, the pace of agricultural productivity growth in Asia has eclipsed that of Africa over the last several decades.

And because the benefits of most agricultural R&D investments accrue broadly and cannot be captured by firms investing in them, there is a strong role for sustained support for public R&D. Enhancing the capacity of African public agricultural R&D and extension systems should be a priority area for U.S. assistance.

Unfortunately, little progress has been made over the past several decades in creating African universities and scientific crop and livestock institutes capable of developing improved technologies appropriate for the wide range of African farming conditions. Similarly, little progress has been made to rehabilitate weak national agricultural extension systems. U.S. development assistance has typically addressed these weaknesses by providing grants to international organizations, private development-oriented companies, and international universities, developing alternative modes of technology transfer and extension. A key challenge for U.S. development assistance will be to find cost-effective ways of building the capacity of local institutions—those providing R&D, extension, education, policy analysis, and dissemination—to support agricultural productivity growth and broader economic transformation in the region. To do so, it is necessary to identify the parts of U.S. assistance that are working well, those that aren't, and find ways to improve outcomes.

U.S. development assistance can better leverage the expertise of US Agriculture in this process. The United States has one of the most dynamic and productive agricultural systems in the world. Historians and economists point to the land-grant university system, the U.S. Cooperative Extension Service, the USDA and its Economic Research Service (ERS), and other public agricultural institutions as major drivers of US agricultural growth. The United States is capable of providing needed leadership and expertise to support the development of strong agricultural institutions in Africa - a precondition for the region's sustainable development.

Bottom line: We propose that the main thrust of a new approach be to shift the role of U.S. institutions from providing the technologies, services, and answers to equipping African organizations to do so themselves. Over the span of the next 1 or 2 decades, this will be the most effective and cost-saving approach to achieving win-win outcomes for African and U.S. interests.

How To Develop Mutually Beneficial Partnerships Between U.S. Development Partners and Local Agricultural Organizations

If we are looking to transform Agricultural Development to generate better results, with fewer financial resources, helping African institutions more directly to do more will allow U.S. dollars to go farther. Grantees raise revenues through overhead rates on the grant and enhance preeminent capacity in particular thematic areas. Overhead charges may account for as much as 50 percent of the total value of U.S. grants to some grantees, such as international organizations, universities,

NGOs, and private for-profit companies and interests may not align with the grantor's interest in building capacity to phase out over time.

As a result, capacity building assistance is often less effective than it could be. International universities play an important 'public goods' role in producing policy-relevant knowledge and new technologies that can be successfully adapted in developing countries and by discovering emerging trends that shape public discussions on important topics in African agriculture. Continuing this type of work is crucial but should be done in a way that engages local African institutions in the process as equal partners.

U.S. capacity building programs must also consider how to make long-term individual capacity building more cost-effective. The training of scientists with master's and doctoral degrees at major land-grant universities in the United States costs at least $65,000 per year when relocation costs, living costs, and overheads are counted. The total cost is five times that of producing MSc graduates through the African Economic Research Consortium's Collaborative Masters in Agricultural Economics and Extension sandwich program at the University of Pretoria, which may serve as a model for experimentation and replication in other fields. This program allows graduate students from developing countries to get classroom training at the University of Pretoria, but conduct field research for their theses in their home countries under the joint supervision of local and international professors. Where regional demand is sufficient, U.S. universities may also consider providing affordable graduate-level training at overseas campuses in collaboration with one or more African universities.

Stop Bypassing Local African Policy Institutes and Universities

Few African-led policy institutes or universities have been centerpieces of long-term U.S. capacity building support. Despite some notable successes in recent years whereby U.S. development assistance has built the capacity of local policy research institutes, progress has generally been very limited. The perception that these institutions are weak has effectively sidelined them in policy-oriented grant-making processes. Instead, significant grants intended to assist in developing agricultural policy, monitoring and data generation capacity have been allocated to international organizations that provide important services to local organizations, such as ministries of agriculture, but that devote a small fraction of their budgets to helping African organizations deliver such services themselves.

The task of transforming African agriculture should therefore shift to encouraging leadership from African experts and organizations, even as both international and local players remain involved. It is not an either/or issue but one of achieving the appropriate balance, with dynamic, cooperative partnerships as the foundational principle. Effective U.S. assistance will also recognize that collective action is required to address many types of challenges, such as climate change, sustainable agricultural intensification, and promoting free and fair trade. Currently, development assistance tends to side-step many collective action problems by creating parallel organizations and systems that can be sustained only as long as donor projects remain funded.

The U.S. Congress should consider an approach that more effectively encourages relevant U.S. agencies to recognize the long-term nature of capacity building work in key agricultural institutions in developing countries, and give them the authority to provide appropriate funding and oversight frameworks. It is crucial that U.S. efforts also involve significant investment on the part of the national governments in Africa—they must have 'skin in the game', to leverage U.S. investments, ensure sustainability and bolster national agrifood systems to maintain progress once donor funds are no longer available.

As a response to the global food crisis in 2007–9, several Members of the 111th U.S. Congress introduced legislation that would have created a U.S. global food security strategy that included the establishment of a Higher Education Collaboration for Technology, Agriculture, Research, and Extension (HECTARE) Program designed to develop and sustain the education, research, and institutional support for a developing country's agricultural science and education sector. The bill was not enacted into law.

Global leaders committed themselves to addressing global U.S. assistance at a G8 Summit in L'Aquila Italy in 2009. The United States responded by establishing the Feed the Future program. While comprehensive in a number of areas such as support for women and smallholder farmers, market development, and access to seeds, a strong higher education and human and institutional capacity program is absent.

A single HECTARE-type program has been established, and that one, Innovative Agricultural Research Initiative (iAGRI) is funded at the USAID Mission level in Tanzania. Ohio State leads a consortium of six U.S. universities—Michigan State,

Virginia Tech, University of Florida, Tuskegee, Iowa State—working to build both human and institutional capacity at Tanzania's Sokoine University. The iAGRI program has been very successful in helping the Tanzanian agricultural sector, and represents an example worth emulating.

Recommendations to consider in the Farm Bill:

- Capitalize on USDA's extensive knowledge and technical expertise to enhance capacity within (1) local agricultural extension systems working with millions of farmers; working from a local institutional base and (2) policy analysis units in developing nations, especially on SPS technical regulations, trade facilitation, and overcoming barriers to markets. USDA should undertake to develop monitoring and evaluation techniques that are more suitable for the long-term investments and payoffs that are characteristic of institution-building efforts. For instance;
  - The current Farmer-to-Farmer program could be augmented to address intuitional capacity building needs in the areas they are serving, from a local institutional base.
  - Congress could also give USAID the flexibility to offer USDA extension personnel and other agricultural specialists long-term assignments to work with counterpart institutions in Africa. This approach might allow USDA to apply its domestic extension experience internationally to strengthen counterpart African public sector extension systems.
- Expand the Innovative Agricultural Research Initiative (iAGRI) program model established at the University of Sokoine in Tanzania to a multi-country pilot to scale up teaching, research, and extension programs that address organizational development challenges by providing management training and matching local organizations with sister organizations in the U.S., at a fraction of the cost of training in the U.S. The iAGRI project represents a unique combination of fostering a range of agricultural institutions within Tanzania, and similar efforts should be encouraged elsewhere in Sub-Saharan Africa. In addition to costing a fraction of what a U.S. based model costs, the host African institutions provide resources, further leveraging U.S. dollars and building sustainability.
- Open the Cochran Fellows program to training government officials and private-sector employees charged with overseeing SPS standards-setting testing and certification of food and agricultural products, with the aim of bringing those efforts up to international standards.
- Bolster funding and flexibility for USDA's Foreign Agricultural Service, both to expand coverage of agricultural attaché offices in developing countries and to increase the level of expertise in existing offices, in order to better assist U.S. agribusiness firms operating within developing countries and those development activities requiring agricultural expertise, especially as they relate to trade.
- Create mechanisms to help land-grant faculty members with agricultural experiment station appointments through funding from the Hatch Act to identify and recruit scientists from universities in developing countries to build local programs of agricultural research, extension and market information dissemination.
- Under the current Peace Corps program, create a 1 to 2 year agricultural specialization program for recent agriculture graduates and faculty from U.S. institutions in partnership with 4–H or Future Farmers of America (FFA) that focuses on strengthening the capacity of agricultural education and extension in developing countries. AgriCorps is a great private U.S. model that could be authorized and supported.
- As some development agencies and private foundations do, mandate lower overheads on grants to international development partners.
- For grants where the lead grantee is an international partner, consider putting greater oversight and direction on the activities of U.S. partners—universities, NGOs, and private development firms—so that their activities directly target capacity building objectives within the grant. In many cases, this will require more intensive official review of grant budgets to ensure that sufficient grant funds are flowing to recipient organizations and that the effort expended by U.S. university staff is devoted to directly supporting particular objectives of the grant. This could apply across USDA programs to ensure more sustainable outcomes and local ownership.

- Where appropriate, require that substantial shares of total project funds be subcontracted to local African partners (perhaps with a minimum threshold) with oversight of how such funds are allocated.
- In addition to ensuring that U.S. assistance contributes to national plans, Congress should consider requiring that to the extent possible, U.S. development assistance be contingent upon financial or in-kind commitments from the host government to ensure mutual ownership and sustainability.
- USDA may wish to build exit strategies into international programs that aim to graduate over time. To do this, USDA should consider mandating that capacity building efforts with national and local institutions be built into requests for proposals, and include appropriate budget lines with milestones. These aspects should be evaluated to ensure that international development partners support national systems rather than parallel ones, and build the capacity needed to phase down U.S. assistance.
    - For instance, the McGovern Dole program was authorized in 2002, and includes flexible funding in support of capacity building to facilitate government ownership and support the eventual phase out of U.S. assistance. To further incentivize capacity building and government ownership, we recommend that the House Agriculture Committee consider report language to incentivize better coordination and grantee support to local institutions by making USDA awards contingent on direct capacity building support with clear goals, budget lines and timelines for the eventual graduation of U.S. assistance and hand over of programs to national partners, where appropriate.
    - Consider new models of partnership between U.S. and African universities to reduce the costs of educating the next generation of advanced degree holders in Africa. As indicated above, programs such as iAGRI and the African Economic Research Consortium's Collaborative Masters in Agricultural Economics and Extension may be models to explore. Where regional demand is sufficient, U.S. universities may also consider partnering with African universities to provide affordable graduate-level training at overseas campuses.

Domestically, U.S. Agriculture needs to maintain its comparative edge. After 150 years of investing in Public Agricultural Research, U.S. farmers are the most productive in the world, but China, Brazil and India are catching up and the three countries outspend the U.S. by $2.66 for every $1 the U.S. spends. To ensure U.S. agriculture maintains its edge in productivity and innovation, we need ensure that we have adequate funding for agricultural research here at home. On the authorizing side, recommendations to consider under the research title to better leverage R&D resources and expertise could include;

- Giving USDA the flexibility to fund basic and applied research projects that are conducted outside the United States by lowering bureaucratic barriers for USDA (and State Agricultural Experiment Stations (SAESs)) engagement in international R&D by amending Section 1402 of the National Agricultural Research, Extension, and Teaching Policy Act of 1977. This would facilitate more work which is beneficial to both U.S. and foreign producers, such as on plant or animal disease, and could also strengthen the collaborative relationship between USDA and USAID on agricultural research, both in terms of research planning and execution.
- Revisit the basis of the formula funds provided for state agricultural experiment stations, putting more weight on the relative values of agricultural production and nutrition as the bases for cross-state allocation. Combined with more stringent state-matching requirements, moves in this direction could strike a balance between Federal *versus* state funding, in which efficient financing principles would call for financing "local" public goods using "local" taxes. This shift could also spur more emphasis on nutrition.
- Create a commodity check-off program or research assessment aimed specifically at generating funds for agricultural research to be managed outside existing U.S. check-offs programs. To make such a program palatable to grower groups, the government could offer matching funds (up to some predetermined limit), thus splitting the R&D burden between check-off programs and general tax revenues. Including other industries that benefit from agricultural R&D in the scheme (such as input suppliers and food processors) would allow for even more agricultural R&D and, if implemented wisely, substantially correct the persistent under-investment in agricultural R&D.

Conclusions

The time has arrived for the United States to invest directly in long-term capacity building of African universities, agricultural training colleges, vocational schools, national crop science research organizations, extension systems, and policy analysis institutes. International private companies, universities, and NGOs have important but increasingly redefined roles that put African institutions in the lead. African governments should show greater financial commitment to building the capacity of public agricultural organizations, and innovative cost-sharing arrangements among foundations, international development agencies, and African governments might provide scope for leveraging greater mutual commitment to the development of African agrifood systems.

There are strong mutually shared aspirations in the United States and throughout Africa that could be realized through more effective support for African agriculture. U.S. and African governments share core interests in promoting private investment in African food systems in partnership with local firms and in supporting fair agricultural trade and a sustainable global food system. It is increasingly recognized that African agricultural exports in the majority of cases do not compete with U.S. farm interests and are in most instances highly complementary. Rising farm incomes in Africa promote growth multipliers that expand private investment and employment opportunities in African agrifood systems and more broadly in the rest of the economy. Rising incomes in Africa also promote U.S. export interests. Moreover, sustainable agricultural development in Africa promotes political and economic stability in the region. These are the benefits that would emerge from strong partnerships between African governments, the private-sector and millions of African farmers and entrepreneurs supported by enlightened U.S. development assistance programs.

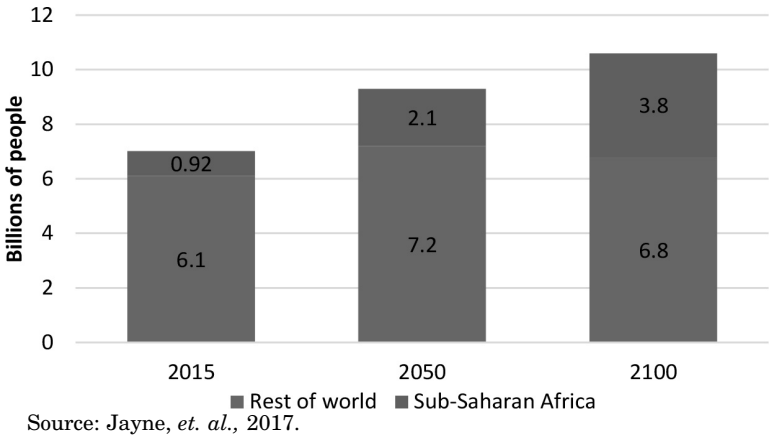
The United States can help the stronger African universities and research institutes to carry out many of the land-grant activities that U.S. universities undertake at home, providing know-how and extension support to farmers and local agribusiness firms, and training the next generation of young Africans to contribute to their nations' development. Once enacted, the proposals made here will take time to generate their full impact. This is why there is no time to waste in getting started.

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All three agricultural policy briefs commissioned by the Farm Journal Foundation can be downloaded at the following URL: *http://www.farmersfeedingtheworld.org/policy-briefing/*.

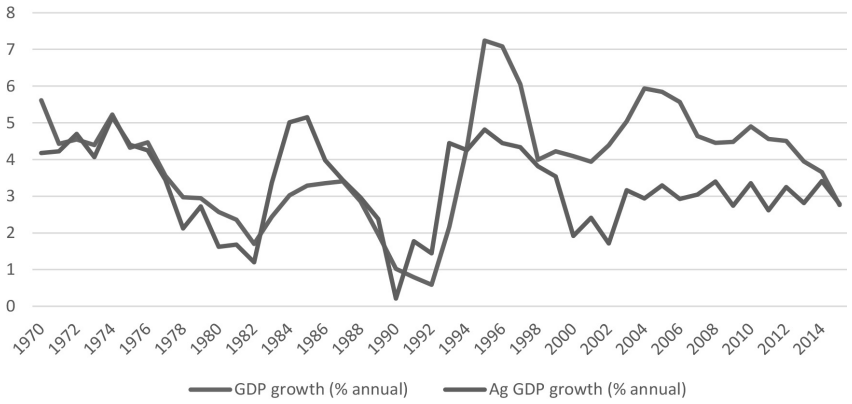
ANNEX

Figure 1. Sub-Saharan Africa's Share of World Population Will Rise From 12% to 23% to 35% Between 2015 to 2050 to 2100



Source: Jayne, *et. al.,* 2017.

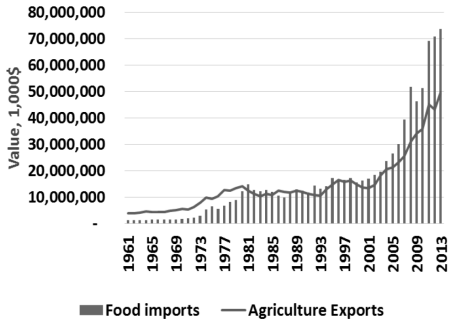
Figure 2. GDP Growth in Sub-Saharan Africa Tracks Agricultural GDP Growth, 1970–2014



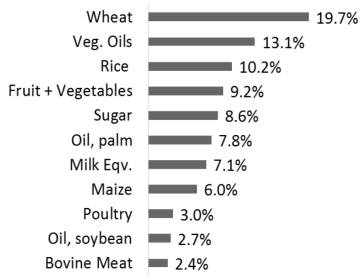
Source: ACET, 2017.

Figure 3. Value of Food Imports by Sub-Saharan African Countries and Top Commodities Imported

Trends in Food Imports (1,000$), 1961–2013



Share of Top Ten Food Imports (2013), % Total Food



Source: ACET, 2017.

Table 1. The Top Five Foods and the Top Five Food Imports in Sub-Saharan Africa, By Sub-Region, 2013

Top five foods	Western Africa	Middle Africa	Eastern Africa	Southern Africa
Consumption				
Top five foods (by caloric intake)	1. Rice 2. Cassava 3. Vegetable oils 4. Maize 5. Yams	1. Cassava 2. Maize 3. Vegetable oils 4. Wheat 5. Rice	1. Maize 2. Wheat 3. Rice 4. Cassava 5. Pulses	1. Maize 2. Wheat 3. Vegetable oils 4. Sugar 5. Rice
Percent of calories supplied by top five foods (kilocalories per capita per year)	52	50	53	71
Imports				
Top five food imports (percent of total imports by value)	1. Rice 2. Wheat products 3. Vegetable oils 4. Palm oil 5. Sugar	1. Wheat products 2. Poultry meat 3. Rice 4. Vegetable oils 5. Sugar	1. Wheat products 2. Vegetable oils 3. Sugar 4. Rice 5. Fruits and vegetables	1. Vegetable oils 2. Fruits and vegetables 3. Rice 4. Wheat products 5. Sugar
Top five food imports (percent of total food imports by value)	78	56	74	54

Table 1. The Top Five Foods and the Top Five Food Imports in Sub-Saharan Africa, By Sub-Region, 2013—Continued

Top five foods	Western Africa	Middle Africa	Eastern Africa	Southern Africa
Food imports (percent of total imports by value)	14	12	13	4

Source: FAOSTAT Online, ACET, 2017

The CHAIRMAN. Thank you, sir.

The chair would like to remind Members that they will be recognized for questioning in order of seniority for Members who were here at the start of the hearing. After that, Members will be recognized in order of arrival. I appreciate Members' understanding.

I now recognize myself for 5 minutes.

This is the face of five little girls eating lunch, or breakfast, at a McGovern-Dole program site. I had an opportunity to go to this school in Ethiopia, Addis Ababa, last May, May of 2016, to see these programs at work. We got to watch these little girls eat. If they go to school a certain number of days in a month, they get to take an extra ration of oil home with them to their families to give them an incentive so the families keep these little girls in school.

We went from this program to a mountainous region at a final distribution point for emergency food aid to watch that process happening. I watched a slightly built young fellow as two other big fellows dropped a 110 pound sack of rice on his back. He kind of slumped under it, walked over to his donkey, put it on there, and came back for the other food that he was getting. And at least for the next several days, that family would not go hungry. And these little girls will not be hungry either.

The entire time I was there I thought about the wonderful stuff we are doing. This is really good stuff. These kids are eating. They are going to school. It was also in the back of my mind the entire time that we have mortgaged our own children's future doing good things and that one of these days we may face a very daunting challenge of how to continue to do the good work we are doing here but also respect the challenges and the threats to the long-term survival of this country with $20 trillion in debt and growing. And one of these days, either me or somebody in this position is going to face those hard choices and have to decide between American children and Americans and the great work we are doing overseas. And it is going to require the Wisdom of Solomon to make that happen.

At least, this President has highlighted that with his budget. I disagree with what he has done. But we are now talking about it in much more meaningful terms than we were before the submission of that budget. And it is important that we do this because we are going to have to make hard choices between good stuff. The easy stuff that we shouldn't spend money on, that is just going to go away. But we are going to have to make hard choices between the good stuff.

Dr. Jayne, I cut you off a second ago. How can we move toward self-sufficiency in countries *versus* continuing to do the emergency feeding? What can we do—*in lieu of,* just continuing to provide food—to allow these countries to transition to self-sufficiency?

Dr. JAYNE. Okay. Thank you.

We have made progress over the last decade or two on this. And you can see a progressive weaning of developing countries off of food aid as they develop, more of the same. But it is possible to make our development assistance even more effective than it has been. And that is by emphasizing the same kind of development of local agricultural institutions much in the same way that the United States, 150 years ago, and its farmers benefited from the USDA Cooperative Extension Program, the land-grant universities that worked on crop science and developed new varieties for farmers. These are the nuts-and-bolts kinds of investments that we can be using to develop those countries and wean them off of the need for food aid.

The CHAIRMAN. In your testimony, you mentioned AgriCorps. Would you brief the group as to what AgriCorps does, Dr. Jayne?

Dr. JAYNE. I don't think it was me who said AgriCorps, Mr. Chairman.

The CHAIRMAN. All right.

Well, then I will talk about AgriCorps.

Dr. JAYNE. Okay. Thanks.

The CHAIRMAN. AgriCorps is a privately funded group of young men and women who graduated from our universities with agriculture degrees.

Dr. JAYNE. Sure.

The CHAIRMAN. They have grown up on farms, and this group sends them to Ghana. And they are now in Liberia this year setting up 4–H programs in these schools. The one we visited, the junior high school, which is as far as it can go in Ghana—their programs of learning how to grow things and make money—supports four scholarships to high school students under this 4–H program. And when 4–H started there, the pregnancy rate among young middle school kids was something like 60 percent. Today, for the kids that participate in 4–H, the pregnancy rate is zero. These are good programs. This has no taxpayer dollars involved, just a program coming out of Throckmorton, Texas, where some local folks decided we need to spread that 4–H program, you mentioned the extension programs, to Ghana and Liberia. There is good stuff going on.

With that, I recognize Mr. Peterson for 5 minutes.

Mr. PETERSON. Thank you, Mr. Chairman.

As you guys have noted, the World Food Programme and Famine Early Warning System predicts these four famines this year. And some of you have alluded to this in your testimony. But if you have experience, any of you, of the current conditions in these countries, could you give us your perspective of what is happening on the ground? Some of you did this, to some extent, but if you could elaborate a little more specifically of what is going on, on the ground, and how these programs are going to be used to try to alleviate that?

Ms. SCHULER. Thank you.

So I can speak to the situation in East Africa. As I said, I just came from East Africa. And there were four countries in particular that were at crisis level. Ethiopia, South Sudan, and Somalia: South Sudan and Somalia actually were at famine stage. People

and children were already dying in those countries. The situation in South Sudan is dramatic. In many places, because of the violence and just the general crisis situation and insecurity in that country, it is very difficult even to deliver food aid into certain places. There are food drops, for example, that happen. And I actually was out there a couple of months ago and saw a team of our staff from World Vision who had just come back from the field, and these guys are out in the field waiting for those food drops so that they can ensure that that food gets to the most vulnerable people.

In Somalia, the same situation, World Vision and other development actors are on the ground implementing programs with title II resources and in partnership with WFP that often uses U.S. Government food resources. These programs are critical. They are a critical piece of our programming in response to this famine in East Africa. And what is beautiful is that there is a general effort by everyone to bring in more resources from the U.S. Government. But we also have a lot of private citizens around the U.S. that also bring in private resources, care about people on the ground who are starving, care about children. And when we talk about the fact that we partner with the U.S. Government to provide food aid, they like that. They feel there is leverage there, and that it is a partnership. There are 25 million people in East Africa alone at risk of starvation and food insecurity. And these programs are important today. Many of those children will starve if we cut these programs.

Thank you.

Mr. PETERSON. Is the basis for this coming from these programs? The folks that are getting this out into the countryside, is this food that we have shipped under the Food for Peace Program, and then they are the ones trying to get it out into the country? Is that how it is working?

Ms. SCHULER. I will give you an example of Ethiopia, a country that I have worked in for almost 20 years. You mentioned that you recently visited Ethiopia. Fantastic progress has been made in Ethiopia because of a program like the Joint Emergency Program that a number of PVOs are a part of. It is an emergency food assistance program led by Catholic Relief Services. And there is also quite a large title II development program in that country.

And so, in these places where there is severe food insecurity and possibility of famine, the title II program is being implemented. And that food is going to people in that country, right now, today, through that JEOP and through the title II development program. With the JEOP, it is more emergency food assistance. With the title II development program, this is trying to mitigate the impact of future disasters by building resilience in the communities. Absolutely, title II programming is helping organizations like World Vision deliver food to very vulnerable people in these countries.

Mr. PETERSON. I yield back.

The CHAIRMAN. Mr. Gibbs, 5 minutes.

Mr. GIBBS. Thank you, Mr. Chairman.

Thanks for having this hearing. I think it is important.

If you look back at history, American action after World War I *versus* what we did after World War II with the Marshall Plan paid much dividends, Food for Peace, and all that work we did.

Mr. Schoeneman, you commented about, it used to be, I guess, USAID's budget, most of it went for food and transportation. Now it is about ⅓. Can you expound a little bit about what is occurring there?

Mr. SCHOENEMAN. Sure. What we are seeing is the constant push for added flexibility that folks in the reform community have been trying to make has eaten up a large portion of the funding that goes to title II. My written testimony, if you take a look at it, about ¼ of what we spend on outlays for title II is going to buy commodities. Less than ten percent goes on ocean freight. Less than ten percent is inland freight in the United States. Twenty percent, including the lockbox funding, is 202(e), which in the 2014 Farm Bill was plussed-up and increased. And almost all of that increase has gone to cash programs and food voucher programs and local/regional purchase. And then you have a huge amount of money that is going for inland transportation, storage, and handling.

Now, that doesn't make any sense to me. GAO highlighted that in their last report because ITSH should be going down if the amount of title II American food is being reduced in country, because that is only supposed to be used to move and warehouse American food.

I have a hard time trying to figure out why the numbers are looking the way that they are doing, particularly as commodity prices have been going down. At the end of the day, we really need better oversight.

Mr. GIBBS. I guess I am confused. The cash payments are going to buy commodities here in this country or going to commodities elsewhere?

Mr. SCHOENEMAN. Elsewhere. GAO's last report basically said that of the increase that was given, the added flexibility given to USAID in the 2014 Farm Bill, something like 90 percent in the last year of that increase went to cash assistance, food voucher programs, local-regional purchase, not buying American commodities.

Mr. GIBBS. We are hurting American farmers, American agriculture.

Mr. SCHOENEMAN. Correct. And that is the biggest issue. And Chairman Conaway pointed this out. When we do these local-regional purchase programs, I understand that there is a need for it, and we support some flexibility. But we have to keep in mind, American farmers compete internationally, and this is a global market. Every dollar that an American taxpayer sends overseas to buy foreign food is not a dollar being spent here in the United States. It is not economic activity in the United States. It is not cargo that is going to be shipped on an American ship coming out of Texas or anywhere in the Gulf. That is a big issue for us, and that is why we are really concerned with the way the program has been going.

Mr. GIBBS. Another thing I want to make sure is highlighted, you mentioned in your testimony the cargo preference and the Jones Act, having a viable merchant marine industry and the impact it has when they are at the beck and call of the Defense Department when there is an emergency. The best example probably was when we kicked Saddam Hussein out of Kuwait, when the merchant marine had to haul all of that equipment over there and the cost we

would have for the United States Navy to maintain those kinds of ships to be available every once in a while when needed would be a lot more. That is an important point that needs to be made that people don't quite understand. You highlighted the cargo preference keeps merchant mariners operating because of that. Do you want to expound a little bit on that?

Mr. SCHOENEMAN. Sure. Congressman Gibbs is absolutely right. The bottom line: A ship is like a car. And cargo is like gasoline. If you don't have cargo, the ship doesn't move. If you don't have gas, the car doesn't move.

You can buy as many ships as you want. You can have them sitting up, tied next to the quay. If there is no cargo to keep them commercially viable in peacetime, then my members aren't sailing. They are not making money. The companies aren't making money, and all this is, is a drain on the taxpayer. The whole point of cargo preference is to provide a cargo base that is of things we are already buying and already shipping anyway. It is not like we are going out of our way to buy stuff that we don't need to send it over to Africa or Asia or even defense cargo. We are taking stuff that we are already going to buy, and we are just requiring it to be moved on U.S. ships. And that way we provide the cargo base that keeps my members working. That is critical. And if we don't have that, the merchant marine goes away. And that is why these programs have been around since 1904 and 1954, respectively.

Mr. GIBBS. I am almost out of time.

Ms. Salem, I am just curious. What is the cost of a packet like this?

Ms. SALEM. That is interesting that you bring that up, because running a business, one of our most important things is to look at costs. And since we started this just 8 years ago, the cost of these packets has gone down dramatically. Where a box used to cost $55, we are now down to $38. And that is due to efficiencies, economies of scale, *et cetera,* per packet, it is about 30¢.

Mr. GIBBS. Thank you. My time is up. I yield back.

The CHAIRMAN. Ms. Fudge, 5 minutes.

Ms. FUDGE. Thank you, very much, Mr. Chairman. And thank you all for being here today.

With leadership comes responsibility. If, in fact, we are the leaders of the world, we need to take some responsibility, if indeed we still are. Of all the things we could cut, we would cut food. We have become complicit, or will become complicit, in the starvation of women and children.

How many guns do we need? How much ammunition do we need?

It is immoral. It is heartless, and it is not even strategic for our world relations. It cuts jobs in this country. It is the most ridiculous thing I have ever heard. If we are leaders, it comes with some responsibility.

Ms. Schuler, the McGovern-Dole Program does provide agricultural commodities to reduce hunger and promote literacy. For young girls in these developing countries, the program has shown some additional benefits. Could you address that, please?

Ms. SCHULER. Thank you.

So the McGovern-Dole Program is a really smart and important program. I will give you an example of a McGovern-Dole Program that we have in Mozambique. It supports thousands of children to go to school and supports school feeding for those children. And the outcomes then are improved nutrition for those children, more girls in school, and improved literacy rates. It is one of the most critical programs that we can do.

We all care about the well-being of children around the world. The programs I have seen that improve literacy rates, for example, it is amazing what you find when kids can read. You ask the kids: "Can you read?" And they hold up their book. They are so proud that they can read. Their parents are peering in the window. I have seen this all over Africa. This is a fantastic way to spend our money.

Being able to go to school, having good nutrition, it helps learning outcomes. It is a fantastic and important way to use U.S. Government resources.

Ms. FUDGE. Thank you very much. I am really not going to ask any other questions. I just want to close with this. When we question the viability of NATO, when we no longer want to be in the Paris accord, when we pick fights with mayors that we don't need to pick fights with, at some point, it will not be America first; it will be America alone.

I yield back.

Ms. PLASKETT. Madam, if you would yield just a moment to me? Right here.

Ms. FUDGE. Yes.

Ms. PLASKETT. Thank you.

Ms. Schuler, just when you talked about literacy, besides just the pride, what economically happens in African countries and African villages when women, and particularly girls, are educated and can read? Economically, not just in sense of pride.

Ms. SCHULER. Educating women and girls is one of the most important things that we can do in Africa to build communities, to build households. Oftentimes, if you think of a household, the women in a household in Africa are often responsible for management of that household like in many, many places. And so, if you have uneducated women and poorly educated women, they are less able to manage their household in terms of economics. And I will talk about that in a minute. But they are also less able to keep their children healthy, less able to understand how to keep their family healthy. But, oftentimes, when women are more educated, they are able to start, for example, if you can link them with a microfinance program, they are able to start a small business. And when you give a woman a loan, boy, she will take that, and she will do something fantastic with that.

And we have seen that in so many cases where educated women, educated girls, have stronger households, better economy in the household, are able to have small businesses and to thrive. And that helps the overall economy of the country.

Ms. PLASKETT. Thank you so much.

Thank you, Congresswoman, for yielding to me. Because if we don't want to take on the responsibility, at least let's just be strategically smart about this.

Mr. SUPPES. Mr. Chairman, could I comment on Ms. Schuler's comments?

The CHAIRMAN. Yes.

Mr. SUPPES. I saw what she is talking about firsthand in our visit to Tanzania pertaining to the ladies, the women. Probably 70 percent of the farmers there, maybe 65 percent, are women.

The bankers, they are not from Tanzania, the bankers are like FINCA and some of these organizations, prefer to deal with the ladies. The ladies are more comprehensive. They are probably more apt to repay their loans. One individual lady there had been in the program for 19 years, I believe. And they started out by being loaned basically $200, pretty high interest rate. And they are expected to pay it back. But this lady was able to acquire an acre or two and get it paid for. She was able to send her children through school. It doesn't cost much, but it costs a lot there in relationship to their dollar. I would like to verify what she has been talking about. The women are kind of running things over there. Whether that is good or not, I am not sure.

The CHAIRMAN. The gentlelady's time has expired.

Mr. Scott.

Mr. AUSTIN SCOTT of Georgia. I don't know if you intended to destroy any future political career. But you just did. Yours, not ours.

Ma'am, Ms. Salem, we have a gentleman named Mark Moore who, in 2009, founded MANA in Fitzgerald, Georgia, where they manufacture a very similar product. I shared that product with one of the finest men I have ever met, General Kelly at the time, now it is Secretary Kelly, as we were discussing the importance of these types of programs throughout the world.

He had one suggestion on the package. This is from someone who knows what they are talking about, not me. And the MANA package had the same USAID symbol on it. The American flag should probably be more prominently displayed on the package. Just a suggestion from someone. I have made that same suggestion to others as well. Because while I am glad, as Ms. Schuler has said, the education is improving, many people can't read the packages. And the American flag is a global symbol for good. And any way it can be more prominently displayed, I would appreciate.

Ms. SALEM. Okay. And those decisions are made strictly by USAID. We are taking direction from the higher-ups at USAID.

Mr. AUSTIN SCOTT of Georgia. We will give USAID a little instruction there.

But I do appreciate what you do. It is an extremely important mission. And thousands, if not millions, of people have benefited from the work of you and organizations like MANA and the people that volunteer their time.

I am very familiar with merchant marines. My father-in-law was a merchant marine. I have been to Kings Point. I had the discussion with the Navy this past week about the value of our merchant marines, and certainly we are extremely concerned that, over the last several years, while there are 10,000 more ships in the fleet worldwide, that the U.S. fleet is down by about 30 percent to 169 of the 41,674 merchant vessels in the world. Please don't take this question as anything other than just asking for the facts.

How much more does it cost us to ship it on a U.S.-flagged vessel than it would cost on a non-U.S.-flagged vessel?

Mr. SCHOENEMAN. That is a very difficult question to answer.

Mr. AUSTIN SCOTT of Georgia. I just mean container to container.

Mr. SCHOENEMAN. Well, that is the problem. It changes every day. If I had to ballpark it, and somebody is going to yell at me for saying this, I would say maybe ten percent more. But, at the end of the day, the economic benefit and the value to the taxpayer way outweighs whatever that differential would be.

Mr. SCOTT OF GEORGIA. We cannot win a fight overseas if we cannot get our equipment there.

Ms. Schuler, is that the calculation, ten percent more that other people, is that number approximately?

Ms. SCHULER. I don't have that number calculation. I do know that currently, ½ of food aid budget is spent on shipping and related costs. For my comment on just efficiency and ensuring that we work together to look for ways to get the most resource to the people in need.

Mr. SCHOENEMAN. If I can comment on that, briefly, Congressman Scott?

Mr. SCOTT OF GEORGIA. We have to maintain the merchant marine fleet.

Mr. SCHOENEMAN. We do. And let's be clear, the shipping amount, the amount of money that goes to shipping, it is easy to conflate that, because that includes everything. That is not just the ocean side, which is about 8.2 percent. That includes the inland freight in the United States. It includes all of the getting and transporting, and handling of the materials in country that would be charged no matter who or where we sourced the products from. At the end of the day, it is always going to cost some kind of money to get the products from the port to get into the hands of folks.

I just wanted to make clear that, at least on the ocean side, we are minuscule compared to the amount of money that the overall program has.

Mr. SCOTT OF GEORGIA. I would be interested in seeing the calculations. And, again, I recognize and had this discussion with the highest levels in the Navy this past week, literally, about the value of the Merchant Marines Academy.

With that said, let me just thank you for what you do. It is an important part of who we are as America, and I look forward to continuing to support you.

With that, Mr. Chairman, I yield the 13 seconds.

The CHAIRMAN. The gentleman yields back.

Mr. McGovern, 5 minutes.

Mr. MCGOVERN. Thank you. Mr. Chairman, I would like to ask for unanimous consent to insert into the record a letter sent to us from 100+ Christian leaders urging that we support these international food aid programs.

The CHAIRMAN. Without objection.

[The information referred to is located on p. 1173.]

Mr. MCGOVERN. I want to thank all of you for being here. I appreciate your thoughtful and insightful testimony. I am encouraged by the support you have all expressed for our international food programs. I am particularly grateful for your support for Food for

Peace, and McGovern-Dole, and you all kind of represent very different perspectives. And so let me say, I agree with you. And you are right. These are all important programs.

And like you, I have seen many of these programs up close and personal firsthand. I have witnessed U.S. NGOs, humanitarian aid workers, and our own USDA and USAID field officers responding on the ground with emergency food and water and medical attention to deal with the masses of refugees fleeing violence or natural disasters, or drought or what have you. But their courage and compassion and their professional expertise just takes my breath away. We have some incredible people responding to these emergencies. And it makes me proud to be an American, quite frankly, when I see these programs in action.

I have seen how these programs provide kids with nutritious meals in school settings, like McGovern-Dole, and allows these kids to be able to learn. You can't learn on an empty stomach. It encourages parents to send their kids to school, because there is food there. It encourages parents to send more girls to school, and they are incredibly successful.

I have had mothers come up and thank me when I visited McGovern-Dole programs, thank the people in the United States for what they are doing. I remember I was in Colombia many years ago visiting a McGovern-Dole program, and a mother came up to me and introduced me to her 11 year old son and said that every day in this terrible slum they were living in, one of the armed actors comes through the neighborhood asking this mother to give up her 11 year old son so he can join one of the armed groups. And she said, and they say to her that we can give him something you can't, and that is we can feed him.

Because of the programs that the U.S. taxpayers support, this mother can now send her kid to school. He is getting fed, and he is going to learn to read and write and maybe be a leader in that country. And she says to send my thanks the people of the United States.

I just have this kind of radical idea that that kind of stuff is good for us. It is good for our national security. When people like you, they don't want to blow you up. Yet, we are having this crazy battle now with the President's budget.

And I am sorry. It is heartless. It is reckless. It is self-defeating, and it is stupid. Why would we even go after these programs that not only deal with a humanitarian crisis, but actually help us. I am grateful to the farmers who grow the food. I am grateful to the railroads, the truckers, the port workers who transport and warehouse the commodities and other supplies, to the shippers, the U.S. Merchant Marines, everybody who transport our food around the world, to all the NGOs and humanitarian aid workers. Nothing could be more in the immediate and long-term national security interest as well as our economic and social interest of the United States.

I tell people all the time that hunger is a political condition. We can eliminate it. You guys all have ideas how to eliminate it. It is we that don't have the political will. We should be debating about how we enhance this. This is ridiculous that we are talking about cutting or eliminating it. I am embarrassed, quite frankly, that a budget like this is before us.

Since the President's budget is supposed to be a national security budget, let me throw the question out to you. How do you view these programs as contributing to the U.S. national security interests both in the immediate and the long-term? Anybody?

Dr. Jayne?

Dr. JAYNE. Thank you very much.

So there are particular programs that have been proven to promote development and goodwill and all of the things that you mentioned.

Okay. AgriCorps is one of them that the chair mentioned. Another one is the Farmer to Farmer Program. That is a USDA program where retired farmers from the U.S. with expertise of some kind, go over to a developing country, work with farmers there. There are many ambassadors of goodwill, and they are promoting development at the same time.

Those programs really need to be expanded in order to promote a win-win situation.

Mr. MCGOVERN. Right. It gets to the point that, look, extreme poverty and hunger leads to chaos and war and conflict. This is where terrorists go to find recruits. It is in our national security.

Ms. Schuler?

Ms. SCHULER. Yes. Just speaking about Somalia, which I am more familiar with, in East Africa, Somalia is a place where the U.S. Government with its colleagues in Ethiopia and other countries are trying to reduce the threat of Al Shabaab. By supporting programs like this, we have an OFDA and Food for Peace emergency program in Somalia. We can imagine. We are feeding people. We are supporting people. They are getting to know us as the good heart of America. You could imagine that people would join those terrorist groups if they had nothing. Like you said, they have nothing.

They might be enticed with something else. But these programs make a difference in places like Somalia, and it directly reduces the influence of Al Shabaab and reduces the number of people that will join those terrorist groups.

Mr. MCGOVERN. We are very generous. It is worth fighting for. Thank you.

The CHAIRMAN. The gentleman's time has expired.

Mr. Crawford, 5 minutes.

Mr. CRAWFORD. Thank you, Mr. Chairman.

Ms. Schuler, in your testimony concerning USAID and maritime mentions that monetization continues to form its existing food programs that could actually damage the program's credibility, domestic support over time. Is that of concern to World Vision?

Ms. SCHULER. Thanks.

Ms. SALEM. I am in the middle here.

Ms. SCHULER. For World Vision and for many humanitarian organizations, our number one objective is to improve the well-being of the poorest people in the world. That is kind of where we focus our efforts.

And what is beautiful about this title II program, for example, and I have been involved in this program for years in different ways, both at headquarters and also in the field, is the partnership that we have between NGOs, shippers, farmers, government. And

it is just a really nice partnership. If you have ever been to Kansas City in the meetings there, it is just a nice feel. It is a good partnership.

But, the program has been going for 60 years. It is always good to look at constant improvement and review. And so for us, we just believe that all of these parties that are partnering should get together and look at ways to improve the way we do business and reform the system if necessary so that we can get the most resource to the most people. And that is really what we hope.

We would never hope that those efforts to improve efficiency would result in a cutting of the program overall. That would never be our intent. But, it is good business to look at reviewing and improving as necessary.

Mr. SCHOENEMAN. Congressman Crawford, if I could throw in there. The benefit and the advocacy that farmers like Ron and the mariners like my guys sitting in the back row here have provided over the years puts a human face and American face on a program that otherwise could be characterized as just another excuse for Americans to run up the credit card to give away money to people overseas.

I have heard that phraseology used about programs like this. And it is completely wrong, and that is what makes this program good. As Chairman Conaway pointed out, we are $20 trillion in debt. If we are going to be spending money on these programs, we have to be spending it in the best way possible in a way that helps to provide an economic and a political benefit at home not just overseas, and that is what this program has always done.

And that is why you have American mariners, you have American farmers coming up here hand in glove working together to make sure that this program stays viable, and that is why it has worked for 60 years. And if we cut American farmers out, if we cut American mariners out of these programs, then all we are going to have left is a check, and checks don't vote.

Mr. CRAWFORD. Well, let me just say, I am for P.L. 83–480. I am for these programs, but I want to make a distinction between those commodities that we use as a part of these programs *versus* cash, which is oftentimes a point of debate.

So my point being this: Cash has a habit of turning into things these programs weren't designed for. What I would like to find out is, GAO has indicated cash assistance can be susceptible to fraud and abuse. Have any of your organizations implemented any kind of protections to combat that type of phenomena from taking place?

Because I agree with you. I want to get nutrition to people who need it, but I don't want to put cash in the hands of people who might use that against the folks that need our assistance. Any comments there?

Ms. Salem?

Ms. SALEM. Yes. It is kind of ironic that this is the program that we are threatening to cut, because most of the countries in the world are giving cash, and the U.S. is the one who is holding on to trying to keep the Americans in mind when we are adding these items to the budget.

And so it is a program that is very much in our own self-interest. And so to me, it is kind of ironic that it is slated to be deleted from

the budget. In the field we are always able to monitor very closely what products are where, how much they are getting used. We are doing monitoring and evaluation everywhere to make sure that we are seeing actual outcomes.

I just also want to say that while sometimes we feel like the world is falling apart, and we have famines, and we have all these issues, like, overall, we are trending in the right direction, that these 60, 70 years of these policies have dramatically increased the state of the world.

We used to have two billion people who lived under $2 a day. Now we have a billion. That is a massive improvement. When I got started in this business, we had five million children who would die from severe acute malnutrition every year. It is down to three. That is just in 7 years. These programs and all of these efforts that all of us at this table are working on are working. And we are trending in the right direction, and we are making a big dent in changing these lives. We can't stop now.

Mr. CRAWFORD. Thank you.

I yield back.

The CHAIRMAN. The gentleman's time has expired. Mr. Evans, 5 minutes.

Mr. EVANS. Thank you, Mr. Chairman.

I would like to ask this question of everyone at the table. As we head into consideration of the farm bill expiring in September of 2018, what would each of you set forth as top issues for consideration?

Dr. JAYNE. Thank you, Mr. Evans.

Any kind of program that helps to build capacity locally so that there is sustainable capacity being developed in developing countries that will encourage these countries to become more committed to private trade and investment that will always be a win-win for them and for the United States.

In general terms, any kind of program that is going to support those objectives should be nurtured. And my colleagues here, I am sure, will agree with me. That even though there is always going to be a need for food aid when there are disasters, by far the preference both here as well as in developing countries, will be to help them become self-sufficient, as the chair mentioned earlier, and to become more commercial partners rather than dependent disaster partners. Anything that promotes that objective would be in our interest.

Mr. SCHOENEMAN. Congressman, the point that I made earlier, at least for us, our biggest goal would be that whatever changes or reforms that the Congress is looking at in the farm bill, we focus on returning Title II, P.L. 83–480, to the program it was and always has been, which is an in-kind program that is designed to get food in the hands of the hungry people.

I think we have enough flexibility. We have done enough tinkering in all of these programs over the last 10 years to give USAID and other folks the flexibility they need in other accounts with different pots of money that they can use to address immediate issues that they need. And that this program should remain an in-kind program.

The other thing I would say is, this Committee needs to do oversight on USAID. I know they are not in within your jurisdiction, but get it back, because our biggest concern when I look at some of these numbers, they just don't make any sense to me. And if they are not making sense to me, I am sure they are not making any sense to you.

And I would like to hear from USAID directly where are their controls. Where is the transparency? Where is the accountability? Because I don't want to see any of the funds that were supposed to go to buy food, supposed to go in the hands of kids ending up where it is not supposed to be. We all can take a wild guess where that would be.

Ms. SALEM. I would echo that the Food for Peace Title II programs that we are currently working in, the products that we make are evidence-based, and this was done in collaboration with USAID, who commissioned a study through Tufts to make sure that our American food aid basket was the best that is there, and that we are looking at what the issues are on the ground and then delivering evidence-based solutions for that.

You all have a before-and-after picture that I submitted with our written testimony. That picture and that transformation is proof that this is the impact that we can make. That is as evidence-based as I can think of. And that is as measurable as I can think of.

And to watch children be able to transform like that in a 6 week period from near death to running around and playing like a 2 year old should, those are important programs of Food for Peace. We are proud to have been partners with them to make this impact significant.

Ms. SCHULER. Yes, thank you.

As per my testimony, I will reiterate by maybe giving a little context. Continuing to fund the multi-year, multi-country development programs is critical. In years like this, even though there are emergencies, you still need that development programming, the long-term programing, to prevent and kind of mitigate these emergencies. That is just a critical piece of what we do, building resilience in households and the communities for longer-term sustainability. That has to continue. That will be something we would like to say.

And then also, this idea of continuing to leave a little bit of flexibility in the way that we program. Programming with cash or vouchers or commodity, in different contexts you might need different ways of programming and to reach different groups of people at different times.

This idea that it is all commodity-based maybe is not the best way to look at it, and that is something we would like to see a little bit more flexibility in the way that we use the resources.

Then as I said, eliminating the minimum monetization requirement, because it is costly and often an inefficient way to do business.

The CHAIRMAN. The gentleman's time has expired.

Mr. Lucas, 5 minutes.

Mr. EVANS. Mr. Chair——

Mr. LUCAS. Thank you, Mr. Chairman.

And I apologize for having stepped out briefly for another committee hearing. My neighbor up in Kansas, could I turn to you for a moment. And I realize that this question has already been asked. I apologize. But let's expand on it for a moment.

When we send the actual commodity out into the food programs out into the world, there are certain quality standards that have to be met. Can you discuss for a moment what it takes to be a U.S. participant in providing actual product to these programs that go around the world?

Mr. SUPPES. It probably depends on the country and what product they are trying to make and who is going to be the recipient of that process.

Mr. LUCAS. Well, give us an example of the most challenging extreme and then give us an example of the simplest, just to give us a feel——

Mr. SUPPES. Well, I can give you an example. The U.S. probably has some of the strictest grading standards in the world as far as wheat. I can speak to wheat.

Take Argentina, for example. They are in the Mercosur with Brazil, which is similar to NAFTA. And since they are in close proximity, the transportation is less than if we ship something there, but if we try to ship something to Brazil, there is a ten percent tariff coming in there, so we are at a disadvantage there. But, yet, Argentine wheat doesn't meet the specs that the Brazilians want, so they prefer to have U.S. wheat. And that happens in other countries.

If, for example, a flour mill has Russian wheat, and it doesn't quite meet their specifications, they will buy some U.S. wheat to blend with that and strengthen it. I don't know that I can specifically answer your question, but we do from start to finish, for example, our research in Kansas or in Oklahoma or wherever it is, start out with a lot of perimeters that those researchers go by. These are the things that we want to end up with. They will grow these little plants of wheat, and every year they throw thousands away because they don't meet their specs.

Once those things are in production, we do milling and baking tests based on criteria sent to us by the millers in the U.S. We have to meet their specifications. Then when the harvest completes, FGIS is in there inspecting again, and especially when shipments go out of the country. But when it goes to a foreign country, it is based specifically on specs coming from that position, like if a certain country wants certain specs, they write it in the contract.

Mr. LUCAS. When it comes to the quality of the product and the nutrition programs that we have, the U.S. generally, it is fair to say the recipients are ensured the highest quality product on nutrition?

Mr. SUPPES. Yes. You will be getting probably the best quality wheat in the world. And that is why we are having a problem competing with the Black Sea wheat coming out. We can't price our quality that low. We don't want to price our quality that low. It is a better product.

The thing you run into by buying wheat from next door, for example, in Africa, it will be inconsistent. You may have some good quality wheat. You may have some poor. But what the world likes

about U.S. wheat is the quality as well as the consistency so they don't have to change their mill settings. The thing we are concerned about with buying next door is protein content and gluten, and you are kind of mentioning that. And so in our research, we try to develop those strengths.

So we are the most reliable source of wheat in the world. And you go visit these customers we have, and they will tell you that. Then they are faced with the fact, can they afford it? A lot of times they don't.

Mr. LUCAS. But ultimately, if we are using public resources, and we are trying to help our fellow citizens on the planet, we have a responsibility to make sure they get the maximum benefit from that?

Mr. SUPPES. Yes. And that would be a point that I would add to what Mr. Evans asked. We need continued financing for ARS research as well as private coming into it. But the ARS is very important. That has been cut back, and so the U.S. farmers have had to pick up a lot of that tab, which we do.

If you have ever been to the innovation center in Kansas that we have, it is fantastic. We have people coming in. They are from General Mills teaming up with our scientists there. They are doing some wonderful things there.

Mr. LUCAS. Mr. Chairman, my time is about to expire, and I yield back.

The CHAIRMAN. The gentleman yields back.

Mr. Panetta, 5 minutes.

Mr. SUPPES. Excuse me. Could I answer Mr. Evans's question?

The CHAIRMAN. We are supposed to each get 5 minutes, and so you can submit your answer for the record if you would like to, sir.

Mr. SUPPES. I see, okay.

Mr. PANETTA. Mr. Chairman, thank you.

The first thing, if I may, Mr. Chairman, and I apologize for not saying this earlier, I would like to introduce into the record per unanimous consent two letters that I have here. The first letter being from 121 retired three- and four-star flag and general officers from all branches of the armed services stressing the strengthening of diplomacy and development alongside defense, which are critical to keeping America safe.

The second letter is from over 200 business leaders to Secretary of State Tillerson, which talks about how we can advance our interests overseas and support jobs here in our country through the need of strong international affairs budget.

The CHAIRMAN. Without objection.

[The letters referred to are located on p. 1174.]

Mr. PANETTA. Thank you.

Ladies and gentlemen, thank you very much for being here. I appreciate the preparation. I appreciate your testimony being willing to come and talk to all of us.

As you have heard today from many of the questions, many of the statements of us on the Agriculture Committee, it is one of the reasons why I enjoy being on this Committee. You find a lot of bipartisan support here for a number of issues, and that we, I believe, based on the districts that we come from throughout this na-

tion, we truly understand what it means to be secure not only in this country but abroad.

We understand our future food security. We understand our national security, and clearly, these areas that you have talked of today definitely demonstrate that. We appreciate you being here to reinforce that. Thank you very much.

It is clear that when it comes to the United States and our affairs abroad, we have a responsibility to play, and that when we don't live up to that responsibility, when we don't lead, that vacuum is filled, and we have seen that over and over. Be it as you mentioned in Africa with China, be it in Syria with Russia, be it in South Sudan with the devastation that is going on right now.

I have an article in front of me that basically says, if America does nothing, 50 percent of South Sudan's population could be gone.

It is clear that being American, as I have heard, being American means that we bear the burden of serving be it in this country, be it abroad. I truly agree with that. It sounds like all of you do. I know that many of us on this Agriculture Committee agree with that as well. And so that is why you are hearing so much support for these programs.

Obviously, we want to work to save these programs, but let's talk about if they were saved, give me some of the improvements that could be made. What could be improved with the programs that you have spoken of today?

Dr. Jayne, if you could.

Dr. JAYNE. Thank you. I appreciate your impassioned and well-articulated views on that.

Okay. In terms of what we could do to improve it. In the long run, as I mentioned in response to Mr. Evans, that the programs that are developing local capacity should really be the emphasis.

Many of us have this image of developing countries or Africa as a place where there is no expertise; we have to really fill the void ourselves to do that. That is certainly not the case anymore. It is a really outdated mode.

By the way, I should mention this: Of my 30 years that I have worked in this area, I have lived in Africa for 7 of those years. And I have been able to see over the span of 3 decades the amazing increase in technical expertise that is locally there. And any kind of coherent U.S. development policy towards them is going to engage those people more directly in our programs.

Because they can be advocates, they can influence government policy in important ways. Bringing them into the equation into our programs is really going to be in our interests as well as in their interests just in the same way that China is doing right now.

Mr. SCHOENEMAN. Congressman, I would say at least on the maritime side, we have been working very hard to increase our efficiency to try to speed up deliveries to make sure we get food where it needs to be faster. One of the easiest things we think USAID could do would simply be to adopt commercial terms in their contracting with other companies. It would make things a lot easier.

It would not create the issues now where we are having very odd ways of handling the cargo and getting ships booked to get them

overseas. If we were using commercial terms, it would make things a lot easier on our side and speed things up.

The other thing I would say is, we know in advance where a lot of these famines are going to be. We have gotten the early forecasting. We have been doing a lot of warehousing and prepositioning of food overseas. I would like to see us continue to do that and strengthen that so that we are moving things closer, moving American food to positions that are easier to get inland using American ships.

The CHAIRMAN. The gentleman's time has expired.

Mr. Abraham, 5 minutes.

Mr. ABRAHAM. Thank you, Mr. Chairman.

I thank the panel for being here. I have been many places over the world, in a previous life, on humanitarian missions, and I certainly understand the badge of honor that we as Americans carry but that also carries responsibility and accountability.

I am an advocate of President Trump's America First policy. I totally believe that when America carries a burden of food aid to these underdevelopment and unfortunate countries and these unfortunate people that we should also bear the responsibility and the accountability of delivering this food economically and safely.

I don't trust the cash. I don't trust the vouchers. I am hopeful that we can trust the locally and regionally produced food; however, it is malpractice if we spend three to five times per bushel of wheat on a local production when we can buy more American wheat and feed more people. That 7 month old that weighs 7 pounds, and that may be shortsighted, you say, on my end, but that 7 month old that weighs 7 pounds, her and her mother really don't care 5 years down the road. They are just trying to live until tomorrow. And we need to deliver more American commodities to them with American flagged ships. It does go back to U.S. security; it does go back to national security, and it goes back to food security.

Mr. Schoeneman, we have often with wars and rumors of wars, which continue to pop up globally, have proverbially been caught with our pants down, because we have not had the shipping to move troops and tanks and planes to areas of criticality very quickly. And that is where the merchant marines come in, the merchant mariners.

Expound on how important that is that we can't afford to have 25 less ships than we had in previous years as far as a national security issue is concerned.

Mr. SCHOENEMAN. Absolutely, Congressman.

The bottom line for us is the vast majority of military cargo that goes overseas to sustain our warfighters goes on American commercial ships not Navy ships. It is the American commercial maritime industry that carries a vast majority of these products. They need cargo in peace time so that those ships are available and those mariners, more importantly, are available to crew those vessels.

We have approximately right now, in the industry sailing deep sea, about 11,300 mariners. That is barely enough for us to cover our commercial fleet as well as the surge fleet that the Maritime Administration and the Department of Defense maintain, and we can only do that for about 4 months at a time.

And if we had to fulfill sustained combat operations for more than 4 months, we would be in trouble, because we don't have the mariners. And the issue, really, with these jobs is it takes a long time to grow a mariner. Each of my members sitting in the back there, they are going to work and study for at least a year before they are ready to start an entry-level job in the industry.

And to train a senior-level mariner, a captain, or a chief engineering, it takes 10+ years plus the sea time and all the accreditations, all the licensing requirements, all the medical requirements. You can't just pick somebody off the street and send them to war even as a merchant mariner. And we have done that in the past, and it has caused a lot of problems.

World War II, we had to ramp up so quickly that to the extent that we were losing a ship a day in 1942. One in every 26 merchant mariners during World War II perished on the high seas. We cannot sustain that in a modern setting right now. If we even lost one ship, it would be catastrophic, because that is how much this fleet has atrophied.

We need these programs. We need cargo preference to keep these cargoes on these vessels. In fact, we need more. Right now, we carry about 50 percent, after the MAP–21 law changed the percentage, 50 percent of this in cargo. I wish we carried 100 percent of it. Because anything that keeps these ships moving provides jobs for these folks that need them that can crew these vessels in wartime, and they are absolutely critical, and we can't go to war without them.

Mr. ABRAHAM. Thank you, Mr. Chairman. I will yield back.

Mr. SUPPES. Could I comment?

The CHAIRMAN. Yes, sir. You have 30 seconds.

Mr. SUPPES. Okay. One thing that has come up, that I have noticed, that kind of bothers me, is that there are some Food for Progress projects that are not funding because the transportation line item has been used up.

So apparently, when the transportation of $40 million runs out, the programs cease. Perhaps we should take a look at maybe increasing that line item so that we can fulfill more of the projects that USDA has in mind. Thank you.

The CHAIRMAN. The gentleman yields back.

Ms. Blunt Rochester, for 5 minutes.

Ms. BLUNT ROCHESTER. Thank you, Mr. Chairman.

And thank you to the panel. What is really special is to see the different perspectives up here, all pretty much saying the same thing in terms of the importance of food security. And I have had the opportunity last month with my friend and colleague, Roger Marshall, to actually have a conversation in a video on *Global Week of Action on Hunger and Famine.* And it just reiterates why many of us like being on this Committee, because when we have common goals, we are able to achieve some great things for our country.

As someone who has lived and worked abroad, I have worked in Ethiopia, Uganda, I have had the opportunity to live in China for 4 years and seeing exactly what you talked about in terms of the expansion of African nations and just the synergy that is happening there. This really is important to me, because it is not just

about benefiting other nations and other people, but it is also about the respect and up lifting the United States of America.

I have a couple of questions, and I hope to get to the main two, but they are for the whole panel. The first is, there has been a lot of support for agriculture development from the private-sector, including companies like Delaware's own DuPont, Coca-Cola, and others. And many people think that because of this, there is really not a need for the government to invest in this type of work, and that the private-sector can do it.

What would happen if the U.S. were to stop investing in agriculture development, and can the private-sector make up the difference?

Dr. JAYNE. Thank you so much. It wouldn't stop the development of these areas, but it would retard the pace at which they develop.

So the private-sector certainly is understanding that because of demographic change in the world, most of the increased demand for food is going to be in developing countries. They see that market.

But what they may not see is that the pace at which the demand grows in these countries is going to depend on the extent to which development assistance can effectively promote income growth in these countries. Because the rate of food demand is going to increase not just on population growth but also on income growth.

So to the extent that U.S. development assistance can be effective in promoting income growth, it is going to be a win-win for everybody, for our partners in Africa as well as for our private-sector partners.

Ms. BLUNT ROCHESTER. Thank you.

Anybody else can jump in, or I can go to my quick second question?

Mr. SUPPES. As I mentioned earlier in our innovation center in Kansas, we do a lot of co-op with private and public and see no problem with that. We share information. We share research, but I do see a problem with the public getting clear out of it.

Ms. BLUNT ROCHESTER. Thank you. Thank you.

And then my second question is more about reorganization. There is a lot of reorganization happening across the Administration and some in the field of agriculture. And I just wanted to get your opinions as stakeholders, all of you are different stakeholders, could you talk a little bit about reorg for agriculture?

Mr. Schoeneman?

Mr. SCHOENEMAN. I was vocal about this. We have had experience working with USDA for quite a number of years. We have had experience working with USAID. My biggest concern with USAID is that very many times they forget the first two letters of USAID are *US,* the United States. And all too often, they are focused entirely on their mission, and they don't think about any of the political realities at home or even why these programs were created in the first place.

I work with KCCO, and the folks in Kansas City have always been excellent. They have been great supporters of these programs for years. A lot of us in maritime feel a lot more comfortable with them than we do with USAID. And it is unfortunate, because we have done our best to try to work with these folks over the last 10 years, but I will tell you, we are constantly vilified; we are con-

stantly treated like we are starving kids because we want to create good-paying jobs for Americans. I don't agree with that. From our perspective, we would love to see USDA take a larger role in P.L. 83–480.

Dr. JAYNE. My partner and I have to have a beer later on to try to work this out. In my view USAID and Global Food Security Act has done tremendous things to promote development. In line with my previous point, the private-sector and the U.S. interests broadly are well served by development in general, which is what USAID is doing.

Even though there may be particular aspects that Mr. Schoeneman, I may agree with him on, overall, in the main, the development agenda that USAID has is promoting national interests for us. Thank you.

Ms. BLUNT ROCHESTER. Thank you.

I yield back.

The CHAIRMAN. The gentlelady yields back.

Mr. Yoho, 5 minutes.

Mr. YOHO. Thank you, Mr. Chairman.

Thank you for holding this important hearing. And I appreciate the panel sitting here.

The CHAIRMAN. Is your microphone on?

Mr. YOHO. Yes, sir. Well, it is now.

The CHAIRMAN. It is a tough concept.

Mr. YOHO. I know it.

Welcome.

Thank you, Mr. Chairman. I am pleased the Agriculture Committee is holding this important hearing on the future of foreign aid as it pertains to the farm bill. It is crucial that this Committee, indeed, all the Members of the House evaluate how we structure our nation's foreign aid.

The world has changed and our methods of delivering foreign aid need to change as well. We must focus on efficiently transitioning aid recipient countries to trading partners. We need a paradigm shift from aid to trade. And I know a lot of people might want to take a hatchet and cut foreign aid off and say we are not doing a good job.

I came up here 4 years ago. I am in my fifth year. I came up here to get rid of foreign aid, but I have become a lot more learned in those 4 years. And what I have learned is what General Mattis said. If you cut foreign aid, buy more ammunition, because you are going to need it.

We need to transition, and we need to be more effective at how we do what we do. I am the Chairman of the Caucus on Effective Foreign Assistance, and this is something that we are very passionate about. We have done some good things in the program with the different farm bills and the different initiatives that have come out here, but we rely on you guys in the industry to make this more effective.

I know there are a lot of things on the table. Do we put more grain over into an area, or do we put more money in there. We need all the above depending on the circumstance.

My background is agriculture. When you have an emergency situation, a humanitarian situation, you need to get food there now.

But long-term, I think there is a need to have a cash-base portion of this, but not all of it. I don't think you want to go for all of it. But the other thing you need to do while we are doing that, and this is where we have seen us change, is the development of the foreign production of food.

Our university where I come from, they are doing meat production in northern Africa. And if I were to ask you the areas that you guys deal with the most, what continent is it, I would assume it is probably Africa. Is that correct?

Dr. JAYNE. Yes.

Mr. YOHO. All right. And you look at the amount of money that we have put over there, it is in the billions of dollars, and there is 1.11 billion people that live there: 650 million people today in the 21st century don't have electricity. You can't really help a nation if the governments aren't willing to help. We have to pick those governments that are willing to be adaptable, and that is what I like some of the things in OPEC and things like that.

I am sorry I wasn't here earlier. When you look at the way we go forward, and we have the debate about do we ship raw products over there, and I am all for supporting our American farmers, and I am all for supporting people in those other countries, but we have to do it to where it doesn't break the domestic market.

And we have just seen the recent example with peanuts in Haiti. And I forget how many tons we dumped into Haiti, but it took the incentive from the indigenous farmers to stop growing peanuts, because there was no market for them to market their products. As we do this, I would like to hear from whoever best can answer this.

Ms. Salem, go ahead. And how do you direct this, and how do you work, and more importantly, work with a government to get them on the same page? And that is where I like what we do with OPEC and MCC, because they do a great job, because they hold those governments accountable. What is your experience?

Ms. SALEM. It is a great question. We can't have these programs eliminated, but we do have to make them more efficient to some degree. The world is a big place. And while I am in very much in support of sending things from the U.S., I strongly believe there has to be a combination of the two. And in my industry, we actually are part of the partnership.

And so we have eight factories that are local suppliers in countries like Niger, Ethiopia, India, Haiti, and they are in malnutrition hot spots. They can produce those types of food locally. And then what we do from Edesia is we subsidize the other countries. Because we can't have a factory in Syria. That doesn't make any sense.

So by working together, by having both local production and support from the U.S., we have the flexibility to, depending on the situation, to be able to respond the most efficiently, cost effectively, and the smartest way to really——

Mr. YOHO. I am going to cut you off there, because I am about out of time.

With our budgetary restraints that we are facing as a nation, we have to be more effective at what we do, and we rely on you to become more effective at that and focus on aid not trade, and let's transition these countries off as soon as we can.

Thank you, and I yield back.

The CHAIRMAN. The gentleman's time has expired.

Ms. Adams, 5 minutes.

Ms. ADAMS. Thank you, Mr. Chairman.

And I want to thank all of the witnesses for your testimony.

I have read often in the Bible that there are probably more than 3,000 references to how we treat the poor, the least of us.

We have always been a compassionate nation, and I guess sometimes if your belly doesn't growl because you are hungry, maybe you just don't understand. But having said that, I represent the 12th District in North Carolina. And I have seen firsthand the issues of food insecurity just in my district, and even my state ranks high in food insecurity. I am real passionate about this issue.

Having said that, with South Sudan, and Somalia, and Yemen, and Nigeria facing famine conditions, and 52 million children worldwide suffering from acute malnutrition, the U.S. foreign assistance is crucial. I certainly appreciate all the comments you all have made in support of that.

Ms. Schuler, international food aid has been a component of United States foreign policy with bipartisan support for over 6 decades. And I am real delighted to be on this Committee because of the bipartisan compassion that we seem to have. President Reagan, when signing the proclamation establishing World Food Day said that all Americans can be proud of our country's continuing efforts to battle world hunger.

President Trump's budget, however, would zero out and severely cut funding for those vital international programs, and with the long tradition of bipartisan support for these programs, do you feel that there is justification for abruptly zeroing out these programs?

Ms. SCHULER. No, I do not feel there is justification. I think it would be a huge mistake. It would impact millions of people, and it would damage our reputation as a country almost immediately. As I said before, these programs are some of the best, most effective programs in terms of helping millions of people, and they absolutely need to be kept, yes.

Ms. ADAMS. Thank you. You mentioned in your testimony that 70 million people worldwide would face severe food insecurity, and thank you for bringing that to our attention.

Mr. Suppes, you were not able to respond to a question of my colleague here, so I wanted to give my brother an opportunity to get that back in.

In terms of the question that he asked about the top issue for our consideration as we consider the farm bill that would be expiring in September, if you would like to comment, I would like to hear what you have to say about that.

Mr. SUPPES. Well, first of all, I am here because I think monetization is very important. In fact, I am currently planting sorghum right now and my tractor is idle. That is how important it is, I need to be here to talk to you about it.

The other thing is getting off topic a little bit, you talk about the farm program, we need to really take a little crop insurance, and that is the only thing I really have to hang my hat on as far as a farmer. Whatever the word *sustainable* means, it keeps me there.

And as I mentioned before, research, ARS research. And in wheat. We need to continue that. We have been cutting back. And in cutting back, then it throws the burden back to the farmer itself, which is okay. We are willing to pick some of that up, but it also goes to the private companies. As long as we have kind of an equal representation, there. We are in pretty good shape.

Ms. ADAMS. Great. Well, thank you very much.

Mr. SUPPES. Thank you.

Ms. ADAMS. Mr. Chairman, I will yield back my few minutes.

The CHAIRMAN. The gentlelady yields back.

Mr. Marshall, you are cleaned up?

Mr. MARSHALL. Yes, sir. I am ready to go.

The CHAIRMAN. All right.

Mr. MARSHALL. Thank you, Mr. Chairman.

Mr. Suppes, you and I live in the largest agricultural producing district in the country. We grew up in the backyard of one of the coauthors of the McGovern-Dole bill, or as we call it, the Dole-McGovern bill back home. Despite that, we literally have mountains of grain and nowhere to go with them.

Despite that, we have food insecurities in our own district, in our own state, and in our own world. You chose to be here. Most of your colleagues are back home planting sorghum, as you just said, and you have been overseas. Why do you do this? What is your passion? What drives you?

Mr. SUPPES. Well, just being a farmer and being outdoors and being an agriculturist, a conservationist, an economist, and a humanitarian probably brings me to that. I can only imagine, I have been in enough countries representing farmers through U.S. Wheat Associates, that I have seen a lot of this stuff not necessarily food aid, but talking to flour millers.

As you are in country, you could see what is going on in Africa, in Nigeria, or these other countries. And you are thinking, well, the U.S. has a presence there in a lot of places. We probably need more. I suppose my exposure to those things have brought me here.

Mr. MARSHALL. Okay. Thank you.

Ms. Salem, I have looked at your package here. And there is one ingredient missing. Mr. Suppes there has the highest protein content of wheat in the world that he grows. And we just want to make a little push to get some wheat in there.

And I want to ask you kind of the same question. You are basically a volunteer for your organization. What is your passion? What brought you here to start this company?

Ms. SALEM. One thing, being a mom. I have four daughters, but my family is from Tanzania, the last three generations. I have seen too many times firsthand what it looks like to lose a child and to hear those sounds and to sit with a mother who has lost her child. And that is the only reason I am here. That is the only reason I get up every morning to take on this fight, which is never easy.

It is for those mothers who have had to lose children for the most ridiculous reason. We know how to treat severe acute malnutrition. It doesn't take any research. It just takes will and action to make it happen.

Mr. MARSHALL. Thanks. Thanks for your passion.

I, too, have been blessed to travel to places from Haiti to Africa. And typically, I saw more kwashiorkor syndrome as opposed to marasmus. I am just curious in the world, the places you are treating, are you seeing more than the other? Is it more protein? Is it more calorie-based nutrition issues?

Ms. SALEM. You are getting very technical now, Mr. Marshall.

Mr. MARSHALL. Yes.

Ms. SALEM. I think that what we are trying to do, we don't just make this one product. We make an entire range.

Mr. MARSHALL. Oh, okay.

Ms. SALEM. About eight. And obviously, very focused also on innovation too. We are looking at all of the different the issues that are going, from prevention of malnutrition for under 2s, severe acute, moderate acute, chronic, stunting, pregnant and lactating women. We are looking at all the issues and trying to design specific products that can help design nutritional outcomes that are measurable and have clinical trials along with it to be able to prove these outcomes.

Whatever the problem is, we are looking at solutions and innovative solutions and willing to work with partners on the ground who are seeing things to create something that can work well in the field.

Mr. MARSHALL. Is it more a protein deficiency in Africa or in Haiti, or is that more of just a caloric intake or both?

Ms. SALEM. At this point, I would say more caloric because of the drought. And when you add a drought plus war, you are really just lacking food in general. Not as much the diet diversity maybe what we are seeing more in Central America.

Mr. MARSHALL. There is not a better protein source, of course, than Kansas beef. Have you guys tried to do anything with beef as far as prepared product like this, is it just too costly?

Ms. SALEM. Yes.

Mr. MARSHALL. Surely, it is an incredible protein source?

Ms. SALEM. Right. It is definitely a cost issue. And peanuts are something that are grown here, but also in all of Africa and Latin America too. These types of formulas are being able to be produced locally and here as well. Beef might knock us out of the——

Mr. MARSHALL. Well, a big chunk of your expense is cost, it sounds like transportation. Is that 50 percent of the product, getting it from Point A to B? Is that a big chunk of it?

Ms. SALEM. No. If you are shipping a container that is valued with about $60,000 worth of products, an average shipping cost would be $5,000. The majority is spent on the food.

Mr. MARSHALL. All right. Thank you.

And I yield back.

Ms. SALEM. Thank you.

The CHAIRMAN. Mr. Soto, 5 minutes.

Mr. SOTO. Thank you, Mr. Chairman.

A lot of us are concerned we are at a real crossroads with regard to American leadership abroad, whether it was with support of NATO, whether it was a withdrawal from the Paris climate accord, or now with the elimination or proposed elimination of the McGovern-Dole Food for Education Program.

But for argument's sake, let's start with America, first. I would like to ask, first, Mr. Suppes, with regard to domestic hunger, do we have enough of our commodities remaining in the United States to be able to feed the United States like wheat or other key commodities?

Mr. SUPPES. There is no problem there.

Mr. SOTO. Okay.

And then, Dr. Jayne, what would you say are the current causes of domestic hunger? Is it the foreign aid program or there are other factors?

Dr. JAYNE. No, I don't think it has anything to do with the foreign aid program. It is purchasing power issues, access to cash to purchase food. There are some significant poverty issues in this country.

Mr. SOTO. And then let's turn to American jobs that would be lost.

Mr. Schoeneman, what would be the number of jobs lost among our seafarers if this program is eliminated?

Mr. SCHOENEMAN. It is hard to say. It would depend on the number of ships that were lost. But I will tell you, we have lost about 2,400 just in the last 5 years since we changed the percentage that we carry.

But the maritime industry alone accounts for hundreds of thousands of jobs direct and indirect that are involved specifically in this program, and those jobs would probably go away if these programs went away.

Mr. SOTO. We are talking about hundreds of jobs, thousands of jobs, or tens of thousands of jobs? Just as an estimate.

Mr. SCHOENEMAN. I would say at least tens of thousands if not more.

Mr. SOTO. And then going to keeping America safe, if we pull away from these programs, I would like to ask Ms. Schuler and Ms. Salem, who fills this vacuum, and what effect would it be on keeping America safe?

Ms. SCHULER. Well, as I talked about Somalia, Somalia is one of the countries where the U.S. is fighting hard against a terrorist group, Al Shabaab, where we have seen many attacks in Kenya, Ethiopia, and elsewhere. They would fill the gap. If we pulled out of Somalia with our assistance, kids, young people, people who felt there was no hope, they would turn toward those terrorist groups, and America would be a loser.

Mr. SOTO. And would it be fair to say that there would be a increase in piracy among Somalians and others who in the past have made that region unstable?

Ms. SCHULER. Possibly, yes.

Mr. SOTO. And then what is your opinion, Ms. Salem? Who would fill the void for a lot of these programs if we left?

Ms. SALEM. Yes, I agree. One of the areas that we are very involved in Nigeria. In the north when Boko Haram was defeated and humanitarian aid workers went in, they found 250,000 severely malnourished kids. That means that is ¼ million people who are basically near death. And so this is what the terrorists are doing to people in these countries, and so we need to continue to

fight to be the leader in those regions and defeat that way of thinking, you have another question?

Mr. SOTO. Thank you.

Mr. Suppes, I want to go back to emerging markets for agriculture. We had great growing season, but prices were low. How do you think this would affect growth in agriculture, going forward, if we didn't lead in with some of these food aid programs in emerging markets?

Mr. SUPPES. Well, it is probably not the place to talk about rankings, but as far as exports?

Mr. SOTO. As far as growth in exports based upon a lead-in on these programs.

Mr. SUPPES. Okay. If you put together all the food aid programs that we currently do in a year and take the wheat and add the wheat all up, wheat in my area, it would amount to probably the fourth largest customer that I have, which would be called Food Aid. If you look at the Pacific Northwest, that would be about number ten as far as customer.

Now, we are not here to look at customers, but eventually after you produce food aid for these people, a lot of those countries do end up becoming our customers.

Mr. SOTO. I don't want to interrupt but one last question. What type of job loss do you think would happen among, for instance, our wheat industry if this program was eliminated?

Mr. SUPPES. Well, you are looking at elevator systems. You are looking at rail lines that handle the commodity. You are looking at the maritime. It is all connected. You might even lose a few more farmers. You are talking about a lot of jobs.

Mr. SOTO. Thank you.

The CHAIRMAN. The gentleman's time has expired.

Mr. Allen, 5 minutes.

Mr. ALLEN. Thank you, Mr. Chairman.

Thank you all for being here today to tell your stories and experiences on how international food aid programs are important to your organizations, and how they continue to benefit various sections of the U.S. economy.

With the new Administration, we have heard a different approach in platform, and we have heard it here today about America first. The equivalent of that would be certainly, I would want to donate to your worthy cause, but it would be improper for me to go to the bank and borrow the money to donate to you to have my children cosign that note and have them pay that debt at some point in time.

So that is just an illustration of where this country is. As we know for years, we have historically been a leading provider in international food aid, and in sum, you mentioned your organization is just that, American agriculture commodities, grown and harvested by American farmers, and I want to thank you for highlighting that today in your discussion.

Mr. Schoeneman, I was particularly interested in hearing your testimony, as it provided, and we touched on it, about the U.S.-flagged vessels and the reduction of those U.S.-flagged vessels. Is this a politically correct issue?

Mr. ALLEN. If it is our food and we are sending it over there, shouldn't it be on our ships?

Mr. SCHOENEMAN. Absolutely. I don't think it is a politically correct issue. It all comes down to money. I think that is the real concern.

Mr. ALLEN. Okay.

Mr. SCHOENEMAN. Unfortunately, we are the quiet service. We do our jobs. Our members, we go to work every day. I go to work every day to make sure my members go to work every day. Unless something bad happens, you don't usually hear about the maritime industry. We keep our heads down, and we get our work done. And that has made it very easy, unfortunately, in some of these debates, to use us as a pay-for or use us as a means of trying to balance something out somewhere else. MAP–21 is a perfect example of that. That was a transportation bill in 2012, under a deal that was cut back in the 1980s, we were to carry 75 percent of all food aid cargoes. That was reduced by 25 percent to 50 percent in MAP–21. And in addition to that, in the next year's budget, there was a program called Ocean Freight Differential that essentially would require the Federal Government, the Maritime Administration, to reimburse USDA, the Food For Peace Program, for whatever the difference was in the cost of transporting all this grain on American ships *versus* what it would have cost them if it was foreign. It was mandatory spending. It was automatic. There was never an issue.

But, unfortunately, the Budget Committee hates mandatory spending, and that was something that they zeroed out. Now we have a self-fulfilling prophesy of transportation costs that are going up, and the result, because we are not covering those. It is difficult for us when we are looking at this program, we see that the appropriations have stayed about flat, and the amount of money we are spending on transportation is going up. The amount of money we are spending on food is going down. We need to find ways to fix this. But cutting the mariners out is horrible for national security.

Mr. ALLEN. How are we getting the food over there?

Mr. SCHOENEMAN. Well, that is part of the problem. A lot of the new flexibility ideas that folks have put out there is to either provide cash. Now, I have been told that that is a very minuscule amount of money, but it is still more money than is going to buy food. We have vouchers. We are buying food locally, but then it is being shipped on foreign-flagged vessels from a new point of origin over there, not on American ships. And, unfortunately, since we are only carrying ½, we love to remind USAID that the 50 percent is a minimum, not a maximum. We can carry as much cargo as they want to give us. But, unfortunately, they do their best to try to keep it at that 50 percent level, and that makes it hard.

Mr. ALLEN. Ms. Schuler, Ms. Salem, thank you for your work. It is amazing what you are doing there, Ms. Salem, with your business. And just one last question.

In this country, we have an obesity problem. In this country we waste more food than we eat. And there are people starving around the world. Why can't we solve this?

Ms. SALEM. You bring up a great point. If we were able to eliminate the waste alone, we would be able to feed the whole world a couple times over. We are wasting 30 percent of all food that is——

Mr. ALLEN. And then get our U.S. fleet to take it over to these countries——

Ms. SALEM. I hope it is not wasted——

Mr. ALLEN. Ms. Schuler, you have any closing comments?

Ms. SCHULER. Well, I would just say that, in many countries, you also have issues related to conflict. Many of the countries that we are talking about that have huge food assistance needs are countries with conflicts. We need to work together with government and provide leadership to solve those crises.

Mr. ALLEN. Right and provide leadership. Yes. Exactly.

Thank you.

I yield back.

The CHAIRMAN. The gentleman's time has expired.

Mr. Lawson, 5 minutes.

Mr. LAWSON. Thank you.

And I have learned a great deal from you all this morning. Because I have not been involved in international food programs. I have heard a whole lot about them. But to just listen to you all has been very stimulating.

Two things I am concerned about is, one, what might have been Ms. Salem talking about how China trains some of the people from Africa in their language, and then they go back, and they come back again. And they eventually are going to be leaders in their country and so forth.

How does that affect us in America?

Dr. JAYNE. Yes. Okay. Thank you. I think that was me.

China observes an opportunity in developing countries. They are going for it. They are investing heavily in both soft and hard forms of infrastructure, training, and all of this.

How is that affecting the United States? It sort of depends on how the United States responds. If the United States responds recognizing that these are opportunities for win-win situations, and they go after those opportunities through the programs of USAID and USDA, and the kind of programs that we are looking at here, we have an opportunity to get the America first objectives, which many people here have kind of talked about. We can get those objectives through a U.S. development assistance program that is well articulated.

I would say that even if the view is just America first, it is in America first interests to get out there and promote development in other countries because our private-sector is going to win from that. China is doing what is in China's best interests. And how can we fault them for that? It would be unfortunate if all of the opportunities available for the United States to benefit from promoting trade and development in Africa, that we don't take advantage of that. That is where we are at risk, if we don't carry forward some of the programs that have been discussed during this hearing.

Thank you.

Mr. LAWSON. Yes.

Ms. SCHULER. If you remember, George W. Bush was seen as a leader on HIV and AIDS across Africa, for example. And people

still talk about that in Africa, how great of a job the U.S. did in terms of helping to reduce the impact and mitigate the impact of HIV/AIDS. Why can't we be a leader in ending hunger and being a leader in the world in that regard? That would be a beautiful way to strengthen the U.S. reputation around the world and help the America first cause.

Mr. LAWSON. Okay. If we can still be a leader in the Food for Progress Program, which increases our capacity around the world, who are we in competition with? Is that just where we want to be?

Dr. JAYNE. Yes, sir. Thank you.

One of the questions that we frequently hear people say is, "Why should we promote agricultural development in countries? They are just going to take away our markets and compete with us." Well, if you look at the kind of crops that are exported out of Africa, it is usually cocoa, tea, coffee, cut flowers, tropical fruits, to a lesser extent cotton. Okay? With the exception of cotton, none of these other crops really compete with our U.S. exports. That is why it is increasingly a win-win to promote development in both areas. They are very compatible and synergistic with each other. Our farmers, and our broader agribusiness community, stand to gain a lot by development in these areas of the world.

Mr. LAWSON. Mr. Chairman, with that, I yield back.

The CHAIRMAN. The gentleman yields back. Thank you.

Mr. Goodlatte, 5 minutes.

Mr. GOODLATTE. Thank you, Mr. Chairman.

This has been a very good hearing. I really appreciate all of your participation, and I agree with some of what almost all of you have said.

I agree with Dr. Jayne that food production in these countries and sustainability is absolutely critical. We have to have that. But I also agree with Mr. Schoeneman and our wheat grower and probably Ms. Salem that as much of this as we can do to promote growth in the United States of support for this program by producing it, processing it, and shipping it from the United States to handle emergency food aid is vitally important to keep the support for this program, or you are going to see more and more public support for the kind of proposals that do completely cut these programs out.

Dr. Jayne, let me start with you. I am concerned about the efficiency of some of these programs that are run to encourage that production. I have been to Ethiopia as well. I have been to schools, just like the Chairman has, seen children being fed, very nutritious, and also some pretty inexpensive food that gets them to school and gets them through the day. But then, as I drove there, I saw the most archaic, and this is in Ethiopia, with beautiful farmland, being farmed with animals, basically. I saw very little mechanized equipment.

What is USAID doing, and are there other U.S. Government programs, or is it primarily relying on USAID, to get a place like that modernized and more efficient so they can take advantage of that farmland and produce for their own people?

Dr. JAYNE. That is a great question. USAID, I believe, is doing the bulk of U.S. Government programs toward development assistance. And, of course, the fact——

Mr. GOODLATTE. How efficient are they? I get the impression that a lot of money is wasted. I have been to Haiti, too, where Congress appropriated $2 billion, not just for food aid but for rebuilding a devastated country that was the worst in the Western Hemisphere before the earthquake and then just totally devastated after the earthquake. And I see a lot of waste. What is going on?

Dr. JAYNE. Well, certainly, almost all of these programs could be made more efficient. That is true.

One example I can give you right off is that our capacity-building programs, which are designed to train the next generation of scientists locally and extension workers and farmers locally, that can be done much more efficiently.

Mr. GOODLATTE. Are we paying Americans to go over and do this like the Chinese are doing? Are we bringing people from these countries to the U.S. like the Chinese?

Dr. JAYNE. We are mostly bringing them to the U.S. And it costs us $65,000 a year to bring someone overseas into a land-grant U.S. system for training, $65,000 per year.

Mr. GOODLATTE. Why?

Dr. JAYNE. It costs about $7,000 per year to train someone locally. And we are starting——

Mr. GOODLATTE. Is a U.S. person going over there to train them? Because I want the U.S. to get credit for this.

Dr. JAYNE. Of course. Yes. And we are needing to innovate, and we are seeing ways in which we need to partner more with universities overseas to develop——

Mr. GOODLATTE. I want to ask Ms. Salem a question or two as well. I never heard of this before. I think it is phenomenal. I am really impressed. And I am interested in knowing what you think about what overall percentage of U.S. food aid should be fortified, nutrient-dense products like those produced by Edesia.

Ms. SALEM. Yes. It is a good question. Our product is not a silver bullet for hunger. We are really focused on very specific cases of malnutrition, specifically moderate——

Mr. GOODLATTE. Immediate, get it there quickly, it can be prepositioned?

Ms. SALEM. But also for the right people. You want the bulk grains to be used for adults and people who don't fall into the most vulnerable categories. We want to save this just for those that are really at the brink of death, who are in clinics, it is like a food by prescription. Think of it as a medical food *versus* grains. That is really what we need to be using these for, not for the masses.

Mr. GOODLATTE. How do you pronounce your name, sir?

Mr. SUPPES. Suppes.

Mr. GOODLATTE. Like it looks.

Mr. SUPPES. In Tanzania, the wheat that we sent over there to that flour mill, it is a very large flour mill; is, of course, fortified. And they told us that they were selling this to the underprivileged at a cheaper rate.

Mr. GOODLATTE. You are happy to sell it over there. You are happy to sell it to the U.S. Government to distribute over there. And you are also happy to sell it to Ms. Salem, right?

Mr. SUPPES. Absolutely. She could make crackers and put this peanut butter in between. It would be phenomenal.

Ms. SALEM. So many new ideas.

Mr. GOODLATTE. My time has expired. Thank you, Mr. Chairman.

The CHAIRMAN. The Chairman of the Nutrition Subcommittee, Mr. Thompson.

Mr. THOMPSON. Mr. Chairman, thank you. Thank you for all members of the panel. This is a very important hearing that we are having. Nutrition does matter. It certainly matters here at home, and it matters overseas in areas where we have talked about what we can do to improve. I happen to believe, and maybe I am wrong. Maybe I am just naïve. I have been accused of that on occasion. I happen to believe the United States has been the most effective force for good of putting food in the bellies of hungry people overseas.

Am I wrong? Am I naïve on that? We are looking at how we can improve, right? But we are not really here to mourn the fact that we have failed. I think that we should be very proud of what this nation has done, what American farmers and farm families have provided. I actually think that is kind of a bias, being from a pretty rural area. Looking out for your neighbors is sort of a characteristic of rural America. I always say the best part of living in a rural community is that everybody knows your business. The worst part is everybody knows your business. And the fact is that we do have an impact around the world.

I want to come back to how we get things there briefly.

Mr. Schoeneman, and you have talked about this a little bit, it is my understanding that our agriculture and maritime communities have developed an enduring bipartisan partnership in these programs. How would this partnership be impacted by proposals to turn these programs into more overseas cash handouts, which I have concerns with when I look at the news headlines over the past 10, 12 years? I mean, I know food winds up in hungry bellies. Cash sometimes winds up different places. Or perhaps a voucher program or by weakened cargo preference requirements, how would that impact support for funding these programs?

Mr. SCHOENEMAN. What we have been telling folks for the last 10 years is, if you remove the domestic constituency between the American farmer, the American mariner, the PVOs, and the other organizations that provide this aid, these programs are going to die. They are going to get zeroed out. It is an inevitability. Because when you look at these programs, if there is not a domestic support for them politically, then what do they become? As Mr. Yoho and Mr. Allen pointed out, they are just giveaway programs. And we don't have the money to do it anymore.

As the Chairman said, we are $20 trillion in debt. If we are going to be spending our taxpayer dollars, it has to be on something that has a domestic benefit. You cut out the political constituencies for these programs at home, they are going to go away. And the President's budget is a perfect example of that. No other President has taken a shot at McGovern-Dole and P.L. 83–480 the way that President Trump did. The only reason he was able to do that is because we so undermined the domestic program that we have cut out the Americans in it, and it makes it easy to cut away. I am

very concerned if we do not put the Americans back in this program, that these programs are going to go away, period.

Mr. THOMPSON. Can you elaborate on the efforts made by shippers to ensure efficient delivery? You made reference to this, but I wondered if you could flesh that out a little more, efforts to ensure efficient delivery of food aid cargoes in emergency situations. Are there other steps that could be taken to improve the speed of delivery of U.S. in-kind commodities during emergencies?

Mr. SCHOENEMAN. As I noted earlier, if we can try to mirror the commercial industry's practices in the food aid sector, that would make things much easier on our guys trying to handle the inland transportation as well as the port transportation getting them on the ships. Commercial terms would be a big impact on that.

Prepositioning, doing more prepositioning would be beneficial so that we can cut down on the travel times. And then, frankly, a lot of the issues I see the USAID members trying to play the game of how do we get to that 50 percent threshold and those types of things. If we simply carried all the cargo, it would make it much easier. From that perspective, if we were able to increase the percentage that we carry, and then we can work together with USAID to find creative ways to be innovative and to move things faster, I am fully confident that the industry can do that, and we look to working with them to do that in the future.

Mr. THOMPSON. Thank you.

Ms. Schuler, based on your experience in the field, do you believe PVOs are currently able to provide the appropriate mix of food aid modalities in response to world hunger needs while protecting against fraud and abuse?

Ms. SCHULER. Yes. I think that the PVO community is working very hard on looking at ways to hold partners accountable and communities accountable and their own agencies. World Vision, for example, has a program called Citizen Voice in Action. It actually engages people at the community level to hold their governments, to hold other partners, accountable. And this is a great tool and has been very successful in reducing fraud with food aid programs but also with other programs.

Mr. THOMPSON. Thank you, Mr. Chairman.

The CHAIRMAN. The gentleman's time has expired.

Thank you very, very much. What a terrific panel today. Each of you have brought a face and a perspective to this important issue, and I appreciate you coming to D.C. to make that happen.

Sonny Perdue, our new Secretary of Agriculture, has a new motto for USDA. It is: "Do Right and Feed Everybody." And clearly that is on the front of your minds. This is a hard subject. In addition to going to see the McGovern-Dole Program and the emergency program, we also went to Jordan to see the voucher-cash assistance program in a Syrian refugee camp just south of the Syrian border. You don't go into a refugee camp of some 80,000 people and come out the same person that you went in. And those vouchers actually were being used to buy U.S. rice. It was in smaller packages in the grocery store that was set up in the camp.

It is clear we are going to need a blend of cash and products. And every one of you made good points. Whether it is one of the references Ms. Adams made to the poor in the Bible, where Christ

said: "You will have the poor with you always." You are not going to be able to work your way out of a job. We are going to always have the poor with us, and there is going to be some responsibility. And we all bear some responsibility to feeding, whether it is reacting to natural disasters, droughts, hurricanes, earthquakes, other things that happen, or it is in response to man's inhumanity to man. The wreck in Venezuela, that is just a government that mistreated its people, corruption, mismanaged, whatever it is in these countries that have these problems. We, as Americans, with the blessings we have, do have the responsibility to assist where we can.

As I also mentioned, we have tough sledding ahead for our own country. We don't have an unlimited checkbook, even though it appears that way. We don't. We are going to be using the Wisdom of Solomon to try to figure out how we continue to do the very best we need to do around the world and create that leadership that everyone talks about. America is a leader. You don't hear any other country who is referenced in response to these kinds of issues the way America is referenced. And that is a point of pride for us. We have done good stuff around the world, as G.T. mentioned, and we will continue to do it, whether it is through governments, Ms. Salem and the private-sector doing what you do best. We are going to continue to help. And each of you have helped us this morning gain a better understanding of how tough this is going to be. Please pray for our decision makers, because these are going to be hard priorities to set and hard things to do that are coming at us a whole lot quicker than maybe we even thought.

Again, what a great panel you were this morning. I thank each of you very, very much.

Under the Rules of the Committee, the record of today's hearing will remain open for 10 calendar days to receive additional material and supplementary written responses should any of the witnesses want to respond to something that you needed to get into the record. We will take that for any question posed by the Member.

This hearing of the Committee on Agriculture is adjourned.

Thank y'all.

[Whereupon, at 12:23 p.m., the Committee was adjourned.]

[Material submitted for inclusion in the record follows:]

SUBMITTED PRESS RELEASE BY HON. JAMES P. MCGOVERN, A REPRESENTATIVE IN CONGRESS FROM MASSACHUSETTS

March 16, 2017
http://www.usglc.org/2017/03/16/100-christian-leaders-tell-congressional-leadership-protect-foreign-assistance/

Press Release

U.S. Global Leadership Coalition

100+ Christian leaders tell Congressional leadership: Protect foreign assistance

Catholic and evangelical leaders, pastors, artists, and other high-profile Christians urge lawmakers to support resources for the State Department and USAID

Washington, D.C.—More than 100 Christian leaders from across the United States are calling on Congress to avoid disproportionate cuts to America's foreign assistance programs that make up less than 1% of the Federal budget.

In a letter to the House and Senate leadership, the signers write: "It is our moral responsibility to urge you to support and protect the International Affairs Budget" noting "we cannot turn our back on those in desperate need."

The signers—representing the Catholic and evangelical communities—include national leaders, pastors, heads of faith organizations, recording artists and authors. Cardinal Timothy Dolan and Rev. Samuel Rodriguez—who spoke at the 2017 Inauguration—also are among the signers.

As the budget process moves to Capitol Hill, the leaders stress that America must remain that "shining city on a hill" that "brings hope to poor, hungry, [and] vulnerable."

* * * * *

March 16, 2017

Hon. MITCH MCCONNELL,
Majority Leader,
U.S. Senate,
Washington, D.C.;
Hon. PAUL RYAN,
Speaker,
U.S. House of Representatives,
Washington, D.C.;
Hon. CHARLES E. SCHUMER,
Minority Leader,
U.S. Senate,
Washington, D.C.;
Hon. HON. NANCY PELOSI,
Minority Leader,
U.S. House of Representatives,
Washington, D.C.

Dear Majority Leader McConnell, Minority Leader Schumer, Speaker Ryan, and Minority Leader Pelosi,

As Christian leaders, it's an honor to represent dedicated and faithful citizens living in every Congressional district in this country. We're writing to share our support for the International Affairs Budget that every day brings hope to poor, hungry, vulnerable and displaced men, women and children around the world.

America is blessed with fertile land, abundant natural resources, a strong economy, and faithful citizens who value religious freedom. But beyond our borders, many countries experience unparalleled suffering and loss of life due to extreme poverty, disease, natural disasters, and conflict. Today, there are 65 million displaced people, the most since World War II, and 795 million people still go to bed hungry every night.

Matthew 25 tells us when we serve the least of these, we are serving the Lord. As people of faith, we cannot turn our back on those in desperate need. We are grateful for America's global development and diplomacy programs that have been instrumental in saving lives, safeguarding religious liberties, and keeping America safe and secure. Both Republican and Democratic Administrations have strong legacies of supporting humanitarian and development programs that enable countless people to pull themselves out of poverty and live life with dignity. It is through these diplomatic and development tools that we've seen countries and communities build peaceful, productive societies that do not turn to violence or terrorism.

At a time when we're especially security conscious, the International Affairs Budget is crucial to demonstrating our values to the world, building friendships with other nations, and lowering security risks around the world.

With just one percent of our nation's budget, the International Affairs Budget has helped alleviate the suffering of millions; drastically cutting the number of people

living in extreme poverty in half, stopping the spread of infectious diseases like HIV/AIDs and Ebola, and nearly eliminating polio. Additionally, it promotes freedom and human rights, protecting religious freedom for millions around the world.

As followers of Christ, it is our moral responsibility to urge you to support and protect the International Affairs Budget, and avoid disproportionate cuts to these vital programs that ensure that our country continues to be the "shining city upon a hill."

Thank you for your consideration.

Timothy Cardinal Dolan, Archbishop of New York
Rev. Dr. Samuel Rodriguez, President, National Hispanic Christian Leadership Conference
Leith Anderson, President, National Association of Evangelicals
Rich Stearns, President, World Vision USA
Bishop Gregory J. Mansour, Chairman of the Board, Catholic Relief Services
Michael W. Smith, Singer/Songwriter
Dr. George O. Wood, General Superintendent, Assemblies of God
Dr. Ronnie Floyd, Immediate Past President, Southern Baptist Convention
Amy Grant, Singer/Songwriter
Shirley V. Hoogstra, J.D., President, Council for Christian Colleges & Universities
Tom Lin, President & CEO, InterVarsity Christian Fellowship
Third Day, Christian Rock Band
Jonathan Reckford, CEO, Habitat for Humanity
Mark Labberton, President, Fuller Theological Seminary
Jo Anne Lyon, General Superintendent Emerita, The Wesleyan Church
Most Reverend Jerome E. Listecki, Archdiocese of Milwaukee
Most Reverend Salvatore J. Cordileone, Archbishop of San Francisco
David Wilson, General Secretary, Church of the Nazarene
Rev. Gabriel Salguero, President, National Latino Evangelical Coalition
Most Reverend Joseph E. Kurtz, D.D., Archbishop of Louisville
Santiago "Jimmy" Mellado, President & CEO, Compassion International
John Crosby, Senior Pastor, Christ Presbyterian Church
Rev. Johnnie Moore, Author
Bob Bouwer, Reverend, Faith Church (8 locations)
John K. Jenkins Sr., Senior Pastor, First Baptist Church of Glenarden
Keith Stewart, Senior Pastor, Springcreek Church
Alec Hill, President Emeritus, InterVarsity Christian Fellowship
Scott Arbeiter, President, World Relief Corporation
Martha Newsome, President & CEO, Medical Teams International
J. Ron Byler, Executive Director, Mennonite Central Committee
Mike Mantel, President & CEO, Living Water International
Carol Bremer-Bennett, Executive Director, World Renew
Gary Edmonds, President & CEO, Food for the Hungry
Anita Smith, President, Children's AIDS Fund
Shepherd Smith, President, Institute for Youth Development
Bruce Wilkinson, President & CEO, Catholic Medical Mission Board
Steve Stirling, President & CEO, MAP International
Peter Vander Meulen, Coordinator in Office of Social Justice, Christian Reformed Church in North America
Joel K. Johnson, Pastor, Westwood Community Church
James H. Barnes III, President, Bethel University
Steve Moore, Board Chair, World Relief
Deborah Smith Pegues, Board of Directors, World Vision USA
Rev. Jonathan Odom, Pastor, Asbury UMC
Dr. Mark Wilbanks, Senior Pastor, Wieuca Road Baptist Church
Dr. Stephen Treash, Senior Pastor, Black Rock Church
Laura Truax, Senior Pastor, LaSalle Street Church
Jeffrey Moes, Senior Pastor, Sunnybrook Community Church
Gino Grunberg, Co-Pastor, Harbor Christian Center
Rev. Jay Madden, Pastor for Mission, Peachtree Presbyterian Church
Chris Cramer, Pastor, Orchard Grove Community Church
Chad Hayward, Executive Director, Accord Network
Galen Carey, Vice President of Government Relations, National Association of Evangelicals
Scott Garber, Author
Ken Wytsma, Senior Pastor, Antioch Church
William Minchin, Pastor of Business Administration, Grace Fellowship Church
Bishop Horace E. Smith, MD, Senior Pastor, Apostolic Faith Church
Ted Esler, President, Missio Nexus
Rev. Dr. Michael L. Henderson, Senior Pastor, New Beginnings Church
Dr. G. Craig Williford, President, Multnomah University
Carmen Fowler Laberge, President, Presbyterian Lay Committee
Colin P. Watson, Sr., Director of Ministries and Administration, Christian Reformed Church in North America
Dr. Don Argue, Ambassador at Large, Convoy of Hope
Scott Ridout, President, Converge
Rev. Dr. Liz Mosbo VerHage, Associate Pastor, Quest Church
Gregory Loewer, Pastor for Missions, Columbia Baptist Church
Jim Lyon, General Director, Church of God Ministries
Constantine M. Triantafilou, Executive Director & CEO, International Orthodox Christian Charities (IOCC)
Alan Robinson, National Director, Brethren in Christ, U.S.
Mark S. Young, President, Denver Seminary
M. Craig Barnes, President, Princeton Theological Seminary
Adam Pray, Minister, theChurch.at
Dennis Hollinger, Ph.D., President, Gordon-Conwell Theological Seminary
Alan Cureton, President, University of Northwestern
Jon Middendorf, Pastor, OKC First Church of the Nazarene
Rev. Bobby Griffith, Jr., Pastor, City Presbyterian Church
Rev. David Cassidy, Pastor, Christ Community Church
Dr. Timothy J. Brooks, Lead Pastor, South Portland Church of the Nazarene
Rev. Doug Serven, Pastor, City Presbyterian Church
Rev. Dan Claire, Rector, Church of the Resurrection
Rev. Joel St. Clair, Pastor, Mosaic Community Church
Dr. O. Alan Noble, Assistant Professor of English, Oklahoma Baptist University
Rev. Dr. Irwyn Ince Jr., Pastor, City of Hope Presbyterian Church
Rev. Russ Whitfield, Pastor, Grace Mosaic Church
The Right Rev. Dr. Steven A. Breedlove, Diocese, Christ our Hope, Anglican Church in North America
Rev. Alan Cross, Executive Director, Community Development Initiatives, Montgomery Baptist Association
Rev. Dr. James C. Howell, Senior Pastor, Myers Park United Methodist Church
Rev. Don Flowers, Jr., Senior Pastor, Providence Baptist Church
The Most Rev. Dr. Foley Beach, Archbishop, Anglican Church in North America
Dr. Chris Ellis, Minister of Mission and Outreach, Second Baptist Church
Dr. Stephen Cook, Senior Pastor, Second Baptist Church
Dr. Christopher Pollock, Lead Pastor, Midtown Church
Peter Greer, CEO, HOPE International
David W. Kendall, Bishop, Free Methodist Church, USA
David T. Roller, Bishop, Free Methodist Church, USA
Matthew A. Thomas, Bishop, Free Methodist Church, USA
Justin B. Fung, Pastor of Teaching & Formation, The District Church
Jason Surratt, Pastor of Stewardship and Global Missions, Seacoast Church
Dr. Gregg Okkesson, Dean, Asbury Theological Seminary
Stephanie Summers, CEO, Center for Public Justice
Ruth Anne Reese, Ph.D., Professor of New Testament, Asbury Theological Seminary
Brandon Heath, Singer/Songwriter
Dr. Stephen Offutt, Assistant Professor of Development Studies, Asbury Theological Seminary
Matt Maher, Singer/Songwriter
Jonathan Martin, Writer and Speaker
Aaron Graham, Lead Pastor, The District Church
Rev. Eugene Cho, Lead Pastor & Founder, Quest Church/One Day's Wages

CC:

Hon. DONALD TRUMP, *President;*
Hon. MIKE PENCE, *Vice President;*
Hon. REX TILLERSON, *Secretary of State.*

SUBMITTED LETTERS BY HON. JIMMY PANETTA, A REPRESENTATIVE IN CONGRESS FROM CALIFORNIA

February 27, 2017

Hon. PAUL RYAN,
Speaker of the House,
U.S. House of Representatives,
Washington, D.C.;
Hon. NANCY PELOSI,
Minority Leader,
U.S. House of Representatives,
Washington, D.C.;
Hon. MITCH MCCONNELL,
Majority Leader,
U.S. Senate,
Washington, D.C.;
Hon. CHARLES E. SCHUMER,
Minority Leader,
U.S. Senate,
Washington, D.C.

Dear Speaker Ryan, Minority Leader Pelosi, Majority Leader McConnell, and Minority Leader Schumer:

As you and your colleagues address the Federal budget for Fiscal Year 2018, we write as retired three and four star flag and general officers from all branches of the armed services to share our strong conviction that elevating and strengthening diplomacy and development alongside defense are critical to keeping America safe.

We know from our service in uniform that many of the crises our nation faces do not have military solutions alone—from confronting violent extremist groups like ISIS in the Middle East and North Africa to preventing pandemics like Ebola and stabilizing weak and fragile states that can lead to greater instability. There are 65 million displaced people today, the most since World War II, with consequences including refugee flows that are threatening America's strategic allies in Israel, Jordan, Turkey, and Europe.

The State Department, USAID, Millennium Challenge Corporation, Peace Corps and other development agencies are critical to preventing conflict and reducing the need to put our men and women in uniform in harm's way. As Secretary James Mattis said while Commander of U.S. Central Command, "If you don't fully fund the State Department, then I need to buy more ammunition." The military will lead the fight against terrorism on the battlefield, but it needs strong civilian partners in the battle against the drivers of extremism—lack of opportunity, insecurity, injustice, and hopelessness.

We recognize that America's strategic investments in diplomacy and development—like all of U.S. investments—must be effective and accountable. Significant reforms have been undertaken since 9/11, many of which have been embodied in recent legislation in Congress with strong bipartisan support—on human trafficking, the rights of women and girls, trade and energy in Africa, wildlife trafficking, water, food security, and transparency and accountability.

We urge you to ensure that resources for the International Affairs Budget keep pace with the growing global threats and opportunities we face. Now is not the time to retreat.

Sincerely,

1. General KEITH B. ALEXANDER, USA (Ret.), *Director,* National Security Agency (2005–2014), *Commander,* U.S. Cyber Command (2010–2014)
2. General JOHN R. ALLEN, USMC (Ret.), *Commander,* NATO International Security Force (2011–2013), *Commander,* U.S. Forces-Afghanistan (2011–2013)
3. Lt. General EDWARD G. ANDERSON III, USA (Ret.), *Vice Commander,* U.S. Element, North American Aerospace Defense Command/*Deputy Commander,* U.S. Northern Command (2002–2004)
4. Lt. General THOMAS L. BAPTISTE, USAF (Ret.), *Deputy Chairman,* NATO Military Committee (2004–2007)
5. Lt. General RONALD R. BLANCK, USA (Ret.), *Surgeon General* of the United States Army (1996–2000)
6. Lt. General H. STEVEN BLUM, USA (Ret.), *Deputy Commander,* U.S. North American Aerospace Defense Command and U.S. Northern Command (2009–2010)
7. Lt. General STEVEN W. BOUTELLE, USA (Ret.), *Chief Information Officer and G6,* United States Army (2003–2007)
8. Admiral FRANK L. BOWMAN, USN (Ret.), *Director,* Naval Nuclear Propulsion (1996–2004)
9. General CHARLES G. BOYD, USAF (Ret.), *Deputy Commander in Chief,* U.S. European Command (1992–1995)
10. General BRYAN DOUG BROWN, USA (Ret.), *Commander,* U.S. Special Operations Command (2003–2007)
11. General ARTHUR E. BROWN, JR., USA (Ret.), *Vice Chief of Staff* of the United States Army (1987–1989)
12. Vice Admiral MICHAEL BUCCHI, USN (Ret.), *Commander* of the United States Third Fleet (2000–2003)
13. Lt. General JOHN H. CAMPBELL, USAF (Ret.), *Associate Director of Central Intelligence for Military Support,* Central Intelligence Agency (2000–2003)
14. General BRUCE CARLSON, USAF (Ret.), *Director,* National Reconnaissance Office (2009–2012)
15. General GEORGE W. CASEY, JR., USA (Ret.), *Chief of Staff* of the United States Army (2007–2011)
16. Lt. General JOHN G. CASTELLAW, USMC (Ret.), *Deputy Commandant for Programs and Resources* (2007–2008)
17. Lt. General DENNIS D. CAVIN, USA (Ret.), *Commander,* U.S. Army Accessions Command (2002–2004)
18. General PETER W. CHIARELLI, USA (Ret.), *Vice Chief of Staff,* U.S. Army (2008–2012)
19. Lt. General DANIEL W. CHRISTMAN, USA (Ret.), *Superintendent,* United States Military Academy (1996–2001)
20. Lt. General GEORGE R. CHRISTMAS, USMC (Ret.), *Deputy Chief of Staff for Manpower and Reserve Affairs* (1994–1996)
21. Admiral VERN CLARK, USN (Ret.), *Chief of Naval Operations* (2000–2005)
22. Admiral ARCHIE R. CLEMINS, USN (Ret.), *Commander in Chief,* U.S. Pacific Fleet (1996–1999)
23. General RICHARD A. "DICK" CODY, USA (Ret.), *Vice Chief of Staff,* United States Army (2004–2008)
24. Lt. General JOHN B. CONAWAY, USAF (Ret.), *Chief,* National Guard Bureau (1990–1993)
25. General JAMES T. CONWAY, USMC (Ret.), *Commandant,* U.S. Marine Corps (2006–2010)
26. General JOHN D.W. CORLEY, USAF (Ret.), *Commander,* Air Combat Command (2007–2009)
27. General BANTZ J. CRADDOCK, USA (Ret.), *Commander,* U.S. European Command and NATO Supreme Allied Commander Europe (2006–2009)
28. Vice Admiral LEWIS W. CRENSHAW, JR., USN (Ret.), *Deputy Chief of Naval Operations for Resources, Requirements, and Assessments* (2004–2007)
29. Lt. General JOHN "MARK" M. CURRAN, USA (Ret.), *Deputy Commanding General Futures,* U.S. Army Training and Doctrine Command (2003–2007)
30. General TERRENCE R. DAKE, USMC (Ret.), *Assistant Commandant,* U.S. Marine Corps (1998–2000)
31. Lt. General ROBERT R. DIERKER, USAF (Ret.), *Deputy Commander,* U.S. Pacific Command (2002–2004)
32. Admiral KIRKLAND H. DONALD, USN (Ret.), *Director,* Naval Nuclear Propulsion (2004–2012)
33. Lt. General JAMES M. DUBIK, USA (Ret.), *Commander,* Multi National Security Transition Command and NATO Training Mission-Iraq (2007–2008)
34. Lt. General KENNETH E. EICKMANN, USAF (Ret.), *Commander,* Aeronautical Systems Center, U.S. Air Force (1996–1998)
35. Admiral WILLIAM J. FALLON, USN (Ret.), *Commander,* U.S. Central Command (2007–2008)
36. Admiral THOMAS B. FARGO, USN (Ret.), *Commander,* U.S. Pacific Command (2002–2005)
37. Admiral MARK P. FITZGERALD, USN (Ret.), *Commander,* U.S. Naval Forces Europe (2007–2010) and U.S. Naval Forces Africa (2009–2010)
38. General RONALD R. FOGLEMAN, USAF (Ret.), *Chief of Staff* of the United States Air Force (1994–1997)
39. Lt. General BENJAMIN C. FREAKLEY, USA (Ret.), *Commander,* U.S. Army Accessions Command (2007–2012)
40. Lt. General ROBERT G. GARD, JR., USA (Ret.), *President,* National Defense University (1977–1981)
41. Admiral JONATHAN W. GREENERT, USN (Ret.), *Chief of Naval Operations* (2011–2015)

42. Lt. General ARTHUR J. GREGG, USA (Ret.), *Army Deputy Chief of Staff* (1979–1981)
43. Lt. General WALLACE C. GREGSON, USMC (Ret.), *Commanding General,* Marine Corps Forces Pacific and Marine Corps Forces Central Command (2003–2005)
44. Vice Admiral LEE F. GUNN, USN (Ret.), *Inspector General,* U.S. Navy (1997–2000)
45. General MICHAEL W. HAGEE, USMC (Ret.), *Commandant,* U.S. Marine Corps (2003–2006)
46. Lt. General MICHAEL A. HAMEL, USAF (Ret.), *Commander,* Air Force Space and Missile Systems Center (2005–2008)
47. General JOHN W. HANDY, USAF (Ret.), *Commander,* U.S. Transportation Command and Commander, Air Mobility Command (2001–2005)
48. Admiral JOHN C. HARVEY, JR., USN (Ret.), *Commander,* U.S. Fleet Forces Command (2009–2012)
49. General RICHARD E. HAWLEY, USAF (Ret.), *Commander,* Air Combat Command (1996–1999)
50. General MICHAEL V. HAYDEN, USAF (Ret.), *Director,* Central Intelligence Agency (2006–2009)
51. General PAUL V. HESTER, USAF (Ret.), *Commander,* Pacific Air Forces, *Air Component Commander* for the U.S. Pacific Command Commander (2004–2007)
52. General JAMES T. HILL, USA (Ret.), *Commander,* U.S. Southern Command (2002–2004)
53. Admiral JAMES R. HOGG, USN (Ret.), *U.S. Military Representative,* NATO Military Committee (1988–1991)
54. Lt. General WALTER S. HOGLE JR., USAF (Ret.), *Commander,* 15th Air Force (2000–2001)
55. Lt. General STEVEN A. HUMMER, USMC (Ret.), *Deputy Commander for Military Operations,* U.S. Africa Command (2013–2015)
56. Lt. General WILLIAM E. INGRAM, JR., USA (Ret.), *Director,* U.S. Army National Guard (2011–2014)
57. General JAMES L. JAMERSON, USAF (Ret.), *Deputy Commander in Chief,* U.S. European Command (1995–1998)
58. Lt. General ARLEN D. JAMESON, USAF (Ret.), *Deputy Commander in Chief,* U.S. Strategic Command (1993–1996)
59. Admiral GREGORY G. JOHNSON, USN (Ret.), *Commander,* U.S. Naval Forces Europe/*Commander in Chief,* Allied Forces Southern Europe (2001–2004)
60. Admiral JEROME L. JOHNSON, USN (Ret.), *Vice Chief of Naval Operations* (1990–1992)
61. Lt. General P.K. "KEN" KEEN, USA (Ret.), *Chief,* Office of the U.S. Defense Representative to Pakistan (2011–2013)
62. Lt. General RICHARD L. KELLY, USMC (Ret.), *Deputy Commandant, Installations and Logistics* (2002–2005)
63. Lt. General CLAUDIA J. KENNEDY, USA (Ret.), *Deputy Chief of Staff for Army Intelligence* (1997–2000)
64. General PAUL J. KERN, USA (Ret.), *Commanding General,* U.S. Army Materiel Command (2001–2004)
65. General WILLIAM F. KERNAN, USA (Ret.), *Supreme Allied Commander, Atlantic/Commander in Chief,* U.S. Joint Forces Command (2000–2002)
66. Lt. General DONALD L. KERRICK, USA (Ret.), *Deputy National Security Advisor to The President of the United States* (2000–2001)
67. Lt. General BRUCE B. KNUTSON, USMC (Ret.), *Commanding General,* Marine Corp Combat Command (2000–2001)
68. Vice Admiral ALBERT H. KONETZNI, JR., USN (Ret.), *Deputy Commander,* U.S. Fleet Forces Command and U.S. Atlantic Fleet (2001–2004)
69. General CHARLES CHANDLER KRULAK, USMC (Ret.), *Commandant* of the Marine Corps (1995–1999)
70. Lt. General WILLIAM J. LENNOX, JR., USA (Ret.), *Superintendent,* United States Military Academy (2001–2006)
71. Vice Admiral STEPHEN F. LOFTUS, USN (Ret.), *Deputy Chief of Naval Operations for Logistics* (1990–1994)
72. General LANCE W. LORD, USAF (Ret.), *Commander,* U.S. Air Force Space Command (2002–2006)
73. Admiral JAMES M. LOY, USCG (Ret.), *Commandant,* U.S. Coast Guard (1998–2002)
74. Vice Admiral JOSEPH MAGUIRE, USN (Ret.), *Deputy Director for Strategic Operational Planning,* National Counterterrorism Center (2007–2010)
75. Admiral HENRY H. MAUZ, JR., USN (Ret.), *Commander in Chief,* U.S. Atlantic Fleet (1992–1994)
76. Vice Admiral JUSTIN D. MCCARTHY, SC, USN (Ret.), *Deputy Chief of Naval Operations, Fleet Readiness, and Logistics* (2004–2007)
77. Lt. General DENNIS MCCARTHY, USMC (Ret.), *Commander,* Marine Forces Reserve (2001–2005)
78. Vice Admiral JOHN "MIKE" M. MCCONNELL, USN (Ret.), *Director* of the National Security Agency (1992–1996)
79. General DAVID D. MCKIERNAN, USA (Ret.), *Commander,* International Security Assistance Force in Afghanistan (2008–2009)
80. General DAN K. MCNEILL, USA, (Ret.), *Commander,* International Security Assistance Force (ISAF) in Afghanistan (2007–2008)
81. General MERRILL A. MCPEAK, USAF (Ret.), *Chief of Staff,* U.S. Air Force (1990–1994)
82. Lt. General PAUL T. MIKOLASHEK, USA (Ret.), *Inspector General,* U.S. Army/*Commanding General* of the Third U.S. Army Forces Central Command (2000–2002)
83. Vice Admiral JOSEPH S. MOBLEY, USN (Ret.), *Commander,* Naval Air Force, U.S. Atlantic Fleet (1998–2001)
84. General THOMAS R. MORGAN, USMC (Ret.), *Assistant Commandant* of the U.S. Marine Corps (1986–1988)
85. Lt. General CAROL A. MUTTER, USMC (Ret.), *Deputy Chief of Staff, Manpower and Reserve Affairs,* Marine Corps (1996–1998)
86. Admiral ROBERT J. NATTER, USN (Ret.), *Commander,* Fleet Forces Command/*Commander,* U.S. Atlantic Fleet (2000–2003)
87. General WILLIAM L. NYLAND, USMC (Ret.), *Assistant Commandant,* U.S. Marine Corps (2002–2005)
88. Lt. General TAD J. OELSTROM, USAF (Ret.), *Superintendent,* U.S. Air Force Academy (1997–2000)
89. Admiral ERIC T. OLSON, USN (Ret.), *Commander,* U.S. Special Operation Command (2007–2011)
90. Lt. General H.P. "PETE" OSMAN, USMC (Ret.), *Commanding General* II MEF (2002–2004)
91. Lt. General JEFFREY W. OSTER, USMC (Ret.), *Deputy Administrator and Chief Operating Officer,* Coalition Provisional Authority, Iraq (2004), *Deputy Commandant for Programs and Resources,* Headquarters Marine Corps (1998)
92. Admiral WILLIAM A. OWENS, USN (Ret.), *Vice Chairman,* Joint Chiefs of Staff, (1994–1996)
93. Lt. General FRANK A. PANTER, JR., USMC (Ret.), *Deputy Commandant for Installations and Logistics* (2009–2012)
94. Vice Admiral DAVID PEKOSKE, USCG (Ret.), *Vice Commandant,* U.S. Coast Guard (2009–2010)
95. General DAVID H. PETRAEUS, USA (Ret.), *Director,* Central Intelligence Agency (2011–2012); *Commander,* Coalition Forces in Afghanistan (2010–2011) and Iraq (2007–2008)
96. Vice Admiral CAROL M. POTTENGER, USN (Ret.), *Deputy Chief of Staff for Capability Development,* NATO Allied Command Transformation (2010–2013)
97. Admiral JOSEPH W. PRUEHER, USN (Ret.), *Commander in Chief,* U.S. Pacific Command (1996–1999)
98. Lt. General HARRY D. RADUEGE, JR., USAF (Ret.), *Director,* Defense Information Systems Agency/*Commander,* Joint Task Force for Global Network Operations/*Deputy Commander,* Global Network Operations and Defense, U.S. Strategic Command Joint Forces Headquarters, Information Operations (2000–2005)
99. Vice Admiral NORMAN W. RAY, USN (Ret.), *Deputy Chairman,* NATO Military Committee (1992–1995)
100. Lt. General JOHN F. REGNI, USAF (Ret.), *Superintendent,* United States Air Force Academy (2005–2009)
101. General VICTOR "GENE" E. RENUART, USAF (Ret.), *Commander,* North American Aerospace Defense Command and U.S. Northern Command (2007–2010)
102. General ROBERT W. RISCASSI, USA (Ret.), *Commander in Chief,* United Nations Command/*Commander in Chief,* Republic of Korea/U.S. Combined Forces Command (1990–1993)
103. Lt. General NORMAN R. SEIP, USAF (Ret.), *Commander,* 12th Air Force /Air Forces Southern (2006–2009)
104. General HENRY H. SHELTON, USA (Ret.), *Chairman,* Joint Chiefs of Staff (1997–2001)
105. Admiral WILLIAM D. SMITH, USN (Ret.), *U.S. Military Representative,* NATO Military Committee (1991–1993)
106. Admiral LEIGHTON W. SMITH, JR., USN (Ret.), *Commander in Chief,* U.S. Naval Forces Europe/*Commander in Chief,* Allied Forces Southern Europe (1994–1996)
107. Lt. General JAMES N. SOLIGAN, USAF (Ret.), *Deputy Chief of Staff for Transformation,* Allied Command Transformation (2006–2010)
108. Admiral JAMES G. STAVRIDIS, USN (Ret.), *Commander,* U.S. European Command and *NATO Supreme Allied Commander,* Europe (2009–2013)
109. Lt. General MARTIN R. STEELE, USMC (Ret.), *Deputy Chief of Staff for Plans, Policies and Operations,* U.S. Marine Corps (1997–1999)

110. General CARL W. STINER, USA (Ret.), *Commander in Chief,* U.S. Special Operations Command (1990–1993)
111. Vice Admiral EDWARD M. STRAW, USN (Ret.), *Director,* Defense Logistics Agency (1992–1996)
112. Vice Admiral WILLIAM D. SULLIVAN, USN (Ret.), *U.S. Military Representative* to NATO Military Committee (2006–2009)
113. Lt. General WILLIAM J. TROY, USA (Ret.), *Director,* Army Staff (2010–2013)
114. Admiral HENRY G. ULRICH, USN (Ret.), *Commander,* U.S. Naval Forces Europe/*Commander,* Joint Forces Command Naples (2005–2008)
115. General CHARLES F. WALD, USAF (Ret.), *Deputy Commander,* U.S. European Command (2002–2006)
116. General WILLIAM S. WALLACE, USA (Ret.), *Commanding General,* U.S. Army Training and Doctrine Command (2005–2008)
117. Lt. General WILLIAM "KIP" E. WARD, USA (Ret.), *Commander,* U.S. Africa Command (2007–2011)
118. General CHARLES E. WILHELM, USMC (Ret.), *Commander,* U.S. Southern Command (1997–2000)
119. General MICHAEL J. WILLIAMS, USMC (Ret.), *Assistant Commandant,* U.S. Marine Corps (2000–2002)
120. General RONALD W. YATES, USAF (Ret.), *Commander,* Air Force Materiel Command (1992–1995)
121. General ANTHONY C. ZINNI, USMC (Ret.), *Commander in Chief,* U.S. Central Command (1997–2000)

CC:

Secretary of State REX TILLERSON,
Secretary of Defense JAMES MATTIS,
National Security Advisor H.R. MCMASTER.

May 22, 2017

Hon. REX TILLERSON,
Secretary,
U.S. Department of State
Washington, D.C.

Dear Secretary Tillerson,

As business leaders, we are writing to voice our strong belief in the return on investment from the U.S. International Affairs Budget in advancing America's economic interests overseas and supporting jobs at home.

With 95 percent of the world's consumers outside the United States and many of the fastest growing economies in the developing world, now is the time to double down on America's global economic leadership. America's diplomats and development experts help build and open new markets for U.S. exports by doing what only government can do: fight corruption, strengthen the rule of law, and promote host country leadership to create the enabling environment for private investment. Our country's investments have generated impressive results: eleven of America's top fifteen export markets are in countries that have been recipients of U.S. foreign assistance.

Strategic investments in diplomacy and development make America safer and more prosperous. American companies depend on robust U.S. engagement overseas, especially in the fast growing markets in the developing world. Our embassies and consulates around the world are essential partners for American businesses to ensure we can compete on a level playing field. Trade promotion programs have helped drive American exports, which today make up almost 13 percent of America's $18 trillion economy and support about one in five American jobs.

The State Department and USAID are increasingly partnering with American businesses to catalyze and leverage private-sector expertise and resources to create sustainable solutions at scale on a range of challenges such as energy, health, and agriculture. And today, host countries themselves are driving policy changes to compete for American investments. Moreover, America's global economic leadership also embodies our country's values—promoting economic freedom, prosperity, and entrepreneurship that can mitigate the drivers of violent extremism in the world today. In today's global economy, we have a significant opportunity to strengthen the State Department, USAID, and our development agencies and the capacity to partner with the private-sector to address global challenges and to expand opportunity.

We are committed to working with you in your role as Secretary of State to share our perspectives on the importance of U.S. international affairs programs to boost our exports abroad and our jobs here at home, and we urge your support for a strong International Affairs Budget for Fiscal Year 2018.

Respectfully,

CHRIS POLICINSKI, *President and CEO,* Land O'Lakes
ANDREW TISCH, *Co-Chairman,* Loews Corporation
DAVID MACLENNAN, *Chairman and CEO,* Cargill
SARAH THORN, *Senior Director, Global Government Affairs,* Walmart
CAROLINE ROAN, *Vice President, Corporate Responsibility,* Pfizer, Inc.; *President,* Pfizer Foundation
KATE RUMBAUGH, *Vice President, Government Relations,* The Coca-Cola Company
JOHN MURPHY, *Senior Vice President for International Policy,* U.S. Chamber of Commerce
JIM COLLINS, *Executive Vice President,* DuPont
BRAD FIGEL, *Vice President Public Affairs North America,* Mars, Inc.
TERRY GRANT, *President,* Utah Market, KeyBank
TREY GRAYSON, *President & CEO,* Northern Kentucky Chamber of Commerce
KEITH GULLER, *CEO,* Essex Industries
DAN HALEY, *President & CEO,* Colorado Oil & Gas Association
DAVID HART, *Executive Vice President,* Florida Chamber of Commerce
CHRIS HENNEY, *President,* Ohio Agribusiness Association
AARON HERMSEN, *Director of Business Development,* China Iowa Group
DAVE HOFFERBERT, *President,* Bond Technologies, Inc.
GREGORY HOPKINS, *Partner & President,* Solitude Wealth Management
KEVIN HOUGEN, *President & CEO,* Aurora Chamber of Commerce

CONNIE JUSTICE, *President,* Planson International
PAUL NEUREITER, *Executive Director for International Government Affairs,* AMGEN
KATHRYN REILLY, *Global Director Public Affairs,* Aon
TARA HOGAN CHARLES, *Associate Director, Global Government Relations,* Procter & Gamble
H.C. SHIN, *Executive Vice President, International Operations,* 3M
MICHAEL BOYLE, *CEO,* Boyle Energy Services & Technology
BILL LANE, *Chair Emeritus,* U.S. Global Leadership Coalition
JEFF ROWE, *President of Global Seeds and North America,* Syngenta
PHILIP DE LEON, *Director, Public Affairs & International Business,* AGCO Corporation
HUGH WELSH, *President,* DSM Nutrition
PETER TICHANSKY, *President,* Business Council for International Understanding
DOUG GALEN, *CEO,* RippleWorks
DAVID WILHELM, *Partner & Chief Strategy Officer,* Hecate Energy
PAMELA VENZKE, *Global Government Affairs & Policy,* General Electric
FLORIZELLE LISER, *President & CEO,* Corporate Council on Africa
KATHRYN D. KAROL, *Vice President, Global Government & Corporate Affairs,* Caterpillar Inc.
DAN GAYNOR, *Global Communications,* Nike
KEVIN KOLEVAR, *Vice President, Global Government Affairs,* The Dow Chemical Company
LAURA LANE, *President, Global Public Affairs,* UPS
MELISSA FROEHLICH-FLOOD, *Vice President, Government Affairs,* Marriott
GARY M. COHEN, *Executive Vice President and President, Global Health and Development BD* (Becton, Dickinson and Company)
LISA MALLOY, *Senior Director, Global Policy Group,* Intel Corporation
KRIS CHARLES, *Senior Vice President, Global Corporate Affairs,* Kellogg
Ambassador RICHARD HOLWILL, *Vice President, Public Policy,* Amway
JEFFREY N. SIMMONS, *President,* Elanco Animal Health
TOM HALVERSON, *CEO,* CoBank
KEN FLETCHER, *CAO,* Pike Enterprises
PETER M. ROBINSON, *President & CEO,* United States Council for International Business
KARL JENSEN, *Senior Vice President,* National Governments, CH2M
WARD BREHM, *Founder, Chairman,* The Brehm Group
CHRIS KEULEMAN, *Vice President, Global Government Relations,* International Paper
FREDERICK S. HUMPHIES, JR., *Corporate Vice President, U.S. Government Affairs,* Microsoft CORPORATION
DAVE ADKISSON, *President & CEO,* Kentucky Chamber of Commerce
JOSEPH ALBERT, *Owner,* Eli H. Albert Agency
DIANE ALLEVA CACERES, *Principal,* Market Access International, Inc.
LUIS ARGUELLO, *President & CEO,* DemeTECH
JEREMY ARTHUR, *President & CEO,* Chamber of Commerce Association of Alabama
CONNIE BACON, *Commissioner,* Port of Tacoma
DOUG BADGER, *Executive Director,* Pacific Northwest International Trade Association
TRAVIS BARNES, *President & Founder,* Hotel Tango Artisan Distillery
GENE BARR, *President & CEO,* Pennsylvania Chamber of Business and Industry
KURT R. BAUER, *President & CEO,* Wisconsin Manufacturers & Commerce
LANE BEATTIE, *President & CEO,* Salt Lake Chamber
JON BENNETT, *Vice-President of Business Development,* Catalyze Dallas
THOMAS BENTLEY, *Owner & Chairman of the Board,* Bentley World Packaging
JOHN BERNLOEHR, *President,* Consolidated Metal Products, Inc.
CARL BLACKSTONE, *President & CEO,* Greater Columbia Chamber of Commerce
SILVIA BONILLAM, *Director, Small Business Development Center,* Illinois Hispanic Chamber of Commerce
ANTONIO BOYD, *President,* Think Tank Consulting Group, LLC
TONY BRAIDA, *Vice President,* Bankers Trust Global Banking
BECKY BROOKS, *President & Executive Director,* Ruidoso Valley Chamber of Commerce
KELLY BROUGH, *President & CEO,* Denver Metro Chamber of Commerce
CINDY BROWN, *President,* Chippewa Valley Bean
JOHN BRUNTZ, *President & CEO,* The Boulder Company
ANNE BURKETT, *Executive Director,* North Alabama International Trade Association
BOB BURLESON, *President,* Florida Transportation Builders Association
JAY BYERS, *President & CEO,* Greater Des Moines Partnership
STEVE CAIN, *President,* Triangle North Carolina British American Business Council
GALEN HULL, *President,* Hull International
THOMAS HULSEMAN, *Managing Director,* Metro Chicago Exports
MARK INGRAO, *President & CEO,* Greater Reston Chamber of Commerce
BOB JAMESON, *President & CEO,* Fort Worth Convention & Visitors Bureau
ANDREA JETT FLETCHER, *Executive Director,* French-American Chamber of Commerce
JOHN KALARAS, *CEO,* Quality Training Institute
JEFFREY B. KENDALL, *President,* JBK Integrated Solutions, LLC
ROBERT KILL, *President & CEO,* Enterprise Minnesota
JOSEPH KIRK, *Executive Director,* Mon Valley Progress Council
WALLY KOCEMBA, *Chairman & CFO,* Calhoun Companies
KATIE KRUGER, *CEO,* Denver Metro Commercial Association of REALTORS®
MATT KRUPP, *Co-Owner,* Desantis Krupp, LLC
KITTY KURTH, *President,* Kurth Lampe
EMILY LANE, *Vice President of Sales,* Calendar Islands Maine Lobster
CRAIG LANG, *President,* The Prairie Strategy Group
LLOYD LE PAGE, *President & CEO,* Heartland Global, Inc.
KIRK LEEDS, *CEO,* Iowa Soybean Association
DONNA LINDQUIST, *President,* Soleil Global Communications
LOU ANN LINEHAM, *President,* Linehan Associates, LLC
DOUG LOON, *President,* Minnesota Chamber of Commerce
KEVIN LUTZ, *President,* Armstrong Printery, Inc.
KEVON MAKELL, *Founder & CEO,* Seww Energy
Dr. TOBY MALICHI, *Founder, Global Chief Executive, and Ambassador of Trade,* Malichi Group Worldwide
RON MARSTON, *President & CEO,* HCCA International
FRANCES MARTINEZ, *Founder & CEO,* North Shore Latino Business Association, Inc.
NICK MASTRONARDI, *Founder & CEO,* POLCO
JASON MATHIS, *Executive Director,* Downtown Alliance
ROBERT MAYES, *CEO,* Keel Point
EDDIE MCBRIDE, *President & CEO,* Lubbock Chamber of Commerce
SANDI MCDONOUGH, *President & CEO,* Portland Business Alliance
CANDACE MCGRAW, *CEO,* Cincinnati/Northern Kentucky International Airport
LARRY MCQUEARY, *COO,* Indy Fuel
DANIEL MCVETY, *President,* Japan China Carolina
J. PATRICK MICHAELS, *Founder,* Chairman & CEO, CEA Group
DAVID MILTON, *Chief Supply Chain Officer,* Payless ShoeSource
MORTADA MOHAMED, *Executive Director,* Texas International Business Council
ANEEZAL MOHAMED, *General Counsel, Compliance Officer & Secretary,* Commercial Vehicle Group
BEAU MORROW, *Owner,* Left Hand Design
WILFRED MUSKENS, *President & CEO,* Stevens & Lee
RON NESS, *President,* North Dakota Petroleum Council
LAURA ORTEGA, *Executive Director,* International Business Council, Illinois Chamber of Commerce
ERSAL OZDEMIR, *President & CEO,* Keystone Corporation
SAUL NEWTON, *Executive Director,* Wisconsin Veterans Chamber of Commerce
JERRY PACHECO, *President,* Border Industrial Association
JIM PAGE, *President & CEO,* Chamber of Commerce of West Alabama
RICHARD PAULLIN, *Executive Director,* The International Trade Association of Greater Chicago
RAYMOND PILCHER, *President,* Raven Ridge Resources
HEATHER POTTERS, *Chief Business Development Officer,* PharmaJet, Inc.
RAMIRO PRUDENCIO, *President & CEO,* Burson-Marsteller Latin America
ROBERT QUICK, *President & CEO,* Commerce Lexington
LAURIE RADKE, *President,* Green Bay Area Chamber of Commerce
RONA RAHLF, *President & CEO,* Utah Valley Chamber of Commerce
BROOKS RAIFORD, *President & CEO,* North Carolina Technology Association (NCTA)
MICHAEL RALSTON, *President,* Iowa Association of Business and Industry
BEDE RAMCHARAN, *President & CEO,* Indatatech
OLGA RAMUNDO, *President,* Express Travel
JOSH RAWITCH, *Senior Vice President, Communications,* Arizona Diamondbacks
JOE REAGAN, *President & CEO,* St. Louis Regional Chamber
JEFF REIGLE, *President & CEO,* Regal Ware, Inc.
GENE REINEKE, *CEO,* Hawthorne Strategy Group
JOHN REINHART, *CEO & Executive Director,* Port of Virginia
COLIN RENK, *Executive Director,* America China Society of Indiana
SANDRA RENNER, *CEO,* FasTrack Global Expansion Solutions, Inc.
JIM ROCHE, *President,* Business & Industry Association of New Hampshire
BOB ROHRLACK, *President & CEO,* Greater Tampa Chamber of Commerce
ROBERT ROTONDO, *President,* Rotondo Enterprises, Inc.
JACK ROY, *Owner,* Jax Enterprises

WILLIAM CANARY, *President & CEO,* Business Council of Alabama
BEN CANNATTI, *Executive Director,* Main Street Jobs Coalition
JOHN CASPER, *President & CEO,* Oshkosh Chamber of Commerce
KIP CHEROUTES, *President,* Japan-U.S. Network, Inc.
LALIT CHORDIA, *President & Founder,* Thar Tech
GIL CISNEROS, *Chairman & CEO,* Chamber of the Americas
JAY CLEMENS, *President & CEO,* Associated Oregon Industries
JONATHAN COFFIN, *Vice President,* VOX Global
HARVEY COHEN, *President, KZB,* Inc.
TODD CONNOR, *CEO,* Bunker Labs
CARALYNN NOWINSKI COLLENS, *CEO,* UI LABS
ALFONSO CORNEJO, *President,* Hispanic Chamber Cincinnati USA
BILL CRONIN, *President & CEO,* Pasco Economic Development Council, Inc.
JOE CROOKHAM, *President,* Musco Lighting
MARYANN CRUSH, *Manager,* South Boston Transit Systems, LLC
DAN CULHANE, *President & CEO,* Ames Chamber of Commerce
YURI CUNZA, *President & CEO,* Nashville Area Hispanic Chamber of Commerce
ERIC DALLIMORE, *Owner,* Leon Gallery
SARAH DAVASHER-WISDOM, *COO,* Greater Louisville, Inc.
DANIEL DAVIS, *President & CEO,* Jacksonville Chamber of Commerce
RICHARD DAYOUB, *President & CEO,* Greater El Paso Chamber of Commerce
RYAN DECKERT, *President,* Oregon Business Association
CONNOR DEERING, *President,* Cemen Tech, Inc.
DUSTIN DEVRIES, *Co-Founder, Technology Consultant,* Caffeine Interactive Technologies
BRIAN DICKEN, *Vice President of Advocacy & Public Policy,* Toledo Regional Chamber of Commerce
BILLIE DRAGOO, *Founder & CEO,* RepuCare
STEVE DUST, *President & CEO,* Greater Cedar Valley Alliance and Chamber
BARRY DUVAL, *CEO,* Virginia Chamber of Commerce
LAURI ELLIOTT, *Chairman & Executive Director,* Afribiz Group, Inc.
JASON ESPINOZA, *President,* New Mexico Association of Commerce and Industry
JOE E. EVANS, *Owner,* Evtex Companies
KEITH EVANS, *President,* Key Financial Insurance Agency, Inc.
TERESA FAIDLEY, *Senior Vice President,* Schaumburg Bank & Trust Company N.A.
TERRY FANKHAUSER, *Executive Vice President,* Colorado Cattlemen's Association
RONALD J. FINLAYSON, *CEO,* E-Systems Corporation
BEVERLY FLATEN, *Vice President of International & Domestic Marketing,* JM Grain
HENRY FLORSHEIM, *President & CEO,* Wichita Falls Chamber of Commerce
MICHAEL FORD, *Chairman,* Mid-Atlantic District Export Council
NATHAN FRAMPTON, *President,* Fanimation
STEPHANIE FREEMAN, *President & CEO,* Dunwoody Perimeter Chamber
JENNY FULTON, *Founder,* Miss Jenny's Pickles
DAVID GESSEL, *Executive Vice President,* Utah Hospital Association
DAVID RUDD, *Partner,* Ballard Spahr, LLP
REBECCA RYAN, *Founder,* Next Generation Consulting
MEL SANDERSON, *Vice President of International Affairs,* Freeport McMoRan, Inc.
LYDIA SARSON, *Executive Director,* German American Chamber of Commerce of Philadelphia
JOE SAVARISE, *Executive Director,* Ohio Hotel & Lodging Association
CHRIS SAXMAN, *Executive Director,* Virginia FREE
DAVID SCHAFFERT, *CEO,* Olympia Thurston County Chamber of Commerce
DEAN SCHIEVE, *President,* Victus Motion and DMD Consulting
MICHAEL SCHMITT, *Executive Director,* America-Israel Chamber of Commerce Chicago
BRET SCHOLTES, *President & CEO,* Omega Protein Corporation
RALPH SCHULZ, *President,* Nashville Area Chamber of Commerce
MIKE SHANLEY, *Founder & CEO,* Konektid International
STEPHANIE SIMPSON, *Vice President,* Texas Association of Manufacturers
BILL SISSON, *President & CEO,* Mobile Chamber of Commerce
NATHAN SLONAKER, *President,* Columbus International Affairs Opportunity
JIM SPADACCINI, *CEO & Creative Director,* Ideum
BRUCE STEINBERG, *President,* Relyco
MICHAEL STRANGE, *President,* Bassett Ice Cream
CAROL STYMIEST, *President,* Canadian Business Association of North Carolina
GREG SUMMERHAYS, *President & CEO,* Sandy Area Chamber of Commerce
DAVID TAYLOR, *President,* Pennsylvania Manufacturers Association
CHRISTIAN THWAITES, *Chief Strategist,* Brouwer & Janachowski
JON TROEN, *President & CEO,* Mittera Group
BRETT VASSEY, *President & CEO,* Virginia Manufacturers Association
LIANE VENTURA, *Senior Vice President,* Greater Miami Chamber of Commerce
CHAD VORTHMANN, *Executive Vice President,* Colorado Farm Bureau
CHRIS WALLACE, *President,* Texas Association of Business
JEFF WASDEN, *President,* Colorado Business Roundtable
JOYCE WAUGH, *President & CEO,* Roanoke Chamber of Commerce
CHEROD WEBBER, *President & CEO,* Innovative Global Supply, LLC
ED WEBB, *President & CEO,* World Trade Center Kentucky
DEBORAH WILKINSON, *President,* Wilkinson Global Connections
SHERYL WOHLFORD, *Owner,* Automation-Plus
RICHARD YANG, *President,* Carolinas Chinese Chamber of Commerce
STEVEN ZYLSTRA, *President & CEO,* Arizona Technology Council
HOWARD GLICKEN, *Founder, Chairman & CEO,* The Americas Group
NEEL GONUGUNTLA, *President,* U.S. India Chamber Of Commerce DFW
DEAN GORDER, *Executive Director,* North Dakota Trade Office
MATT GLAZER, *Executive Director,* Austin Young Chamber of Commerce

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SUPPLEMENTARY MATERIAL SUBMITTED BY NAVYN SALEM, FOUNDER AND CHIEF EXECUTIVE OFFICER, EDESIA INC.

[June 27, 2017]

I appreciate the opportunity to submit additional information for the Congressional record. On behalf of myself and the people who work with me to make transformational, evidence-based ready-to-use foods, I want to say thank you for the opportunity to give a voice to those who have none, and who's lives and the lives of their children are in grave danger. Since 2010, I have appreciated the partnership of USAID and the USDA, two U.S. agencies that have never wavered in their shared commitment to help promote a more stable and secure world through the power of food aid.

I applaud the Committee's commitment to their efforts, which are both doing good in the world and creating economic opportunities in our communities. While all of the reasons below—national security, economic stability, increased GDP, job creation are important, Edesia is here first and foremost because we have the opportunity to the save lives. Together, we have the power to make a difference in the life of millions.

There are several issues that I wish to address in response to common themes of the hearing and Members' questions:

> Mr. MCGOVERN. . . . Since the President's budget is supposed to be a national security budget, let me throw the question out to you. How do you view

these programs as contributing to the U.S. national security interests both in the immediate and the long-term? Anybody?

Food security is national security and to this end USAID's Food for Peace is a critical partner in ensuring America's security. Hunger, food insecurity, and malnutrition are linked to violence, conflict, migratory activities, and potentially radicalization. These elements lead to political instability and terrorism that ultimately affect the United States. Food for Peace's food aid works to combat extreme deprivation, understanding that political stability depends on people's basic needs being met. We strongly support the comments of General Mattis and other military leadership on this issue—food aid is an essential tool for defense and is cheaper than bombs.

Mr. EVANS. . . . I would like to ask this question of everyone at the table. As we head into consideration of the farm bill expiring in September of 2018, what would each of you set forth as top issues for consideration?

Maintaining level funding authorization for food aid programs, especially Food for Peace, Title [II] of Public Law 83–480, is critical for American jobs and our mission in the world. In this climate of austerity, we ask that the Committee continue to protect food aid programs in the next farm bill. While we support some additional flexibility in food aid, we feel that in-kind food aid is an important part of the U.S. humanitarian response that creates economic opportunity at home, future trading partners abroad, and improved global security.

The commitment by this Committee, and the Agencies it oversees, to science-based, results-driven innovation has positioned American, companies, like Edesia, as industry leaders. This includes putting nutrition at the center of the food aid basket by focusing on the need for nutritional commodities that are effective and "fit for purpose",[1] such as ready-to-use foods and corn-soy blend, for vulnerable populations (young children, pregnant women, people living with HIV/AIDS) in addition to bulk commodities for feeding the general population. Ready-to-use foods currently account for only ~1.5% of the food aid basket purchase and we would like to see this percentage doubled in the program in order to meet more of the current needs of children with acute malnutrition. Investments in nutrition-specific solutions have a positive impact on long-term GDP growth and overall issues of safety and security both at home and abroad. In 1984, there were zero practical remedies for Ethiopian children enduring the extreme pain of famine. In 2017, the very best solutions are readily available and can easily be deployed anywhere famine exists. Tackling and ending the global health crisis of malnutrition in our time is now possible.

The CHAIRMAN. . . . How can we move toward self-sufficiency in countries *versus* continuing to do the emergency feeding? What can we do—*in lieu of,* just continuing to provide food—to allow these countries to transition to self-sufficiency?

Early intervention with the right "fit-for-purpose" nutritional products can lead to a lifetime of health and productivity for children who do not succumb to malnutrition or its effects. The nutritional support that USAID provides through food aid improves long-term stability and economic development. Reductions in chronic malnutrition rates can increase GDP by 4–11% in Asia and Africa,[2] creating countries which are more stable, and productive. These counties are able to not only support themselves but transition to becoming consumers in the global market. Along with food aid, development programs that focus on supply chains, agricultural markets, and nutrition education move countries toward self-sufficiency.

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[1] Webb, P., B. Rogers, I. Rosenberg, N. Schlossman, C. Wanke, J. Bagriansky, K. Sadler, Q. Johnson, J. Tilahun, A. Reese Masterson, A. Narayan. 2011. *Delivering Improved Nutrition: Recommendations for Changes to U.S. Food Aid Products and Programs.* Boston, MA: Tufts University.

[2] World Bank. 2016. *Investing in nutrition: the foundation for development—an investment framework to reach the global nutrition targets.* Washington, D.C. : World Bank Group. *http://documents.worldbank.org/curated/en/963161467989517289/Investing-in-nutrition-the-foundation-for-development-an-investment-framework-to-reach-the-global-nutrition-targets.*

SUPPLEMENTARY MATERIAL SUBMITTED BY THOMAS S. JAYNE, PH.D., FOUNDATION PROFESSOR OF AGRICULTURAL, FOOD, AND RESOURCE ECONOMICS AND CO-DIRECTOR, ALLIANCE FOR AFRICAN PARTNERSHIP, MICHIGAN STATE UNIVERSITY; ON BEHALF OF FARM JOURNAL FOUNDATION

The CHAIRMAN. . . . How can we move toward self-sufficiency in countries *versus* continuing to do the emergency feeding?

A recent U.K. study in Kenya and Ethiopia estimates that every $1 invested in resilience will result in $2.90 in reduced humanitarian spending and avoided losses as well as improved poverty, hunger, and malnutrition outcomes.

With roughly 70% of Africans currently engaged in agriculture, the U.S. should invest in; (a.) Agricultural Development that will help farmers grow more of their own food (b.) capacity building to strengthen agricultural and academic institutions, and (c.) technical assistance to strengthen local food systems and markets. These measures will address the root causes of food insecurity. A resilient food system and strong institutions will ultimately lessen the need for more costly humanitarian assistance when shocks like drought occur, and will help governments' better respond to their own needs.

Here are two examples of how U.S. Feed the Future investments are already having an impact, helping people to feed themselves and reducing the need for emergency aid;

Malawi—*A comparison of two communities in Malawi between 2016 and 2017 illustrates the point.*

- Last year, Malawi's 10 month humanitarian response cost the USG a total of $126 million in Food for Peace emergency, and some repurposed Feed the Future and ENV resources. According to the World Food Programme, the estimated cost to deliver food to one of the families was approximately **$390 per household over the 10 month response** period (including rations, transportation of food, and administrative costs). Other than the food rations the village had received, there was no other development assistance—**their situation strongly suggested that they would likely require food again during the next shock.**
- By contrast, a community in which USAID invested an estimated $376 per household **over 5 years** did not require food assistance during last year's emergency. Over the long-term, this comparison suggests that the savings from helping people become more self-sufficient could be extraordinary.
- Feed the Future is also assisting the private-sector and the Government of Malawi by providing technical assistance with warehouse receipts to help farmers store grain and achieve better prices, while also supporting food needs during deficit periods. This will help Malawi to be more resilient and less reliant on the U.S. for emergency assistance.

Ethiopia:

- Data USAID collected from the same households every 2 months over the course of the 2016 El Niño drought in Ethiopia's lowlands provides even more powerful evidence in this regard. Among those that experienced the most severe drought conditions, households in communities reached by Feed the Future's comprehensive resilience programs were largely able to maintain food security during the 2016 drought with only minor impacts on household nutrition despite the fact that the drought was more severe and farther reaching than the 1985 drought that led to widespread famine. By contrast, households in other communities that did not receive assistance with their agricultural practices experienced a significant, 30% decline in their food security status and required food assistance.

The CHAIRMAN. . . . What can we do—*in lieu of,* just continuing to provide food—to allow these countries to transition to self-sufficiency?

U.S. assistance can be more targeted to help transition to local ownership. A more cost-effective, direct approach should include;

1. A new approach that would shift the role of U.S. institutions from providing the technologies, services, and answers to equipping African organizations to do so themselves.
2. Significant investment on the part of the national governments in Africa—they must have 'skin in the game', to leverage U.S. investments, ensure sustainability and bolster national agrifood systems to maintain progress once

donor funds are no longer available, similar to what the Millennium Challenge Corporation (MCC) requires for country compacts.

3. The U.S. could provide more technical assistance to help governments maintain and rotate their grain reserves to use them more effectively. Government grain reserves exist across Africa in countries for instance, in: Malawi, Ethiopia, Kenya, Mali, Zimbabwe, Nigeria, Tanzania and Zambia. Ethiopia has been successful to some extent in managing their reserves, but others have been less successful with poor control of grain condition, management and rotations causing grain to rot, rather than be available when the countries need it most.
4. Proposals from U.S. grantees that include a plan from the outset that allows for a transition to nationally owned and operated programs
   - The World Food Programme and the World Bank published a report entitled "*Rethinking School Feeding: Social Safety Nets, Child Development, and the Education Sector* (*https://openknowledge.worldbank.org/bitstream/handle/10986/2634/48742.pdf*)." On pages 39 and 40, they report on "Key Elements of the School Feeding Program Transition Process". They found that successful transitions to nationally funded and operated school feeding programs usually include an agreement at the outset. They recommend that a successful plan include an agreement between the government and implementing partners about the duration of external assistance, and clear time frames and milestones for the transition process. This kind of approach could be applied to U.S. food aid programs like McGovern-Dole as host countries experience greater economic and agricultural growth. McGovern-Dole can step up the capacity building and Feed the Future would support the Agricultural side, connecting productive farmers to the school feeding market.
5. One could look at the viability of private initiatives, like the famine insurance scheme now overseen by the African Union. Theoretically, it might be an effective public-private partnership to reduce the need for emergency aid and could bring in more donor money. Having host governments and other donors contribute to insurance could reduce the U.S. humanitarian outlays significantly in strategic geographies in Africa.

The CHAIRMAN. Would you brief the group as to what AgriCorps does, Dr. Jayne?

AgriCorps is an innovative private model that uses recent agriculture graduates and faculty from U.S. institutions in partnership with 4–H or Future Farmers of America (FFA) to strengthen the capacity of agricultural education and extension in developing countries. They provide direct technical assistance to developing country partners at a fraction of the cost of International or U.S. partners. In 2016, they had 19 dynamic young fellows who volunteered for 1 year and embedded within a community or local organization in Ghana, sharing their technical expertise to improve practices. When the fellows return to the U.S., the impact of their work in Africa will continue. To reap all of the benefits of this program—not just overseas, but here at home as well—the Committee could recommend that returning AgriCorps participants be considered for key positions in American agriculture including those positions identified by USDA in workforce and succession planning. This would be a great model public-private model for the Agriculture Committee to consider in the farm bill to provide the kind of capacity building we suggest for Agricultural Development in our written testimony.

Mr. MCGOVERN. . . . Since the President's budget is supposed to be a national security budget, let me throw the question out to you. How do you view these programs as contributing to the U.S. national security interests both in the immediate and the long-term? Anybody?

Of the estimated 800 million people facing hunger globally, ½ are farmers. Helping farmers feed their families and have enough to sell on the local market will help their communities thrive. Locally gained food security through agricultural productivity and an improved food system will contribute to stability by stemming the flow of human migration and trafficking while reducing the number of people who join armed groups out of desperation to feed their families and make an adequate living.

Throughout the developed world, agriculture accounts for a significant share of countries' GDP and labor force. When agricultural development assistance from the United States and other donor nations is provided, this helps to improve the agricultural productivity of smallholder farmers and thus income generated by that sector

in a given country. This contributes to creating greater economic prosperity which tends to be shared fairly widely among the population. As individual farming households gain more discretionary income, they can afford to get their children educated, which improves the family's long-term financial prospects and when these gains are aggregated across villages and provinces, also bolsters the national economy and contributes to more secure nations.

Under such improved economic conditions, evidence suggests that the likelihood of sustained civil conflict or widespread militia/insurgent activity is reduced. On the other side of the coin, where poor economic opportunities persist, the likelihood of conflict grows. Recent examples abound—we know that the food price volatility experienced globally in 2007–08 spurred food riots in dozens of countries, and is seen as a major factor in the unrest, which toppled several governments during the Arab Spring. An extended drought in Syria between 2006 and 2009, limited local food availability and is considered a contributing factor in the civil conflict that arose in that country in 2011 and which has driven millions of Syrians to either become displaced internally or to migrate in search of safety and the opportunity to feed their children.

Today, there are an estimated 65 million people who have been forcibly displaced because of the threat that military conflict and/or food insecurity posed to them in their home countries, the highest number since the end of the Second World War. That total includes more than 22 million refugees primarily from the Middle East and Africa, who have placed large economic burdens on neighboring countries and created political backlashes in many other countries that are farther removed geographically.

When countries can produce more of their own food, they are less reliant on accessing the international market. Such markets are doubly risky because world food prices move not only because of commodity price shifts but also due to energy price volatility affecting the cost of ocean transport. The food price crisis of 2007–08 was amplified by energy price volatility over the same period, as oil prices soared from $70/barrel in January 2007 to $156/barrel in June 2008. Countries in Sub-Saharan Africa that had invested in agriculture and food systems fared better than African countries that rely heavily on imports to meet their basic food needs. For instance, in Uganda, when the prices of expensive imported commodities rose during the crisis, families purchased less expensive, locally grown alternatives on the market. As a result, Uganda's food security remained relatively stable.

A broader example of this relationship can also be seen in Rwanda. In 1994, a vicious civil war between two tribal groups broke out, which is estimated to have cost at ½ million lives. At the time, the country had a per capita GDP of about $107, and corn yields averaging only 1.2 tons per hectare in the 5 years leading up to the conflict. Since that conflict, and especially over the last several years, both the Rwandan Government and donor countries (the United States among them) have invested heavily in the country's agricultural sector—the latter to the tune of nearly $50 million per year, and maize yields have nearly doubled, to more than 2.3 tons per hectare. The country's per capita GDP is now about $700 per year, and child stunting rates have fallen. According to Worldwide Governance Indicators calculated by professional statisticians at the World Bank and the Brookings Institution, Rwanda was in the top ¼ of Sub-Saharan African countries in terms of their political stability as of 2015.

In a March 2017 letter to Congressional leadership, spearheaded by the U.S. Global Leadership Coalition, more than 120 retired Three- and Four-Star Generals and Admirals asserted that "elevating and strengthening diplomacy and development alongside defense are critical to keeping America safe." This letter was sent in response to the release of President Trump's s "skinny budget", which called for reducing funding at the U.S. Agency for International Development by 31 percent for Fiscal Year 2018. The full text of the letter can be found at this link: *http://www.usglc.org/2017/02/27/over-120-retired-generals-admirals-on-state-and-usaid-budget-now-is-not-the-time-to-retreat/*.

> Mr. EVANS. . . . I would like to ask this question of everyone at the table. As we head into consideration of the farm bill expiring in September of 2018, what would each of you set forth as top issues for consideration?

No one does Agriculture as well as the U.S. The upcoming farm bill offers Congress the opportunity to encourage USDA and the land-grant university system to leverage their strengths in agricultural research and institutional expertise in agricultural education and extension more effectively in U.S. global food security efforts. Recommendations are outlined in the written testimony, with some specifics below.

Increasing public sector funding for agricultural research and development is crucial to ensure that U.S. Agriculture maintains its comparative edge in

productivity. Funding for U.S. public Ag R&D over the years has flat lined. China, Brazil and India now outspending the U.S. $2.66 for every $1 the U.S. spends. We can leverage federal funding with State and Private-Sector funding to strengthen U.S. public R&D efforts.

We believe that such assistance not only benefits producers in developing countries, but over the long run, creates economic benefits for the United States as well, in terms of expanded market opportunities. This view was well expressed in an Op-Ed penned by Senator Jerry Moran in the June 2, 2017 issue of *Agri-Pulse.* In that Op-Ed, he pointed out that "by investing in global agriculture development, not only can we guide food-insecure countries down a path that leads to greater peace and prosperity, but we can also develop long-term trading partners who purchase Kansas grown food and agriculture products. That's a win-win." That Op-Ed can be found at the following link: *https://www.agri-pulse.com/articles/9315-opinion-global-agriculture-development-benefits-americas-farmers*.

The following steps be considered in relevant legislation:

Farm Bill Research Title

(1) Give USDA the flexibility to fund basic and applied research projects that are conducted outside the United States by lowering bureaucratic barriers for USDA (and State Agricultural Experiment Stations (SAESs)) engagement in international R&D by amending Section 1402 of the National Agricultural Research, Extension, and Teaching Policy Act of 1977 to "encourage intramural and extramural science programs in research, extension and teaching that strengthen American agriculture through global partnerships and engagement." This language would facilitate more work which is beneficial to both U.S. and foreign producers, such as on plant or animal disease, and could also strengthen the collaborative relationship between USDA and USAID on agricultural research, both in terms of research planning and execution.

(2) Update the basis of the formula funds provided for state agricultural experiment stations, putting more weight on the relative values of agricultural production as a basic determinant for cross-state allocation.

(3) Create a commodity check-off program or research assessment aimed specifically at generating funds for agricultural research to be managed outside existing U.S. check-offs programs. The government can offer matching funds (up to some predetermined limit), thus splitting the R&D burden between check-off programs and general tax revenues. Including other industries that benefit from agricultural R&D in the scheme (such as input suppliers and food processors) would allow for even more agricultural R&D and, if implemented wisely, substantially correct the persistent underinvestment in agricultural R&D.

Farm Bill Trade Title

(4) The U.S. Government made crucial investments through the African Graduate Fellowship Program beginning in the 1960s and 1970s to help developing countries create their own agricultural institutions and research capacity, but such long-term training efforts are largely a thing of the past today. In order to bring back some of this capability, we should consider bolstering funding for the Borlaug Fellows program, and provide at least some of the Fellows sufficient resources to pursue a full graduate degree.

(5) Coordinate Farmer-to-Farmer, Cochran and Borlaug Fellowships from an oversight perspective, and allow USDA flexibility to offer extension personnel and other agricultural specialists longer-term assignments to follow up on work with counterpart institutions in Africa, building on previous work conducted under Farmer-to-Farmer, Cochran and Borlaug projects.

(6) Capitalize on USDA's extensive knowledge and technical expertise to enhance capacity within (1) local agricultural extension systems working with millions of farmers; working from a local institutional base and (2) policy analysis units in developing nations, especially on SPS technical regulations, trade facilitation, and overcoming barriers to markets. USDA should undertake to develop monitoring and evaluation techniques that are more suitable for the long-term investments and payoffs that are characteristic of institution-building efforts. For instance;

a. Open the Cochran Fellows program to training government officials and private sector employees charged with overseeing SPS standards-setting testing and certification of food and agricultural products, with the aim of bringing those efforts up to international standards.

b. Augment the current Farmer-to-Farmer program to address intuitional capacity building needs in the areas they are serving, from a local institutional base. Congress could consider effective private capacity building models like AgriCorps, potentially through Farmer to Farmer. Upon returning to the

U.S., these AgriCorps fellows should be considered for employment in U.S. agriculture, including at USDA as the Department implements its workforce and succession plans.

c. Congress could also give USAID the flexibility to offer USDA extension personnel and other agricultural specialists long-term assignments to work with counterpart institutions in Africa. This approach might allow USDA to apply its domestic extension experience internationally to strengthen counterpart African public sector extension systems.

(7) Modify the statutory responsibilities of USDA agricultural attachés to include providing assistance to U.S. agribusiness firms engaged in commerce within developing countries, not just to those conducting trade with such countries.

Global Food Security Act Reauthorization

(8) Make U.S. capacity building programs more cost-effective by supporting more local African policy institutes, implementers and universities by encouraging leadership from African experts and organizations, even as both international and local players remain involved.

(9) Consider supporting programs that train scientists in Africa rather than in the U.S. to reduce costs.

(10) Require that national governments in Africa prioritize agriculture and provide budgets for these activities to leverage U.S. investments and ensure sustainability, similar to what the Millennium Challenge Corporation (MCC) requires for country compacts.

(11) Expand the Innovative Agricultural Research Initiative (iAGRI) program model established at the University of Sokoine in Tanzania to a multi-country pilot to scale-up teaching research, and extension programs that address organizational development challenges by providing management training and matching local organizations with sister organizations in the U.S., at a fraction of the cost of training in the U.S. The iAGRI project represents a unique combination of fostering a range of agricultural institutions within Tanzania, and similar efforts should be encouraged elsewhere in Sub-Saharan Africa. In addition to costing a fraction of what a U.S. based model costs, the host African institutions provide resources, further leveraging U.S. dollars and building sustainability.

> Mr. YOHO. . . . It is crucial that this Committee, indeed, all the Members of the House evaluate how we structure our nation's foreign aid.
>
> The world has changed and our methods of delivering foreign aid need to change as well. We must focus on efficiently transitioning aid recipient countries to trading partners. We need a paradigm shift from aid to trade.

In Sub-Saharan Africa, 41 African countries have signed compacts under the Comprehensive Africa Agriculture Development Program (CAADP), which commits them to review the needs in their own agricultural sectors and invest their own resources in addressing them. There are two concrete goals associated with such compacts—(1) allocate at least ten percent of their own government expenditures to the agricultural sector, and (2) achieve six percent annual growth in agricultural GDP.

As a result, on average, public agricultural expenditures have risen by more than seven percent per year across Africa since 2003, nearly doubling public agricultural expenditures since the launch of CAADP. USAID and USDA should consider requiring national governments in Africa to provide significant investment in Agriculture to ensure sustainability and bolster national agrifood systems, similar to what the Millennium Challenge Corporation (MCC) requires for country compacts. It might be necessary to ratchet up the required level of national investment through their national budgets gradually over a several year period, but the concept of requiring 'skin in the game' is a sound one. It helps ensure that the national government has a stake in maintaining funding to sustain those activities once U.S. funding flows have ended.

Shifting USAID to Trade

With Africa's projections for growth detailed in the written testimony, supporting Ag Development in Sub-Saharan Africa will lead to an exponential increase in economic growth in their economies, with positive market growth for U.S. Agriculture, and the broader U.S. economy. Here are some statistics on how the U.S. economy stands to benefit from trade *versus* aid;

1. **Many countries once dependent on food aid are now big buyers of U.S. food products.** According to USAID, 43 of the top 50 consumer nations of American agricultural products were once U.S. foreign aid recipients. One of these countries, Indonesia, has gone from being the largest recipient of

USDA food assistance just ten years ago, to becoming the United States' ninth-largest export market for agricultural, fish and forest products. In Fiscal Year 2010, the United States exported $2.3 billion worth of agricultural goods to Indonesia, a six-fold increase over the course of a decade. Similarly, South Korea, once a major U.S. aid recipient is the 6th largest importer of U.S. agricultural products in 2016, importing U.S. corn, meat, and other commodities (USDA).

2. **Africa's food import bill has risen seven-fold in the past 15 years to roughly $45 billion annually and will likely continue to expand rapidly especially with income growth.**

3. **Estimates of job created in the U.S. resulting from increased U.S. food exports (greater demand for transport services, finance, insurance, reinsurance, port facilities, storage, input supply, and farming) are significant. See below;**

U.S. agricultural exports more than doubled in value between 2006 and 2014, from $82 billion to $168 billion. Based on 2014 USDA/ERS estimates of the multiplier effects of U.S. agricultural exports, that increase supported nearly 650,000 jobs and generated $109 billion in additional U.S. economic activity over that period.

With respect to Sub-Saharan Africa, the $2.3 billion in U.S. agricultural exports shipped annually to that region on average over the last 5 years (2012–2016) supported 17,440 jobs throughout the U.S. economy and generated an additional $2.9 billion in U.S. economic activity each year here at home.

For concrete proposals from the written testimony that could be considered for the Farm Bill or GFSA Reauthorization, see the response to Mr. Evans.

JOINT SUBMITTED STATEMENT BY ACTION AGAINST HUNGER, *ET AL.**

Chairman Conaway and Ranking Member Peterson, as international humanitarian and development organizations devoted to addressing the needs of the most vulnerable people around the world, we would like to thank you for holding a hearing on June 7, entitled *The Next Farm Bill: The Future of International Food Aid and Agricultural Development.* We especially appreciate your words of support for these programs, and the steadfast commitment you have shown them over the years. We stand as ready partners to work with you and other Members of the House Committee on Agriculture and with the members of the House Appropriations Subcommittee on Agriculture, Rural Development, Food and Drug Administration and Related Agencies to ensure their continued funding in annual appropriations bills and that their reauthorization in the next farm bill retains existing flexibilities and improves how these programs function, while using taxpayer dollars as wisely as possible.

As U.S.-based charities and faith-based organizations, many of which are implementing these programs, we strongly oppose the elimination of funding for the Food for Peace and McGovern-Dole programs, as outlined in the Administration's FY 2018 Budget Proposal. Cutting lifesaving programs does not improve upon assistance or stretch dollars to reach more people. Instead, the Administration's proposal would gut our country's two largest food aid programs.

Cutting funding to the Food for Peace Title II program would leave over 41 million people without assistance,[1] 33 million of whom would almost certainly face hunger and starvation without such assistance.

The McGovern-Dole program provides school lunches for poor children in primary and secondary school. Oftentimes, the food distributed through the program is the only meal these children receive each day, and as a result, school attendance in program areas is greatly increased, especially for girls who likely would not receive an education without the incentives provided by the program. To date, McGovern-Dole has reached 40 million children and is active in 24 countries.

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*Statement submitted by: Action Against Hunger, The Borgen Project, Bread for the World, CARE, Catholic Relief Services, Church World Service, Global Citizen, Interaction, Mercy Corps, Modernizing Foreign Assistance Network, ONE, Oxfam America, Save the Children, World Food Program USA, World Vision U.S.

[1] *Food for Peace—Fiscal Year 2016 Programs,* U.S. Agency for International Development, undated *https://www.usaid.gov/sites/default/files/documents/1866/FY_2016_Fact_Sheet_FINAL_6.1.2017.pdf*.

At a time when more than 20 million people in four countries are currently at risk of famine, adequate funding levels from both authorizers and appropriators for these critical food aid programs is more important than ever. We therefore respectfully request that both the McGovern-Dole and Food for Peace be reauthorized in the next farm bill.

During the hearing, a number of questions were raised regarding how international food assistance programs are implemented, and their associated costs. We would like to respond to some of these points.

Integrity of Food Assistance

It was suggested during the hearing that the use of "cash" in programs was less secure than the use of commodities in programs. In this case, "cash" refers to cash transfers, vouchers, and local and regional procurement of food commodities. As many implementing organizations know, there are challenges to ensuring the security of any aid program, and many safeguards are put into place to protect the integrityof programs of both types of assistance.

Implementing organizations identify and deliver assistance under strict compliance requirements and take the necessary measures to ensure that resources reach the intended recipients. In commodity and cash programs, meticulous records are kept to ensure assistance is distributed to the right people and is not diverted to other purposes. In most programs, there is no government entity involved in handling these resources (the largest exception in current programs is the off-market monetization of food aid commodities arranged with the Government of Bangladesh). USAID implementing partners are accountable to the agency, and to Congress, in how they utilize these resources. They know who is receiving commodities, and they know what is being bought with vouchers and cash transfers. In both cases, implementers use real time data to monitor these programs. The scenario that some critics of different food aid modalities have painted of corrupt government officials skimming off the top is highly unlikely in either cash or commodity programs.

Cargo Preference

Several Committee Members inquired as to the costs related to cargo preference and the impact it has on food aid programs. The estimate that the costs associated with U.S.-flagged shipping is only about ten percent higher than competitively bid foreign flag vessels offered by the witness for USA Maritime at the hearing is lower than reported in recently published studies. Available data demonstrates the costs are much higher.

- In 2015, a report by the U.S. Government Accountability Office (GAO) found that cargo preference laws increased the cost of shipping across all food aid programs by 23 percent on average between 2011 and 2014, and by 36 percent just on USDA administered food aid programs.[2] The GAO also noted that this resulted in food aid programs spending approximately $107 million more on ocean freight during this period than they otherwise would have if cargo preference laws were not applied.
- Looking at food aid shipments from 2012 through mid-2015, the American Enterprise Institute (AEI) found that packaged shipments on U.S.-flagged vessels cost $61 more per ton and bulk shipments cost $33 more per ton.[3] According to AEI, cargo preference requirements added $50 million more a year to ocean freight costs during this period.
- And, in a 2011 study by the Maritime Administration, it was found that operating costs for U.S.-flagged vessels were 2.7 times more expensive than equivalent foreign flag vessels.[4]

It was also suggested during the hearing that cargo preference requirements for food aid programs be increased from the current 50 percent requirement. Given the impacts cargo preference requirements have on reducing beneficiary reach, we strongly oppose this idea and note it will only mean more food aid dollars going to

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[2] *International Food Assistance: Cargo Preference Increases Food Aid Shipping Costs, and benefits are Unclear,* GAO–15–666, August 26, 2015 *https://www.gao.gov/products/GAO-15-666.*

[3] Stephanie Mercier & Vincent H. Smith, *Military readiness and food aid cargo preference: Many costs and few benefits,* American Enterprise Institute, September 28, 2015, *http://www.aei.org/publication/military-readiness-and-food-aid-cargo-preference-many-costs-and-few-benefits/*.

[4] *Comparison of U.S. and Foreign-Flag Operating Costs,* U.S. Department of Transportation, Maritime Administration, September 2011, *https://www.marad.dot.gov/wpcontent/uploads/pdf/Comparison_of_US_and_Foreign_Flag_Operating_Costs.pdf.*

ocean freight and less going to the purchase of food for people in need. **We in fact encourage the Committee and all of Congress to find ways to reduce the impact of cargo preference on food aid programs.** This could be done by reducing or eliminating the current 50 percent requirement, and/or changing how cargo preference laws are applied. For instance, USDA food aid programs require that the minimum percentage be met by each awarded project, in each country, in each year. Moving away from such a narrow approach in calculating cargo preference would also reduce its impact on programs.

Monetization in Title II

Currently, the farm bill requires that 15 percent of the commodities used for development programs in title II be monetized. This means the commodities must be sold in foreign markets to raise proceeds that are then used to fund development programs. As the GAO reported in 2011, proceeds made through monetization on average only account for 75 percent of the total cost to purchase and ship those commodities in the first place, making monetization an inefficient means to fund programs.[5]

We recommend that the requirement to monetize in title II programs be replaced with permissive authority to utilize monetization. This will preserve the ability to use monetization in instances where it makes sense, while allowing programs to continue to move away from monetization when benefits do not outweigh its inherent inefficiencies. We also underscore that shifting monetization from a requirement to a permissive authority will not result in a change in the amount of U.S. commodities shipped overseas; it will simply end a requirement to sell those commodities once they arrive in a developing country.

Community Development Fund and Title II

The 2008 Farm bill established a minimum funding level for non-emergency, development programs under title II. These programs, referred to as the "safebox" or Development Food Aid Programs (DFAPs), are multi-sectoral, multi-year programs that address root causes of hunger. Without the assurance provided by the safebox, some believe that funding for long-term development could be diverted during times of high emergency needs, such as those we are currently experiencing. Stable funding for development programs is critical, as these programs often focus on building the resilience of vulnerable regions to withstand shocks, which can ultimately reduce the number of people in need of emergency assistance in future crises.

For the last several years, USAID has used waiver authority to substitute some title II funding going towards the safebox with funding from the Development Assistance account, under the auspices of the Community Development Fund (CDF). With the funding made available through the CDF, and additional funding for direct program costs made possible by changes in the 202(e) account during the last farm bill, USAID has substantially reduced the use of monetization in title II programs, thus making them more efficient. It is also important to note that use of CDF provides programs additional direct cash funding in a way that does not reduce the amount of U.S. commodities made available through title II—they are simply shifted to emergency uses.

We strongly recommend that the Committee support this arrangement in the next farm bill, and provide a means to USAID to implement this approach without relying on its waiver authority. Specifically, we ask the Committee to adopt provisions that allow USAID to use other funds it is appropriated in the implementation of title II safebox programs, and that funds used in this way may be counted towards the minimum required funding levels for non-emergency programs. Through this, the reliance of monetization is reduced, programs have more flexibility in the modalities they can utilize, and the level of commodities used in programs is not reduced.

Implementation of the Food for Peace Program

It was also suggested by the USA Maritime witness that USDA assume responsibility for implementing the Food for Peace program. We can only assume this suggestion was made because USA Maritime prefers to work under USDA's narrower interpretation of the cargo preference law that would result in greater use of U.S.-flagged vessels, as our experience in the actual management of programs does not present any reason to make such a drastic change.

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[5] *International Food Assistance: Funding Development Projects through the Purchase, Shipment, and Sale of U.S. Commodities Is Inefficient and Can Cause Adverse Market Impacts,* GAO–11–636, June 2011, *http://www.gao.gov/assets/330/320013.pdf*.

Title II programs are managed by USAID's Office of Food for Peace (OFFP). In addition to title II, the OFFP also manages implementation of the Emergency Food Security Program (EFSP), which funds cash-based emergency food assistance programs. This gives OFFP the ability to coordinate the entire U.S. emergency food assistance response, ensuring the commodities and cash made available are used in the most appropriate ways. The OFFP also works closely with the Office of Foreign Disaster Assistance (OFDA), which responds to non-food emergency needs, to ensure the full scope of emergency needs is addressed. Together, this allows USAID to effectively coordinate emergency response, despite the multiple funding streams that contribute to the response. Moving implementation of title II programs to an entirely different agency would likely diminish current coordination with EFSP and OFDA programming, making our emergency response efforts less effective.

Conclusion

Given the Administration's misguided decision to recommend the elimination of funding for these programs, now more than ever it is necessary to work together and redouble our efforts to fully fund these programs. We need to ensure that U.S. food and nutrition assistance reaches as many people as possible and responds to emergencies as quickly as possible. Updating food aid programs to allow them to operate more efficiently and help more people in need, while maintaining strong bipartisan support, should be everyone's goal. The ability of USAID to use the right tools at the right time to address hunger and malnutrition—including food vouchers, cash transfers, local and regional procurement, and U.S. commodities—is vital to ensuring that we can respond to crises effectively and that United States assistance reaches millions more people at no additional cost.

We look forward to working with your Committee, other Members of Congress and the range of interested stakeholders to strengthen food aid programs, fully fund food assistance in order to meet urgent humanitarian needs and build resilience in poor communities over the long term, to protect the core focus of helping hungry, malnourished, and vulnerable people, and to continue to increase the effectiveness of existing food assistance programs. Together, we can help ensure U.S. international food aid remains an American and global success.

SUBMITTED QUESTIONS

Response from Margaret Schuler, Senior Vice President, International Programs Group, World Vision, Inc.—U.S.

Questions Submitted by Hon. Stacey E. Plaskett, a Delegate in Congress from Virgin Islands

Question 1. Why does Food for Peace use multiple modalities in its operations, including commodities and cash transfers?

Answer. While a range of various food assistance modalities exist, there is no "right" intervention. General food distributions in times of emergency and non-emergency ensures beneficiaries receive sufficient calories, while supplementary food distributions often emphasize nutritious foods among pregnant and lactating women and their young children in the first 1,000 days of life.

In the U.S. context, through the Food for Peace program, U.S. grown commodities are sold to the U.S. Government by American farmers to be used in food assistance programming. This type of food aid is ideal when local markets are not functioning or there is insufficient food available to meet the local food need. When local market conditions are favorable and adequate quantities of food are available, local commodities can be purchased and then used in country or regional response efforts. In both contexts, this food assistance can be exchanged for participation in programs known as food for assets or food for work which are designed in an effort to address underlying causes of hunger and poverty, by building up the capacities and institutions of the impacted communities.

Additional modalities include cash transfers, which allow qualifying beneficiaries to purchase food and other household items in local markets. Vouchers are a form of cash-based transfers that are used when there is a perceived risk of transferring cash, or if there is a need to ensure people receive a specific type of food.

Before selecting a modality or multiple/modalities to be used in food assistance programming, a comparison of all options are considered and evaluated based on the following factors: appropriateness based on market conditions, feasibility and likelihood of success, objectives of the program, and the overall cost of the intervention.

The ability of USAID to use the right tools at the right time to address hunger and malnutrition—including food vouchers, cash transfers, local and regional procurement, and US commodities—is vital to ensuring that we can respond to crises

effectively and that United States assistance reaches millions more people at no additional cost.

Question 2. How do organizations like yours make sure taxpayer dollars are protected from waste, fraud and abuse?

Answer. It was suggested during the hearing that the use of "cash" in programs was less secure than the use of commodities in programs. In this case, "cash" refers to cash transfers, vouchers, and local and regional procurement of food commodities. As many implementing organizations know, there are challenges to ensuring the security of any aid program, and many safeguards are put into place to protect the integrity of programs of both types of assistance.

Implementing organizations identify and deliver assistance under strict compliance requirements and take the necessary measures to ensure that resources reach the intended recipients. In commodity and cash programs, meticulous records are kept to ensure assistance is distributed to the right people and is not diverted to other purposes. In most programs, there is no government entity involved in handling these resources (the largest exception in current programs is the off-market monetization of food aidcommodities arranged with the Government of Bangladesh).

USAID implementing partners are accountable to the agency, and to Congress, in how they utilize these resources. They know who is receiving commodities, and they know what is being bought with vouchers and cash transfers. In both cases, implementers use real time data to monitor these programs. The scenario that some critics of different food aid modalities have painted of corrupt government officials skimming off the top is highly unlikely in either cash or commodity programs.

Response from Brian W. Schoeneman, J.D., Political and Legislative Director, Seafarers International Union (AFL–CIO); on Behalf of USA Maritime*

Question Submitted by Hon. David Rouzer, a Representative in Congress from North Carolina

Question It seems to me that one thing that food aid reformers overlook are the economic benefits of sourcing our humanitarian assistance cargoes at home. Can you talk a little more about the different parts of the economy that benefit from the food aid programs?

Answer.

Questions Submitted by Hon. Stacey E. Plaskett, a Delegate in Congress from Virgin Islands

Question 1. The U.S. has established a 200 mile perimeter from its coastlines within which maritime vessels are required reduce their emissions.

To meet strict requirements triggered in 2015, ships have been switching to cleaner-burning, lower-sulfur fuel when they reach this zone.

Additional emission caps are pending for 2020 or 2025, which will apply to all shipping routes, including outside the 200 mile perimeter.

An OECD report concluded that this could have a significant impact on shipping costs.

What is your take on the effect this will have on shipping costs, and prices for end-users?

Answer.

Question 2. What do you believe is the appropriate role for the shipping industry in the area of environmental protection?

Answer.

*There was no response from the witness by the time this hearing was published.

THE NEXT FARM BILL

(SNAP TECHNOLOGY AND MODERNIZATION)

THURSDAY, JUNE 8, 2017

HOUSE OF REPRESENTATIVES,
SUBCOMMITTEE ON NUTRITION,
COMMITTEE ON AGRICULTURE,
Washington, D.C.

The Subcommittee met, pursuant to call, at 10:00 a.m., in Room 1300 of the Longworth House Office Building, Hon. Glenn Thompson [Chairman of the Subcommittee] presiding.

Members present: Representatives Thompson, DesJarlais, Hartzler, Davis, Yoho, Marshall, Faso, Arrington, McGovern, Adams, Evans, Lujan Grisham, Lawson, and Panetta.

Staff present: Caleb Crosswhite, Callie McAdams, Jennifer Tiller, Mary Rose Conroy, Rachel Millard, Stephanie Addison, Kellie Adesina, Lisa Shelton, Troy Phillips, and Carly Reedholm.

OPENING STATEMENT OF HON. GLENN THOMPSON, A REPRESENTATIVE IN CONGRESS FROM PENNSYLVANIA

The CHAIRMAN. Good morning. This hearing of the Subcommittee on Nutrition entitled, *The Next Farm Bill: SNAP Technology and Modernization,* will come to order.

Good morning once again. Welcome to everyone to today's Nutrition Subcommittee hearing on SNAP technology and modernization. Thank you to everyone for taking the time to be here, especially our four witnesses.

As many of you know, our Committee has conducted a thorough review of SNAP over, well, at this point, over the past 2½ years. And I want to take a moment to share why this was done and what we hope to achieve as we move to farm bill reauthorization.

First, this program touches more than 42 million Americans each month. It is the largest domestic hunger safety net program in the country. We have a responsibility to ensure that we evaluate how this anti-poverty program is serving those it intends to help.

Second, we need to get the policy right. As we approach the upcoming farm bill it is critical we understand opportunities to amend and improve the program to properly account for the changes that come with our evolving, technological world. This hearing's purpose is to discuss technology and modernization of SNAP, including areas to enhance program integrity, streamline delivery of services, improve the customer experience, and ease administrative burdens.

Today we will hear about two distinct systems SNAP state agencies utilize to determine program eligibility and issue benefits. On the issuance side, electronic benefits transfer, or EBT, is an electronic system that allows a recipient to authorize the transfer of their government benefits from a Federal account to a retailer account to pay for products received. It is important to note that the transition to EBT, completed in 2004, represented a tremendous step forward in improving the program's integrity, administrative efficiency, and customer service.

Prior to issuing benefits to households, state agencies determine whether households qualify for the program. To qualify for SNAP, applicants must meet the eligibility and income requirements mandated by Congress, which are tied to the Federal poverty level. New eligibility systems are rules-based, with SNAP law, regulations, and policy built in, generating eligibility calculations using program rules when workers enter households' data. Most states also rely on integrated eligibility systems, IESs, which determine eligibility for SNAP along with other benefits, such as Medicaid and TANF.

In addition to EBT and eligibility system modernizations, many states and counties are working on improving the experience of SNAP households through enhancements to their business processes and customer-facing technologies. Now, these and other technology initiatives, combined with data-driven business process improvements, can enhance administrative efficiency at the state level while making the process of applying for SNAP benefits more streamlined for households in need.

I want to thank all of our witnesses for sharing their time and their expertise. I look forward to hearing from experts in EBT, eligibility systems, customer-centric business processes and technology applications, and about how the evolution and innovation within those arenas helps to improve the efficiency of this important program.

[The prepared statement of Mr. Thompson follows:]

PREPARED STATEMENT OF HON. GLENN THOMPSON, A REPRESENTATIVE IN CONGRESS FROM PENNSYLVANIA

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In addition to EBT and eligibility system modernizations, many states and counties are working on improving the experience of SNAP households through enhancements to their business processes and customer-facing technology. These and other technology initiatives, combined with data-driven business process improvements, can enhance administrative efficiency at the state level while making the process of applying for SNAP benefits more streamlined for households in need.

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I now recognize Mr. McGovern for any opening comments he would like to make.

The CHAIRMAN. I now recognize my friend and colleague, Mr. McGovern, our Ranking Member, for his opening comments.

OPENING STATEMENT OF HON. JAMES P. MCGOVERN, A REPRESENTATIVE IN CONGRESS FROM MASSACHUSETTS

Mr. MCGOVERN. Well, thank you, Mr. Chairman. And I want to thank all of our witnesses for being here today, and I am pleased that we have the opportunity to discuss SNAP technology and modernization as we prepare for the next farm bill.

Modernizing our IT infrastructure to increase efficiency and improve access to benefits is certainly an important goal; one that I strongly support. We can constantly find ways to make improvements, and we know that there are some issues out there. I cringe every time I hear a story about a mother who is working two jobs and trying to raise a family, who ends up going to a grocery store and, for whatever reason, there is a glitch and her EBT card doesn't work and she can't buy her groceries. That is something that should not happen, and especially with all of our advanced technologies it shouldn't happen, and we certainly need to find ways to improve that.

But, I should also point out that a lot of the IT improvements that are moving forward, just like many other improvements we have discussed in our over 21 hearings on SNAP in this Committee, cost money. And I am deeply concerned about the availability of additional resources for SNAP, given the devastating budget that President Trump released a few weeks ago.

The President's budget, in case you forgot, cuts SNAP; our nation's first line of defense against hunger, by $193 billion. That is a 25 percent cut. What baffles me about the White House proposal is it attempts to gut a program that is working. And that is what we have learned in the 21 hearings that we have had here. It is one of the most efficient and effective Federal programs that we have. It helps to alleviate poverty, promote long-term health, and lessen hunger in communities all across this country.

In our hearings we have heard from witnesses, both Democratic witnesses and Republican witnesses, about the power of SNAP and

our anti-hunger safety net. We learned that the current benefit level, which averages about $1.40 per person, per day, is inadequate and certainly should not be cut. Among a number of other important points, we learned that supporting innovations in the program, creating evidence-based programs and good case management takes well-funded Federal investments.

President Trump's own Secretary of Agriculture, Sonny Perdue, told this Committee last month that SNAP is, "a very important, effective program." He told us that there was no need to dramatically reform the program because, "you don't try to fix things that aren't broken."

Now, I agree with Secretary Perdue on those points, and encourage President Trump and his OMB Director, Mick Mulvaney, our former colleague, to listen to the experts when it comes to SNAP and other anti-hunger programs.

In all of the hearings, we haven't heard from one witness who suggested cutting SNAP. President Trump's budget is reckless, and in my opinion, if it ever gets enacted, is heartless. We should do everything in our power to stop these dangerous proposals from advancing in this Congress.

So again, I welcome the conversation about IT modernization in SNAP. And let's continue to support good ideas, let's make this all better, let's make it easier for people to recertify. Again, a lot of the people we are talking about are working, and their lives are filled so they don't have time for endless bureaucracy or endless waiting, or making appointments, and they certainly should be able to make sure that their card works when they go into a grocery store. That means it is important that we realize to make these advancements, we cannot cut the program. SNAP cannot be an ATM machine for other priorities.

I look forward to hearing from our witnesses. I thank you for being here. And I yield back my time.

The CHAIRMAN. I thank the gentleman.

The chair would request that other Members submit their opening statements for the record so the witnesses may begin their testimony, and to ensure that there is ample time for questions.

And I would like to welcome our witnesses to the table. We are joined by Mr. Jason Boswell, Vice President for Programs, of Conduent, out of Sandy Springs, Georgia; Mr. Steve Mathison, Senior Vice President of Network Relations, First Data, Omaha, NE; Ms. Vickie Yates Brown Glisson, Secretary, Kentucky Cabinet for Health and Family Services, Frankfort, Kentucky; and Ms. Lauren Aaronson, Assistant Deputy Commissioner, Office of Business Process Innovation, Human Resources Administration, New York, New York.

You see the lights in front of you. All of the Members have received your written testimony. We thank you for that preparation ahead of time. Well done. And so we are going to proceed with 5 minutes of oral testimony. You will see that it will be a green light, and when it gets to yellow, it gives you basically a minute left, and when you get to red, I would just ask at that point wrap up whatever current thought or statement that you are in the middle of. And then we will proceed after all four members of the panel have

presented your oral testimony, then we will do a question and answer opportunity at that point with the Members.

Mr. Boswell, please begin when you are ready.

STATEMENT OF JASON BOSWELL, VICE PRESIDENT FOR PROGRAMS, CONDUENT, STATE AND LOCAL SOLUTIONS, INC., FLORHAM PARK, NJ

Mr. BOSWELL. Good morning. On behalf of Conduent and myself, I would like to thank the Committee for the opportunity to speak with you today, to discuss SNAP technology and modernization as it applies to the services we provide or influence.

Conduent is the world's largest provider of diversified business process services, with a tremendous focus on public-sector services for each level of government; Federal, state, and local. A significant portion of our business services are directed to health, human, and social service programs, with payments capability such as EBT being a centerpiece of those services.

As you know, EBT is the SNAP benefit delivery technology utilized by all states, and is the services and industry in which I have served, and had the opportunity to serve in, for the last 15 years. My written testimony provides more detailed insight into our view of how SNAP and EBT delivery may embrace and benefit from new and modern technologies, but to briefly highlight some of those areas for our discussion today, our view is that EBT and the end-to-end SNAP eligibility process would greatly benefit from a greater embrace of mobile technologies, not only for immediate recipient services, but to align the EBT industry to be positioned to better adapt to a changing payments culture and infrastructure.

Mobile solutions for EBT processors, such as Conduent, can not only provide customer service on EBT accounts, but can be a vehicle for program communications, education, and incentive for healthy and nutritional choices. From an eligibility management perspective, mobility offers more streamlined approaches to document intake, verification, communication, and appointment scheduling, just as examples.

In addition to mobile services, the private-sector can, with the collaborative partnership with our state and Federal customer partners, offer a variety of additional services into the end-to-end SNAP eligibility and delivery process to reduce cost, increase efficiency, and provide greater tools for program integrity, monitoring, and enforcement. These may include the adoption of EBT-specific business intelligence and data analytics tools which Conduent offers, changes in the EBT card program policy as it relates to use and design, as well as relaxing or removing restrictions that prevent states from seeking private-sector assistance with SNAP eligibility process.

While we appreciate the position that final determination of eligibility belongs with the merit employees, there are a variety of eligibility service components that could be performed by the private-sector not only to introduce program efficiency, but to ensure that the merit employees can focus more centrally and specifically on the more complex aspects of each case they manage.

FNS should approve the use of non-merit personnel, including contractor staff in the constituent call centers that involve client

contact during the application and case management process. This includes conducting interviews and certifying households, simplifying the intake process, telephone inquiries, case management, and appointment scheduling are just a few examples where states could potentially reduce costs and infrastructure, facilities, and other overhead through employing a private-sector vendor with the experience, capacity, scalability, to perform those services. These changes can improve a state's service delivery model across human service programs, address the increase in workload due to the changes in the integrated eligibility systems, and provide worker relief across programs so that merit workers may focus on eligibility final determination and services.

Thank you.

[The prepared statement of Mr. Boswell follows:]

PREPARED STATEMENT OF JASON BOSWELL, VICE PRESIDENT FOR PROGRAMS, CONDUENT, STATE AND LOCAL SOLUTIONS, INC., FLORHAM PARK, NJ

I am pleased to submit this statement for the record to the House Committee on Agriculture, Subcommittee on Nutrition. My name is Jason Boswell and I'm a Vice President with Conduent, State & Local Solutions, Inc. We appreciate the opportunity to participate in a discussion on how technology and modernization can be leveraged to improve delivery and access to SNAP. Conduent is on the technological forefront in its use of automated systems and is committed to integrating the latest technology across all our business lines to increase efficiencies and improve services to individuals. Our portfolio includes closed proprietary network programs such as SNAP and WIC and open network programs that use a prepaid debit card for TANF, Child Support, Unemployment and other cash programs. Our experience in providing technology solution for government benefit services in 34 states can be seen below:

- 20 years of experience operating EBT, WIC, Debit Card, and eCC programs.
- 109,600 POS devices currently deployed.
- $86 billion in benefits/payments issued in 2016.
- More than 3.2 billion transactions processed per year.
- 913 million IVR calls in 2016.
- 25.7 million CSR calls in 2016.
- 25 EBT SNAP programs.
- 7 EBT WIC programs.
- 110 Debit card programs.
- 9 Electronic Child Care programs.

As the national leader in providing EBT services our goal is to continually improve access to benefits, use technology to provide SNAP participants with benefit information to support decisions for making healthy choices, and to continually implement new technologies that help us achieve these goals. In order to utilize and take advantage of new technologies the EBT program must evolve. In the following pages we discuss different options available in the marketplace today.

Mobility—A relatively new offering for SNAP benefit recipients is the availability of a mobile app to view program balances, transactions, and enable cardholder alerts. Our mobile app is available for both Android and iOS users and is free to download in the respective app stores. By providing three options for cardholders to obtain program information, the Interactive Voice Response (IVR) toll free number, the Internet and a mobile app, cardholders are able to access information in the manner which is most easy for their lifestyle. Providing a mobile app also helps to empower recipients to monitor their account for potential fraudulent use by others that may have access to their SNAP benefit card. Additionally the mobile app can be a tool to convey important program information quickly to recipients or could be used to influence spending behavior by offering incentive (*e.g.,* coupons) for healthy food purchases.

Another innovation that is on the cusp for SNAP with respect to mobility is the potential use of mobile wallets for making purchases. As point of sale equipment has been upgraded in recent years, many retailers have installed new credit card

readers capable of accepting near field communication (NFC) or contactless transactions. Mobile Wallets such as Samsung Pay or Apple Pay are now more mainstream. Mobile wallets allow individuals to carry credit card or debit card information in a digital form on their mobile device. Instead of using a physical plastic card to make purchases, individuals can pay with their smartphone, tablet, or smart watch. Mobility does not need to be limited to credit cards or debit cards and indeed can be a successful tool in reducing costs for the EBT program. Mobile payments is fast becoming a preferred method to allow individuals to make purchases using either a secure passcode or utilize the fingerprint option to pay for purchases. Not only is the use of mobile payment secure but the transaction is quick and easy for the consumer. EBT could greatly benefit from the implementation of mobile payments even in the closed network environment.

Fraud Analytics—Data Warehouses and business intelligence tools are utilized by most states however, advance fraud analytics, specific to EBT, are not common. These tools are generally not requested in RFPs however where deployed by Conduent, they offer predictive modeling to assist in identifying potential fraud. Our Intelligent Analysis Portal (IAP) uses a weighted formula to factor in 20 different key fraud indicators to produce targeted lists of suspicious behavior that states can use as a foundation for investigations. Rather than combing through hundreds of pages of individual reports, states using the advanced fraud tools have access to short, clear targeted reports of the suspicious transactions that are most likely to be fraudulent. This streamlines administrative efforts in order to achieve maximum results. Advanced analytics and intelligent fraud tools can aid both the USDA and states in rapid fraud identification and generate reports specific to each states need.

As an example of the effectiveness of the IAP, Conduent recently received the following from the South Carolina Attorney General's office.

> *"I am writing to thank you for your involvement in the trial in York County, South Carolina last week. You handled yourself very well on the witness stand and I appreciate your preparation and patience with the process. The state secured a guilty verdict, and I believe a large portion of that was due to getting the records into evidence through you as a records custodian for Conduent. I also believe presenting the records in an organized format through use of the data warehouse was a vital part of the trial."*

Within the Conduent IAP, analytical analysis can be performed on a variety of identification measures including but not limited to:

- Rapid or repeated transactions which identifies merchants who perform abnormal, rapid transactions in a short time.
- Early morning manual swipes to identify merchants who do abnormal early morning manual transactions.
- Travel distance to merchant which identifies recipients who travel more than the average travel time to do the transaction for that area.
- Deposit amount—identify the recipients with abnormal deposit in terms of dollar amount or frequency.
- Multiple card replacement, for example greater than four cards replaced in the last 12 months.
- High percent of total available benefits taken in one transaction or at one location.
- Odd hours transactions for large amounts or large percent of total availability.
- Alert on merchant activity that increases or decreases by certain amounts.
- Alert on top vendors for sales, returns, credits (outside frequently used big box retail or grocers).
- Address changes across large ZIP [C]ode differentials.
- Shopping patterns across large geographic differentials.
- Out-of-state spending activity over 50 percent in last 3 months.
- Out-of-state and out-of-border state spending activity over 50 percent in last 3 months.
- Identify "frequent flyers" for disputes or fraud claims

Analytical techniques include a variety of methods including:

- Outlier Detection—Compares data to automatically find retailers, recipients, and shopping patterns that stand out from their peers.

- Network Analysis—Locates and links retailers and recipients that are connected to each other and highlights groups with similar suspect behavior patterns.
- Temporal Analysis—Uses time to identify retailers whose sales, adjustments, or return volume has suddenly spiked upward or downward when nothing else has changed.
- Peer Analysis—Various retailer or recipient behavior events are identified as "key fraud indicators". These events are scored separately and in combination to identify the highest-risk retailers or recipients.

As more and more states implement fraud analytic tools and technology enhancements, the benefits to reducing fraud will continue to grow.

Call Personalization—Conduent has recently implemented advance technology for SNAP recipients calling the IVR to obtain program information. By levering ANI (Automatic Number Identification), our system identifies the originating phone numbers for incoming calls. Through innovative data analysis (or "smart learning") we are able to determine the normal call patterns of a caller such as card number entered, language choice and menu options for information being requested. The system then shortens the call by requesting only abbreviated information from a caller and then presenting them with the call flow most similar to their prior requests. A caller always has the option for the full menu after providing them their customized options based on historical calls.

Building on the success of call personalization, Conduent has the ability to leveraging meta data from caller's ANI information and historical IVR data to identify fraudulent callers as they are in process. We expect to provide this information to state personnel to assist with internal investigations and prosecution.

Photo ID Cards—There are recent innovations with respect to for photo cards on SNAP benefit cards that are still being monitored for their impact. The recent final rule issued by FNS regarding SNAP Photo EBT Card Implementation Requirements, is one such example.

One benefit of adding recipient photos to SNAP cards is the fraudulent selling of the cards to other non-authorized persons for some smaller value than the benefits on the card. The industry calls this "hand-to-hand" fraud. If photos are present, a cardholder may be less likely to "sell" the card and PIN to those persons seeking to "buy" an EBT card and PIN. Where photos are added to cards, a policy change to require cardholders to pay for replacement cards may also cut down on this type of fraud. Suspending benefits for cardholders who have excessive card replacement requests may also be another fraud deterrent.

As equipment has evolved at the point of sale, generally a person does not hand their card to a sales person to perform a transaction but instead "swipes" their own card and returns it to their wallet. This impacts the ability to verify the photo on the card with the person making the purchases. Enhanced mandates can be implemented that would require this added security check but would impact the checkout process for retailers and recipients. Current policies would also need to be evaluated as there are current FNS guidelines that prohibit denying transactions. An example would be if a recipient provided their card to a caregiver to make food purchases on their behalf, the card currently would be accepted if the person had the physical card in their possession and enters the associated PIN to complete the transaction.

We are committed to the monitoring programs where photo cards have been implemented for ongoing program efficiencies and work with the states and FNS on additional enhancements to provide fraud reduction and administrative support.

In closing, I would like to thank you for your time and for the opportunity to discuss this important topic. We look forward to continuing to support the SNAP community with innovative technology for all participating stakeholders.

The CHAIRMAN. Mr. Boswell, thank you so much for your testimony.

Mr. Mathison, go ahead and proceed with your 5 minutes when you are ready.

STATEMENT OF STEVE MATHISON, SENIOR VICE PRESIDENT OF NETWORK RELATIONS, FIRST DATA CORPORATION, OMAHA, NE

Mr. MATHISON. Good morning, Chairman Thompson, Ranking Member McGovern, and Members of the Committee. My name is Steve Mathison, I am the Senior Vice President of Network Rela-

tions at First Data Corporation, and I am pleased to be here today on behalf of myself and my company, and appreciate the opportunity to share with you our perspective on the modernization of the SNAP program.

By way of background, First Data sits at the center of actual global electronic commerce. We serve approximately six million business locations and 4,000 financial institutions around the world, and we facilitate the secure routing of card transactions between those two constituents.

By way of example, in 2016 we powered 88 billion global transactions; more than 2,800 transactions each second, totaling approximately $2.2 trillion U.S. last year.

First Data's role in the SNAP system is to enable retailers to accept SNAP cards in their stores, and ensure that each transaction is routed to the appropriate state for both the authorization and settlement process.

As we think about the future of SNAP and the desire for a more modern system, technology availability comes immediately to mind. In the bank card world, the infrastructure supporting the payments rails is subject to a series of rules, agreements, and oversight that ensures that outages do not regularly occur. For example, Visa and MasterCard take an active role in ensuring that there are service-level agreements and sufficient technology and infrastructure across the entire payments ecosystem so that if a systems issue were to occur, there are redundancies and business continuity plans to ensure that commerce is not disrupted. And as a secondary level, there are multiple Federal and governmental oversight controls, risk management protocols, and departments that have oversight of the financial and service industry, including players like First Data, like the FFIEC, the FDIC, the OCC, and the Federal Reserve, that also play an active role in making sure that the continuity of the program is ensured.

The lack of similar service standards and requirements for SNAP processing tends to lead to the SNAP cards not working for a large number of cardholders on a fairly frequent basis. As you can imagine, system-wide outages have negative impacts on SNAP recipients by reducing their access and creating extra inefficiencies and costs. We think this is an area that the Federal Government should explore.

When we think about payment security, we generally focus on criminals attempting to compromise the card number. This stolen card information can be used to create counterfeit cards, and criminals can use those cards to make purchases fraudulently. What we see across our retailer base is the broader government benefit card environment has very small amounts of counterfeit fraud. The reason for this is because each SNAP recipient must use their PIN to perform a transaction. They have to have their physical card and a PIN as something that only they know. Because this two-factor authentication is an effective method for preventing fraud, we believe PINs should continue to be mandatory. As retailers move into the online grocery space where a traditional PIN pad is not necessarily present for the purchase, we think it is important for the government agencies to explore enhanced security in this space. Specifically, we recommend that the Federal Government explore

requiring that SNAP transactions made online should have this two-factor authentication. Fraud in the e-commerce space is much higher than the physical point of sale, and as such, having a way to keep fraud rates manageable and low in these higher-risk transactions will be an important factor in keeping SNAP funds flowing as benefits to recipients, rather than fraud losses to criminals. Maintaining and protecting the integrity of the program is crucial.

Finally, we believe the government should be taking steps to encourage competition among the payment processors that contract with state agencies. Currently, there are few processors that occupy this space. While there is some limited competition during the bidding process, once a contractor wins a bid from a state, the processor effectively becomes a monopoly for how that state's transactions must be processed. Retailers that wish to offer SNAP acceptance in their stores must process with that contractor, and only that contractor. This has become problematic because of the introduction of new fees by the processors and contractors to the retailers. Retailers are essentially forced to accept any fee that is assessed because there is no other option for processing the SNAP transaction for that state.

We generally believe that the Federal Government should take the position that the imposition of fees for enabling SNAP in their stores; fees that don't necessarily go to the states, should be prohibited. As an alternative, we suggest the creation of a mechanism for a retailer to negotiate these fees, and/or process their SNAP transactions with a competing contractor for a given state in a competitive environment.

In conclusion, we commend the Committee for exploring ways to modernize the SNAP program. Many Americans rely on the program to improve their lives, and we believe these Americans should have the same positive experiences when transacting with their SNAP cards as others do when transacting with traditional bank-issued credit and debit cards.

As one of the entities that provides the infrastructure used to transport payment card data securely and efficiently, we appreciate the opportunity to provide our perspective, and look forward to keeping an open dialogue with the Committee Members as new ideas are brought to bear.

Thank you, and I will be happy to answer any questions that anyone may have.

[The prepared statement of Mr. Mathison follows:]

PREPARED STATEMENT OF STEVE MATHISON, SENIOR VICE PRESIDENT OF NETWORK RELATIONS, FIRST DATA CORPORATION, OMAHA, NE

Good morning, Chairman Thompson, Ranking Member McGovern, and Members of the Committee.

My name is Steve Mathison, and I am Senior Vice President of Network Relations at First Data Corporation. I am pleased to be here today on behalf of First Data, and I appreciate the opportunity to share with you our perspective on the modernization of the Supplemental Nutrition Assistance Program (SNAP) and efforts to make it more efficient and effective for the millions of Americans who rely on these benefits in their everyday lives.

After providing an overview of First Data's role in the SNAP system, I will focus my comments on three primary areas: (1) technological availability; (2) payments security; and (3) increased competition.

First Data sits at the center of global electronic commerce. Founded more than 40 years ago, First Data serves approximately six million business locations and 4,000 financial institutions around the world. We are one of the largest retailer payment processor and bank issuer processors in the world, enabling businesses to accept electronic payments, helping financial institutions issue credit, debit, and prepaid cards, and routing secure transactions between them. In 2016, we powered 88 billion global transactions, or more than 2,800 transactions every second of every day, totaling $2.2 trillion per year, which is equivalent to nearly 10% of U.S. Gross Domestic Product. In addition, First Data owns the STAR debit network, with over one million point of sale (POS) and ATM locations nationwide.

Overview of SNAP Payment Processing

In order to consider our comments in the appropriate context, it is important to understand the basic transaction flow for a cardholder using an electronic benefit transaction (EBT) card. Technology providers like First Data enable commerce by facilitating the transaction processing connections between retailers, networks, and payment card issuers. Behind the scenes, the process is broken down into two distinct transaction processes: authorization and settlement.

When a consumer uses a payment card to purchase goods, the retailer must obtain authorization for the purchase from the bank that issued the card. This authorization is confirmation that the consumer's account is in good standing and that there are sufficient funds available in the consumer's account to cover the purchase. And, if the authentication process includes the consumer's Personal Identification Number (PIN), that PIN is also validated by the issuer to ensure the legitimate consumer is the one attempting the purchase. In the case of SNAP EBT cards, the state holding the SNAP funds is considered to be the card issuer (and the state may contract that service out to a third party to manage the accounts on the state's behalf). The authorization is, essentially, a request to make funds available to the retailer for the purchase.

If the authorization request meets the card issuer's requirements, and the PIN passes the issuer's PIN validation algorithm, a reply is returned to the retailer, via the retailer's payment processor, indicating that the request has been approved. If the authorization request does not meet the card issuer's requirements, or if the PIN validation is unsuccessful, the retailer is informed that the requested transaction has been declined.

The final step is the "settlement" process in which funds are received in aggregate from the card issuer (*i.e.,* the state holding the EBT account) for all approved SNAP transactions occurring at all retailers accepting SNAP cards during that business day. Funds are then separated into the proper amounts for each respective retailer, and those funds representing all the approved SNAP transactions processed at a retailer's location are then transmitted to each retailer's bank account.

First Data's role in the SNAP system is to enable retailers to accept SNAP cards in their stores and ensure that each SNAP transaction is routed to the appropriate state for both the authorization and settlement processes: we authorize SNAP transactions for retailers accepting the cards, our STAR network also authorizes cash transactions in authorized locations for SNAP cardholders, and we settle the accounts for our retail customers for approved SNAP transactions that have occurred during the day.

Technology Improvements

As we think about the future of SNAP and the desire for a more modern system, technological availability comes immediately to mind. In the bank-issued card world, the infrastructure supporting the payments rails is subject to a series of rules and agreements to ensure that outages do not regularly occur.

Quest is the network that provides the operating rules that govern the distribution of government benefits including SNAP. Quest is governed by the National Automated Clearing House Association and encourages that government entities incorporate the Quest rules in their contracts with third party entities used to distribute benefits.

There are differences in how the oversight and controls for the bank-issued credit and debit cards are managed by global payments networks such as Visa or MasterCard *versus* how the oversight and controls are managed relative to the Quest network. For example, in the case of a Visa or MasterCard network, those two entities take an active role in ensuring that there are service-level agreements and sufficient technology infrastructure across the entire payments ecosystem so that if a systems issue were to occur at a payment processor, the network, or at a financial institution that issues the cards, there are redundancies and business continuity plans to ensure that commerce is not disrupted. The lack of similar serv-

ice standards and requirements for SNAP processing leads to the SNAP cards not working for large numbers of cardholders on a fairly frequent basis. As you can imagine, system-wide outages have negative impacts on SNAP recipients by reducing their access to necessary purchases, causing frustration for retailers and cardholders alike, creating extra inefficiencies and costs, and undermining confidence in the program.

We think this is an area that the Federal Government should explore. Adding baseline standards not only provides an incentive for state agencies and SNAP providers to improve, it will also lead to increased systems availability, lower costs, and an overall improvement in throughput which ultimately will ensure the consumers standing in the checkout lanes can get their benefits when they need them.

Payments Security

Additionally, we think the SNAP program could benefit from taking a more modern look at payments security. When we think about payments security in this space, we generally are thinking about criminals attempting to compromise the card number. This can occur when a criminal steals the card information at the card swipe, or steals it by hacking into the systems where card information is stored. The stolen card information is then used to create counterfeit cards by encoding the card information onto the magnetic stripe of generic plastic cards. Or, criminals can use that card number online to make unauthorized purchases.

The traditional bank-issued debit and credit cards have been undergoing a transition from relying solely on the magnetic stripe on the back of the card to including a more secure chip that interfaces with a point of sale terminal for the transmission of transaction data. The chips have microcomputers in them that are able to produce dynamic cryptograms and algorithms that make the cards much more difficult to counterfeit than the card data from a magnetic stripe, which holds only static information. Since the chip data is very difficult to reproduce, this lowers the incentive a criminal might have to steal card information—since the stolen card data from a chip card is very difficult to monetize via the conventional process of creating a counterfeit card and making fraudulent purchases, there is little to no benefit from stealing the card data in the first place.

However, chip technology, while certainly more advanced than the magnetic stripe, is not a panacea for all card fraud; its benefits are limited to stopping counterfeit card production.

There is an unresolved industry question about whether state agencies should be prescribing chip technology for SNAP cards. From what we see across our retailer base, the broader government benefit card environment has very small amounts of counterfeit fraud (*i.e.,* stealing the card information from a legitimate SNAP card, reproducing a duplicate of the original card, and using that duplicate to make purchases), because PINs are required for all government benefit cards, including SNAP cards. In other words, First Data isn't seeing much counterfeit card production in the government space; and since adding a chip primarily only addresses counterfeit cards used at the physical point of sale, we don't believe that prescribing chip implementation in SNAP cards will create material fraud reductions or cost savings across the SNAP payments ecosystem.

However, the reason the counterfeit fraud is low is because each SNAP recipient must use two-factor authentication to make a SNAP purchase—the cardholder must present his/her physical card **and** must enter a PIN for each and every transaction. And because the two-factor authentication is an effective method for preventing fraud, First Data believes PINs should continue to be mandatory.

The Payment Card Industry Data Security Standard (PCI DSS) governs data security for credit and debit cards, and PCI requires, for example, a certain level of hardware security. For example, PIN pads today self-destruct if anyone tries to tamper with them or even open them to access their internal technology.

When a consumer enters a PIN on a PIN pad at a retailer location, the PIN is encrypted, leading to a much more secure transaction.

Several years ago, only about ½ of the 8–10 million retailers that accept credit and debit cards had PIN pads. With the migration to chip cards, however, many retailers have decided to upgrade their point of sale terminals to be able to securely accept and process the chip card that's presented.

It's now fairly standard in the industry for a retailer to have a standard PIN pad, because the keys for the security chips are also in the PIN pads.

As more retailers move into the online grocery space—where a traditional PIN pad is not present because the consumer is transacting from his/her computer or smart phone—we think it's important for government agencies to explore enhanced security.

Specifically, we recommend that the Federal Government explore requiring that SNAP transactions made online or in an eCommerce environment (*i.e.,* the consumer does not transact within the retailer's physical store, but rather initiates the transaction remotely via a computer or a mobile phone) should have two-factor authentication. Two-factor authentication involves data other than simply authenticating that the individual attempting the transaction has an account number.

In addition to something the individual ***has*** (such as their SNAP card), the second factor of authentication typically takes the form of either something the individual ***knows*** (such as a PIN or the answer to security questions) or something the individual ***is*** (such as fingerprint scans).

Additional forms of cardholder authentication are key in order to enable SNAP redemptions for emerging opportunities such as online grocery shopping and remote ordering for in-home delivery. Fraud in the eCommerce space is much higher than the physical point of sale. As such, having a way to keep fraud rates manageable and low in these higher-risk transactions will be an important factor in keeping SNAP funds flowing as benefits to recipients rather than fraud losses.

Increased Competition

Finally, as we think about a sustainable future of SNAP that leads to positive cardholder experiences, we believe the government should be taking steps to encourage competition among the payment processors that contract with state agencies to manage the state's SNAP programs.

Currently, there are few processors that occupy this space. And while these processors compete with each other as they bid to be a state's SNAP contractor, generally the state selects only those contractors with the lowest cost bids, which creates a cost prohibitive environment for other processors to try to enter the market.

While there is limited competition during the bidding process, once a contractor wins a bid from a state, that processor effectively becomes a monopoly for how that state's SNAP transactions must be processed. Retailers that wish to offer SNAP acceptance in their stores ***must*** process with that contractor. There is no alternative; the retailer must simply acquiesce to the demands of the contractor. This has become especially problematic because of the introduction of new fees by the dominant processors in an effort to supplement the thin-margin bids used to win the state's SNAP contract. These fees impact the retailers accepting the cards and the retailer processors like First Data who route the transaction from the retailer location to the network and the state.

Retailers and merchant processors are in a tough situation where they are essentially forced to accept any fee that is assessed by these state processors because there is no other option for processing a SNAP transaction for that state.

Generally, we believe the Federal Government should take the position that the imposition of processing and transaction fees for state processors is prohibited. Simply put, charging the retailers a fee for allowing a SNAP beneficiary to buy groceries at their store is unfair. The imposition of these fees could have the chilling effect of retailers deciding to curtail or cease acceptance of SNAP benefits altogether.

Or, as an alternative, we suggest the creation of a mechanism for a retailer to negotiate and/or process their SNAP transactions with a competing contractor for a given state. If fees must be imposed, they could be market-driven, competitive, and negotiated rather than imposed unilaterally.

In conclusion, as the electronic payments system continues to adapt to respond to innovative technologies as well as growing cyber threats, we commend the Committee for exploring ways to modernize the SNAP program. Clearly many Americans rely on the program to improve their lives, and we believe these Americans should have the same positive experiences when transacting with SNAP cards as others do when transacting with traditional bank-issued credit and debit cards.

As one of the entities that provides the infrastructure used to transport payment card data securely and efficiently along the payments rails, we appreciate the opportunity to provide our perspective on modernization efforts and look forward to keeping an open dialogue with the Committee Members as new ideas are brought to bear.

Thank you, and I will be happy to answer any questions you may have at this time.

The CHAIRMAN. Mr. Mathison, thank you for your oral testimony.

Secretary Glisson, please go ahead and proceed with your 5 minutes whenever you are ready.

STATEMENT OF VICKIE YATES BROWN GLISSON, J.D., SECRETARY, KENTUCKY CABINET FOR HEALTH AND FAMILY SERVICES, FRANKFORT, KY

Ms. GLISSON. Good morning, Chairman Thompson, Ranking Member McGovern, and Members of the Subcommittee.

Thank you for the opportunity to come and speak to you today. I am Vickie Yates Glisson. I am Secretary of Kentucky's Cabinet for Health and Family Services, and I have been invited today to discuss Kentucky's experience in creating an integrated benefits eligibility and enrollment system.

Prior to my tenure as Secretary, the Federal Government, as you may know, strongly encouraged states through enhanced funding to create an integrated modular system for eligibility and enrollment. When I became Secretary, I inherited from the former Administration the responsibility to implement what we were led to believe was a completed, a vetted, and a ready IT platform that would serve as an upgraded, integrated eligibility and enrollment system for our health and human service programs. Unfortunately, our experience was quite the opposite.

In 2016, Kentucky became the first state to implement an integrated eligibility and enrollment solution known as benefind, and it was on the .NET platform, and that included both Medicaid, the Qualified Health Benefit Plans, the advanced premium tax credits, SNAP, and TANF.

Implementation of this experimental system was not without significant challenges. We were only able to achieve our goal of an integrated eligibility and enrollment system through reactive changes to resolving issues as they arose. Hopefully, by sharing our experience today and lessons learned, other states may proactively address similar issues and avoid them during their system implementation.

Almost immediately upon rollout, we realized some system latency issues were caused and had caused increased processing time. We upgraded server capacity within the first few days, and processing did speed up and improved. As time went on though, we realized that there were more serious issues. These issues included system design issues, policy decisions that had been made, and data quality. These issues snowballed with nearly catastrophic results, causing a massive backlog with some of our members who actually did temporarily lose their benefits.

An example of how one issue can snowball into a larger problem involves data quality that is used to support an integrated eligibility and enrollment system. This new system, as supported by the Federal Government, was designed to ping the Federal incarceration database, for instance, to determine whether a household member was currently incarcerated and thereby ineligible for benefits. Our system was functioning as it had been designed. During the transition to benefind, the system sent a query to the Federal database, which responded with requested data about a member's incarceration status. If the query returned a match that someone was incarcerated, the system automatically sent a notice to that member that eligibility was being terminated unless documentation to the contrary was provided. The problem, however, is that the data was highly inaccurate, and resulted in tens of thousands of er-

roneous letters being sent automatically to members. This single issue snowballed enormously; first, because these letters went out via mail. There was a time lag with the state being able to get feedback that there were erroneous letters out in the state. By the time this issue was identified, we had already passed the point where returning to the former eligibility and enrollment system; the legacy system, now was no longer feasible. Further, these letters caused confusion and panic among our members, who flooded our call centers and our lobbies. Instead of performing their typical case management duties, our caseworkers spent hours dealing with the fallout from these erroneous letters.

This was on the top of the increased caseload associated with the system conversion, and in addition to caseworkers now getting used to a new eligibility and enrollment system. This is just one example of a problem that could not have been easily identified in the system testing before the system performed, because it performed as designed.

Another complication is the lack of coordination between Federal agencies to support an integrated eligibility and enrollment system for benefits. FNS policies on who may access data and assist with applications does not match up with CMS policies. Remember, this is an integrated system. CMS allows contractors to assist with applications, while FNS does not.

We have hundreds of contractors available in Kentucky who can assist with Medicaid eligibility applications, give information about Medicaid application status, but are prohibited from using that exact same information to assist with SNAP applications. Benefind automatically determines eligibility for Medicaid and SNAP if all of the information is entered and verified. Benefind is not permitted to use that same information if entered by a contractor to determine SNAP eligibility because FNS requires a state merit employee caseworker only to process the SNAP eligibility. Benefind was intended to determine eligibility for all services and benefits with one application, including SNAP and Medicaid. FNS policy permits only state merit employees to process SNAP applications, which results in a duplication of efforts and has impeded the efficiencies that are expected of this system. If this policy were changed, then the system could be optimized and truly be a one-stop shop with no wrong door in order to enter the system. Issues with Federal databases, and disconnected and uncoordinated policies between Federal agencies could not have been foreseen prior to the rollout.

Last, benefind was implemented at the urging of the Federal Government. We, therefore, urge the Federal Government to be proactive and to address these issues. First, the inadequacies of the Federal database, such as the Federal incarceration database, must be addressed. These databases should be accurate, they should be updated frequently, in order to avoid erroneous decisions. And then last, we urge that the Federal Government require better coordination between agencies to allow the same authorized workers to work through the entire process for both FNS and CMS benefit applications. Resolution of these impediments will greatly enhance our experience and cause the system to be much more efficient, as it was intended.

Thank you for your time.
[The prepared statement of Ms. Glisson follows:]

PREPARED STATEMENT OF VICKIE YATES BROWN GLISSON, J.D., SECRETARY, KENTUCKY CABINET FOR HEALTH AND FAMILY SERVICES, FRANKFORT, KY

Kentucky's Experience in Implementing an Integrated Eligibility and Enrollment System

Introduction

Good morning. I am Vickie Yates Brown Glisson, Secretary of Kentucky's Cabinet for Health and Family Services and I have been invited to discuss Kentucky's experience in creating an integrated benefits eligibility and enrollment system.

I became Secretary of Kentucky's Cabinet for Health and Family Services on December 9, 2015. My Cabinet is responsible for the administration of Kentucky's human services and health care programs, including Medicaid, SNAP, TANF and foster care. When I became Secretary, I inherited from the former Administration the responsibility to implement what we were led to believe was a completed, vetted and ready IT platform that would serve as an upgraded integrated eligibility and enrollment system for our health and human services programs. Unfortunately, our experience was quite the opposite.

We experienced numerous challenges from the beginning that could have been avoided and some that could not have been avoided. While the ultimate outcome did result in an upgraded integrated eligibility system, we only got there through reactive changes to resolving issues. Hopefully, by sharing our experience and lessons learned other states may proactively address similar issues and avoid them during their system implementation.

Benefits of an Integrated Eligibility and Enrollment System

An Integrated Eligibility and Enrollment System housed within a single Cabinet has many benefits. First, as alluded to above, the Department for Medicaid Services, the Department for Community Based Services (which oversees family support benefits such as SNAP and TANF), and Information Technology staffs are all located within my Cabinet. This alignment allows for a more streamlined and coordinated project team and leadership. Because the agencies work together, our Cabinet may better collaborate and plan while ensuring representation of each program area's interests. We work together to determine how those interests best fit into the new integrated system while also supporting the no wrong door concept and maximizing the use of shared services for eligibility determination and other core business processes.

Another benefit of benefind, our integrated eligibility system, is the modernized infrastructure. It allows for real-time eligibility and enrollment processing for benefits. It was intended to improve workflow and automation features, including appeals and complaints. It also brought our eligibility system in line with new Federal guidelines and policies.

Finally, benefind was designed to have system modularity. The application architecture was designed in a way that allowed for deployment of common services/functionalities to support integration of additional HHS programs. For example, the Child Care Assistance Program is scheduled for integration in September 2017.

In summary, the primary benefits of an integrated eligibility system include: (1) Improved access—self-service portal, telephonic, in person and paper/mail-in applications; (2) Improved efficiency and effectiveness—one application for all benefits; information collected one time in one system—Reduces duplication of effort; (3) Continuously improved business operations, transparency and accountability through data reports and performance information.

Background

Prior to my tenure, the Federal Government had strongly encouraged states, through enhanced funding, to create an integrated modular system for eligibility and enrollment. In 2011, the former Governor of Kentucky requested and received approval from the Federal Government to use a waiver to build an IT system to integrate eligibility and enrollment determination functions for a health benefits exchange and for all state-administered health and human services programs using an integrated data base. In 2012, the former Administration entered into a contract providing for a multi-stage production that was intended to create a horizontal fully integrated Eligibility and Enrollment platform with two doors.

The first door, therefore, was the state-run health benefits exchange, which was used for Medicaid expansion eligibility determinations and enrollment.

The second door is a one-stop shop for benefits, including SNAP, TANF, K–TAP, Foster Care, Kinship Care, Medicaid and some waiver programs, that was intended to work concurrently with the prior release. The system was expected to streamline the application process by using one application, along with Federal data, to determine eligibility for all benefits. Release 5, known as benefind, was initially scheduled by the former Governor for release on December 4, 2015. The former Administration delayed that release until December 29, 2015, because of suspected system issues.

Prior to December 29, 2015, the current Governor was inaugurated and I became Secretary of the Cabinet. Rather than release the platform without any review during the middle of QHP open enrollment, we delayed the project and initiated a review of system readiness. That review included written documentation from the vendor that 7,000 user test cases had passed, 240 performance tests were satisfactorily completed, and more than 200 testers had been employed across the Cabinet. We received multiple assurances that benefind had been thoroughly tested and piloted and that all necessary staff had been thoroughly trained. Vendor testing predicted that no severe defects would exist upon roll-out and that any minor issues would have a work-around. We were further assured that all USDA technical and programmatic guidelines had been met. The vendor assured us that the system was ready but that contingency plans were in place to address any issues that might arise. Kentucky also had an IV&V vendor who reviewed risk and contingencies, and gave us no reason to delay further.

Roll-Out Brought Significant Issues to Light [1]

Kentucky was the first state to implement the integrated eligibility and enrollment system on a .NET platform with the broad spectrum of services. In consultation with CMS, we scheduled a go-live date for February 29, 2016. Almost immediately, we realized some system latency issues were causing longer than anticipated durations during screens. Server capacity was upgraded within the first few days and processing speed improved. As time went on, however, we realized there were more serious issues. These included issues with system design, policy decisions data quality, and system issues. While there was a roll-back contingency in place in the event the system conversion was not successful, it was no longer a feasible or prudent option, by the time many of the issues were identified.

An example of how one issue can snowball into a larger problem involves data quality. Our new system was designed to ping the Federal Incarceration Database to determine whether a household member was currently incarcerated and, therefore, ineligible for benefits. Our system was functioning as designed. During the transition to benefind, the system sent a query to the database, which responded with requested data about a member's incarceration status. If the query returned a match that someone was incarcerated, the system automatically sent a notice to that member that eligibility was being terminated unless documentation to the contrary was provided.

The problem, however, is that the data was highly inaccurate and resulted in tens of thousands of erroneous letters being automatically issued. This single issue snowballed enormously. First, because these letters went out via mail, there was some delay in the state getting feedback about the erroneous letters. By the time this issue was identified, we had already passed the point where returning to the legacy system was not feasible. Further, these letters great caused confusion and panic among our members, who flooded our call centers and our lobbies. Instead of performing their typical case management duties, our caseworkers spent hours dealing with the fallout from these erroneous letters. This was on top of the increased case load associated with the system conversion, and on top of their getting used to using a new system.

That is just one example of how one issue can cause big problems. And it is one that could not have been easily identified in system testing.

Another complication was the fact that FNS policies on who may access data and assist with applications do not align with CMS policies. CMS allows contractors to assist with applications while FNS does not. We have hundreds of contractors available who can assist with Medicaid eligibility applications and give information about Medicaid application status but who are prohibited from using the exact same information to assist with SNAP applicants. Benefind automatically determines eligibility for Medicaid if all of the information is entered and verified. Benefind is not permitted to use that same information, if entered by a contractor, to determine SNAP eligibility because a merit employee case worker is required to process the SNAP eligibility. Benefind was intended to determine eligibility for all services, in-

[1] A listing of post-launch issues and their resolutions is attached to this presentation.

cluding SNAP and Medicaid with one application. This FNS policy, however, requires duplication of efforts and has impeded the efficiencies expected of the system.

Additional complications included a decision on the part of the former Administration to shift workload from our local caseworkers and to replace the face-to-face model with a call-in center. This change in workflow did not align well with our new system. Our shift to a statewide model caused us to lose specialized expertise. This was then compounded by a lack of adequately trained staff. All of these issues snowballed with nearly catastrophic results causing an enormous backlog, long wait times, full lobbies and for some members to be dropped from receiving benefits.

Immediate Action Was Taken to Resolve the Issues

Because most of these issues were not evident prior to roll-out, we had to combat the problems from behind. In order to avoid further disruption to essential services, I employed an all-hands on deck approach. I immediately empanelled a team comprised of senior leadership, program policy experts, vendor management and programmers, and representatives from field offices for daily meetings, including meetings on weekends to address identified defects. As issues mounted, we supplemented field operations with 120 additional IT staff to provide technical assistance with case processing and targeted training to improve worker efficiency. We distributed a daily targeted plan to field supervisors with direction to prioritize cases based on due dates to lessen impact on SNAP and Medicaid applicants and recipients. We developed a Rapid Fire Team to improve customer service and to handle critical cases escalated for possible loss in benefits, and a team comprised of 100 field staff was located to Frankfort's technology command center to provide centralized processing. This team enabled the vendor to troubleshoot programming issues and identify solutions to incorporate into future programming and facilitated hands-on system training so users could serve as field mentors. We augmented staffing within the Office of Ombudsman to address increased call volume and to ensure that every individual who reported a concern received a follow-up call within twenty-four hours of initial contact. We created a cross-department team to review all auto-generated notification letters programmed into the system to ensure accuracy. After each daily session with the vendor and senior management, we identified specific programming solutions for implementation and targeted a release date. We also hosted telephonic and in-person conferences with Federal Medicaid and United States Department of Agriculture partners and received approval to extend coverage in an attempt to minimize a lapse in benefits. Finally, we employed additional security in field offices to assist with workflow and to ensure that client and employee safety received the highest priority.

Importance of a Proactive Stance

Today, most of the issues have been fully resolved. Many of these issues could have been avoided altogether had proper planning and oversight procedures been enacted from the beginning. First, better communication, coordination and oversight of the vendor, along with the inclusion of performance metrics and sanctions for non-performance in the contract, is essential to gaining full knowledge of the true status of the system. Communication with the vendor was lacking initially, and the testing was not as robust and inclusive as we believed. Had the vendor been more closely monitored, we could have asked better questions, we would not have had to rely on their assurances, testing could have been more thorough and representative, and a better contingency plan could have been developed including reversion to the prior system. The inclusion of performance metrics and sanctions for non-performance in the contract would have enhanced monitoring and vendor communications. Next, comprehensive training and adequate staffing should be in place and a workflow developed that is reflective of the IT system should all be in place well prior to roll-out to ensure that issues may be identified and handled as expeditiously as possible.

Finally, if we are to have a truly integrated system, we need the Federal Government to assist. Proactivity on the Federal Government's part would be an enormous help in minimizing issues. Federal databases, like the Federal Incarceration Database, should be accurate and updated frequently to avoid erroneous decisions. The Federal Government should also take an integrated approach to policies to ensure that they are consistent and that they align with the IT design it has encouraged. The FNS policy prohibiting anyone but merit employees to assist with SNAP applications must be changed. Currently, CMS has determined that contractors may assist with Medicaid eligibility applications. Recently, CMS has further reduced burdens on the application process by allowing insurers and brokers to access the Federal platform. This disconnect prohibits us from using the contractors who have access to the same information for Medicaid to assist with SNAP applications which

results in duplication of efforts and an impediment to the efficiencies expected of the system.

Resolution of these impediments would greatly enhance our experience and cause our system to be as efficient as intended. If these issues were addressed, then the system could be optimized and truly be a one-stop shop with no wrong door.

Conclusion

We continue to monitor our system and work with our vendor closely to confirm that any future releases will result in a system that is reliable and stable. We conduct frequent reviews of system operations to ensure that any defects are quickly identified and resolved. We are committed to facilitating the process for our population.

[ATTACHMENT]

Post Launch Issues and Resolutions

- **Issue:** Significant costs associated with delaying rollout.

  KY Response: Renegotiated additional costs associated with a delayed roll-out down approximately 50%.

- **Issue:** UAT testing needed more involvement of business analysts in test scenario planning and for correspondence generation.

  KY Response: Enhanced testing of processes and software.

- **Issue:** "Go live" did not include adequate roll back/contingency plan.

  KY Response: By the time the scope and magnitude of systematic issues were fully identified the contingency plan, reversion back to Kentucky Automated Management Eligibility System (KAMES), was not feasible to implement. However, benefind provides the ability for workers to override emergency cases.

- **Issue:** Center for Medicare and Medicaid Services and Food and Nutrition Services policies contradict each other in the integrated system, and did not properly allow utilization of kynectors/application assisters.

  KY Response: Requested and received approval from FNS for kynectors affiliated with nonprofits to assist with SNAP applications. This change did little to solve the problem as merit employees were still required to perform the interview and eligibility determination for SNAP. Kentucky recommends additional flexibility and better program eligibility policy alignment across Federal eligibility programs.

- **Issue:** Training was inadequate; no proficiency test for staff prior to roll-out. Also, what training was performed was done several months in advance of go-live. That lag resulted in a system that has several changes between training and go live, and high attrition meant many workers were not trained in advance of roll-out.

  KY Response: Proficiency thresholds and timeframes will be established and verified prior to any future system roll-outs. Will also ensure some training takes place in close proximity to system rollout.

- **Issue:** Pilot project was insufficient; not fully representative of local offices.

  KY Response: Future pilot programs will incorporate all special populations and geographic areas.

- **Issue:** Clear communication between vendor and CHFS was lacking.

  [*KY Response:*] Streamlined operations and communication by requiring twice weekly meetings and implementing morning and afternoon status reports.

- **Issue:** 2013 DCBS workforce study recommended a statewide structure that has proven inadequate for operating the benefind system.

  KY Response: Several specialized teams were created and some shift of responsibilities back to local level has occurred. CHFS is currently undergoing a formal examination of workflow for more permanent and substantial changes to better align with benefind system.

- **Issue:** Long phone wait times and case review times associated with benefind roll-out.

  KY Response: Established a Rapid Response Team (RRT)—this group of 10–20 vendor and CHFS staff gave us the ability to quickly respond to cases that required immediate action. Additionally, CHFS improved the phone system Interactive Voice Response (IVR). Improvements made to the phone systems have greatly decreased wait times by providing a specific queue for citizens seeking benefits status or reporting changes.

- **Issue:** Sizeable case backlog associated with benefind roll-out.

  KY Response: Established Operation Field to Frankfort (O.F.F.)—this team of 60–100 employees from across the state, assisted by 12–15 vendor employees, was consolidated in Frankfort to address high volume of cases, specialized populations experiencing issues, and to receive additional training. This team has successfully processed hundreds of thousands of cases and has been instrumental in identifying system issues experienced during the benefind roll-out process.
- **Issue:** Incorrect notifications mailed to constituents.

  KY Response: Completed a detailed review of all possible system-generated correspondences/notifications for accuracy and software errors, and identified trigger threshold improvements. CHFS and vendor continue to review policies associated with notifications, in order to eliminate confusion.
- **Issue:** Small populations saw a disproportionate volume off errors during roll-out.

  KY Response: Worked with community partners such as KY Center for Equal Justice, KY Association of Health Care Facilities, KY Refugee Ministries, and Catholic Charities to ensure we are addressing citizens' concerns, while implementing changes to the organizational processes in order to better serve the citizens.

The CHAIRMAN. Secretary Glisson, thank you for your testimony.

Ms. Aaronson, go ahead and proceed with your 5 minutes of testimony when you are ready.

STATEMENT OF LAUREN AARONSON, ASSISTANT DEPUTY COMMISSIONER, OFFICE OF BUSINESS PROCESS INNOVATION, NEW YORK CITY HUMAN RESOURCES ADMINISTRATION, NEW YORK, NY

Ms. AARONSON. Good morning. Thank you, Chairman Thompson, Ranking Member McGovern, and Members of the Subcommittee, for giving me the opportunity to testify today.

My name is Lauren Aaronson, and I lead the Office of Business Process Innovation at New York City's Human Resources Administration. I am pleased that you are recognizing the work that Mayor Bill de Blasio and HRA have undertaken to modernize the way New York City administers the SNAP program.

Today I will focus on our work to improve the client experience, and the agency's ability to adapt to and incorporate new and emerging technologies in its service delivery model.

Currently, nearly 1.7 million New York City residents receive SNAP benefits. HRA has invested in the creation of a self-directed service model for our SNAP population. In addition to providing an enhanced customer experience, this lower-touch model frees up our eligibility workers' time, and allows them to focus on those clients who truly need their support. Some of these technologies include an innovative online tool called ACCESS HRA, where residents can retrieve benefit information and apply and recertify for SNAP. This portal allows clients to create an account to gain real time access to over 100 case-specific data points. Additionally, clients can make limited changes, view e-notices, and opt into text message and e-mail alerts. As of this month, there are more than 300,000 HRA online accounts for SNAP households.

Using an USDA grant, HRA launched a self-service mobile app to give clients the ability to use their mobile device to better manage their cases on-the-go. The app allows clients to utilize their mobile device to capture and submit images of SNAP eligibility documents to the agency, and allows us to leverage innate mobility

tools such as push notifications, mapping, and calendaring. HRA uses an iterative design approach and techniques such as A/B testing as a way to put the user first, and allow us to optimize the functionality of these apps. Clients have downloaded this app over 112,000 times, and uploaded over one million images. For those clients that prefer to transact with us in our centers, we provide a suite of self-service tools, including self-service check-in kiosks, PC banks to use ACCESS HRA, and self-service scanning.

In an effort to simultaneously address improving the client experience and increasing worker efficiency, in 2016 HRA implemented a new call center for recertification eligibility interviews. This new operation takes advantage of a waiver from the USDA, and allows clients to conduct SNAP eligibility interviews on an On-Demand basis, rather than waiting for a scheduled interview. This is an improvement for our clients as well as an efficiency improvement for workers, who no longer call to schedule and reschedule interviews.

The clearest success of On-Demand is the increased number of interviews taking place by phone. Before On-Demand, only 52 percent of SNAP recertification interviews were held by phone, we can now report as high as 76 percent of interviews on the phone. Each of these improvements represents a reduction or elimination of a significant barrier. By mitigating the barriers to access, we can ensure clients maintain benefits and reduce the churn of clients at recertification, which can tax our resources.

Technology has changed the way we communicate with each other and our institutions. We recognize that our work to improve the client experience must not stop at optimizing digital systems and improving online communication efforts. Through data analysis, client interviews, and research, we identified certain behavioral patterns that lead to the churn of clients at recertification. We crafted behaviorally-informed notices, informing clients that they would lose their benefits if they did not act, and we found that those clients who received these notices were more likely to initiate their recert application, and completed phone interviews earlier in the recertification period; a low-cost approach to improving outcomes. Over time, these collective investments will reduce our physical footprint, and save on expensive lease costs, while removing barriers to access and making it easier for clients to apply for and maintain their benefits.

The de Blasio Administration will continue to work to expand access and remove barriers to SNAP using online tools and technology innovations. Our work has resulted in a better customer experience and a more efficient operation for HRA.

Modernization of client and worker facing tools and processes can only take us so far. There is a need to review the underlying Federal regulations that guide SNAP, to help jurisdictions take full advantage of the continuous technology advances, changes in population needs, and shifts in the workforce. There is an administrative burden on states and Federal oversight that could benefit from building more flexibility into the regulations so that every innovation does not require a waiver.

We would also like to take this opportunity to work with you to protect low-income and vulnerable Americans, as well as Americans with disabilities, against any proposed Federal cuts in the

SNAP program. Not only would cuts to the SNAP program reverse years of gains that cities and states like New York have made in service delivery, it would also harm local economies. In New York City, SNAP recipients purchase more than $3 billion worth of food, generating about $5.4 billion of economic activity largely within small businesses.

We look forward to continued collaboration with the Committee as we continue to innovate and modernize the SNAP program. For a detailed account of these efforts, I invite you to review my submitted testimony.

Thank you. I look forward to your questions.

[The prepared statement of Ms. Aaronson follows:]

PREPARED STATEMENT OF LAUREN AARONSON, ASSISTANT DEPUTY COMMISSIONER, OFFICE OF BUSINESS PROCESS INNOVATION, NEW YORK CITY HUMAN RESOURCES ADMINISTRATION, NEW YORK, NY

Good morning. Thank you, Chairperson Thompson and Members of the House Agriculture Committee Subcommittee on Nutrition for giving us this opportunity to testify and respond to Committee questions today.

My name is Lauren Aaronson and I am an Assistant Deputy Commissioner of the Office of Business Process Innovation at the New York City Human Resources Administration (HRA). I am pleased that you have invited me here today to testify and that you are recognizing the work that New York City Mayor Bill de Blasio and HRA have undertaken to modernize the way New York City administers the SNAP program. We believe we are well on our way to achieving the two primary and equal goals of our modernization efforts—improved customer experience and optimized operational efficiency. I will focus this testimony on the de Blasio Administration's work to improve the client experience and the Agency's ability to adapt to and incorporate new and emerging technology in its service delivery model while addressing the needs of the most vulnerable New Yorkers, including older New Yorkers and those with limited sight, mobility and technology and broadband access. These continuous efforts and reforms are helping the Administration to move towards its goal of eliminating hunger in New York City and ensuring that every New Yorker who is eligible for SNAP has unencumbered access to this critical nutrition support while utilizing fewer administrative resources.

As this Committee knows, SNAP is the nation's most important anti-hunger program, assisting more than 45 million low-income Americans, 70 percent of whom are families with children and more than one in four are households with seniors or individuals with disabilities. Currently, nearly 1.7 million New York City residents receive SNAP, including nearly 600,000 children (35%) and 415,000 seniors (25%). Compared to 1 year ago, the SNAP caseload increased by 1,254 cases (0.1%), which was a decrease of 7,269 recipients (−0.4%). Since Mayor de Blasio took office in January 2014, we have worked to implement both immediate and long-term measures to combat economic inequality and to ensure that each New Yorker has access to, as well as, the resources and supports they need to thrive and avoid hunger.

Over the past 3 years, HRA has invested in the creation of a self-directed service model for our SNAP population. These self-service tools are available to all SNAP enrollees, and a large segment of our SNAP population is interested and able to take advantage of this model. In this day and age, our clients are accustomed to using self-service tools at train stations, banks, airports and supermarkets. In addition to providing an enhanced customer experience, this lower-touch model frees up our eligibility workers' time and allows them to focus on those clients who truly need their support.

I will now spend a few minutes discussing some of these technology improvements and other initiatives aimed at reducing barriers to access and bringing our service delivery model further into the 21st century.

New and Improved Technology

The goal of our modernization effort is to create a self-directed service model that allows applicants and clients to transact with the Agency without the burden of having to physically come to an HRA location. Over time these investments will help the City to reduce our physical footprint and save on expensive lease costs while removing real barriers to access, and making it easier for clients to apply for and

maintain their benefits. We know from national studies that the point of recertification is where many eligible clients across the country often lose their benefits.

Launched ACCESS HRA

To improve access to benefits and information on a pending or active case, NYC developed an online portal available to New Yorkers anywhere an Internet connection is available. ACCESS HRA is an innovative tool that allows New York residents to retrieve benefit information and apply and recertify for SNAP and other benefits. This portal allows clients to create an ACCESS HRA account to gain access to over 100 case-specific points of information in real-time, including application and case statuses, upcoming appointments, account balances, and documents requested for eligibility determinations. Additionally, clients can make changes to contact information, view eligibility notices electronically, and opt into text message and e-mail alerts. We continue to improve this tool to add new functionality and will soon allow recipients to submit their Periodic Report in addition to reporting changes in circumstances. As of May 31, 2017 there are more than 300,000 HRA online accounts for SNAP households, and we receive over 33,000 submissions each month.

ACCESS HRA also allows clients to:

- View E-notices that remain accessible for 365 days.
- Go Paperless! Clients are able to opt-in to reduce the number of paper notices sent from HRA.
- Request an electronic budget letter from the Case Details page, which will appear as an e-notice the next business day.
- Recertify SNAP and Cash Assistance cases.
- Document Reuse: Select documents on file at HRA for identity, age, and other eligibility documents to re-use when submitting an online application.
- Opt into text message and e-mail alerts about their case. For example, a client can now receive a text when their SNAP recertification period begins.
- After submitting a recertification form, track the date it is received by HRA on the Case Details page.

HRA complies with NYC local laws by making ACCESS HRA available in seven languages (English, Arabic, Chinese, Haitian Creole, Korean, Russian and Spanish), and the tool was designed and tested to make its content more accessible to people with disabilities, which means it is compliant with WCAG 2.0 (Web Content Accessibility Guidelines), AA standard. We have taken great pains in ensuring that we perform User Acceptance Testing with a diverse cross section of users, including those with disabilities.

Launched HRA Mobile App

In an effort to decrease the digital divide, HRA was awarded a U.S. Department of Agriculture grant to launch a self-service mobile app to give clients the ability to use their mobile device to better manage their cases. Implementing mobility as a tool is significantly different than designing an online web portal. Mobile devices are powerful tools in their own right, and taking advantage of a phone's innate capabilities is critical to successful implementation. Though the app allows clients to utilize their mobile device to get access to much of the same information that is available on the web portal, it also allows clients to use the camera to capture and submit images of SNAP and Cash Assistance eligibility documents to the Agency. In addition, it allows us to use push notifications to remind clients about important case milestones such as recertification, as well as access integrated functions such as mapping and calendaring.

Designing for a mobile device has certain challenges including the need to create a highly intuitive user interface. For this reason, HRA uses an iterative approach to design that puts the user first and allows us to optimize the functionality of the apps. Techniques such as A/B testing, where we go directly to our clients in the HRA Centers to test candidate designs to are utilized regularly. Since the application's launch, clients have downloaded the mobile app 112,000 times, and uploaded over one million images. Not needing to return documents at our centers saves clients and staff time, images are also of significantly better quality and already connected to the pending case action so that the eligibility worker does not have to waste time searching.

On-Site Self-Service Tool

For those clients that prefer to transact with us inside of our centers we have provided a suite of self-service tools. These tools include self-service check-in kiosks and PC Banks to utilize ACCESS HRA and self-service scanning.

The scale of our centers necessitates ticketing and routing for an efficient client flow. Self-service check-in allows clients to identify the purpose of their visit and automatically receive a ticket appropriately routing them within the center.

Across NYC almost 80 percent of applicants that come to our centers to apply for SNAP are interested in applying online in our PC Banks. In some cases, applicants do not have access to a computer or feel more comfortable submitting online with the assistance of a facilitator in our offices. We have also been able to use the PC banks as a forum to solicit client feedback on the usability of the ACCESS HRA tool, and identify improvements to the application questions, communications with clients, and efficiencies in our operation. This feedback loop allows us to hear the "voice of the client" and adjust our technology and processes to create a better overall client experience. The overall impact of these usability adjustments have impacted the foot-traffic in our centers, as close to 65% of our online applications are being submitted on computers and mobile devices outside of an HRA location.

There are currently 15 SNAP centers and 103 community-based organizations across the City where clients can quickly and easily scan and submit documents electronically. Clients are able to use the self-service areas to submit documentation in support of case changes such as the addition or removal of a family member, and change in rent or address. In addition, 12 Job Centers have scanners and ten Job centers have self-service kiosks. The self-service document scanning option allows clients to submit documents at locations convenient to them, not only at our SNAP centers.

On-Demand Interviews

In an effort to simultaneously address improving the client experience and increasing worker efficiency, at the beginning of 2016, HRA implemented a new call center to handle recertification eligibility interviews for SNAP. This new operation takes advantage of a waiver from United States Department of Agriculture Food and Nutrition Services (FNS) and allows clients to conduct their SNAP Eligibility interviews on an On-demand basis at their convenience, rather than wait for a call during a 4 hour window, or come into a center and wait for an in-person interview. This is an improvement for the client, as well as an efficiency improvement for the workers who no longer have to call to schedule and reschedule interviews. The clearest success indicator for On-Demand has been the channel shift of interviews taking place in-person at centers, to interviews being over the phone at the clients' convenience. In October 2015, before the implementation of the On-Demand call center, only 52% of the completed SNAP recertification interviews were held via telephone. We now have reached as high as 76% of the interviews held by phone—a 24% increase. As we continue to increase our capacity, we will begin to introduce on-demand telephone interviews for new SNAP applicants by this Fall.

Each of these technological improvements alone represents a reduction or elimination of a significant barrier. Together they represent a wholesale change to the ways in which clients apply for and recertify for benefits—ultimately reducing the number of clients who do not receive this vital benefit because it is too hard to apply and recertify or the investment of their time is too great. By mitigating the barriers to access we can ensure clients maintain their benefits and reduce the churn of clients at recertification, which can tax resources across the system.

Behavioral Based Notification

Technology-from computers to mobile devices, to Facebook, Twitter and Snapchat, to text messages—has become an important way for New Yorkers to communicate with each other and institutions and to get the information that they need. This is precisely why the de Blasio Administration has committed to bringing every New Yorker affordable, high-speed Internet access by 2025 and prompted the launch of LinkNYC, the world's largest and fastest free municipal WiFi network with more than one million users. Notwithstanding these incredible advances, the de Blasio Administration remains laser focused on helping New Yorkers overcome obstacles not necessarily related to technology and broadband access.

At HRA, we recognize that our work to improve client experience must not stop at optimizing our digital systems and improving our online communication efforts. Through data analyses, client interviews, and research, we were able to identify certain behavioral patterns that lead to churn of clients at recertification. For example, SNAP notices weren't catching clients' attention. In response to this, we crafted a behaviorally-informed reminder notice to clients that they'd lose their benefits if they didn't act in a timely manner. What we found was that those clients who received the behaviorally-informed notice:

- Were 5.5% less likely to miss the form submission step than clients who did not;

- Were more likely to submit recertification forms and completed phone interviews earlier in the recertification period; and
- Were 12.9% more likely to have submitted a recertification form than the control group.

Now I would like to briefly discuss how these low and high tech innovations are allowing HRA to meet clients in the setting where they feel most comfortable, both online and offline.

SNAP Outreach

SNAP Outreach Online

In April 2015, HRA launched an advertising campaign to encourage New Yorkers struggling to afford food to seek help, especially targeting low-income seniors and immigrants. Through *FoodHelp.nyc,* potential clients are redirected to ACCESS HRA where they are able to determine if they qualify for SNAP and other City, state, and Federal benefits. In addition to the website, the campaign consists of print advertisements in English and the six New York City Local Law languages in locations throughout the City. The campaign also includes digital advertisements and video testimonials of past and current SNAP clients. Since the inception of the SNAP Helps campaign in April 2015, *FoodHelp.nyc* has seen approximately 131,000 lifetime users with roughly 74% being new users. Additionally, there were approximately 58,000 click-throughs from *FoodHelp.nyc* to ACCESS HRA, representing 44% of site visitors.

SNAP Outreach in the Community

HRA's SNAP Support Services unit manages out-stationed staff at three community-based "Paperless Office System" sites providing online access to benefits with an 88% approval rate for approved applications. SNAP Support Services staff also provides technical assistance to 103 community-based organizations that provide SNAP facilitated enrollment and recertification services. Over the past year, SNAP Support Services provided outreach services at more than 1,676 individual community events and prescreened more than 9,526 potentially eligible applicants.

Now I would like to briefly discuss how this Committee can help the City and State of New York continue to leverage technology in pursuit of improved program efficiencies and outcomes.

A–87 Cost Allocation Waiver

Families in need often require assistance from more than one program, which can mean visiting multiple offices, completing multiple applications, and providing the same documents to more than one program. Improvements in technology can streamline the delivery of programs, making the process more efficient for service providers, and helping to ensure that families and individuals receive program services in a more holistic manner. The current A–87 cost allocation waiver provides incentives for states to streamline service delivery, efforts towards which have begun in many states. In New York, these efforts will create a "no-wrong-door" service system for families that will help to ensure that they receive all the help they need, no matter which program they approach first. This coordinated approach to service delivery, will help families get back on their feet and off of assistance more quickly. However, this work is not done, and the expiration on December 31, 2018, of the increased Federal reimbursement available under the A–87 cost allocation waiver threatens to slow or halt this important work in New York and elsewhere. For this reason, New York strongly recommends that this Committee work with the United States Department of Health and Human Services' Centers for Medicare and Medicaid Services and the U.S. Department of Agriculture to extend or make permanent this waiver in order to incentivize states to continue to develop the types of technological advances and outcomes described in this testimony.

Conclusion

The Administration will continue to work to expand access and remove barriers to SNAP by using online tools and technology innovations. The results of these implementations have been multi-faceted. For clients, it has resulted in shorter wait times to complete their transaction, and a better customer experience for our low touch population as well as for our clients in need of a more in depth worker intervention. Our workers are spending time helping clients when needed, rather than completing the scanning tasks, routing clients manually, and data entry. Modernization of client and worker facing tools and processes can only take us so far. We believe there is a need to review the underlying Federal regulations that guide this program to help states and local jurisdictions take full advantage of the continuous technology advances, changes in our population needs, and shifts in the workforce.

There is administrative burden on both the states and the Federal oversights that could benefit from building more flexibility into the regulations so that every innovation does not require a waiver.

We would also like to take this opportunity to work with you to protect low-income and vulnerable Americans as well as Americans with disabilities against any proposed Federal cuts to the SNAP program or other safety net programs. Not only would cuts to the SNAP program reverse years of gains that cities and states like New York have made in service delivery it would also harm local economies. In New York City, SNAP recipients purchase more than $3 billion in food, generating about $5.4 billion of economic activity largely within small businesses. We look forward to continued collaboration with you as we continue to innovate and test and learn from new technology and tools

I look forward to your questions.

Thank you

The CHAIRMAN. Ms. Aaronson, thank you so much for your testimony.

The chair would like to remind Members that they will be recognized for questioning in order of seniority for Members who were here at the start of the hearing. After that, Members will be recognized in order of arrival. I appreciate Members' understanding.

I now recognize myself for 5 minutes of questioning.

Mr. Mathison, your testimony provides some encouraging news about the security of SNAP EBT card technology, indicating that the two-factor authentication provided by the use of a magnetic strip card with a PIN is an effective method for preventing fraud. However, you also indicated that there is still room for innovation with regards to secure two-factor authentication in situations where the card is not present, such as online transactions; e-commerce.

My question is how might we accomplish this in SNAP so that we can maintain both access for recipients and the integrity of the program for different types of transactions?

Mr. MATHISON. Yes. Thanks for the question, Mr. Chairman. As we think about what is happening out in the retail marketplace, as these physical grocers start to provide online services; whether it is online shopping or providing remote delivery in the home, where the cardholder and the benefit recipient doesn't necessarily go to the physical location, the card simply isn't present. As we try to facilitate these transactions on an online basis there are technologies available such as virtual PIN pads or secondary authentication methods where something that the benefits holder would have, like a fob or a token, or some other kind of administrative function that would identify that as a legitimate benefits holder, is paramount to making sure that, as these transactions happen, there isn't an explosion of fraud. The reason I say that is because as we think about what happens in the bank card world, the difference between the fraud levels that happen at the physical point of sale and the fraud that happens in the e-commerce world is very different because of this authentication. When you are in the store, I have the ability to look a person in the eye, I have the ability to extract a PIN from them that authenticates that they know that they are a legitimate cardholder, but in the e-commerce space those two ingredients are not necessarily available. I don't get to see the person, and they don't actually have a credential that authenticates that they are the person that is authorized to use that card.

So making sure that these kind of second-factor authentication technologies go along for the ride as we start to deliver SNAP benefits into the e-commerce space is going to be very important to make sure that fraud does not occur.

The CHAIRMAN. Thank you.

Secretary Glisson, you have been very frank about some of the challenges your department faced in launching your eligibility system, and the lessons you learned in the process. It seems that there was a complex set of issues from contracting, oversight, IT, to policy. With 20/20 hindsight, what would you advise other states embarking on these projects to prioritize at the outset to mitigate some of these complications, and what can the Federal Government do to support states in these efforts?

Ms. GLISSON. Thank you. Thank you, Chairman Thompson. I appreciate your question.

I think some of the things that I could say to the states, and I will just note that we did try to make a list in our written testimony that we provided, in our white paper, so I would encourage folks to go and look at the white paper. I think that there are things that I would remind them about that we learned and they were tough lessons, one of those is around the training aspect. We were told by the vendor that there had been a lot of training, that had been done appropriately and so forth, but training is essential. And we found out that training needs to be done very close to the actual time of the rollout. When you are doing a whole state-wide rollout, that can be very difficult because it can encompass a lot of training over a larger period of time. Maybe phasing in, if that is possible, that was not something we could do, we had to do a complete state rollout, but having training and having training that is close to the time of the rollout can be very helpful.

One of the things that was most beneficial is that we also put together a team of individuals that came to Frankfort, and they worked on some of the harder cases that we have to deal with. These are cases that are more complex. The SNAP cases generally are not quite as complex as some of the other cases that are in an integrated system. But we brought a dedicated group of workers that all they did was sit and work on cases. This was like maybe upwards to 100 workers that came to Frankfort and spent all day just working on particularly hard cases. That was also very beneficial because once you were in our local offices, we have 120 counties in Kentucky, we have a local office where you can get your SNAP benefits in every one of those 120 counties, those folks were being overwhelmed at the time. Having a group of individuals that came and that was all they did; they did not have to deal with the folks coming in the door at a local office, that they could just work on the issues around trying to work more difficult cases, that was also very helpful.

I also think it is very important that there needs to be really good communication between the vendor and the state. You need to have the right kind of a team that can talk the language and understand the language, make sure that you understand what is going on. There needs to be adequate testing. We were told that there was adequate testing, but that testing had not been done on some of these more complex cases that are part of an integrated

system. You have to remember that when you are having an integrated system, you have SNAP cases, but now you have Medicaid and other benefits, and they can be very complex, particularly around the Medicaid area and long-term care cases. You may feel that the testing has been adequate, but make sure that you've tested on all aspects of the case, including those more difficult Medicaid, or maybe what we call AMA cases for long-term care.

Also, make sure you have a backup plan. We had understood that there was a backup plan, but that it is also helpful to see if there is something that is kind of off-the-shelf, these plans are all customized, very expensive, lots of money has been spent on them just for that state. It would be helpful if you truly have a backup plan, is there something that could be purchased off-the-shelf, something that is out there that you could look at, take, and it could fill in the gap until you can get this thing back on its feet.

So make sure you have a backup plan. And be careful that you have the right folks in the committees making decisions, particularly around policy decisions. These policy decisions are some of the earliest decisions that are made around these integrated systems. A cabinet or those that are using these integrated systems, you must make certain that you have the right folks at the table, understanding when they make a policy decision, like in Kentucky, that they are going to ping a Federal database, and that these Federal databases are not really adequate. They need to understand that. The vendor needs to have an understanding of that, and there needs to be that good communication, and you need to be very careful as you are making these policy decisions about how you are going to be verifying information.

Those are just some of the areas that I would suggest that, if I had 20/20 vision, some of the things that could be helpful for other states.

The CHAIRMAN. Very good. Thank you very much.

I now recognize the Ranking Member for 5 minutes.

Mr. MCGOVERN. Well, thank you very much. And thank you all for your testimony.

One of the things that bothers me is when I hear reports, as I mentioned in my opening statement, of individuals who are on SNAP who go to a grocery store or market and then cannot use their benefit. Does anyone have any idea how many people we are talking about who that happens to on a monthly or yearly basis?

These outages are not a rare occurrence.

Mr. MATHISON. I guess the way I would try to benchmark that for you is, let me give you an example of one that happened, it was in the first week of May. There was an outage for the State of Louisiana. It happened for 3 minutes over the lunch hour, and there were 2,800 cardholders that were unable to get their SNAP benefits as they went shopping over their lunch break. From a frequency perspective, it really does vary. It can be everywhere from sporadic, one or two a month, because you have over 70 different jurisdictions, right?

Mr. MCGOVERN. Right.

Mr. MATHISON. Each one of them has their own ups and downs.

Mr. MCGOVERN. Right.

Mr. MATHISON. But on any given day, what I would say is, as we process for over the 70 jurisdictions, there is very rarely a day goes by that at least one of them doesn't have some kind of an outage.

Mr. MCGOVERN. Well, that is a problem. And so what happened to those shoppers in Louisiana who went with their SNAP cards and were told that they couldn't purchase their food?

Mr. MATHISON. Yes, typically what happens is, if the outage is short in a matter of minutes, they will usually just wait and retry the transaction, because you have to think about the lane experience, they are standing there in the checkout lane, they have a shopping cart full of groceries and they are trying to check-out. Usually they are just trying to stand there and wait until the system comes back up, or sometimes they will go over to the customer service desk and they will try to complete their transaction over there when the system comes back online.

Mr. MCGOVERN. And what happens if it is not a quick fix?

Mr. MATHISON. Yes. Usually, what they do is they will abandon the shopping cart and just leave.

Mr. MCGOVERN. Yes, that is obviously unacceptable. Typically we have people who are on SNAP who are working, who have families, who are trying to juggle a million different things.

Mr. Mathison, you mentioned the lack of redundancies in SNAP systems in your testimony, is this the cause of outages that prevent SNAP clients from being able to use their cards, and how do we fix this?

Mr. MATHISON. Yes, one of the things we do, I mentioned in my testimony the idea that there are, in the bank card world, there are actually legislative entities that manage the integrity of the financial system. They have oversight over Visa, MasterCard, they have oversight over the card issuers in that world, and they actually have oversight of First Data. While we are not a financial institution*, per se,* since we process approximately ten percent of the GDP through our systems on any given year, they do come in and they monitor us. There is oversight around what are our risk management policies, what are our oversight and controls over redundancies, what are our business continuity programs. And so we are required to have all those policies and procedures in place, and be able to document what we are going to do in such an outage.

What I would suggest is, with the different states all contracting separately, each with a different contractor, find out how their program runs, and if we have a disparity of how that works across the different jurisdictions.

Mr. MCGOVERN. Right.

Mr. MATHISON. Each one probably has their own policy in place, but they are necessarily not consistent.

Mr. MCGOVERN. But to fix this, I assume it will cost money.

Mr. MATHISON. Yes. At the end of the day it is going to come down to, to the extent that there is not a secondary system that can come online when the first one fails, for example, there will probably be an investment needed to be made.

Mr. MCGOVERN. Right. The investment by the state and by the Federal Government, who would pay for this?

Mr. MATHISON. Typically, since the states have outsourced, and perhaps Mr. Boswell could weigh-in on this as well, but since the states tend to outsource that function to the contractors, as part of that initial arrangement is where the actual building and spending would happen.

Mr. MCGOVERN. Right. But I would assume some of it would be Federal money, right? Ms. Aaronson, I was pleased to learn about the innovations in New York City and we certainly applaud that, but you mentioned that you received a grant from USDA to make some of those improvements. Would you have been as successful in implementing these innovations without Federal investment, and what can this Committee do to help New York City and cities and states across the country to continue to make technological progress to improve delivery and access to services?

Ms. AARONSON. Thanks, Ranking Member McGovern. I think that these innovations would not have been possible without—sorry. Thanks, Ranking Member McGovern, for that question. I don't think that these innovations would have been possible without investment from the USDA, and without a very large budget to invest.

Mr. MCGOVERN. Right.

Ms. AARONSON. And it is important for us in the city, our scale is quite large, and in order to manage a caseload the size of ours we need the technical infrastructure in place to do so, otherwise you would have ballooning headcount just to handle the caseload. Technology helps us to increase efficiencies and to make our customer experience better.

Mr. MCGOVERN. Okay. And I guess my final point would just simply be: we are all for moving ahead with new advancements and technology. We want the experience for those who are the clients to be better, and we certainly do not want to have people show up at grocery stores and be told we can't take your card. That is just unacceptable. But to do that and to do the kinds of things that you guys did in New York City is going to require continued investment. In the long-run it will certainly benefit everybody. We are having this hearing in the context of a budget proposal that would significantly slash budgets that are designed to support these kind of innovations.

I thank you all for your testimony.

The CHAIRMAN. The gentleman yields back.

I now recognize the gentleman from Kansas, Mr. Marshall, for 5 minutes.

Mr. MARSHALL. Yes, thank you, Mr. Chairman.

I guess I will start with Ms. Aaronson. How long have you been working in New York City?

Ms. AARONSON. This is my 19th year with New York City.

Mr. MARSHALL. Compared to 19 years ago, what is our efficiency like? In other words, if we have a Federal budget of $80 billion in a year, and you spent $3 billion, how do you measure efficiency over the past 19 years?

Ms. AARONSON. Well, I haven't always been in this particular position, but I can say that the efficiencies that we have gained through the investments that we have made in the modernization that we have undergone recently can be seen in the fact that we

have shifted many of our workers from front offices to back offices, where they are doing much more eligibility-related tasks, rather than working on scanning documents and data entering, they are actually determining eligibility. We have decreased the number of in-person transactions in our centers by 31 percent. And we can measure churn by the fact that at the point of recertification, for instance, we have decreased the number of failed-to-keep interviews by ten percentage points since we implemented——

Mr. MARSHALL. Well, excuse me, do you measure just the cost of administering this from year to year, since you introduced all this technology?

Ms. AARONSON. It is really hard to specify specific costs. We have just recently implemented these modernizations, and we haven't yet determined what the ideal staffing model is. Moving a system this large over time is difficult to do.

Mr. MARSHALL. You don't measure how much it costs from year to year?

Ms. AARONSON. We certainly do measure that, and I can get you more specific data, but I don't have——

[The information referred to is located on p. 1237.]

Mr. MARSHALL. Has there been improvement in it, do you think?

Ms. AARONSON. Well, I have seen improvements in the outcomes for our clients, and I have seen improvements in terms of the number of transactions that we have needed to complete in-center *versus*——

Mr. MARSHALL. But not the cost?

Secretary, how long have you been in your position?

Ms. GLISSON. I have been in my position since December of 2015.

Mr. MARSHALL. December 2015. Do you have any idea if your efficiencies improved anything? I mean just the cost to administer the program, has it improved in the past 5 years and 10 years with all this technology we are introducing?

Ms. GLISSON. I don't have the numbers in front of me about whether we could quantify that for you, anecdotally, I would say that there are some improvements that we have seen. We have been able to cut down on our overtime. When I came into the Cabinet, out in the counties most of those counties were on overtime, so we have been able to slash the overtime that they are using. We are seeing some reduction in staff. We are seeing some efficiencies.

I will tell you that there are, and the Chairman asked me this question, and I don't think I really quite got a chance to answer that and follow up on your second part of that question, which is how could you help us so we can get some of those efficiencies. What I would suggest is that there is a way to actually get efficiencies, because if we were able to work with the Federal Government and get certified modules, remember, this is an integrated eligibility and enrollment system. Many of these states are not prepared to be able to understand all of the different vendors that come to their doors, and you have all of these vendors, and different vendors are working with every state.

Mr. MARSHALL. Yes.

Ms. GLISSON. If we were able to actually work more closely with the Federal Government to identify certified modules, whether it is through an app perhaps, or working with the Federal Government

to decide this has been successful in certain states and we would suggest that you contract with these particular vendors. That could be very helpful.

Mr. MARSHALL. Yes, my goal is that we would get the most number of dollars that we spend, as many of them to the customer as possible.

Ms. GLISSON. Exactly.

Mr. MARSHALL. And I understand that.

State to state there is probably some variation, and I am not sure if anyone, Mr. Boswell, Mr. Mathison, has much experience from state to state. What is the cost to administer this program? Does it vary much from state to state?

Mr. BOSWELL. The cost for administering the EBT side, I can't really speak for the entire cost of administering the integrated eligibility system, *et cetera.* From an EBT perspective it is relative, and it is similar state to state. It is primarily driven by the participant size of the entire caseload by state, generally speaking, but for an EBT cost for administration it is relatively the same.

Ms. GLISSON. Okay. I would like to add that that has been a challenge for our state. There was this enhanced funding to get states to go ahead and implement these integrated systems. When it comes to the management and the operation of the system, this is to build and design the system, that Federal funding then goes away, there is a substantial reduction in that Federal funding. For states, that is another thing that states need to be aware of because states are not prepared to take on that additional management and operation funding that is going to be needed to manage and to operate these very expensive, high-level systems.

Another reason that I would suggest that the states and the Federal Government work very closely together on these very expensive systems to get more economies of scale.

Mr. MARSHALL. I yield back.

The CHAIRMAN. The gentleman yields back.

I now recognize the gentleman from Pennsylvania, Mr. Evans, for 5 minutes of questioning.

Mr. EVANS. Thank you, Mr. Chairman.

Research shows that SNAP plays a critical role in improving dietary intake, particularly against obesity, removing food insecurity and improving other nutritional-related health outcomes. Therefore, as we head into consideration for the farm bill, expiring next year, what would you set forth as the top issues for our consideration for SNAP modernization as we move towards the farm bill? And I will start with Ms. Aaronson from New York, and then go down.

Ms. AARONSON. Thank you, Congressman. One of the most important things to consider in the farm bill is allowing SNAP to have access to the same Federal data hub sources that Medicaid does. Increased third party data sources for eligibility determination both results in efficiencies for the agency, as well as for faster processing time for clients to get their benefits.

Further investment in other innovations such as mobility and online tools improve access to the program for folks who are working and unable to get to centers during work hours.

I also think that there is a lot of rigidity in the regulations that govern the program, and if we had more flexibility to innovate it would be a more iterative and faster approach that would benefit both efficiencies and clients.

Mr. EVANS. Yes.

Ms. GLISSON. Yes, sir. I also think that it would be helpful if there was better alignment of policies. It goes to some of my comments earlier. If we could have, since you have many, particularly with integrated systems, you have both CMS at this time and FNS that are involved. I must compliment the FNS people, they worked very nicely with us and tried to help. But, it would be helpful if we could have an alignment particularly for programs that are now moving toward work requirements. Medicaid may be looking toward a work requirement, SNAP has a work requirement. We need alignment around definitions, we need alignment around terms, whenever you have two different agencies, two different entities working together, it would allow us to be able to address these issues more seamlessly.

If there are exceptions or if there are requirements that could be required across the board for all of these benefit programs, that then would allow us to be able to streamline them for an integrated system. For instance, I will just use the recertification issue as an example. For Medicaid, you go back for recertification once a year. It is a passive recertification every 6 months. But for SNAP you actually have a stronger recertification process.

If we could have an alignment around the rules that are impacting all of these benefits that are now going to be offered on an integrated system, it would help tremendously. And actually setting up a more formal collaboration between the two agencies, both with FNS at the U.S. Department of Agriculture, and CMS or HHS, because states are at a loss. We work with Agriculture, we work with CMS, but we can't help bring alignment. If there could actually be a group that whenever you are looking at these integrated systems, and you are going to have benefits that are going to be offered on one system, a formal group that we could work with, that we could go to, and they can then run those traps of working with both of those systems and working out the issues that may affect both agencies. States are at a loss to be able to do that on their own.

Mr. EVANS. Yes.

Mr. MATHISON. Thanks for the question. I guess as we think about the future and what is going to be happening in the next farm bill, what comes to mind, I would just echo what I have touched on in my prior comments, which is focusing on the alignment of the performance and the system availability, is going to be key. Making sure that cardholders and benefit holders that need to redeem their SNAP benefits can redeem them, seems paramount.

But also as you think about cybersecurity, and as the marketplace is changing, how do we protect and maintain the integrity of the program, how do we make sure that as these benefit holders try to use their benefits in these new places that they aren't disadvantaged and they can redeem their benefits when they need them, where they need them, and how they need them, and maintaining the security of that to prevent fraud, is paramount.

Mr. BOSWELL. Thank you for the question. Re-emphasizing a point from my oral statement, reviewing the restriction on non-merit employees, the allowing of non-merit employees to participate and assist the states in the end-to-end eligibility process for things they are restricted from performing today is a key item that should be considered in review of the next farm bill.

I will give an example of some of those things where the vendor community could step in and assist the state with today, that they are not allowed to, but should be: basic telephone inquiries, document scanning and indexing, application submissions and registrations, *et cetera.* To give kind of a simple example, there are a number of integrated eligibility systems across the United States for Medicaid and SNAP. In many of those instances, we have the opportunity, Conduent does, and we are grateful for that, to be able to provide the customer service or customer care component for the integrated eligibility system. When a call is received by Conduent for purposes of Medicaid, we are able to self-service that call, help that individual, one call, one resolution in many cases. But when that same phone call from that same recipient comes in that is a Medicaid recipient, but also is a SNAP recipient, seeking assistance, we are unable to, as a non-merit employee, assist that individual to the fullest extent. We are often having to transfer that particular call to a merit employee or a state employee, or a state help desk, where they are, in many instances, attempting to manage a large call volume themselves, attempting to get to clients quickly. In those instances, the vendor community could step in, assist those individuals with a one-call resolution for starters, but also take off some of the burden of states to have to maintain those infrastructures, those capabilities to service large call centers, as just an example.

Mr. EVANS. Thank you, Mr. Chairman.

Ms. GLISSON. And I strongly agree with Mr. Boswell's comments. That was part of my testimony, part of our white paper. If you can make that change, that would be very helpful if we were able to use our contract entities that we are particularly using with Medicaid, to be able to address the FNS side of the equation. We would be very appreciative.

The CHAIRMAN. Very good. Thank you.

I now recognize the gentleman from New York, Mr. Faso, for 5 minutes of questioning.

Mr. FASO. Thank you, Mr. Chairman.

I apologize for being late. We were at a Transportation and Infrastructure Committee hearing. And, Mr. Boswell, I noted though in your testimony you talked about use of advanced fraud analytics, and you say these are not commonly utilized in most states. What states are using them, and are there any statutory barriers to use of such fraud analytics with the SNAP program?

Mr. BOSWELL. Thank you, Congressman, for the question. From Conduent's perspective and the states that we service, and we service 25 states today as the EBT processor, we deliver a data warehouse and business intelligence tool to approximately 12 of those. Of the 12, two have made an investment into, or either through their procurement process, required an advanced fraud business intelligence tool, which Conduent provides.

To my knowledge, there are no restrictions or prohibitions that would disallow a state from participating in the use of that particular tool. But we find it extremely valuable, our clients have found it to be extremely valuable, and the use of, not necessarily suggesting that fraud is rampant or that there is a program integrity issue, but assisting them in investigation purposes, and assisting in providing weighted, scored factors against certain transactions, and how individuals are using and performing their card transactions to further their investigative purposes.

Mr. FASO. Among the issues that you mentioned in your testimony are odd hours of transactions and large amounts, large percentage of a total availability of the benefit that is on the card, address changes across large ZIP Code differentials, *et cetera.* You mentioned there are two states that are using the advanced analytics, which states are those?

Mr. BOSWELL. From Conduent's perspective, we have two that use the advanced analytics, and that is the State of Ohio and the Commonwealth of Massachusetts.

Mr. FASO. Okay.

Mr. BOSWELL. All of our participating states with our base business intelligence tool can utilize some of the components that you just spoke of.

Mr. FASO. Okay. And, Secretary Glisson and Ms. Aaronson, do either of your agencies use such advanced analytics?

Ms. GLISSON. No, we don't have a formal use of data analytics. I can tell you that we do believe that because of the integrated system it does allow us to have at least some fraud control. In the old system, the way it was set up is that you would go into a county, a caseworker would work one-on-one, face-to-face, generally, with a SNAP recipient. A lot of the information that was taken in was done based upon just the information that they had. There was a lot of room for misunderstanding. Under this system, all fields have to be filled in by the caseworker, they will be dinging certain databases. There is, we believe, less subjectivity that the caseworker will have in this instance, and so hopefully, it will be able to detect some fraud and that is our hope.

Mr. FASO. Okay. Ms. Aaronson, in terms of New York City, and I guess by corollary, New York State?

Ms. AARONSON. Well, Congressman, I can speak to New York City, not as well to New York State, but HRA does use data analytics to identify eligibility and trafficking fraud. We have a dedicated large unit of fraud investigators who regularly receive tips from the USDA, from OTDA, from the public, and we rigorously investigate all of those allegations.

Mr. FASO. Could you be so kind as also to provide for the record to the Committee information as to the City of New York and your ability to use these analytic systems to detect and weed-out fraud in the system? I would appreciate if you could send that.

Ms. AARONSON. Sure.

[The information referred to is located on p. 1237.]

Mr. FASO. And last, do our data systems regularly make it available for merchants to restrict certain purchases? I know you are not allowed to buy alcohol or cigarettes, for instance, or paper products with EBT SNAP benefits. How easily would New York City,

for instance, from your vantage point, you sought a few years ago to have a demonstration to restrict the use of soda purchases with food stamps, and the Obama Administration rejected that. How easily would you be able to implement such a thing with your merchants in New York City if we gave you the authority to do that?

Ms. AARONSON. Well, again, I can speak from New York City's perspective. Of course, our state holds the contract for our EBT provider, and so it is likely that they would need to answer how easy it would be for them to implement that. I am happy to follow up with them as well.

Mr. FASO. Very good. Thank you, Mr. Chairman.

The CHAIRMAN. The gentleman yields back.

I am pleased to recognize the gentlelady from North Carolina, Ms. Adams, for 5 minutes.

Ms. ADAMS. Thank you, Mr. Chairman and Ranking Member McGovern. And thank you to the witnesses for your testimony today.

Food insecurity and poverty are persistent challenges for many communities in North Carolina's 12th District that I represent. SNAP is a vital part of the solution to many of those issues. Last year, more than 142,000 people received SNAP benefits in my district. States across the board, including North Carolina, are implementing or considering new technology for their SNAP programs, and these modernizations have huge impacts on districts like the one I represent.

Ms. Glisson and Ms. Aaronson, the President's budget would drastically limit funding for SNAP. I am very concerned about that. It would also result in a decrease in the funding available for technological improvements for SNAP. If these budget cuts are implemented, what do you think the outcomes will be for your programs and for other states like North Carolina that have modernized their eligibility systems, or are interested in doing so?

Ms. GLISSON. As I mentioned, we have done an integrated system. There will be maintenance and operation expenses tied to the system. We are continuing to look at the system to see if there are other options so that we can even use sort of off-the-shelf options that could be used to be able to function in a way to keep the system functional. Obviously, we will be working within the constraints of whatever those parameters are, we will work within those parameters. We are very fortunate that our system is up and running. It is now functioning much better, and it gives us the option, now we can take a breather, and we can look at ways that we can make this a much more cost-effective system, going forward, whether it is looking at off-the-shelf options or something that is maybe not quite as customizable.

Ms. ADAMS. Ms. Aaronson?

Ms. AARONSON. From New York City's perspective, I would say that the cuts as proposed would be devastating to our ability to continue to modernize and deliver benefits like SNAP to the 1.7 million New Yorkers that receive them.

Ms. ADAMS. Thank you very much for your answers.

Mr. Mathison, the protection of security and privacy for recipients of SNAP is crucially important. You touched on these subjects in your testimony, but would you address how are current SNAP

technology issues being addressed and ensuring that recipients are protected? How do you think that is going to happen?

Mr. MATHISON. Yes, there are a couple of things there. As you think about the security that revolves around the transaction today, as I talked about in my testimony, there are multiple kinds of fraud, there are frauds where perhaps people are giving their cards to people inappropriately, there is other kind of fraud that happens in place, but the type of fraud that I am speaking about specifically that we can see and know to be prevented and protected fairly well is this counterfeit where people are taking cards and using them inappropriately with copies. And we believe that the fact that that card has a PIN is doing an outstanding job of doing that, and we would very strongly urge that anybody that wants to recommend or talk about eliminating, as that being not a very good idea.

There are other technologies we talked about the things that the processors and the states can do about monitoring live transactions as they flow, whether it is velocity checks or anomalies in the transaction, those kinds of things, and as that technology continues to emerge, there will be some benefits available there as well.

Ms. ADAMS. Thank you very much.

Ms. Aaronson, can you outline some of the benefits that come from SNAP outreach, and why it should be recognized as an important piece of reaching people in need, especially our seniors?

Ms. AARONSON. New York City has been a leader in terms of participating in SNAP outreach. We actively have built a campaign around specifically reaching out to seniors and limited English-speakers to try to identify those folks who are eligible but not enrolled in SNAP today. We also are really focused on making sure that folks who are receiving SNAP stay on SNAP when they continue to be eligible, and not miss benefits. A lot of our outreach is around making that very clear to people who are up for recertification.

One of the most innovative things that we do for SNAP outreach is to send our employees out to many CBOs to actually enroll people in the SNAP program at those locations. In some cases, people feel more comfortable in their community locations than coming into a center, and we have been a leader in developing those types of programs.

Ms. ADAMS. Thank you very much.

I am out of time. Mr. Chairman, I yield back.

The CHAIRMAN. The gentlelady yields back.

I now recognize the gentleman from Florida, Mr. Yoho, for 5 minutes.

Mr. YOHO. Thank you, Mr. Chairman.

I appreciate it. And I appreciate you guys being here, the information. And as Mr. McGovern talked about in the beginning, the cuts that the President has proposed are very drastic. And as our nation, we are at $20 trillion in debt, and it is growing.

Austerity measures are coming, and we want to make sure that the programs that get cut that they are cut efficiently, and we want to make sure that the programs are there for the people that truly need the benefits from these nutritional programs. That is our ultimate goal here. But, this is a sign of some things coming,

unfortunately. We saw what havoc the sequestered cuts had on our nation and on our military readiness. And so as we go forward, we want to get the most efficient use of these programs into the hands of the people that need them.

And I want to do a backdrop here on a question I want to ask. A relatively new offering for SNAP benefit recipients is the mobile apps to view program balances, transactions, and enable cardholders alert. Mr. Boswell's company has a mobile app available for both the Android and the iPhones, and it is free to download in the respective app stores. Providing a mobile app also helps to empower recipients to monitor their account for potential fraudulent use by others that may have access to their SNAP benefit cards. Additional the mobile app can be a tool to convey important program information quickly to recipients, or could be used to influence spending behavior by offering incentives for healthy food products. That is your program, right?

Mr. BOSWELL. Yes, sir.

Mr. YOHO. The question is, and this is for the group, this question is for the group, what role do you think the mobile-based technology will play in both reducing administrative costs and improving provisions for the SNAP and preventing fraudulent use? Do you want to take that first, Mr. Boswell?

Mr. BOSWELL. Sure. Excuse me. Wrong one. Absolutely. We view the role of mobile and the SNAP, and especially the EBT marketplace, to be a significant one, as the testimony suggests. From a program delivery perspective, obviously, the first step which we are trying to accomplish is balance information, transactional data, helping the individual, the consumer, learn to be responsible for that account. From a delivery perspective ongoing, we see significant opportunity to drive the message of healthy eating, nutritional purchases through items such as offering coupons or incentives for making healthy purchases in retail marketplaces, *et cetera.*

From a fraud perspective, if you look long-term, much of the suspected fraud, if you will, in the EBT space is what we would consider the hand-to-hand fraud; selling your card, handing your card to someone else in return for some kind of value. If we were able to, from the long-view perspective, move from a card-based technology to more of a mobile payments perspective where you are utilizing mobile wallets, things such as Apple Pay, Google Pay, and instead of having to hand a card and use your PIN, you have to be present with your mobile device and a biometric fingerprint, if you will, to authorize that transaction, you are in many ways helping to prevent that hand-to-hand activity that could take place. That is a unique view and opportunity from a technology perspective that could assist mobile and fraud.

Mr. YOHO. One of the other questions I have, are there any apps that allow the SNAP recipient to see what they purchased on a nutritional content, and can they have running tabulation of that, and is there a way a caseworker can look at that and say, "Well, you are buying these things and not these things, and we need to move into this category?" Because we see the childhood obesity and we see them in the food deserts, and we need to educate and help us work through that process.

Mr. BOSWELL. That is a great question. Currently, a transaction that is processed for SNAP, the information provided back to the processor, such as Conduent, and back to the states is not at the product level. The product information is not passed in that transaction. There are some advances, if you will, that aren't necessarily providing product information, but I will cite the Commonwealth of Massachusetts in a healthy-eating initiative that they have undertaken whereby they have engaged the retailer community and the processors, just as Mr. Mathison at First Data, to identify the amount of money that is spent, or amount of SNAP transaction that is spent on a healthy food option. The grocer identifies the amount that was spent on the healthy food——

Mr. YOHO. But every product has a barcode on there, so I would think there should be a way to tabulate that eventually with an app.

Mr. BOSWELL. There certainly is.

Mr. YOHO. Mr. Mathison.

Mr. MATHISON. If you don't mind, what I would say is to echo what Mr. Boswell is saying, there are other programs that work similar to what you are suggesting. For example, the eWIC program absolutely works at what we call the SKU level or the barcode level.

Mr. YOHO. Right.

Mr. MATHISON. The SNAP system doesn't currently work that way, but there are models out there if they were enabled inside the SNAP system could work similarly.

Mr. YOHO. All right, thank you.

Mr. Chairman, thank you.

Mr. MCGOVERN. Just before you yield back.

Mr. YOHO. Yes.

Mr. MCGOVERN. Yes, all this is very, very interesting too, but not everybody has access to the technology that we are talking about here today. While we are talking about moving forward, everybody having a smart phone and all this, not everybody does. The SNAP population is a very diverse population. Again, it goes back to what I said before about not only moving forward with advancements in technology, but making sure that we don't have situations where the technology isn't working, where people are denied their food benefit. IT should not increase hunger, it should help alleviate it. We have to be very, very careful how we move forward here with generalizations.

Mr. YOHO. Mr. Chairman, can I ask him something?

The CHAIRMAN. Your time has expired, but go ahead.

Mr. YOHO. I would be happy to talk to you, and maybe that is something we should look at incorporating to make sure people have that, because the whole goal is to get people to have the benefits there, and also to make sure they are eating properly. And that may be something that could be incorporated.

Mr. MCGOVERN. Okay, thank you.

The CHAIRMAN. The gentleman's time has expired.

I now recognize the other gentleman from Florida, Mr. Lawson, for 5 minutes.

Mr. LAWSON. Thank you, Mr. Chairman. Welcome to our Committee.

Madam Secretary, the President's budget requires states to pay 25 percent of the SNAP benefit by 2023. The cost shift will be $9 billion to the State of Florida over the next decade. I sent a letter, along with some of my colleagues, to the Governor and asked him how would he handle the cost shift. As a state legislator for almost 3 decades myself, I saw what the state must do to make these programs work. Could you please speak to the burden that it would place on the states to update and maintain and implement the EBT technology if this kind of budget proposal was implemented?

Ms. GLISSON. Well, thank you for the question. And I will go back to a prior answer that I gave, which is that we do have our system up and going. I believe that we are now at a maintenance and operation level, and that we now have, as you said, some time to be able to look at options, particularly options that may not be as customized as this was, but options to be able to actually look for cost-effective ways to be able to implement that kind of technology in Kentucky.

We are also looking for ways to align our benefits programs even more effectively, so we think that there will be cost savings from that, whether it is in Medicaid or otherwise. We are looking for any number of ways to align benefits, align workers to be able to implement these programs and implement benefits, and we believe that we will be able to then assume that responsibility.

Mr. LAWSON. Okay. And a little bit of a follow-up question. I have heard from many grocery store and farmers' markets and small business owners who have noticed the application process and equipment set up with the EBTs. It takes months and sometimes it can be very expensive. In your experience, how can the improvement increase the access of SNAP, because it takes so long sometimes in order for the application process to go through?

Ms. GLISSON. Is this directed to me, sir?

Mr. LAWSON. Yes.

Ms. GLISSON. What we have found with our integrated system is that it is very beneficial for the recipients because it allows them to have a one-stop shop, so they can come into our local offices in each county and they can then provide their data that they need. It is a system that allows us to serve our clients much more efficiently, and we can then work with them more closely. It is essentially a one-stop shop that allows us to deliver our services more efficiently.

Mr. LAWSON. Okay, thank you.

And this question goes to Mr. Steve Mathison. In north Florida, we have four Fresh Access Bucks markets where SNAP families can earn extra money to buy fresh and healthy products. Since these markets evolved, SNAP recipients have been incentivized to purchase healthy and local products to the tune of $20,462 in my district. However, in Fiscal Year 2015, farmers' markets and direct farm only accounts were less than one percent of all the SNAP purchases. Can you explain how third-party processing fees prevent farmers' markets and smaller grocery stores from offering SNAP and SNAP incentive programs?

Mr. MATHISON. Yes. I guess the way to kind of think about that is as smaller and mid-sized businesses, as you are referring to, try to engage in this space, we touched briefly on the burden and the

process to get enrolled and get up and running. The idea that now it is kind of a pay-to-play scenario where I have fees in order to become a SNAP recipient and provide these benefits that I want to provide, can be a barrier. There are plenty of other fees that they have, to tack on some other ones seems to be a way to slow the process down rather than speed it up, especially when they are trying to make investments in their point of sale and register systems. It is a new kind of program that they need to administer. There are certainly a bunch of rules and administrative functions that they need to implement. Whether they are the largest retailer in the world or they are a small bodega, the rules are basically the same. As the smaller businesses try to do that, it can become a burden.

Mr. LAWSON. Okay. And, Mr. Chairman, I yield back. My time ran out.

The CHAIRMAN. I thank the gentleman. He yields back.

I now recognize the gentlelady from New Mexico, Ms. Lujan Grisham, for 5 minutes.

Ms. LUJAN GRISHAM. Thank you, Mr. Chairman. And thank you to the panel.

Secretary Glisson, my series of questions are for you. And I want to thank you for your service. I was a former Cabinet Secretary for three different Governors in New Mexico, and they are tough jobs.

Ms. GLISSON. It is a tough job.

Ms. LUJAN GRISHAM. It is. And it is a great job. And the reality is that what we are talking about today, information technology, and how to utilize it to streamline our application processes, states have been looking at ways to do universal applications given that the majority of these programs are all Federal-related in some way. Each of them, even in the same department, will have very separate unique applications. Although SNAP is sort of that, if you qualify for SNAP you are going to qualify for everything else. That has been the case for a long time, and yet most states in the country still do not have either universal or integrated application processes. And we have changed technology systems since technology was around for states in the 1990s, any number of times to try to get at that. I applaud your efforts, and agree that that is what we need to do, but I have some concerns. And as you are, I am sure, aware that in your state, in Kentucky, 25,000 households wrongly received letters telling them they were no longer eligible for SNAP, when you rolled out benefind. Rhode Island had a similar problem when households were wrongly denied of food assistance, and so much so that the ACLU filed a law suit. And you may or may not know that as I highlighted your state and Rhode Island, let me tell you about how New Mexico is doing, and it is not something that is very positive.

In fact, the former Under Secretary, Kevin Concannon, said that, "New Mexico was the most fouled-up SNAP program in the country." Now, I would really like in the context of this hearing to disagree, but I cannot. Actually, he is very right about that. And given that we rolled out a new technology system called ASPEN that was really intended to help us process faster, but also in an effective way. But, we have a backlog, and in order to address the backlog the human services department was adding assets so that you

didn't have to meet the enhanced timeline for folks who needed emergency assistance. Now we have a consent decree and a court order, a special master, it is going to be very expensive for New Mexico to get out of that mess. And they need to. We want folks who are clearly eligible not only for SNAP but for everything else, to be eligible and get the benefits that they need. I talked about, universal applications, that if the SNAP application doesn't work, then I have trouble with Medicaid and general assistance and LIHEAP and everything else.

What I am worried about is that while we are moving forward, I am not sure that USDA or FNS really have the resources to do both technical assistance and oversight. Are you concerned that that may also be an issue as states should be investing in enhanced information technology to streamline and make more effective and make more reasonable our application processes in general?

Ms. GLISSON. Well, I want to make sure I understand your question. If your question is, do the states need to work and align more closely with the Federal Government before we roll out these systems, I would agree. Part of the issue has been that as states have been looking at if there was enhanced funding encouraging states to do this, and there was not a lot of collaboration, working together to get economies of scale, the states and even the Federal Government were probably not in a position to really think about how they were going to contractually deal with the contractors that were out there, and how that we could work together to get economies of scale, making sure that those contractual provisions were going to be protected.

Ms. LUJAN GRISHAM. What about the accountability aspect? Each of these rollouts, I have given you three, there are many others as you are aware, and I would love to tell you when we were rolling out new information technology, that it always worked. It didn't, and we would deal with the glitches. But I am worried about the accountability factor. And mostly in Federal Government, Mr. Chairman, and, Madam Secretary, as you know, the architecture platforms. The contractors, they don't really have the expertise to tell you what things to look for and when it goes wrong, or then to fix it, to help you both with resources and, as I said, guidance.

Ms. GLISSON. I would agree that there are times that they learn from the states, and they are there on the job learning from the states. I agree with the accountability piece. I put that actually in our white paper. What we have done at our Cabinet is that, maybe this is the health lawyer in me, we have gone in, we have looked at our contracts, we have beefed up our contracts. We now have very strict terms. What I would like to be able to do is even to work closely with the Federal Government so that we work together to come up with a template contract as we are, because it has both Federal funds and state funds into these integrated systems. But, we should be aligned in what we expect to be able to get from the vendors. I would like to work together to have template contracts. I think they should be strengthened. These are very high level, complicated contracts. For instance, I know that I was told that with our Release 5 on our benefind, there were about five million lines of code alone in that one release. States need to understand

how important that is whenever we are contracting for these high-level services I would like to be able to work together.

Ms. LUJAN GRISHAM. Secretary, I am way out of time, and the Chairman is being very generous because it is just us guys here, and what can he do. And I appreciate that. And maybe it is an area, Mr. Chairman, now that I am completely out of order, to think about in the farm bill. We need to think about the resources and the tools to create effective partnerships so that we implement correctly and there is accountability of the states, like mine, who may not have intended to actually do it right.

Ms. GLISSON. I see these as partnerships. It is a partnership. I brought up the issue a little earlier about even trying to make sure that whenever this is a modular system, if we understand what the Federal Government has in mind when they are talking about what do you think is a certified modular system that we could then integrate. I would welcome the opportunity to work more closely together. I think that would be helpful.

The CHAIRMAN. The gentlelady yields back.

We are going to take, for Members who are here, additional time for questioning, if you have additional questions. And I take the liberty of the next 5 minutes.

Ms. Aaronson, you had and Mr. Mathison talked about it, he made comments about small amounts of counterfeit fraud within his oral testimony. You had mentioned about having a large group of fraud investigators, so I wanted to follow up on that and just ask about, have you quantified with those processes that you have compelled to put in place, have you quantified the rate of fraud? Determinations, not the accusations, because I know you mentioned they come from different places; consumers and different places, but the rate of fraud determinations, and as a result, any changes that you made based on any systemic issues you have identified with fraud?

Ms. AARONSON. As I said, we get various referrals for fraud and we investigate those referrals very vigorously. That said, it is so important to take proper steps to limit these types of improper payments, given that the volume of dollars that we are spending is high. The research has shown that the more automated the process, the harder it is for a mistake to be made or fraud to be committed. Electronic identification verification processes help make sure we know who the recipient is, and that they are properly found eligible for use of these benefits.

One of the things that the City has done is to aggregate all the third-party data sources that we do have access to and present them to our eligibility workers in an easily consumable portal for them to refer to as they are doing their interviews, so they can see what other data we have based on these third-party sources and what the applicant has indicated. And this helps in the eligibility determination process to make sure the worker is aware of everything that we do know.

If we had access to sources that are in the Federal data hub that are used for Medicaid we could even do a better job of making sure that we are determining eligibility based on all the facts that are out there.

The CHAIRMAN. Very good. And if there is something you could submit for the record, if you have an opportunity to look at what

some of those incidental issues that your investigators find, I think that is helpful as we work, because we want to make this effective and efficient, and we certainly want to make sure that we are putting the food resources in the stomachs of the folks who need it, and to maximize that. Obviously, fraud is an issue, though our hearings have shown that the incidence of fraud has been relatively low, which is very affirming. That is not to say we don't have a fiduciary responsibility to always monitor and always being vigilant with, well, with the taxpayer resources.

Ms. AARONSON. Absolutely. I would be happy to provide it.

[The information referred to is located on p. 1237.]

The CHAIRMAN. I appreciate that.

I want to follow up because I don't think your testimony mentions behaviorally informed reminder notices. I love how that sounds. I am not quite sure what it is, but having worked in behavioral health, all things come to mind of what that could be. Can you speak more to the development of these notices, and more to what these notices include, and then also what other examples of behavioral patterns leading to *churn,* a word that I just recently learned, has HRA identified?

Ms. AARONSON. Well, thank you, Mr. Chairman. We have worked really hard to identify what points of failure there are in the process that clients fall off of our caseload. Clients missing benefits because of failure to recertify is no good for them, but it also causes them to come back to us and have us to determine eligibility again. Specifically, we crafted a behaviorally informed notice to remind people that they need to call us for their On-Demand interview. And what we tried to do there was to sort of reframe this eligibility moment as one of loss; if you do not do this, you will lose your benefits. And that incentivizes folks to action, as it turns out, more than just your standard government notice saying it is time to recertify. We also articulate the steps more clearly, and use more clear iconography to sort of lay out the three easy steps to recertify. And we have found it to be effective in encouraging folks to take those actions.

We also use behavioral economics principles on our online application instead of necessarily using the standard line, all information needs to be provided as accurate or else punishable by law, we randomly assign other types of statements to see if we can encourage full and honest submission of data. For instance, did you know that nine out of ten New Yorkers receiving benefits also have earned income, to sort of normalize the idea that you can have earned income and still get food stamps. Those are some examples.

The CHAIRMAN. Very good.

Mr. Boswell, the state integrated eligibility systems and EBT systems are closely linked, and both systems need to be working properly for SNAP households to receive the right amount of benefits at the right time each month. What happens if one of those components fails, and are there failsafes in place?

Mr. BOSWELL. Yes, sir. Thank you for the question. Absolutely, is the answer if there are failsafes. I think on both sides I can speak to a couple of them and maybe give a few examples.

I would like to first kind of defer to the earlier conversation about the availability of the system for the individual, the user

that is shopping and trying to purchase foods and cannot. From Conduent's perspective as an EBT processor, obviously, 100 percent availability of our services is what we strive for on a daily basis. To measure that, however, to ensure there is some accountability and some oversight into that, each of our contracts are monitored against a service level of availability of over 99.95 percent availability, measured on a monthly basis. That being said, we obviously strive for 100 percent.

From a systems unavailability perspective, as Mr. Mathison referred to earlier, that can happen at any point downstream in an EBT transaction. It does not necessarily indicate that the processor itself was unavailable. It could be a local issue, a phone line, if you will, if someone is still using a POP on a cell device, *et cetera.*

But let me get to your question. I just wanted to clarify that and understand that Conduent's commitment is 100 percent.

If there is a failed component, first I will give an example from a state's eligibility side, and this is a very simple one. States are very diligent in their contracts with EBT processors to ensure that these components exist. One of the requirements of many of our contracts with states and commonwealths is that in the event of a disaster, if you will, if benefits cannot be issued out of the eligibility system for the participants, Conduent has to have the ability to reissue the same amount of benefits to the same participants for the same amount that was issued in the prior month. We have to have that ability to go back and do that, in an emergency request, so our system has that capability. That is one example of a failed component.

From Conduent's perspective, if there was a failed component, our infrastructure, if you will, is constructed as such to allow for a primary and a secondary system that is always replicating amongst itself, along with a tertiary or a disaster system that is always replicating amongst itself. At any given time we have three environments for every state EBT process that we manage. In the event one fails, it automatically fails to the second. If there is a major catastrophe, such as a disaster, we are automatically able to fail over to that disaster center.

I will say from an investment perspective and in the EBT space, we have recently and are moving toward moving our data centers into two new consolidated tier 3 data centers. Tier 3, if you will, really puts a focus on system availability and security. That is a Conduent investment into the EBT space, along with modernizing our hardware that drives our EBT processing platforms.

So there are components in place. They are tested annually, along with the states and USDA for disaster certification to ensure that in the event of a major failure, we are able to stand in and continue services.

The CHAIRMAN. Very good, thank you.

Just in closing, I want to thank all of our witnesses for bringing your extensive experience to this hearing today to help us as we prepare and move forward. The technological, the modernization aspects are incredibly important. It is the processes and structures by which we make sure that those who have needs that those needs are served.

I also want to thank the staff for helping to put this great hearing together.

We are going to continue our efforts that we have sustained over the past 30 months to prepare for reauthorization of the farm bill, to include a nutrition title that serves as the largest domestic hunger safety net, with effectiveness and efficiency, that is our goal. I personally believe that the values where food is largely grown and produced in rural America includes taking care of neighbors in need. And since farmers feed and nutrition matters, and hunger is not acceptable, the nutrition title is a very important part of the farm bill. We have an obligation to get the nutrition title right. And I really appreciate the commitment of all the Members of the Subcommittee to do this and to get this done.

And so under the Rules of the Committee, the record of today's hearing will remain open for 10 calendar days to receive additional material and supplementary written responses from the witnesses to any questions posed by a Member.

This hearing of the Subcommittee on Nutrition is adjourned.

[Whereupon, at 11:36 a.m., the Subcommittee was adjourned.]

[Material submitted for inclusion in the record follows:]

SUPPLEMENTARY MATERIAL SUBMITTED BY LAUREN AARONSON, ASSISTANT DEPUTY COMMISSIONER, OFFICE OF BUSINESS PROCESS INNOVATION, NEW YORK CITY HUMAN RESOURCES ADMINISTRATION

Insert 1

Mr. MARSHALL. Well, excuse me, do you measure just the cost of administering this from year to year, since you introduced all this technology?

Ms. AARONSON. It is really hard to specify specific costs. We have just recently implemented these modernizations, and we haven't yet determined what the ideal staffing model is. Moving a system this large over time is difficult to do.

Mr. MARSHALL. You don't measure how much it costs from year to year?

Ms. AARONSON. We certainly do measure that, and I can get you more specific data, but I don't have——

Since the beginning of its efforts to modernize its service delivery model in 2014 the Human Resources Administration (HRA) has reduced SNAP administrative costs. For example:

- In City Fiscal 2013 there were 1,600 staff administering the SNAP program. Today, technology and business process improvements are saving nearly $10 million a year in government funds compared to 2013, due to staff shifting reductions.
- The SNAP improvements have completely changed the way the City of New York does business with clients—the program requires less client facing space and we can optimize back office operations since much of this work is no longer location-specific. Technology also allows the City to streamline aspects of other programs—for example public assistance clients can use self-service options instead of waiting in a center to drop off documents and Medicaid is accessed online through the New York Health Exchange. This combination of factors allows the City to reorganize space—consolidating some large client sites and adding smaller "express" and self-service options in more locations. Eliminating one large building in lower Manhattan alone and consolidating core services into a nearby central location will save 76,000$^{2'}$ and $8 million a year and realize another $18 million in cost avoidance annually.

Insert 2

Mr. FASO. Okay. And, Secretary Glisson and Ms. Aaronson, do either of your agencies use such advanced analytics?

* * * * *

Mr. FASO. Okay. Ms. Aaronson, in terms of New York City, and I guess by corollary, New York State?

Ms. AARONSON. Well, Congressman, I can speak to New York City, not as well to New York State, but HRA does use data analytics to identify eligibility and trafficking fraud. We have a dedicated large unit of fraud investigators who regularly receive tips from the USDA, from OTDA, from the public, and we rigorously investigate all of those allegations.

Mr. FASO. Could you be so kind as also to provide for the record to the Committee information as to the City of New York and your ability to use these analytic systems to detect and weed-out fraud in the system? I would appreciate if you could send that.

Ms. AARONSON. Sure.

HRA verifies SNAP eligibility information against external data sources as part of its application process. These automated data matches are built into the application systems and they match up against several third party sources including, bank account data, wage data, unemployment data, [S]ocial [S]ecurity data, city employment data, and child support information, as examples.

New York City has a data analytics unit that uses data to identify fraud. There are a number of fraud indicators and fraud patterns that HRA proactively monitors on a regular basis. These include various matches and models to identify undisclosed income, concealed household members, and benefit usage outside of New York City. Once there is an indication of fraud/ineligibility, HRA's dedicated investigators investigate these allegations and are able to take steps to pursue Intentional Program Violations (IPVs), refer cases for closure, refer cases for prosecution, and recover SNAP dollars, as necessary and appropriate.

Insert 3

The CHAIRMAN. . . .

Ms. Aaronson, you had and Mr. Mathison talked about it, he made comments about small amounts of counterfeit fraud within his oral testimony. You had mentioned about having a large group of fraud investigators, so I wanted to follow up on that and just ask about, have you quantified with those processes that you have compelled to put in place, have you quantified the rate of fraud? Determinations, not the accusations, because I know you mentioned they come from different places; consumers and different places, but the rate of fraud determinations, and as a result, any changes that you made based on any systemic issues you have identified with fraud?

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The CHAIRMAN. Very good. And if there is something you could submit for the record, if you have an opportunity to look at what some of those incidental issues that your investigators find, I think that is helpful as we work, because we want to make this effective and efficient, and we certainly want to make sure that we are putting the food resources in the stomachs of the folks who need it, and to maximize that. Obviously, fraud is an issue, though our hearings have shown that the incidence of fraud has been relatively low, which is very affirming. That is not to say we don't have a fiduciary responsibility to always monitor and always being vigilant with, well, with the taxpayer resources.

Ms. AARONSON. Absolutely. I would be happy to provide it.

HRA has a professional fraud investigative unit, the Investigation, Revenue and Enforcement Administration (IREA) that works on SNAP ineligibility cases, as well as other public assistance fraud. This unit includes a dedicated investigative squad that works with the local district attorneys and other law enforcement on SNAP trafficking cases. In calendar year 2016, IREA investigated 2,448 allegations of fraud committed by SNAP participants. As a result of its investigations, IREA affirmed 142 Intentional Program Violations (IPV) with the average disqualification period of approximately 12 months. The IPVs we see most frequently include undisclosed income and undisclosed mandatory household member with income.

NYC had on average 1.6 million individuals in around nearly 950,000 SNAP households in CFY 2016 and the value of SNAP benefits issued was just over $3 billion. In 2016, as a result of IREA's fraud prevention and detection efforts, HRA recovered $1.6 million SNAP dollars and its efforts resulted in $28.5 million in cost avoidance for CFY 2016.

THE NEXT FARM BILL
(UNIVERSITY RESEARCH)

THURSDAY, JUNE 22, 2017

HOUSE OF REPRESENTATIVES,
COMMITTEE ON AGRICULTURE,
Washington, D.C.

The Committee met, pursuant to call, at 10:00 a.m., in Room 1300 of the Longworth House Office Building, Hon. K. Michael Conaway [Chairman of the Committee] presiding.

Members present: Representatives Conaway, Thompson, Lucas, Gibbs, Austin Scott of Georgia, Crawford, DesJarlais, Hartzler, Davis, Yoho, Allen, Bost, Rouzer, Kelly, Comer, Marshall, Bacon, Dunn, Arrington, Peterson, David Scott of Georgia, Costa, Walz, McGovern, Vela, Kuster, Nolan, Bustos, Plaskett, Adams, Evans, Lawson, O'Halleran, Panetta, and Blunt Rochester.

Staff present: Bart Fischer, Caleb Crosswhite, Matthew S. Schertz, Rachel Millard, Stacy Revels, Stephanie Addison, Anne Simmons, Keith Jones, Kellie Adesina, Troy Phillips, Nicole Scott, and Carly Reedholm.

OPENING STATEMENT OF HON. K. MICHAEL CONAWAY, A REPRESENTATIVE IN CONGRESS FROM TEXAS

The CHAIRMAN. Good morning. This hearing will come to order. I have asked Bob Gibbs to open us with a prayer. Bob.

Mr. GIBBS. Thank you. Our Heavenly Father, thank you for giving us the opportunity to serve here today. Also thank you for bringing our witnesses here today, and all the good work they do back at their universities to help agriculture and provide food and fiber for Americans. And also we want to thank you for helping us cope with the tragedy of last week and the recovery of our good friend, Steve Scalise, and the others that were injured, and just our prayers are with them and their families. And thank you for bringing them back to us to serve again. In Jesus' name we pray. Amen.

The CHAIRMAN. Thank you, Bob.

This hearing of the Committee on Agriculture entitled, *The Next Farm Bill: University Research,* will come to order.

From the level of conversation before the hearing started, apparently it is home week back there. Most of the witnesses must know half the room.

As we continue working to craft the next farm bill, we turn our attention to one of the primary drivers of innovation and productivity in our 21st century agricultural economy, and that is university research.

For more than 100 years, our producers have relied on investments in agricultural research to drive efficiencies and gains in productivity that have helped farmers and ranchers soldier through the toughest of times. While our focus today is on university research, I would be remiss if I didn't acknowledge our world-class teaching and extension programs that are responsible for disseminating the results of that research throughout the countryside and around the globe. This sustained investment, in part, has allowed the United States to enjoy the safest, most affordable, and abundant food and fiber supply in the world.

The U.S. has long been a leader in cutting-edge agricultural research, but our current budget problems have us scrutinizing every dollar, with public funding for agricultural research declining as a share of overall public research spending in the United States. While private-sector investments have picked up some of the slack, results of privately funded research are often not made publicly available. Importantly, private-sector research often builds upon fundamental research supported by our public investment.

While I recognize that our budget problems cannot be ignored, it is important to note that the agriculture community has repeatedly answered the call for reform and has done more than its fair share to generate savings. The current farm bill was expected to save $23 billion over 10 years, but the most recent Congressional Budget Office projections show that the 2014 Farm Bill is now on target to save, or not spend, $104 billion; more than four times what was anticipated.

If the U.S. is going to remain competitive, going forward, we cannot afford to rest on the success of our past and take a back seat to the rest of the world. We must continue making key investments in our agricultural research system in the most efficient manner possible.

Finally, while I will do our witness introductions in a second because we have several Members who want to introduce their particular representative, I want to call attention to Robert Duncan, the Chancellor from Texas Tech. Robert and I go back a long way to his service in the Texas Senate, and I look forward to hearing from him today. Jodey will also formally introduce him here in a moment. We also look forward to hearing Mr. Duncan and all of our witnesses about ways to streamline and prioritize agricultural research in the next farm bill.

[The prepared statement of Mr. Conaway follows:]

PREPARED STATEMENT OF HON. K. MICHAEL CONAWAY, A REPRESENTATIVE IN CONGRESS FROM TEXAS

Good morning and thank you all for joining us.

As we continue working to craft the next farm bill, we turn our attention to one of the primary drivers of innovation and productivity in our 21st century agricultural economy—university research.

For more than 100 years, our producers have relied on investments in agricultural research to drive efficiencies and gains in productivity that have helped farmers and ranchers soldier through the toughest of times. While our focus today is on university research, I would be remiss if I didn't acknowledge our world-class teaching and extension programs that are responsible for disseminating the results of that research throughout the countryside and around the globe. This sustained investment, in part, has allowed the U.S. to enjoy the safest, most affordable, and most abundant food and fiber supply in the world.

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While I recognize our budget problems can't be ignored, it is important to note that the agriculture community has repeatedly answered the call for reform and has done more than its fair share to help generate savings. The current farm bill was expected to save $23 billion over 10 years, but the most recent Congressional Budget Office projections show that the 2014 Farm Bill is now on target to save $104 billion—more than four times what was anticipated.

If the U.S. is going to remain competitive, going forward, we cannot afford to rest on the success of our past and take a back seat to the rest of the world. We must continue making key investments in our agricultural research system in the most efficient manner possible.

Finally, I'd like to welcome all of our witnesses today, but I want to specifically welcome and thank Mr. Robert Duncan, Chancellor of the Texas Tech University System based in Lubbock, for joining us today. I look forward to hearing from Mr. Duncan and all of our witnesses about ways to streamline and prioritize agricultural research programs in the next farm bill.

With that, I yield to the Ranking Member, Mr. Peterson, for any opening remarks he may have.

The CHAIRMAN. With that, I yield to the Ranking Member for any comments he has.

OPENING STATEMENT OF HON. COLLIN C. PETERSON, A REPRESENTATIVE IN CONGRESS FROM MINNESOTA

Mr. PETERSON. Well, thank you, Mr. Chairman. As you said, ag research is vital to our industry's future. The research done by our land-grant universities and other institutions invest in the next crop of agriculture scientists and producers, while ensuring that our farmers can be competitive and continue to meet the growing worldwide demands for our products.

This can't be done, of course, without adequate funding for agriculture research programs. But, I am frankly not quite sure of the best way to go about that. What I do know is that we need to continue to support the mandatory research programs that were created in the 2008 Farm Bill. Overall, we still haven't fully realized our ag research goals, so I will be looking to hear our witnesses' thoughts today on how we can do that.

I would like to see the next farm bill continue our commitment to ag research in a way that allows for continued advancement, but also recognizes our budget challenges, because ag research is the foundation of continued innovation in agriculture.

Along with increased productivity, ag research has led to improvements in individual health and in the environment, along with other benefits.

So with that, I welcome today's witnesses to the Committee, and look forward to their testimony.

I thank the chair, and yield back.

The CHAIRMAN. Well, I thank my colleague.

The chair would request that other Members submit their opening statements for the record so that our witnesses may begin their testimony, and to ensure there is ample time for questions.

With that, I would like to welcome the witnesses to the table. Mr. Arrington, if you would introduce Chancellor Duncan.

Mr. ARRINGTON. Thank you, Mr. Chairman. I just want to say a few things. One, I am just so delighted that my dear long-time friend, Chancellor Duncan, is here. He is the Chancellor of the greatest agriculture school in the United States of America, and just happens to be my alma mater, and I am just so proud that he is here.

He grew up in a rural west Texas community, and his parents were in the agriculture space. He was a legislator in Texas, a state Representative and a state Senator for over 20 years, and a tireless champion for rural America and agriculture. And I am just so happy he is here, and I am proud of all the work he is doing at my alma mater, and I look forward to hearing from him. Thanks for being here.

The CHAIRMAN. With that, Mr. Yoho, would you introduce Dr. Jackie Burns?

Mr. YOHO. Thank you, Mr. Chairman. I am thrilled to be able to introduce Dr. Jacqueline Burns, Dean for Research and Director of the University of Florida Institute of Food and Agricultural Science, referred to as IFAS worldwide, the Florida Ag Experiment Station in my hometown of Gainesville, Florida. UF–IFAS does such phenomenal work that it is not just important across Florida's Third Congressional District, but which has a statewide, a nationwide, and, indeed, a global impact. And it is my alma mater, I am a double-Gator, and it is the real agricultural school. And I am happy that you are here representing University of Florida.

And I just end the remarks by saying Go Gators. And there is one other person that is a Gator that it will be self-evident when he speaks. Thank you.

The CHAIRMAN. Thank you, Mr. Yoho.

We also have with us this morning Dr. Glenda Humiston, the Vice President of Agriculture and Natural Resources at the University of California, in Oakland, California.

Mr. COSTA. Would the gentleman yield?

The CHAIRMAN. I would.

Mr. COSTA. I just want to welcome all of the panel. And I have worked for many years with Dr. Glenda Humiston, and she does a terrific job. She was formerly with the USDA, and now is with the University of California. We are very pleased that you are here to testify.

The CHAIRMAN. Thank you, Mr. Costa.

We also have Dr. Walter Hill who is the Dean of the College of Agriculture, Environment, and Nutrition Sciences and the Vice Provost for the Land-Grant Affairs, Tuskegee University, Tuskegee, Alabama. Dr. Hill, welcome.

Dr. Steven Tallant, if Mr. Vela would introduce him.

Mr. VELA. Thank you, Chairman Conaway and Ranking Member Peterson, for hosting this hearing on university research.

Dr. Steve Tallant, who is a good friend of mine, is here from the Texas A&M University of Kingsville, and he is the President of that institution. Dr. Tallant has 20 years of military service, and previously served as Chief of the U.S. Air Force Family Research Program. Before being at the Texas A&M Kingsville, I believe he was in Wisconsin, if I am not mistaken. Thank you, Dr. Tallant, for being here, and feel free to reply to Mr. Arrington.

The CHAIRMAN. And we also have Ms. Carrie Billy who is the President and CEO at the American Indian Higher Education Consortium in Alexandria, Virginia.

With that, Chancellor Duncan, please begin when you are ready.

STATEMENT OF HON. ROBERT L. DUNCAN, J.D., CHANCELLOR, TEXAS TECH UNIVERSITY SYSTEM, LUBBOCK, TX

Mr. DUNCAN. Thank you, Mr. Chairman, Ranking Member Peterson, and Members of the Committee, Mr. Arrington, for your kind introduction. It is a great honor to be here today. On behalf of all the panel, we appreciate this hearing and this ability for higher education to be heard as it relates to research and the contributions that we can make to furthering agriculture in this great country.

My name is Robert Duncan, I am Chancellor of the Texas Tech University System. The Texas Tech University System has four components. I will begin first with the two Health Science Centers. Texas Tech Health Science Center that is headquartered in Lubbock, but has campuses throughout west Texas and Amarillo, Abilene, Midland-Odessa. While it only started in 1969, it now graduates more healthcare professionals in the State of Texas than any other institution; nursing, pharmacy, and public health, and allied health positions. And the significance of that for agriculture is a lot of those people, a lot of those professionals end up in rural Texas and rural America, and there is a real emphasis there. And that is part of agriculture, is having the opportunity to have great health care.

In addition, we have a Health Science Center on the Texas border in El Paso. The first and the only medical school, the Health Science Center on the border. Our President can literally hit, he says, the Mexican border with a three iron. I don't know if that is true, we haven't tested it, but he says he can do it.

I am here today to talk a little bit about our other two institutions; our general academic institution, Texas Tech University, which was created in 1923, but has had a strong emphasis and core in agriculture, as well as our newest member of our system, Angelo State University, which is a comprehensive regional institution in San Angelo, Texas. Both of these institutions are a significant part of the agriculture production of this country, and neither one of them are land-grant institutions.

Where I want to leave you today, when I step away and you have listened to what I have had to say, is I want to talk a little bit about capacity. In Texas, a group of us back in the 2000s saw that we needed more capacity in our non-land-grant institutions, as well as those that were not funded by the Permanent University Fund, which is a significant $18 billion endowment for higher education. And that is about 26 or 27 institutions, including Texas Tech University, Angelo State, Texas A&M at Kingsville, our partner down there. And so we started looking at different ways and the importance of capacity. And so to that extent, the Texas Legislature created several different funds and opportunities for universities like Texas Tech, University of Houston, A&M Kingsville, and other institutions to start building capacity. And the importance of capacity is, what we learned, is if you don't have continuous predictable

funding for faculty and for infrastructure, then you will not be able to be competitive for private-public research, as well research that is through the AFRI program and the Federal competitive grant program. It takes funding that is predictable so that you can support your faculty, and the infrastructure necessary for the faculty.

I will give the example of Texas Tech University, in 1996 we got zero funding for capacity. As we started building these programs, last year we are receiving about $20 million a year in capacity for research. That is why Texas Tech University is the number one research university, or non-land-grant university in agriculture. The National Science Foundation ranks us as 41 in the country, and number one in non-land-grant agriculture research. And I attribute that to capacity.

The point that I am trying to get across here is that in the 2008; and, again in 2014, this Committee and Congress recognized the importance of non-land-grant institutions competing for agriculture funds, and needing more capacity. The appropriation was $5 million a year. Well, with 70 non-land-grant institutions, you can see that $5 million a year doesn't go very far, and help for institutions that are non-land-grant would be significant. I will give you an example of the importance of non-land-grant institutions often is their regional location. You have a map in there of where your land-grant institutions are located, in the Panhandle and South Plains of Texas, the epicenter of food animal production, dairy, beef, cotton, grain sorghum, there are no land-grant institutions in that region.* The closest from Amarillo is Texas A&M, which is 505 miles away. The regionalism is very important.

Thank you, Mr. Chairman.

[The prepared statement of Mr. Duncan follows:]

PREPARED STATEMENT OF HON. ROBERT L. DUNCAN, J.D., CHANCELLOR, TEXAS TECH UNIVERSITY SYSTEM, LUBBOCK, TX

Importance of Agricultural Research: Non-Land-Grant Colleges of Agriculture

Good morning, Chairman Conaway, Ranking Member Peterson, and the Members of the Committee. Thank you for convening this hearing addressing the continued importance and needs of agricultural research, education and infrastructure. It is an honor to address this Committee on this important subject matter. My name is Robert Duncan, and I am the fourth chancellor of the Texas Tech University System, which includes: Texas Tech University, Texas Tech University Health Sciences Center, Angelo State University and Texas Tech University Health Sciences Center El Paso. Our system includes two Non-Land-Grant Colleges of Agriculture: Texas Tech University and Angelo State University, both of which contribute valuable agricultural research to the industries in our region.

Texas Tech University achieved Tier One designation and was listed in the Highest Research Activity category by the Carnegie Classification of Institutions of Higher Education in 2016. Texas Tech is one of only 81 public institutions listed in this top tier. In 2015, Texas Tech University was ranked No. 41 on the National Science Foundation's rankings for higher education agricultural research and development, which is the highest ranking of any Non-Land-Grant College of Agriculture. Texas Tech University has a total enrollment of nearly 37,000 students and the College of Agricultural Sciences and Natural Resources has 1,754 and 420 undergraduate and graduate students, respectively. The college prides itself on having one of the highest student retention rates at the university. We believe this is due to a combination of factors, including faculty advising of students and student involvement in extracurricular activities.

*The map referred to follows Mr. Duncan's prepared statement.

Every year since 2010, Angelo State University has been recognized by The Princeton Review as one of the nation's "Best Colleges." The university is a Hispanic-Serving Institution and offers more than 100 majors and concentrations, and provides opportunities for both undergraduate and graduate research. Angelo State University is able to provide students with an economical education due to strong financial aid programs, including the $130 million endowment for the Carr Scholarship Program. Specific to the Department of Agriculture at ASU, most of the labs are taught at the Management, Instruction and Research (MIR) Center, a facility that consists of 6,000 acres of range and farm land. The department's mission is to work directly with regional commercial producers through development of seed stock in Angus Cattle, Rambouillet Sheep, Suffolk Sheep, Meat Goats and Dorper Sheep through breeding programs on the University Ranch. In 2015, ASU's graduate agricultural education program was recognized as one of the top 25 in the United States and recently received the Mirabeau B. Lamar Award. Angelo State University's Department of Agriculture has a 100 percent pass rate on the Secondary Teacher Education Exam for Agricultural Education.

Executive Summary

Agricultural research will be required to address the complex issue of producing more food with fewer resources while maintaining the stewardship of the land and natural resources. Further, food security, both under- and over-nutrition, will require a trans-disciplinary approach and agricultural sciences will be a nexus for addressing this complex subject. Unfortunately, research funds allocated for agricultural research are disproportionately less when compared with other Federal research programs and are not keeping pace with other emerging countries. Investing in both foundational and innovative research will be essential to keep the American farmer competitive in this global economy.

The Non-Land-Grant Colleges of Agriculture educate approximately 50 percent of the future workforce in states where they are located. Further, these public institutions provide excellent translational research and outreach programs through their graduate studies and associated research efforts. The funding model of the USDA allocates a large portion of its annual budget to capacity building for the Land-Grant Universities. Though they also fund competitive programs, many of the Non-Land-Grant Colleges of Agriculture are less competitive because they do not have the same capacity as their Land-Grant counterparts. The 2008 Farm Bill authorized a competitive capacity-building program for Non-Land-Grant Colleges of Agriculture, and that program has funded projects since 2012 to purchase new research equipment, address relevant and emerging research areas, and educate students that will be the future workforce. The funding of this program at approximately $5 million per year is small in comparison, but it has had significant impacts on improving research and education capacity in the agricultural sciences and natural resources management. Increasing capacity at the Non-Land-Grant Colleges of Agriculture will increase output of trained workforce and support new and innovative research. Increasing the funding of the competitive capacity-building program for Non-Land-Grant Colleges of Agriculture and creating new funding programs to incentivize the expansion of these institutions will be important strategies to expand our agricultural education and research efforts.

Importance of Agricultural Research and Education

Competitiveness and Sustainability of U.S. Agriculture

Previous investments into agriculture research have paid off more than what was expected. Innovation increased agricultural outputs and efficiencies beyond any other country and has allowed the American farmer to be competitive in an ever more global economy. Population growth is expected to increase, and agricultural outputs are going to need to increase to keep pace. However, it is now well-accepted that the increased outputs cannot come at the expense of natural resources or the environment. Natural resources are limited, so the American farmer is going to have to do more with less. The American farmer and Agribusiness sector produces more food and fiber now with no more land than they did a century ago. Continued investments into innovation are required to meet and exceed the targeted needs for agricultural products.

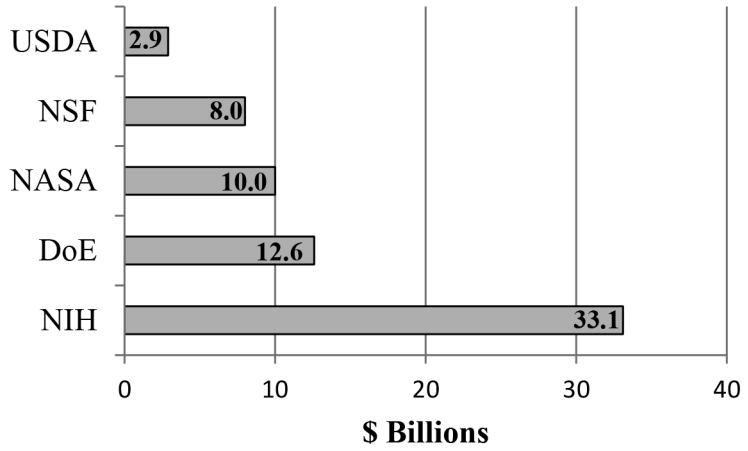
The importance of U.S. Agriculture is a nexus of our economic viability, national security and human health. Recent USDA Economic Research Service data indicate agriculture contributed $992 billion to the U.S. GDP or about a 5.5 percent share. Additionally, agriculture and its related industries provided 11 percent of the U.S. employment. Food security in the U.S. is unprecedented, and food only accounts for approximately 12 percent of household incomes. However, despite the overall access to food, there continues to be food insecurity in every county in the U.S. Further,

one of the greatest security threats to the U.S. is availability of nutritious food. High food prices and restricted access to food are known to destabilize regions, which was apparent in the Arab Spring of 2011. Food security is a complex issue and associated with it is also the increasing amount of over-nutrition. Over-weight and obesity rates in North America are reaching epidemic proportions, and the estimated annual costs associated with this is between $1 and $2 trillion. It is well-accepted that one of the greatest risk factors for many non-communicable diseases is over-nutrition. Food science, behavior economics, nutritional education programs and arguably every aspect of Agribusiness sector are going to be important in combating these complex issues.

Agriculture Is Under Funded Relative to Other Programs

As you will undoubtedly hear today, the annual USDA research budget of $2.9 billion (2017 requested budget) is disproportionately less when compared with other Federal research programs. *Figure 1* shows a comparison of the USDA's intramural and extramural research programs with other leading Federal research funding agencies. The importance of agricultural sciences is overlooked and often taken for granted. The contributions of agricultural sciences research to the advancements of the life sciences is meaningful and transects other disciplines like human health, energy, and basic science. Most agricultural research programs are trans-disciplinary in nature, and many of the most important issues facing humankind such as human health, food insecurity, environmental stewardship and economic viability arguably will be best addressed by trans-disciplinary approaches such as agricultural sciences research.

Figure 1 : Annual Research Budgets



Non-Land-Grant Colleges of Agriculture

Institutions, Education, Training and Research

Seventy institutions in 27 states have Non-Land-Grant Colleges of Agriculture with long histories of successful programs educating and preparing professionals in agricultural sciences and natural resources. It was estimated in these 27 states that approximately ½ the baccalaureate degrees awarded each year in agricultural sciences and natural resources are from one of these institutions. In fact, more than 50,000 students on an annual basis are educated through one of these Non-Land-Grant Colleges of Agriculture. Another important characteristic of a large number of these institutions is they accommodate many under-represented student groups including: first generation students, minorities and rural students. Further, these public institutions provide excellent translational research and outreach programs through their graduate studies and associated research efforts.

A 2015 report from Purdue University indicated that from 2015 to 2020 there will be a deficiency in the baccalaureate or higher degrees needed to fill new agricultural-related positions [*http://purdue.edu/usda/employment*]. They reported an expected annual need of 57,900 graduates and a growing workforce of only 35,400 new graduates with expertise in food, agriculture, renewable natural resources or the environment. Therefore, there is an expected 39 percent annual shortage of graduates

to fill these positions, and the difference must be made up from other non-agricultural degree-based programs. Importantly, the report also notes employers prefer to hire students from agricultural-based degree programs.

Capacity Funding

The USDA has a unique but effective funding system with an annual budget of approximately $850 million that is allocated to the Land-Grant Institutions as capacity-building funds and an annual budget for competitive grants of approximately $700 million. A recent report funded by USDA evaluated the effectiveness of these two primary funding streams and found that both were effective and offered distinct benefits [*http://nifa.usda.gov*]. Importantly, it was noted in the report that although Non-Land-Grant Universities can submit grants to the competitive funding programs, they are likely at a disadvantage because many of these institutions do not have the capacity to compete with the Land-Grant Institutions because they do not have access to those capacity-building funds.

To help support such a capacity, the 2008 Farm Bill authorized a program to provide competitive grants to the Non-Land-Grant Colleges of Agriculture. The program was re-authorized in the 2014 Farm Bill. The first awards were allocated in FY12, and these grants have been instrumental in developing academic, research and outreach capabilities at the Non-Land-Grant institutions. Here are just a few examples to give you an idea of the types of projects that were funded through this program:

- Fresno State, CA—"Expanding the research capacity in agricultural sciences through modernization of instrumentation".
- Chico State, CA—"Integrating agricultural education and outreach to increase profitability through local food marketing channels".
- Missouri State, MO—"Agriculture and food literacy initiative at Northwest Missouri State".
- Montclair State College, NJ—"Bridging the gap between New Jersey farmers and consumers through research, education, and outreach".
- Texas Tech University, TX—"Developing a generation of agricultural change agents in the battle for food security".
- University of Tennessee, Martin—"Building capacity for climate change education & expanding research opportunities in rural communities in TN & KY".
- Fort Hays State, KS—"Unmanned aerial systems and precision agriculture: building capacity in emerging technology".
- University of Wisconsin, Platteville—"Incorporating dairy livestock into agroecosystem research: grazing responsibly for a sustainable tomorrow".

As you can see from this non-exhaustive list, these competitive funds for Non-Land-Grant Colleges of Agriculture are used to purchase new research equipment, address relevant and emerging research areas, and educate students that will be the future workforce. Another important point is the regional diversity of the institutions that received funds through this capacity-building program. As a result, these funds are supporting increased research and educational capacity in all regions of the U.S.

This competitive program has received approximately $5 million in annual funding since 2012, which is comparatively small; but these funds are going a long way at improving research and education in agricultural sciences and natural resources management. Like the American farmer, we know that non-land-grant colleges of agriculture have to do more with less. These capacity-building funds do not require state or private matching, which given the infancy of this program is important. However, we also recognize the importance of leveraging Federal dollars with both state and private funding. An example from my time in the Texas State Legislature is a program our team of legislators developed and funded known as TRIP the Texas Research Incentive Program [*http://thecb.state.tx.us*]. It is a program where emerging research universities are awarded matching funds from the state based on how much an institution raises in private gifts and endowments to enhance research activities. Since 2010, Texas Tech University has received $103.4 million in matching funds through this program and the program has awarded a total $291.3 million. These funds were used to increase research capacity at Texas Tech University, like in the case of a research gift from Bayer Crop Science that was matched by the State of Texas. The gift was used in support of the construction of a $15 million state-of-the-art teaching and research Bayer Plant Science Building on the Texas Tech University campus. Undergraduate and graduate enrollment increased by approximately 25 percent in plant and soil sciences following construction. This is just one example of many of how this type of program is able to leverage resources to

build research capacity at a non-land-grant college of agriculture. Further, this is an example of leveraging dollars to invest in much needed infrastructure in our Colleges of Agriculture at public universities.

In closing, I appreciate the opportunity to share the Texas Tech University System's perspective of our two non-land-grant colleges of agriculture: Texas Tech University and Angelo State University. Investments in agricultural research and infrastructure build over time and are long-term investments in the future well-being of our nation. Research serves as the foundation of applied sciences to assist the industry in solving problems that have a direct impact on all aspects of our economy. As you continue your important work, we hope you will continue supporting and increasing the funding for the non-land-grant colleges of agriculture competitive capacity-building program. The Texas Tech University System would like to work with the Committee to explore additional research partnerships to increase agricultural research investment opportunities for non-land-grant institutions with a proven research track record. We appreciate the Committee's continued support of agricultural research and look forward to working with the Committee as you reauthorize the farm bill.

[ATTACHMENT]

NIFA Land-Grant Colleges and Universities

June 2014



*Central State University (CSU), in Ohio, has been designated as an 1890 LGU. Under the law, CSU will be eligible to receive certain capacity funds in October 2014 and others in Fiscal Year 2016.

**College of the Muscogee Nation and Keweenaw Bay Ojibwa Community College are designated as 1994 LGUs and will be eligible to receive capacity funds in October 2014.

Alabama
Alabama A&M University, *Normal*
Auburn University, *Auburn*
Tuskegee University, *Tuskegee*
Alaska
Ilisagvik College, *Barrow*
University of Alaska, *Fairbanks*
American Samoa
American Samoa Community College, *Pago Pago*
Arizona
Diné College, *Tsaile*
Tohono O'Odham Community College, *Sells*
University of Arizona, *Tucson*
Arkansas
University of Arkansas, *Fayetteville*
University of Arkansas at Pine Bluff, *Pine Bluff*
California
D–Q University, (*Davis vicinity*)
Maryland
University of Maryland, *College Park*
University of Maryland Eastern Shore, *Princess Anne*
Massachusetts
University of Massachusetts, *Amherst*
Michigan
Bay Mills Community College, *Brimely*
Keweenaw Bay Ojibwa Community College, *Baraga*
Michigan State University, *East Lansing*
Saginaw Chippewa Tribal College, *Mount Pleasant*
Micronesia
College of Micronesia, Kolonia, *Pohnpei*
Minnesota
Fond du Lac Tribal & Community College, *Cloquet*
Leech Lake Tribal College, *Cass Lake*
University of Minnesota, *St. Paul*
White Earth Tribal and Community College, *Mahnomen*
North Dakota State University, *Fargo*
Sitting Bull College, *Fort Yates*
Turtle Mountain Community College, *Belcourt*
United Tribes Technical College, *Bismarck*
Northern Marianas
Northern Marianas College, Saipan, CM
Ohio
Central State University, Wilberforce
Ohio State University, Columbus
Oklahoma
College of the Muscogee Nation, Okmulgee
Langston University, Langston
Oklahoma State University, Stillwater
Oregon
Oregon State University, Corvallis
Pennsylvania
Pennsylvania State University, University Park
Puerto Rico

University of California System—Oakland as Headquarters, *Oakland*

Colorado

Colorado State University, *Fort Collins*

Connecticut

University of Connecticut, *Storrs*

Delaware

Delaware State University, *Dover*
University of Delaware, *Newark*

District of Columbia

University of the District of Columbia, *Washington*

Florida

Florida A&M University, *Tallahassee*
University of Florida, *Gainesville*

Georgia

Fort Valley State University, *Fort Valley*
University of Georgia, *Athens*

Guam

University of Guam, *Mangilao*

Hawaii

University of Hawaii, *Honolulu*

Idaho

University of Idaho, *Moscow*

Illinois

University of Illinois, *Urbana*

Indiana

Purdue University, *West Lafayette*

Iowa

Iowa State University, *Ames*

Kansas

Haskell Indian Nations University, *Lawrence*
Kansas State University, *Manhattan*

Kentucky

Kentucky State University, *Frankfort*
University of Kentucky, *Lexington*

Louisiana

Louisiana State University, *Baton Rouge*
Southern University and A&M College, *Baton Rouge*

Maine

University of Maine, *Orono*

Mississippi

Alcorn State University, *Lorman*
Mississippi State University, *Starkville*

Missouri

Lincoln University, *Jefferson City*
University of Missouri, *Columbia*

Montana

Blackfeet Community College, *Browning*
Chief Dull Knife College, *Lame Deer*
Aaniiih Nakoda College, *Harlem*
Fort Peck Community College, *Poplar*
Little Big Horn College, *Crow Agency*
Montana State University, *Bozeman*
Salish Kootenai College, *Pablo*
Stone Child College, *Box Elder*

Nebraska

Little Priest Tribal College, *Winnebago*
Nebraska Indian Community College, *Winnebago*
University of Nebraska, *Lincoln*

Nevada

University of Nevada, *Reno*

New Hampshire

University of New Hampshire, *Durham*

New Jersey

Rutgers University, *New Brunswick*

New Mexico

Navajo Technical College, *Crownpoint*
Institute of American Indian and Alaska Native Culture and Arts Development, *Sante Fe*
New Mexico State University, *Las Cruces*
Southwestern Indian Polytechnic Institute, *Albuquerque*

New York

Cornell University, *Ithaca*

North Carolina

North Carolina A&T State University, *Greensboro*
North Carolina State University, *Raleigh*

North Dakota

Cankdeska Cikana Community College, *Fort Totten*
Fort Berthold Community College, *New Town*

University of Puerto Rico, Mayagüez

Rhode Island

University of Rhode Island, Kingston

South Carolina

Clemson University, Clemson
South Carolina State University, Orangeburg

South Dakota

Oglala Lakota College, Kyle
Si Tanka/Huron University, Eagle Butte
Sinte Gleska University, Rosebud
Sisseton Wahpeton College, Sisseton
South Dakota State University, Brookings

Tennessee

Tennessee State University, Nashville
University of Tennessee, Knoxville

Texas

Prairie View A&M University, Prairie View
Texas A&M University, College Station

Utah

Utah State University, Logan

Vermont

University of Vermont, Burlington

Virgin Islands

University of the Virgin Islands, St. Croix

Virginia

Virginia State University, Petersburg
Virginia Tech, Blacksburg

Washington

Northwest Indian College, Bellingham
Washington State University, Pullman

West Virginia

West Virginia State University, Institute
West Virginia University, Morgantown

Wisconsin

College of Menominee Nation, Keshena
Lac Courte Oreilles Ojibwa Community College, *Hayward*
University of Wisconsin, Madison

Wyoming

University of Wyoming, *Laramie, WY*

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The CHAIRMAN. Thank you, Chancellor.

Dr. Burns, 5 minutes.

STATEMENT OF JACQUELINE K. BURNS, PH.D., DEAN FOR RESEARCH AND DIRECTOR, FLORIDA AGRICULTURAL EXPERIMENT STATION; PROFESSOR OF HORTICULTURE, INSTITUTE OF FOOD AND AGRICULTURAL SCIENCES, UNIVERSITY OF FLORIDA, GAINESVILLE, FL

Dr. BURNS. Chairman Conaway, and Members of this distinguished Committee on Agriculture, thank you for this opportunity to speak with you today.

Agriculture is a major economic driver for the State of Florida. Agricultural research conducted at the University of Florida provides that knowledge, innovation, and tech transfer that supports 2.2 million agriculture-related jobs, and direct industry output of $148 billion in Florida.

Although Florida produces traditional row crops, such as cotton, sugarcane, rice, and peanuts, Florida is primarily a specialty crop state. It is first in production of oranges and grapefruit, fresh market tomatoes, and many others. Livestock, forestry, fisheries are also significant production outputs of Florida's agricultural sector. Florida agriculture is diverse, as is the requirement for research in all of these important ag and natural resource systems.

Competitive research awards authorized by the farm bill provide enormous opportunities for our faculty to support agricultural enterprises in the region, in the state, the nation, and the world. Programs such as NIFA, AFRI, Specialty Crop Research Initiative, and its provision for block grants to the states of agriculture that fund regional needs have been effective, timely, and impactful. The Citrus Disease Research and Extension program that was just recently authorized by the recent farm bill has been exceptionally helpful in our continued quest to solve the most devastating disease to citrus worldwide; citrus greening.

Key issues we face include reduced funding that supports research infrastructure, and the increasing need for longer-term research support that solves our modern agricultural challenges.

I appreciate the opportunity to share ideas for streamlining farm bill competitive funding processes, expanding the use of the letter of intent process, delaying the entry of information at the submission stage that is not necessary for evaluating the merits of the proposal, and providing larger long-term awards, de-emphasizing smaller awards, when applicable, reduces the number of awards handled and provides sustaining opportunities for researchers.

I also appreciate the opportunity to share ideas for prioritizing programs in the farm bill. First, invasive species: Florida's geography means that it is often ground zero for the introduction of costly, invasive species and diseases within the continental United States through its many ports of entry. Prioritizing expanding the scope of invasive species programs to accommodate all threats to commercial ag lands, production systems, and natural lands would greatly improve our response to threats, and prioritizing more proactive research to the extent possible would accelerate development of science-based solutions before the full impact of invasive threat develops.

Second, alternative crops: expanding and prioritizing alternative crop breeding and management programs that focus on sustainable production. This also gives our producers opportunities to remain in agriculture and even diversify their operations.

Precision agriculture and automation such as mechanical harvesting, prioritizing these important programs would be important.

Stakeholder engagement, finally, and prioritizing that opportunity would help the whole process to prioritize the program for national research investment.

Finally, a few words about research infrastructure and deferred maintenance. High-quality research infrastructure is essential to build and maintain research capacity. At the University of Florida, with over $16 million in deferred maintenance costs and reduced funding to maintain its existing agricultural research infrastructure, the University of Florida IFAS has fallen below the critical investment level needed to prevent failures in building systems. The landscape of our universities and IFAS agricultural infrastructure is a patchwork of primarily decaying infrastructure, with an occasional new facility built with opportunistic public and private funds. What is needed is a principled approach to agricultural research infrastructure investments that prevents building systems failures, enhances our ability to conduct world-class research, and emphasizes our world stature as a premiere location for cutting-edge, fundamental, and applied research. One way to do this would be to include provisions in a new farm bill for university infrastructure investments that could provide an opportunity for solutions to this critical deferred maintenance problem. A principled approach that requires matching funds from the university or state sources would signal important contributions between Federal and state agencies.

Thank you.

[The prepared statement of Dr. Burns follows:]

PREPARED STATEMENT OF JACQUELINE K. BURNS, PH.D., DEAN FOR RESEARCH AND DIRECTOR, FLORIDA AGRICULTURAL EXPERIMENT STATION; PROFESSOR OF HORTICULTURE, INSTITUTE OF FOOD AND AGRICULTURAL SCIENCES, UNIVERSITY OF FLORIDA, GAINESVILLE, FL

Chairman Conaway and Members of the U.S. House of Representatives Committee on Agriculture, thank you for the opportunity to speak with you today about (1) the importance of agricultural research programs to our institution in meeting key challenges, (2) ways to streamline and prioritize agricultural research programs through the next farm bill, and (3) the need for deferred maintenance upgrades for our agricultural research facilities.

My name is Jackie Burns, and I am the Dean for Research at the University of Florida in the Institute of Food and Agricultural Sciences (UF/IFAS) and Director of the Florida Agricultural Experiment Station. The mission of UF/IFAS is "to develop knowledge in agricultural, human and natural resources and to make that knowledge accessible to sustain and enhance the quality of life." Our scientists seek to solve the challenges facing agriculture, natural resources, and the interrelated life sciences with disciplinary and interdisciplinary collaborative research. Through our research, we acknowledge the inextricable link between agricultural production and the health and biodiversity of natural resources.

1. Importance of Agricultural Research Programs and Challenges

Agriculture is a major economic driver for Florida. Agricultural research conducted at the University of Florida provides knowledge, innovation and technology transfer that supports 2.2 million agriculture-related jobs and direct industry output of $148 billion in Florida in 2014. Sponsored agricultural research awarded to UF/IFAS was $140 million in FY 2016. Of this amount, over 70% was awarded by Federal agencies. Research expenditures approached $168 million. These dollars are used to conduct research that provides new cultivars, diagnostic tools, disease management strategies, and other technologies and products. Intellectual property from our research activities significantly contributes to the value of University of Florida's agricultural research to the state of Florida, the nation, and the world. Technology is transferred, licensed, and royalties are reinvested into our research programs.

Although Florida produces traditional row crops such as cotton, peanuts, sugarcane and rice, *Florida is primarily a specialty crop state.* Florida is first in production of orange, grapefruit, sweet corn, snap beans, squash, fresh market tomatoes, and tropical foliage plants. Livestock, forestry and fisheries are also significant production outputs of Florida's agricultural sector. Florida's agriculture is diverse, as are the requirements for research in plant, animal, food, environment, and natural resource systems. Competitive research awards authorized by the farm bill provide enormous opportunities for UF/IFAS to support agricultural enterprises.

The financial support for agricultural research provided by these programs and conducted by UF/IFAS scientists is crucial for developing innovative solutions for the benefit of Florida's economy. Federal investments in competitive USDA programs through farm bill appropriations provide opportunities for UF/IFAS to conduct agricultural research. Programs such as the NIFA AFRI, Specialty Crop Research Initiative (SCRI), and its provision for block grants to States of Agriculture that fund regional needs have been effective, timely, and impactful. The NIFA SCRI Citrus Disease Research and Extension program authorized by the 2014 Farm Bill has been exceptionally helpful in our continued quest to solve the most devastating disease of citrus worldwide, citrus greening.

Key issues we face include reduced funding that supports research infrastructure and the increasing need for longer-term research support to solve modern agricultural challenges that are fundamentally rooted in a sustainable agricultural production system.

2. Streamlining and Prioritizing Agricultural Research Programs

I appreciate the opportunity to share ideas for streamlining farm bill competitive funding processes. Reducing administrative burden for sponsor and applicant organizations can improve efficiencies of research.

- Letters of Intent. Expand the use of letter of intent processes to reduce the development of misguided proposals and the number of fully developed grants that are handled.
- Information requirements. Delay entry of information at the submission stage that is not necessary for determining merits of the proposal. To the extent possible, move entry of this information to the post-award stage to improve the efficiency of the submissions process.

- Award periods. Provide larger, longer-term awards and de-emphasize small award programs to reduce the number of awards handled and to provide sustaining opportunities for researchers.

I also appreciate the opportunity to share ideas for prioritizing programs in the next farm bill.

- Invasive species. Increasing global trade is affecting food production and ecosystem service systems generated by commercial and non-commercial working lands. Florida's geography means it is often "ground-zero" for the introduction of costly invasive species and diseases within the continental U.S. through its many ports of entry. Prioritizing and expanding the scope of invasive species programs to accommodate all threats to commercial agricultural production systems and natural lands would greatly improve our response to threats. Prioritizing more proactive research, to the extent possible, would accelerate the development of science-based solutions before the full impact of the invasive threat develops.
- Alternative crops. Keeping agricultural lands in agriculture production will be paramount to meeting the food, fiber and feed needs of a growing population. Expanding and prioritizing alternative crop breeding and management programs that focus on sustainable, efficient and economical production can provide opportunities for producers who seek to remain in agriculture or diversify their operations.
- Precision agriculture and automation. Prioritizing programs in precision agriculture and automation technologies would accelerate development of these and other technologies that are, or will become, the future of agriculture. Every producer will benefit from technologies that allow more efficient and economical operations. Mechanical harvesting and other handling automations, precision application of fertilizers and pesticides, detection and surveillance of pests and diseases through the use of unmanned aerial vehicles and sensing technologies, and other techniques are critically needed to advance and protect production systems.
- Stakeholder engagement. Identifying needed research through continued interaction with the National Agricultural Research, Extension, Education, and Economics Advisory Board, and prioritizing stakeholder involvement in regional or commodity-based listening and planning sessions, are effective ways to prioritize programs for national research investment.

3. Research Infrastructure and Deferred Maintenance

High quality research infrastructure is essential to build and maintain research capacity. The UF/IFAS must hire and retain world-class faculty to advance and support agriculture systems-related research activities. Today, the UF/IFAS suffers from decaying infrastructure that hampers our ability to attract and retain the best and most talented research faculty. With over $16 million in deferred maintenance costs and reduced funding to maintain existing infrastructure, the UF/IFAS has fallen below the critical investment level needed to prevent failures in building systems.

The landscape of our University's infrastructure is a patchwork of primarily decaying infrastructure with an occasional new facility built with opportunistic public or private funds. What is needed is a principled approach to agriculture research infrastructure investments that prevents building systems failures, enhances our ability to conduct world-class research by world-class faculty, and emphasizes our world stature as the premier location for cutting-edge fundamental and applied research.

One way to provide funding for this need would be to include provisions in a new farm bill for University infrastructure investments that could provide an opportunity for solutions to this critical deferred maintenance problem. A principled approach that requires matching funds from University and/or state sources would signal important partnerships between Federal and state agencies that agricultural stakeholders would value.

Thank you for this opportunity to address the Committee and bring the perspective of the UF/IFAS to research and support programs appropriated in the next farm bill.

This concludes my formal statement and I am happy to answer any questions.

The CHAIRMAN. Thank you, Dr. Burns.

Glenda, how do you pronounce your name? Mr. Costa and I said it differently.

Dr. HUMISTON. It is Humiston. Thank you.

The CHAIRMAN. Humiston. All right, Dr. Humiston, you are recognized for 5 minutes.

STATEMENT OF HON. GLENDA HUMISTON, PH.D., VICE PRESIDENT, AGRICULTURE AND NATURAL RESOURCES; DIRECTOR, AGRICULTURAL EXPERIMENT STATION AND COOPERATIVE EXTENSION SERVICE, UNIVERSITY OF CALIFORNIA, OAKLAND, CA

Dr. HUMISTON. Great. Thank you very much.

Chairman Conaway, Ranking Member Peterson, and Members of the Committee, it is an honor to be here today. Thank you for the invitation to discuss research issues and opportunities in the next farm bill.

As part of the University of California, we are quite thrilled to have been there at its very beginnings in 1868. It has grown into a ten campus system throughout the state. We predominantly work with three of those campus; Berkeley, the original one, Davis, and Riverside; however, we partner with all ten, as well as our California State university system and our community colleges increasingly on a variety of projects. We have over several hundred academics scattered around the state; many of them on those three campuses, a few on others, and a few located with another partner, the USDA Agricultural Research Service, at some of their facilities. We have over 200 of those actually scattered throughout the state in every county, doing robust research programs along with delivering a wide array of programs; many of these from capacity funds, including our world-class 4–H Youth Development program, a highly touted integrated pest management program, a statewide nutrition policy institute, and a water research institute, as well as several others.

We take great pride in the work we do, and the partnerships we have with folks out in the field. Frankly, if it weren't for the farmers and landowners out in the field we work with, as well as the rural communities, and increasingly, urban communities, we couldn't begin to do a fraction of the work we do. And not only those partners, but our volunteer base, over 20,000 Californians volunteer for programs like 4–H, Master Gardeners, California Naturalists, *et cetera.* Their labor is valued at over $40 million a year, and they greatly help us extend our programs.

You have heard from previous speakers here the importance of the investment in our land-grant university. One thing I would mention is recent studies that show that on average that investment is 20 to 1. In other words, every $1 of Federal expenditure has a payback of about $20 to the American public. The statistics my number-crunchers give me tell me that that is an annualized rate of return between nine and ten percent. I don't know about you, but, frankly, I wish my portfolio on Wall Street did nearly as well, consistently.

But it is important to understand that that kind of consistent return and the great benefits it has provided to our public and our nation, and food security, relies upon a key bunch of infrastructure out there that we have to maintain and invest in. I refer to several things. First, capacity funds: without that long-term infrastructure

and the people there, we cannot make good use of the competitive grants that we are constantly going after. Competitive grants are great and it is important that we fund those, and perhaps increase funding in those. That is a recommendation that several organizations have put forward now. But the reality is to really solve agricultural problems, we have to keep in mind the long-term nature of those problems.

There was an article in *The Washington Post* this week about mechanization and pursuit of that, but a key thing to remember there is that tomato harvester developed at University of California would not have worked without the plant genetics program that made a tomato able to be machine-harvested. That kind of work takes anywhere from 1 to 2 or more decades, and we need to keep that in mind.

Another big issue that folks are focusing on right now is our deferred maintenance. Our infrastructure is, frankly, a mess. The systems I oversee, we have identified over $45 million in work just to get to functionally adequate. We have roofs that are leaking, and that doesn't even count the infrastructure on the three campuses we work with, that is just our research extension centers and other facilities out in the more rural parts of the state. We are stepping up to the plate to deal with that. I will get our facilities up to at least functionally adequate before I leave my tenure here, but it is going to take help from the Federal Government, the state government, and the private-sector to help us create the world-class facilities that we all need.

Having said that though, I do want to insert a note of caution because we know there is probably not much appetite for this in the Federal farm bill, people are looking at the potential of the infrastructure bill, but quite frankly, our experience at UCSF Medical Center, which is a large research facility, is that the kind of rates of return that the private-sector wants in investing in these doesn't work well for research facilities. It is an issue that really needs further looking.

There are many other issues to look at. I provided those in written testimony, and I look forward to your questions. Thank you.

[The prepared statement of Dr. Humiston follows:]

PREPARED STATEMENT OF HON. GLENDA HUMISTON, PH.D., VICE PRESIDENT, AGRICULTURE AND NATURAL RESOURCES; DIRECTOR, AGRICULTURAL EXPERIMENT STATION AND COOPERATIVE EXTENSION SERVICE, UNIVERSITY OF CALIFORNIA, OAKLAND, CA

Good morning, Chairman Conaway, Ranking Member Peterson, and Members of the Committee. I am honored to have this opportunity to discuss the importance of agricultural research and innovation as you begin work on the next farm bill.

With the University of California (UC) Agriculture and Natural Resources (ANR) serving as a vital partner, California continues to be the nation's top agricultural state. For more than a century, California's $47 billion agricultural sector has depended on UC ANR for the stream of new technologies and research breakthroughs needed to stay competitive and be responsible stewards of the land. We are proud to be part of the Land-Grant partnership that was developed between the states and the Federal Government with the 1862 Morrill Act, the 1887 Hatch and the 1914 Smith-Lever Act. That enterprise has, for over 130 years, advanced scientific knowledge in all aspects of food production, and together with Cooperative Extension, has advanced production capacity, profitability, and safety of the nation's food system.

The UC ANR Land-Grant mission is delivered through several hundred academics conducting research on four campuses, nine Research and Extension Centers and

over fifty county offices throughout the state. We work closely with a wide array of partners and volunteers to deliver programs ranging from 4–H Youth Development to Master Gardeners to Integrated Pest Management, and manage the Nutrition Policy Institute and the Water Resources Institute for California. In the past fiscal year, UC ANR has served over 1.4 million adults and youth directly, published about 1,800 peer-reviewed journal articles and filed over 20 patents. Our 20,000 volunteers contributed the equivalent of over 700 FTE in public service—the equivalent of $40 million in donated time. 1,600 workshops and field days extended best practices and technologies resulting in increased yield, reduced inputs, increased efficiency, improved economic return, and/or conservation of important natural resources.

A recent study examined the return on investment for Federal funding of the public land-grant system; it showed that while benefit-cost ratios vary by state, they are always in double digits—averaging 21:1 and corresponding to annual rates of return between 9–10%.[1] However, returns from these investments is often realized only after considerable lag time—in some cases decades. It takes at least 7 to 15 years of research and development to develop a new crop variety—longer for trees/vines. Deploying and/or adapting new agricultural technologies can be even longer. For example, when UC Davis engineer, Coby Lorenzen, designed a machine to automate the harvest of tomatoes in the 1960's, it also required agronomist, Jack Hanna, to develop a less-delicate variety of tomato that ripened uniformly and could be easily plucked from the plant, essential qualities that made machine harvesting feasible.[2]

A vital component of Federal support for agricultural research has been capacity funding specifically dedicated to supporting research and Cooperative Extension programs at America's land-grant universities. These capacity funds are available annually on a non-competitive basis and require a match at the state and local levels; they include Hatch, Smith-Lever, Evans-Allen, McIntire-Stennis, Animal Health and Disease Research, Expanded Food and Nutrition Program, 4–H Youth Development, Renewable Resources Extension Act, 1890 and 1994 Extension. We strongly support ongoing funding of both capacity programs and competitive funds, and urge Congress to authorize an additional $200 million toward the suite of programs at the National Institute of Food and Agriculture (NIFA). Further, we recommend that formulas for allocations of capacity funds to each state be designed to ensure equitable distribution; in particular, the current definition of "rural" needs serious examination and re-engineering.

The current mix of Federal and state capacity funds is generally leveraged manyfold by Federal competitive grants, grants from private industry, and other types of unrestricted gifts and awards to faculty conducting research at the nation's land-grant universities. Competitive funding processes can elicit new ideas and speed up certain research projects; however, they also encourage a shift from programmatic research towards shorter-term project research. Failure to invest in a well-balanced mix of capacity and competitive funds for food and agriculture research could have very negative consequences for decades to come—consequences that would take significant time to reverse. Although progress is being made to incrementally increase appropriations to the USDA AFRI program, it remains funded at considerably less than the $700 million authorized in the previous two farm bills—far less than funding levels at NIH or NSF. We support the goal of achieving appropriations in AFRI equal to that authorized in the last farm bill by 2020.

While both food security and political stability can be linked directly to innovation driven by investment in agricultural research, resources (people, time, dollars) are limited—we cannot afford to be duplicative; nor can we afford limit our partnerships or methods. To make even greater strides, transformative innovation is needed—moving beyond just improving existing methods and processes to totally re-thinking systems development. As part of our new strategic plan (*http://ucanr.edu/stratplan1.10.2017*), UC ANR seeks to deliver research and extension programs that have direct impacts on the lives of more Californians by harnessing the power of the entire California system of higher education, finding new ways to work with existing partners, cultivating new partnerships, and engaging a much broader array of stakeholders throughout California.

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[1] Julian M. Alston, Matthew A. Andersen, Jennifer S. James, Philip G. Pardey; *The Economic Returns to U.S. Public Agricultural Research.* AM. J. AGRIC. ECON. 2011; 93 (5): 1257–1277. doi: 10.1093/ajae/aar044.

[2] Haspel, Tamar, "One big reason some foods cost so much more than others", Perspective, *Washington Post,* June 19, 2017, *https://www.washingtonpost.com/lifestyle/food/the-biggest-reason-some-foods-cost-so-much-more-than-others/2017/06/16/d3bda28e-5063-11e7-91eb-9611861a988f_story.html?utm_term=.8fc5d6f5e6f6*.

One new strategy is to expand collaborative efforts between experts in soil sciences, plant pathology, biochemistry, entomology, and other fields of sciences with technology experts in robotics, sensors, artificial intelligence, materials, supply chain logistics, and energy systems to solve the today's complex problems in agriculture. Much like the biomedical revolution, it is the integration of multiple disciplines into a single project that can lead to transformative innovation that improves productivity, food safety, and ecosystem services while also giving rise to new businesses. Examples of such multidisciplinary projects include:

- James Rogers studied flexible solar cells at UC Santa Barbara and Lawrence Berkeley National Laboratory. A radio program on world hunger gave the materials scientist his "aha!" moment in 2012. His work on thin-film polymers from solar cells, coupled with information from UC Cooperative Extension, led to an invisible, edible and tasteless barrier that can protect food crops and dramatically improve longevity of produce freshness—using waste plant parts often left on the farm. Apeel Sciences now supports 71 employees and hits shelves this summer, when some of the world's largest avocado producers start using it.[3]
- The European Grapevine Moth (EGVM) was first detected in a Napa County in 2009, but quickly spread throughout the state, leading to quarantine restrictions and a mass effort to determine pest numbers through trapping. Quick collaboration between University of California wine grape specialists, local agricultural officials, state and Federal Government agencies, and vineyard operators, helped identify the problem and recommend a course of action leading to complete eradication. Solutions included mating disruption techniques, vector analysis and targeted insecticides to kill the insect. The last EGVM detection in California was June 2014.[4]
- Central Valley AgPLUS Food and Beverage Manufacturing Consortium[5] focuses on expanding opportunities along the farm-to-fork supply chain, including initiatives to minimize waste, improve distribution of foods, and contribute significantly to increased trade, jobs and economic growth. Multidisciplinary research at UC Davis has resulted in new "smart" technology for food-processing facilities. 90% of water & chemicals from each cleaning cycle is captured and processed for future use in the complex, eventually being used as many as ten times.[6]
- CropManage[7] is an UC ANR online database-driven tool that assists growers and farm managers in determining water and nitrogen fertilizer applications on a field-by-field basis. The software automates steps required to calculate irrigation and Nitrogen fertilizer needs. The web application also helps growers track irrigation schedules and nitrogen fertilizer applications on multiple fields and allows users from the same farming operations to view and share data.

While these types of good news research projects are always welcome, much of this accomplishment could not be achieved without the underlying research infrastructure, provided through capacity funds, being available to support projects funded by competitive grants. On a different, but related subject, one potential solution to deepening concerns over access to a trained workforce for the food and agriculture sectors is a much broader utilization of 4–H programs. This important youth development activity can serve as the beginning of a pipeline directing both rural and urban youth to pursue higher education with the potential for careers in food and agriculture—one example of how capacity funding through Extension supports ongoing programs that are interconnected to the workforce pipeline, as well as other needs for the entire food system.

NIFA recently commissioned TEConomy Partners to conduct a national survey on ". . . whether capacity funding remains a productive model for supporting academic institution-based research and Extension in the 21st century?" The findings are strong and unequivocal in their impact: financial leveraging through matching state and local funds of at least $1.86 per $1 Federal sustains the specialized personnel and scientific facilities and instruments, research station infrastructure, and Extension operations needed for complex agricultural and associated research programs; generates significantly higher volumes of publications; provides flexibility to fund

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[3] *http://apeelsciences.com/.*

[4] Fitchette, Todd, "California eradicates the European grapevine moth", *Western Farm Press,* August 18, 2016, *http://www.westernfarmpress.com/grapes/california-eradicates-european-grapevine-moth.*

[5] *http://cvagplus.org/.*

[6] *http://wineserver.ucdavis.edu/about/facilities/Jess-S-Jackson.html.*

[7] *http://ucanr.edu/blogs/cropmanage/index.cfm?tagname=CropManage%203.0.*

rapid response to emergencies or emerging issues; allows long-term research, leading to improved crop and livestock management; and provides a base of support to successfully vie for competitive grants across all sizes of institutions and Federal, state, and local agencies.[8] For example, about one in six patents in agriculture across the U.S. are based on innovations resulting from Federal capacity funds.

The infrastructure in most land-grant universities is aging, inadequate, and, in many cases, obsolete. A national study of capital facilities and deferred maintenance recently documented the magnitude of the infrastructure problem that threatens to further erode the United States' preeminent role in global food and agriculture. The conclusions from this Sightlines LLC Study[9] on the age of the buildings, the lack of capital investment over time, and the levels of deferred maintenance needs are sobering—the total deferred maintenance cost is at least $8.4 billion. For the United States to remain a world leader in food and agricultural research, this aging infrastructure problem must be addressed.

Given the size of the need, coupled with current goals to reduce Federal domestic spending, many fear that there will be little appetite to fund this issue within the 2018 Farm Bill. Given that, there is a great deal of interest is seeing these research facilities included within any infrastructure bill that the current Administration may offer. However, it is difficult to anticipate what requirements might be added to accommodate the interest in attracting private investment to and federally-funded infrastructure projects. Typically, in these models, the private investor requires strong assurance such as a reliable revenue stream from tuition or bonds or some form of commerce to leverage their risk. This is unlikely to be a model that will work well for research facilities.

It will be important for Members of Congress to hear from leaders in public agricultural colleges who request that research, teaching and Extension facilities at public universities be included in the public infrastructure projects eligible for any Federal program. Dealing with the deferred maintenance of these facilities is of paramount need and should be given strong consideration for new funding in the 2018 Farm Bill. To stretch such dollars, it would be reasonable to require that matching funds be required to receive Federal funds, similar to language in the Research Facilities Act.[10]

We are certainly willing to help carry a share of this load; as example, UC ANR is currently pursuing $35 million in bonds to couple with approximately $10 million from our reserves to deal with the greatest needs at our facilities. This amount will bring us to a functionally adequate level; it will not allow us to provide the 21st century, state-of-the-art research facilities that are needed to truly tackle the complex challenges we face today and in the future. To pursue that need we are also:

- Restructuring how our facilities are managed and ensuring that recharge rates move closer to true cost accounting. This allows reduced expenditure on updating and maintaining equipment and can optimize use of the equipment.
- Enhancing administrative collaboration between the campus Deans and UC system-wide leadership to coordinate institutional matches in support of major extramural grants.
- Expanding the role of the Technology Management and Corporate Relations division to provide additional support in a variety of ways ranging from education and outreach programs to commercialization through patenting, licensing and entrepreneurship. These commercial partnerships can assist in augmenting research funds and opportunities.
- Reinvesting indirect funds into the research enterprise to update facilities and equipment as able and thereby improve competitive advantage for research contract and grants and exceptional research recruitments.

In addition to these initiatives, we are also expanding and formalizing partnerships to better connect the state's farmers with each other and with science-based information sources to assure the sustainability of the state's agricultural systems. To leverage existing resources and better develop synergies among technical assistance providers, representatives of UC ANR, UC Davis, the California Department of Food and Agriculture, California Farm Bureau Federation, California Association

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[8] National Evaluation of Capacity of Programs. *Quantitative and Qualitative Review of NIFA Capacity Funding.* TEConomy Partners, LLC. *https://nifa.usda.gov/sites/default/files/resource/NIFA%20Capacity%20Funding%20Review%20-%20TEConomy%20Final%20Report.pdf* .

[9] *A National Study of Capital Infrastructure & Deferred Maintenance at Schools of Agriculture.* Sightlines, LLC. *http://www.aplu.org/projects-and-initiatives/agriculture-human-sciences-and-naturalresources/DeferredMaintenance_SchoolsofAg.pdf.*

[10] Research Facilities Act [Act of July 22, 1963, Public Law 88–74, 77 Stat. 90] [As Amended in P.L. 113–79, Enacted February 7, 2014].

of Resource Conservation Districts, and USDA Natural Resources Conservation Service (NRCS) recently signed a formal agreement to form the California Farm Demonstration Network. One early action from this partnership is that UC ANR and USDA NRCS are developing shared positions to ensure coverage on agronomic sciences in key crops. We are also exploring how to ensure that science developed by UC ANR can be quickly adopted into the USDA NRCS Field Office Technical guide, making it much more available for implementation by farmers and landowners. One way the 2018 Farm Bill can assist this partnership is to include provisions in the Conservation Title that encourage preference of Cooperative Extension to serve as Technical Service Providers.

In closing, there are several specific recommendations on various farm bill provisions that we will offer as the legislative process unfolds. However, I would be remiss not to mention four programs especially important to California. Those include:

Specialty Crop Research Initiative (SCRI) 7 U.S.C. § 7632

Congress provided $55 million in mandatory funding each fiscal year for non-citrus research for FYs 2014–2018. SCRI is important to California's agricultural research enterprise as nearly all of California's crops are specialty crops and over 50 percent of the nation's fruits and vegetables are grown here. Additionally, the 2014 Farm Bill created the SCRI Citrus Disease Research and Extension (CDRE) program to combat Huanglongbing (HLB), which is a bacterial disease spread by the Asian Citrus Psyllid (ACP). HLB is currently ravaging Florida's citrus industry and has the potential to devastate Texas's and California's citrus industries as well. Congress provided $25 million per year for FYs 2014–2018, for a total of $125 million. Our recommendations are:

- Reauthorize CDRE and maintain mandatory funding level of $25 million per fiscal year.
- Reauthorize SCRI and maintain mandatory funding level for SCRI at $55 million per fiscal year.
- Within 7 U.S.C. § 7632(h), strike the preference for "multi-state" in how grants are prioritized. Many of the specialty crops grown in California, such as tree nuts, dates, and avocados, are not grown in any other state. Partnering with institutions in other states is rarely feasible and often impossible. This "multi-state" language can similarly harm other states with similar circumstances and is fundamentally unfair.

Education Grants for Hispanic-Serving Institutions 7 U.S.C. § 3241

These competitive grants support STEM education programs in the food and agricultural sciences at institutions with at least 25 percent Hispanic enrollment. The farm bill has authorized the program at $40 million per fiscal year, but historically it has received appropriations of $9–$10 million each fiscal year. This rapidly growing segment of the U.S. population will be vital to efforts to fill workforce needs in every aspect of the food and agricultural sectors. Our recommendation:

- Reauthorize the program and at $40 million per fiscal year and work with appropriators to increase annual appropriations.

Sec. 10007 & National Clean Plant Network (NCPN) 7 U.S.C. § 7721

The goal of the Sec. 10007 Farm Bill program is to "prevent the introduction or spread of plant pests and disease that threaten U.S. agriculture and the environment [. . .] [the Animal and Plant Health Inspection Service] APHIS provides funding to strengthen the nation's infrastructure for pest detection and surveillance, identification, and threat mitigation, while working to safeguard the nursery production system." The 2014 Farm Bill significantly increased mandatory funding for Sec. 10007, providing $62.5 million in FYs 2014–2017 and $75 million in FY 2018 for a total of $325 million. Our recommendations:

- Reauthorize NCPN and increase mandatory funding levels from $5 million per fiscal year to $6.5 million. UCR is home to the Citrus Clonal Protection Program (CCPP), which is part of NCPN. Since 2010, CCPP received over $4.4 million in NCPN funding from FY 2010–2016.
- Reauthorize Sec. 10007 and maintain mandatory funding level of $75 million per fiscal year.

Specialty Crop Block Grants 7 U.S.C. § 1621

The Agricultural Marketing Service (AMS) Specialty Crop Block Grant Program (SCBGP) is designed to enhance the competitiveness of specialty crops. Each year, the state Departments of Food and Agriculture submit proposals to AMS to receive

allocated pass-through funding ($22.4 million in FY 2016) for which land-grant universities are eligible to apply. Our recommendation:

- Reauthorize SCBGP and maintain mandatory funding of $85 million per fiscal year.

Faculty and staff at land-grant universities across the nation recognize that their work takes place on behalf of a greater good, a broader goal, and a common vision that is much bigger than their individual achievements. Members of this House Committee on Agriculture can be confident that every dollar of Federal investment authorized by the 2018 Farm Bill and expended at land-grant universities will be a wise investment. That investment is guaranteed to be leveraged further, and to spawn innovation and discovery that will be translated into solutions to improve the lives of U.S. citizens. I thank you for this opportunity to provide testimony.

The CHAIRMAN. Thank you. Doctor.

Dr. Hill, 5 minutes.

STATEMENT OF WALTER H. HILL, PH.D., DEAN, COLLEGE OF AGRICULTURE, ENVIRONMENT AND NUTRITION SCIENCES; VICE PROVOST FOR LAND-GRANT UNIVERSITY AFFAIRS; RESEARCH DIRECTOR, USDA EVANS-ALLEN RESEARCH AND DIRECTOR, GEORGE W. CARVER AGRICULTURAL EXPERIMENT STATION; ADMINISTRATOR, TUSKEGEE UNIVERSITY COOPERATIVE EXTENSION, TUSKEGEE UNIVERSITY, TUSKEGEE, AL

Dr. HILL. Yes, and good morning. Chairman Conaway, Ranking Member Peterson, and Members of the Committee, I come before you today on behalf of the entire land-grant university system, and we thank you for the opportunity to speak before you on food and agriculture at 1890 land-grant universities.

August 30, 2015, Congress recognized the 125th anniversary of the signing of the second Morrill Act, which created the historically black land-grant universities. Today, these universities are an integral part of the Board on Agriculture Assembly of the Association of APLU, and we endorse the APLU farm bill recommendations and budget priorities.

I want to say that we boldly assert that men and women of talent and ability, regardless of their socioeconomic condition, can contribute to the common good through hard work and the opportunity to develop and prosper. In this regard, we want to point to several budget items.

First of all, the 1890 land-grant university capacity funding, and 1862 capacity funding, we fully support that, and we want you to take note of the fact that the legislation requires the 1890s have 30 percent of what the 1862s have for research, and 20 percent for extension. We have not made that, so please take a look at that in the coming year to get us to full partners based on what Congress has done and said before.

The second one is the 1890 Capacity Building Grant Program. For 100 years, the 1890s received minimum or no funding after having been established for research or research facilities. The Capacity Building Grants Program is trying to make up for that. It actually was conceived in brilliance because it is competitive. It brings out the best of us, it addresses the nation's priorities, and critical is that it brings in the partners; so other universities, producers, private-sector are integral as we do that, get better in our competitiveness. We are finding ourselves becoming more competi-

tive in the overall competitive grants program, not only with USDA but also NSF and NIH. So that is one we want to keep and actually strengthen.

Then the 1890 Facilities Program, again, after 100 years, you are in a race with 100 laps, and you begin and the other partner is already 100 laps ahead. This is critical that we have this small investment. It is really a tiny amount of money, but it goes an extremely long way in refining our labs, and what does that do. When I go and partner with California or Texas, or Davis or Ohio, Illinois, Minnesota, those scientists now partner well with us because we have better facilities, it also attracts better scientists.

In terms of the APLU Deferred Maintenance and Infrastructure program, we are 100 percent in support of that program. There is one issue around that. Not even all of the 1890s have state matching funds, most 1862s have substantially more. When it comes to facilities, it looks like this initiative, as my colleagues have said, is going to require state matching, private matching. For the 1890s to be in that ball game, we are going to have to figure out a formula where we might partner and leverage so that we can all benefit and have cutting-edge facilities in that regard. And we can do it. We have done some great things in Alabama partnering, and we could even exemplify that across the nation if need be.

The 1890 Centers of Excellence, just want to say after 125 years we all came together. It has been a critical time as scientists, came up with three excellent concepts, received $2 million to fund those for all 18 states, and we would just challenge you to look at the record of what we accomplished with that small amount of money. Had we received the $35 million we requested, or have some section more than that, we would be magnificent. And the results are national in scope, not just regional.

Congressman Scott has requested through H.R. 51, a $19 million scholarships for these schools.

Now, let me just say, in terms of farmers, aggressive, technology-savvy farmers coming out, African American, other minorities, in terms of all the career areas where the private industry is crying because they don't have the diversity, this would be some of your best-spent dollars, because you already have the dynamic going. Now that we have funds to attract the engineers, the students who have different capabilities and interests to focus in on agricultural problems.

I just want to close by saying that Congressman Justin Morrill, one of the founders of the Republican Party, and the father of the land-grant institutions, established the second Morrill Act and included conditions that former slaves, African Americans, would not be discriminated against and be included in the U.S. land-grant university higher education system. Let's keep that going and improve on it.

Thank you.

[The prepared statement of Dr. Hill follows:]

PREPARED STATEMENT OF WALTER H. HILL, PH.D., DEAN, COLLEGE OF AGRICULTURE, ENVIRONMENT AND NUTRITION SCIENCES; VICE PROVOST FOR LAND-GRANT UNIVERSITY AFFAIRS; RESEARCH DIRECTOR, USDA EVANS-ALLEN RESEARCH AND DIRECTOR, GEORGE W. CARVER AGRICULTURAL EXPERIMENT STATION; ADMINISTRATOR, TUSKEGEE UNIVERSITY COOPERATIVE EXTENSION, TUSKEGEE UNIVERSITY, TUSKEGEE, AL

Chairman Conaway, Ranking Member Peterson, and Members of the Committee, on behalf of Dr. Kent J. Smith, Jr., President, Langston University and chair of the 1890 Council of Presidents; Moses A. Kairo, Chairperson of the Association of 1890 Research Directors (ARD) and Dr. Carolyn Williams, Chairperson of the Association of 1890 Extension Administrators (AEA) and the entire 1890 Land-Grant Community, I would like to thank you for this opportunity to speak about research in food and agriculture at the 1890 land-grant universities.

I am Dr. Walter A. Hill, the Vice Provost and Dean of the College of Agriculture, Environment and Nutrition Sciences at the historic Tuskegee University in Tuskegee, Alabama. Within the educational and race equity context of the Morrill Acts of 1862, 1890 and the 1994 expansion; I serve local, regional, national and international communities; I have been committed to the mission of the 1890 land-grant universities for 37 years. I have taught and continue to teach undergraduate and graduate students from the rural deep American South, Black Belt, urban centers and international students from South America, Africa, the Middle East and the Caribbean to engage in research, agricultural, nutrition and science projects. My passion for improving plant-environment relationships for sustainable agriculture and advanced life support systems and aiding small and historically disadvantaged farmers and rural communities also comprise collaborating with residents, farmers, students and building integrated academic research and consumer-community-building coalitions.

In addition, my career in agriculture education includes working as the Director of the 1890 Land-Grant Research and Extension Programs, the George Washington Carver Agricultural Experiment Station, founder and director of the Carver Integrative Sustainability Center and project director of the Wal-Mart Foundation-sponsored Sustainable Agriculture Consortium for Historically Disadvantaged Farmers. I am also the former Principal Investigator for the 1890 Land-Grant University 125th Anniversary Center for Innovative and Sustainable Small Farms, Ranches and Forest Lands.

There are three 1890 land-grant universities in the state of Alabama from whence I live and work; Alabama Agricultural and Mechanical University, Auburn University and Tuskegee University. It is important to note, August 30, 2015, the United States Senate recognized the 125th Anniversary of the signing of the Second Morrill Act which created 19 historically Black land-grant universities. These historically Black institutions are Lincoln University, Alabama Agricultural and Mechanical University, Alcorn State University, the University of Arkansas at Pine Bluff, Alabama Agricultural & Mechanical University, Prairie View Agricultural & Technical University, Southern University, Virginia State University, Kentucky State University, the University of Maryland-Eastern Shore, Florida Agricultural and Mechanical University, Delaware State University, North Carolina Agricultural and Technical University, Fort Valley State University, South Carolina State University, Langston University, Tennessee State University, Central State University, West Virginia State University and Tuskegee University.

I have intentionally shared the list of historically Black land-grant universities and my work experience with this distinguished Committee, only to emphasize the critical importance for U.S. universities to teach agriculture, engineering, science, and nutrition to its citizens. Within the context of the history of former slave states and equitable education for all citizens of the United States, it is an honor for me to represent the 1890 land-grant universities and in particular the 19 historically Black institutions because—today in the 21st century, there is a dire necessity for all U.S. institutions of higher learning, to work in unity for the purpose of achieving educational progress, agricultural assets and digital footprints for agribusinesses, especially in rural and small communities.

Today, 1890 land-grant universities are proactive members of the Board on Agriculture Assembly of the Association of Public and Land[-g]rant Universities (APLU) and we have consistent hands on role in the development of the APLU Board's proposed farm bill recommendations. We endorse APLU's budget priorities, concerning funding needs and the necessity to better integrate science and education programs into all action and policy activities of the United States Department of Agriculture (USDA). I will take this collegial occasion to emphasize research result oriented information and data provided by historically Black land-grant universities and intro-

duce additional issues of concern specific to 1890 land-grant universities in the new 2018 Farm Bill rewrite legislation.

The Second Morrill Act passed by the Fifty-First U. S. Congress served the educational needs of African American communities and established the 1890 Land-Grant Universities. Although the Second Morrill Act became law during times of great suffering and struggle for African Americans, the 1890 Land-Grant Universities survived and were productive; despite overwhelming odds, due to the commitment and vision of many African American leaders within higher education and some white visionary supporters. The same spirit of sacrifice and concern for students and communities, exhibited by African Americans leaders of the 1890 Land-Grant Universities, embraces the faculty and administrators today in 2017. This spirit, derived from the demographic philosophy of these institutions and the conditions of their founding, is respected worldwide. The general philosophy of the 1890 land-grant universities' administrators boldly asserts, ". . . *men and women of talent and ability, regardless of their socioeconomic condition, can contribute to the common good through hard work and the opportunity to develop and prosper.*"

At the onset, I would like to thank you and the Committee for your dedication and support to America's farmers and ranchers. Your support of the 1890 land-grant universities promotes the equity, opportunity, productivity and profitability of our farmers and the health and safety of all Americans.

Key Issues for the 1890 Land-Grant Universities

On behalf of my 1890 land-grant universities colleagues, I am honored to present the following key issues to you:

1. The critical need for increased investments; and
2. Appropriate funding mechanisms.

The Critical Need for Increased Investments

I am deeply heartened by the recent calls to increase significantly, the investment in agricultural research, extension and education. It is remarkable that so many diverse interests are coming together with an understanding of an urgent need to reinvest in the science and education base serving our farmers and our communities. It is important to note, over the last several decades, according to USDA/Economic Research Service, the U.S. agricultural sector has sustained impressive productivity growth. Our nation's agricultural research system, including Federal-state public research as well as, private-sector research, has been the key driver of this growth. Economic analysis finds strong and consistent evidence that investment in agricultural research has yield high returns per dollar spent. These returns included benefits not only to the farm sector, but also to the food industry and consumers in the form of more abundant commodities at lower prices. There is consensus that the payoff from the government's investment in agricultural research is high. ***We know, the return on investment in agricultural research is $20 for every $1 spent.***

The 1890 land-grant universities look forward to working with all the farm and interest groups who are working to enhance our abilities to serve their needs. As we support critically needed investments in agricultural research, extension and teaching, it is essential that the specific funding needs facing the 1890 land-grant university community also be addressed. Now, I would like to convey some of our specific recommendations to meet the unique needs of the 1890 land-grant universities and the communities we serve.

The 1890 Cooperative Extension programs are comprised of a broad range of science based educational efforts, which have been proven to:

1. Strengthen the food and agricultural industry, particularly small and limited resource farmers, by developing agricultural production systems that are efficient, sustainable and highly competitive in the global economy.
2. Enhance the health of families through diet and nutrition and food safety education and their economic well-being through practical financial education.
3. Enhance youth skills in science, technology, math, citizenship and leadership.
4. Foster strong, stable communities through leadership development efforts and encouraging entrepreneurship.

103 years ago the Smith Lever Act established the effective Cooperative Extension Service. For the more than a century, the Cooperative Extension has developed transformation programs that have improved the economic viability of small-scale agriculture and reduced the decline of small minority-owned farms from century to century, including today in the 21st century.

Programs emphasizing agricultural diversification, marketing strategies and risk management have been of paramount importance to this client group. Many of the

small farmers have diversified their operations to include vegetable production, fruits, specialty crops and animals to increase their cash flow. For example, the 1890 land-grant university, North Carolina Agricultural and Technical University (North Carolina A&T) developed the Natural Hog Growers Association and increased its association's membership hog-sale income by nearly a million dollars in North Carolina and signed a contract with the Whole Food Market. In addition, 1890 land-grant university, Florida Agricultural and Mechanical University's (Florida A&M) development of the Master Meat Goat Herdsman Program has saved producers over $16,250, annually, in the state of Florida's veterinarian and production costs.

In Alabama, farmers participating in a comprehensive program in record keeping, fiscal management, production management and farm planning have become producers that are more efficient. It was reported that 13 farmers acquired USDA farm ownership loans in the amount of $2.6 million and ten acquired operating loans for nearly $1.0 million. Without this training, the farmers would not have qualified for the loans. Programs of this nature enabled the limited-resource farmers in Kentucky to increase their net farm income by $4,500.00.

Increase the Funding Base of 1890 Land-Grant University Capacity Funding

We fully support the reauthorization of capacity programs funding for both 1862 and 1890 land-grant institutions. The amount of capacity funds available to Second Morrill Act 1890 land-grant universities is lesser than the amount of funds made available to our colleagues categorized under the auspices of the First Morrill Act 1862 land-grant universities. Currently, the legislation requires that the funding base of the 1890 land-grant university formula research funding (Section 1445) should be set at an amount equivalent to but not less than 30% of the 1862 land-grant university capacity funding (The Hatch Act of 1887). The 1890 land-grant universities' research program (Evans-Allen) currently received 22% of the 1862 land-grant universities' capacity funding.

Therefore, it is within the context of educational equity, that we are requesting the authorized amount of 30 percent. Similarly, the 1890 Cooperative Extension formula funding (Section 1444) is currently set at an amount equivalent to but not less than 20% of the 1862 Cooperative Extension formula funding (Smith Lever Act signed May 18, 1914). Within the historical context of the purpose of Smith Lever which established the USDA Cooperative Extension Service; for us, the 1890 Second Morrill Act land-grant institutions to be able to implement what was written in the 125th 1890 Land-Grant University Anniversary Resolution announced by U.S. Senator Sherrod Brown to "disseminate information about agriculture and economics." We are requesting to receive the authorized amount of 20 percent because the funding will financially help the 1890 land-grant universities fulfil their duty to help the United States train agricultural leaders and enhance agricultural development for the nation.

As an example of the importance of capacity funding, USDA/NIFA (National Institute of Food and Agriculture)-funded researchers at land-grant university Prairie View Agricultural & Mechanical University (Prairie View A&M) has created an agricultural robot capable of carry multiple sensors, including one that can detect crop height, a multi-spectral camera, and hyperspectral radiometer for processing information from across the electromagnetic spectrum. Robots in agriculture including self-driving tractors, drones and other machines that perform tasks such as precision weeding and spraying, pruning vines in the wine industry, and herding cattle. Agricultural engineers, such as the ones at Prairie View A&M, with robotics knowledge are in high demand because of advanced robotics unmanned agricultural vehicles are becoming widely used in precision agriculture.

NIFA-funded researchers at North Carolina A&T State University (N.C. A&T) have developed a safe, relatively simple technology for deactivating the allergenic proteins in whole roasted peanuts. The patented technology relies on treating whole roasted peanuts with various food-grade enzymes. Repeated laboratory trials using extracts from treated peanuts at N.C. A&T, as well as an initial clinical trial using skin-prick tests at the University of North Carolina at Chapel Hill, have shown promising results. Laboratory tests indicate allergenic proteins can be reduced by up to 98 percent. Researchers have also worked on applying the technology to wheat protein allergens. One of the greatest advantages of this technology is its potential to produce peanut products that can reduce the severity of allergic reaction in the case of accidental exposure.

Estimates vary as to the numbers of people who suffer from peanut allergy, but health officials agree it is one of the most severe and prevalent food allergies. A report from the National Institute of Allergy and Infectious Diseases in 2010 reported

that the numerous studies on the issue, some based on self-reports, estimate the prevalence of peanut allergy in the United States population ranges from 0.6 percent to 1.3 percent (2–4 million people). According to the American College of Allergy, Asthma and Immunology approximately 400,000 children in the U.S. suffer from the allergy. Making matters worse for them, peanut allergy is rarely outgrown, unlike many other food allergies.

Reauthorize the 1890 Capacity Building Grant Program

The 1890 Capacity Building Grants Program has played a critical role in helping us build our capacities in research, extension and teaching. This program has allowed us to attract new faculty, enhance our ability to conduct quality research, has enabled us to carry out needed curriculum development programs, and has permitted us to enhance the delivery of our extension and engagement programs. We also recommend that the authorized funding level for this program be continued.

A $150,000 grant from NIFA's 1890 Capacity Building program helped Fort Valley State University create a bioinformatics curriculum where students learn to transform biological research into informational science. In this program, science, technology, engineering and mathematics (STEM) majors join with computer science majors to become competent bioinformatics programmers and gain hands-on experiences in writing algorithms and coding for biological problems. Bioinformaticians use computers to store, organize and analyze the vast amounts of data generated by scientific research.

Reauthorize the 1890 Facilities Grant Program

We outstandingly recommend reauthorizing the 1890 Facilities Grant Program (Section 1447) at the authorized funding level. The 1890 land-grant universities have a clear and immediate need to improve their academic, research and extension physical facilities. There is also an urgent need to adequately equip these facilities with 21st century state-of-the-art equipment. Years of limited resources have taken their toll on the institutions and needed improvements cannot be delayed. Meanwhile, modern technologies require updated and additional resources and modifications to existing facilities. Without the needed improvements and technology upgrades, it becomes more and more difficult to recruit and train the highest quality scientists and other educational professionals for the future. We therefore, urge your support of authorization for the 1890 Facilities Grant program.

APLU Deferred Maintenance and Infrastructure Program

A recent Association of Public and Land-Grant Universities (APLU) audit (inclusive of 1862, 1890 and 1994 land-grant institutions and Hispanic-serving institutions) estimated $8.9 billion in deferred maintenance of mission-critical buildings, including classrooms and laboratories, animal and plant research houses/farms, greenhouses, and pilot facilities with a $29 million replacement value. Investments in academic research infrastructure would immediately create local jobs, conserve energy, and realize savings over time, in addition to improving research, education and extension outcomes. For the U.S. to remain the world leader in food and agricultural research, the aging infrastructure and deferred maintenance problem must be addressed. Requested is an infrastructure program that leverages, Federal, state and private-sector funds and benefits local, state, regional and national interests, as recommended by APLU.

Change the Carryover Provision for 1890 Extension Funding

The 1890 land-grant universities can only carryover 20 percent of its Extension funding after 1 year while other capacity programs can carryover their funding at 100 percent for 1 or more years. The 20 percent carry-over provision limits the flexibility needed for planning and expending the funding based on identified priorities. We are requesting that the carryover provision for 1890 Extension be changed from 20 percent to a carryover level that would be consistent with the carryover provision for other capacity programs such as Smith-Lever. This will provide the same carryover opportunity for Extension capacity funds for both 1890 and 1862 institutions.

Increase the Funding Base for McIntire-Stennis (Forestry) funding

We recommend increased funding targeted to forestry issues (McIntire-Stennis) at the authorized level. Many of our institutions abide in states where forestry is a major agricultural industry and these institutions have forestry and natural resource programs that are germane to the forestry industry and applicable to the current program eligibility guidelines. For example, Tuskegee University offers the Precollege Summer Program in Forestry, National Resources and Related STEM Areas for 7th and 8th graders and high school students. Each program creates an aware-

ness of the educational and career opportunities that are available in Science, Technology, Engineering, Agriculture and Mathematics.

Nutrition Education Program (Expanded Food and Nutrition Education Program)

Nutrition education is important to the health and well-being of all families, but there is a tremendous need for this program for persons with limited income. EFNEP help individuals to improve their diets and change their food buying behavior. It is recommended that EFNEP be reauthorized at its current level of $90 million. 1890 land-grant university, Southern University and Agricultural & Mechanical's (Southern University and A&M) Food Desert Project takes a critical look at the dual food issues of obesity and lack of access to nutritious food as issues being addressed through innovative programs at Southern University and A&M. Obesity and correlated health conditions have a $100 billion a year impact on the U.S. health care system, and Southern University and A&M is responding with an Extension-based initiative, "Eradicating Food Deserts in Neighborhoods through the Development of School Gardens." Three area schools and 500 students have been reached. The Nutrition Education Program is critical to all communities especially vulnerable people who live in the most economically impoverished rural, urban regions and neighborhoods which comprise the geographic locations of the 1890 land-grant universities.

Authorize the 1890 Centers of Excellence

We recommend authorization of the 1890 Centers of Excellence at a funding level of $35 million per year. These Centers were developed and initiated in 2015 in recognition of the 125th Anniversary of the Second Morrill Act of 1890. They include: (1) Center for Innovative and Sustainable Small Farms, Ranches and Landowners (CISFRL), (2) Center of Excellence for International Engagement and Development (CEIIED), and (3) Virtual Center to Motivate and Educate for Achievement (MEA).

In recognition of the 125th Anniversary of the Second Morrill Act of 1890, several USDA agencies committed $2 million to the 1890 land-grant universities to support the former two centers. The goals of the Anniversary Centers are to substantially increase diversity in the STEM pipeline, increase profitability and jobs in under-served farming communities and enhance talent preparation related to global food security. The 1890 land-grant universities are working in an integrative fashion across multi-disciplines and in partnership with the private-sector, government and community-based organizations to make a difference and obtain measurable impacts on the lives of under-served youth, farmers and developing communities who hold enormous potential. Although the funds from these USDA agencies were used prudently to support under-served small farmers and students at our institutions, these funds were woefully inadequate.

Through the years, the 1890 land-grant universities have struggled with inadequate funding resources to meet the especially challenging needs of under-served communities. The proposed Centers of Excellence would be utilized to help address historical inequities of resources and to allow our institutions the opportunity to work collaboratively and synergistically to help our stakeholders while concurrently effectively competing for other funding resources. These Centers of Excellence would jump-start new initiatives on the 1890 land-grant campuses, particularly developing resources to provide practical solutions to improve job opportunities and the quality of life of citizens in the 1890 land-grant universities' regions and beyond.

As I mentioned earlier, the Center for Innovative and Sustainable Small Farms, Ranches and Forest Lands (CISFRL) was initiated in 2015 as an outcome of the 125th Anniversary of the 1890 Land-Grant Universities. In its first year of operation, approximately 70 farmer clusters or cooperatives, including five or more owners, were created or operationalized in the seven states that initiated the CISFRL, based on competitive proposals. These clusters and cooperatives included hundreds of farmers, ranchers, and landowners. CISFRL has catalyzed farmers, ranchers and landowners working together with universities and the private-sector and state governments to leverage their strengths and resources by working with like-minded producers. Among their successes has been to obtain new markets (including large commercial retailers), who require larger quantities of produce delivered on a consistent basis than a small farmer can supply alone. The cluster approach (farmers working together) has enhanced GAP and food safety certifications, soil testing, pest management, irrigation, other sustainability practices and improved partnering with USDA agencies. Specific achievements after the first year of operation include:

- Increased marketing of vegetables to large commercial retailers (Wal-Mart, Kroger);
- Increased irrigation capacity for vegetable production;

- Joint purchase of equipment for crop spraying and animal pregnancy testing;
- Joint purchasing of coolers to increase the shelf life of fresh produce and refrigerated trucks for transporting fresh produce;
- Access to modern packing and shipping facilities;
- Conducted collectively over 80 workshops and conferences in partnership with USDA agencies, community based organizations for farmer training on FSA, NRCS, FS and APHIS programs and modern technologies; and
- Trained and provided information to small and limited-resource land owners on forest health, pests, invasive species and fire and disease control, and assisted in developing management plans for 422 landowners.

Reauthorize the Outreach and Technical Assistance for Socially Disadvantaged Farmers

We recommend reauthorizing the Socially Disadvantaged Initiative (Section 2501) Program at a level not less than $20 million per year. This program allows the 1890 land-grant universities and other Community Based Organizations to work cooperatively directly in a sustained way with small farmers. We have had tremendous success providing training in risk management, record keeping, farm management environmental stewardship, and alternative enterprises and market development. We train small farmers to access new and alternative markets for their crops and animal commodities. This program has made a dramatic impact on increasing the economic viability and sustainability of these small and limited resource farmers. This critical program should be sustained and strengthened and other small farm programs should be established as a safety net for all such farmers in this category. Comparatively, this group of farming clientele has been vertically ignored in terms of specially targeted programs. We therefore, ask the Committee to rectify this oversight by providing sufficient funding for this program to provide sustained impact.

Authorize Student Scholarships for the 1890 Land-Grant Universities

As introduced by Representative David Scott of Georgia, we request support for H.[R]. 51 to amend the National Agricultural Research, Extension, and Teaching Policy Act of 1977 to direct the Secretary of Agriculture to establish a grant program under which the Secretary will award $19 million per year ($1 million to each institution) for student scholarships. This scholarship program is needed to increase the number of young African American individuals seeking a career in the food and agricultural sciences and shall be provided with the caveat that such scholarship students shall commit to pursue a career in the food and agricultural sciences, including agribusiness, food production, distribution, and retailing, the clothing industries, energy and renewable fuels, and farming marketing, finance, and distribution. Agriculture critically needs a steady supply of diverse individuals with modern agricultural and scientific knowledge and training to support the agricultural industry and R&D enterprise. This requires an ability to translate complex technical knowledge to end-users, particularly farmers and livestock producers, while recognizing the local needs and constraints. According to a recent Purdue University study, the employment opportunities are tremendous for college graduates in food, agriculture, renewable natural resources and the environment; the demand for these graduates exceeds the supply by 39 percent.

Appropriate Funding Mechanisms

We would like to commend the leadership of USDA/NIFA and the Land-Grant University community in the development of the new AFRI competitive grants program, America's flagship competitive grants program for the agricultural sciences. The Department staff and others went the extra mile to make sure that our institutions were fully aware of the new program and gave us the opportunity to compete as equal partners in the process. The 1890 Land-Grant Universities achieved some success, however, with enhanced support to increase our competitiveness we will do even better in the future.

We recommend increased funding at a level of $418 million per year. While we support competitive grants, many of the programs that we provide need to be sustained over time. Short-term competitively awarded projects do not adequately serve the longer-term needs of the under-served populations that we serve. Long-term capacity funding funds provide the necessary sustained funding that is required to truly build capacity. Again, we support competitive grants, but it is not the only funding tool and it is not always the most effective mechanism to meet our needs and the needs of the people we serve in rural and urban communities.

Small Farms/Specialty Crops

The researchers and extension specialists have focused their efforts of helping improve the quality of life and increasing the income/profitability levels of small and undeserved farm operators in the 1890 land-grant universities' regions and beyond, including an emphasis to increase the competitiveness of specialty crops and organic crops. Small farms make up 90 percent of the farm count and operate nearly half of the farmland, but only account for 24 percent of the production. The largest share of farm production, however, occurs on the large-scale family farms. According to the Economic Research Service and other researchers, specialty crops typically account for 30 to 40 percent of the total value of U.S. crops, not an insignificant value.

Even before the increased attention given to specialty crop issues in the 2008 Farm Bill, the 1890 land-grant universities have been assisting specialty crop producers to increase the quality of these products and to develop a market niche.

Specialty crop issues often vary depending on the type of crop involved and the type of market in which they are sold. Among the crops important to producers that the 1890 land-grant universities' researchers and extension specialists have focused on include, but are not limited to, ethnic crops such as *Brassica rapa* cv. Bosai Chinensis (Bok choy), *Amaranthus viridis* Linn (Amaranth or Callaloo), and *Hibiscus sabdariffa* L. (Hibiscus or Jamaican Sorrel); energy beets; ginger; carrots; kale; specialty peanuts; grapes; watermelon; blueberries: vegetable soybeans (edamame); Indian, Chinese and Hispanic vegetable crops; sweet potatoes, southern peas, squash, and eggplant; mushrooms; and herbs.

Among the issues important to producers that the 1890 land-grant universities' researchers and extension specialists have focused on include, but are not limited to, sustainable production practices, planting flexibility restrictions, irrigation programs, labor, food safety, marketing and trade patterns, integrative pest management, and risk management.

With NIFA funding, researchers at Delaware State University have focused on the sweet potato as an alternative agriculture enterprise in Delaware. Sweet potato has become a popular crop for millions of people in Africa, Latin America and south-East Asia. It is a cheap source of carbohydrate and vitamins including vitamin A. In the USA, Louisiana and North Carolina are the largest producers of sweet potato. However, it is becoming popular in other parts of the country including Delaware. To develop suitable varieties in Delaware climate and soil, Delaware State University researchers started varietal trial during 2012 and 2013 growing season at SORC. There were four varieties planted on sandy loam soil with pH 5–6.5 on the tilled bed of 3′ width covered with black plastic. All varieties did well during 120 days of growing period in the state of Delaware. This research has demonstrated that sweet potato can be grown as alternative agriculture enterprises in Delaware. These four varieties are characteristically different for skin color, flesh color, taste and everyone can pick which they like.

With NIFA funding, researchers at Florida A&M University have focused on "biochar technology" and its potential for sustainable agriculture and carbon sequestration, including small and specialty crop farms. Mitigating the anthropogenic increased atmospheric CO_2 and environmental pollution are also major concerns of our society. Finding an economic and ecological feasible solution to those major problems is certainly not an easy task. However, the development of biochar technology may provide a promising means that contribute to the solutions of those global problems. Biochar technology turns portion of the plant materials produced every year into a "charcoal" form and a soil amendment. Biochar enhances soil water and nutrient holding capacity, reduces fertilizer use and its pollution to the environment. Biochar probably is the only viable technology so far that can significantly sequester atmospheric carbon and mitigates the anthropogenic effect on climate change. The findings revealed that showed that biochar as a soil amendment can increase soil productivity and sequester carbon to various degrees depending on the properties of the biochar and the soil receiving the treatment. Additional research is needed to fully realize the optimal use of the technology in various field conditions. The researchers at Florida A&M University have also initiated a design of a low-cost biochar production system that can facilitate the wide spread usage of the technology. Their research, education and outreach efforts revealed the benefits of biochar technology in enhancing agricultural productivity without increasing fertilizer use and in the meantime, sequestering carbon from the atmosphere.

With NIFA funding, researchers at land-grant university, Tuskegee University are leading a consortium of universities that is addressing development of organic farming in southeastern states through education; conducting of research, and development of extension materials for farmers in the region; testing organic pesticides against major pests of southern peas, squash, sweet potato, and tomato; and

providing site specific recommendations to organic growers through organized advanced multi-location, multi-state on-farm trials.

Tuskegee University's Integrated Research and Extension programs with small farmer clusters and small farmer cooperatives have facilitated production and marketing vegetables to large commercial retailers to increase profitability and jobs. Successes have included adaptive irrigation and solar energy technologies to enhance production efficiencies, and partnering of small farmer clusters with medium sized farmers for consistency in produce quantity and quality delivered.

Conclusion: Investing in the Future

In conclusion, I would like to thank the Committee for the opportunity to submit my testimony today on behalf of the Second Morrill Act and Smith Lever Act 1890 land-grant universities. The First Morrill Act was established in 1862, 1 year before President Abraham Lincoln issued the Executive Order of the Emancipation Proclamation (January 1, 1863) which changed the Federal legal status of enslaved Black people from slave to freed persons. Congressman Justin Morrill, one of the founders of the Republican Party and the Father of Land-Grant Institutions established the First Morrill Act (1862) to create public colleges and universities and to provide quality education for all citizens of the United States. In fact, the Second Morrill Act (1890) included the condition that former slaves, African Americans would not be discriminated against and would be included in the U.S. Land-Grant University Higher Education System. Congressman Morrill said, quote:

> "Having emancipated a whole race, shall it be said that there our duty ends, leaving the race as cumberers of the ground, to live or to wilt and perish? They are members of the American family, and their advancement concerns us all. While swiftly forgetting all they ever knew as slaves, shall they have no opportunity to learn anything as freemen?"

Within the historical context of Congressman Justin Morrill's concern, belief and vision for higher education in the United States, as well as, our collective institutions' contributions to educational development and leadership; we are looking forward to working with the U.S. House Committee on Agriculture and our colleagues in the university community, as we move through the reauthorizing of the 2018 Farm Bill. Please, we urge you, to use this historic moment, this significant opportunity, to invest in the nation's 1890 land-grant universities and in the future of all farmers, communities and people we serve.

The CHAIRMAN. Thank you, Dr. Hill.

Dr. Tallant, 5 minutes.

STATEMENT OF STEVEN H. TALLANT, PH.D., PRESIDENT, TEXAS A&M UNIVERSITY-KINGSVILLE, KINGSVILLE, TX

Dr. TALLANT. Good morning. I am Steven Tallant, President of Texas A&M University-Kingsville, and here today on behalf of the Hispanic Association of Colleges and Universities. Chairman Conaway, Ranking Member Peterson, my good friend and fellow south Texan, the Honorable Filemon Vela, and fellow Members of the House Agriculture Committee, thank you for the opportunity to speak with you today.

The scarcity of Hispanic participation in agriculture-related academic programs and professional ranks within the industry is made worse by the relatively low level of Federal agricultural investments in HSIs. This Committee recognized this disparity and included the Hispanic-serving agricultural colleges and universities authorizations in the previous farm bill. And I will refer to those as HSACUs from now on.

A&M-Kingsville's enrollment has been over 60 percent Hispanic since the formation of the HSIs, and over 50 percent of our graduates in agriculture are Hispanic. A&M-Kingsville's agricultural students consistently win state and national awards. These awards reflect the commitment of our faculty, the excellence of our academic programs, and the diligence of our students to constantly

strive for success. However, one area of concern is our aging agricultural research infrastructure. This problem has been highlighted at universities doing agricultural research across the United States.

A&M-Kingsville has been working with the agricultural community since 1948. We have three agricultural centers of expertise; the Citrus Center, the Caesar Kleberg Wildlife Research Institute, and the King Range Institute for Ranch Management. Our Citrus Center has helped the industry recover from devastating freezes, and deal with multiple disease threats like greening and phytophthora. The other centers help our livestock and wildlife industries deal with cattle tick fever and other issues. These industries represent over $5 billion in Texas. Our alumni have gone on to manage multimillion dollar agricultural enterprises and Federal agencies to help advance agriculture.

Today, our faculty and students participate in over $12 million in annual agricultural research expenditures. This includes over $5 million from USDA programs, and we leverage these funds to attract an additional $7 million annually. These research dollars have made dramatic improvement on our retention, graduation rates, and participation in graduate and other professional degrees. We have actively participated in competitive grant programs, including USDA grants, and ten percent of our student participants in these programs have gone on to complete graduate and professional degrees.

I would like to include one example. Veronica Acuna was one of our master students, funded by you through an HSI grant. She went on to complete her Ph.D., and today, Dr. Acuna is a faculty member at our Citrus Center where she researches critical issues like Citrus Greening and water use. Last year, she was awarded the Rising Star Award by our alumni association. All of this is possible because of your investments in HSIs.

This Committee has long supported the value of agricultural research through the development of the land-grant system and minority-serving agricultural research programs. They have also recognized the potential value that HSACUs can contribute to agricultural research. We need this cooperative approach, and we ask the Committee to maintain the authorizations and funding level for the six HSACU programs included in the 2014 Farm Bill. To truly achieve the objective of increasing Hispanics in agriculture, we also urge Members of this Committee to work with your colleagues, particularly those on the Appropriations Committees, to provide the funding needed to carry out these programs effectively. Given the low number of Hispanics in agriculture-related careers, the creation of a pipeline of researchers and research at HSACUs at all levels would strengthen the research capacity of these institutions and help meet employer demands. Hispanic-serving institutions are the most important pipeline for increasing Hispanic success in higher education and the involvement in agricultural research opportunities. HSACUs can better serve the nation if the necessary investments are made. This was the intent of this Committee when HSACUs were authorized in 2008, and I believe this should be a priority in the next reauthorization of the farm bill.

Thank you.

[The prepared statement of Dr. Tallant follows:]

PREPARED STATEMENT OF STEVEN H. TALLANT, PH.D., PRESIDENT, TEXAS A&M UNIVERSITY-KINGSVILLE, KINGSVILLE, TX

Introduction

Chairman Conaway, Ranking Member Peterson, our Representative, the Honorable Vela of Texas' 34th Congressional District, and fellow Members of the House Agriculture Committee thank you for the opportunity to speak with you today about Hispanic-Serving Institutions (HSIs), the unique opportunities offered by Hispanic-Serving Agricultural Colleges and Universities (HSACUs), and ways to streamline and prioritize agricultural research programs as part of the next reauthorization of the farm bill.

My name is Steven H. Tallant and I serve as President Texas A&M University-Kingsville (A&M-Kingsville). Prior to joining A&M Kingsville in 2008, I served as provost and vice chancellor for academic affairs at the University of Wisconsin-Eau Claire. Before my academic career, I served twenty years in the military with a stint as the Chief of Air Force Family Research based at the Pentagon.

Texas A&M University-Kingsville

A&M-Kingsville, chartered in 1917 but not opened until 1925 because of America's entry into World War I, the University is the oldest continuously operating public institution of higher learning in South Texas. After years of growth and expansion, the University became a member of the Texas A&M University System in 1989. Most of A&M-Kingsville's approximately 9,200 students come from South Texas, but there is wide diversity in the population, with students from more than 35 states and more than 43 countries. Seventy-four percent of students are undergraduates. Ethnically, the campus reflects the demographics of the area, with 62 percent of the students Hispanic, 27 percent white, and five percent African American.

With a focus on teaching and research, A&M-Kingsville boasts several renowned research centers that evolved from the natural environment of the region. The Caesar Kleberg Wildlife Research Institute, Citrus Center, King Ranch Institute for Ranch Management and National Natural Toxins Research Center are well-known throughout the world. In the past 6 years, new centers such as the Eagle Ford Center for Research, Education and Outreach and the Institute of Architectural Engineering Heritage were created in response to regional needs and are well on their way to achieving widespread recognition.

A&M-Kingsville is a member of The Texas A&M University System, although an independent campus and not part of Texas A&M University land-grant status. The A&M System is one of the largest systems of higher education in the nation, with a budget of $3.8 billion. Through a statewide network of 11 universities, seven state agencies. The A&M System educates more than 131,000 students and makes more than 22 million additional educational contacts through service and outreach programs each year. Externally funded research expenditures exceed $820 million and help drive the state's economy.

As President of A&M-Kingsville and as a long-standing member of the USDA/Hispanic Association of Colleges and Universities (HACU) Leadership Group, I have had the opportunity to develop a working relationship with the Department of Agriculture (USDA). The Leadership Group is a national body of USDA and HSI leaders appointed by the U.S. Secretary of Agriculture and the President and CEO of HACU. Its purpose is to recommend policies and programs to strengthen USDA partnerships with HSIs and provide leadership and strategic direction to the USDA Hispanic-Serving Institutions National Program Office.

Hispanic-Serving Institutions

HSIs are defined in Title V, Part A of the Higher Education Act, as amended, as accredited, degree-granting, public or private nonprofit institutions of higher education with 25% or more total undergraduate Hispanic full-time equivalent (FTE) student enrollment. In addition, over 50% of the students must qualify for Federal aid.

A&M-Kingsville is one of 472 HSIs in 19 states and Puerto Rico as of the 2015–2016 academic year. HSIs are 13.8 percent of the total nonprofit colleges and universities, yet enroll 23.4 percent of all students and 62.3 percent of all Hispanic students in higher education. The number of HSIs is rapidly growing, from 137 institutions in 1990, to 229 in 2000, 311 in 2010 and 435 in 2014.

The continued growth in the number of HSIs can be projected from the 323 "emerging" HSIs, institutions with enrollments that are 15–24.9 percent Hispanic.

This is up from 2014–2015 when 310 institutions met this criteria in 34 states, including Washington, D.C. Due to rapid Hispanic population growth and the increasing number of Hispanics in post-secondary education, most of these emerging HSIs are expected to become HSIs within the next decade.

Role of Research in Agriculture and HSIs

For many decades, the United States has been the world leader in the sciences, but it is currently experiencing shortages of scientists, and this has allowed other countries to challenge its economic strength and leadership in science.[1] Hispanic Americans and other minority groups represent an untapped pool of talent that could be used to fill this shortage in science, if adequate funds are applied to train these promising domestic undergraduate and graduate students.

Agricultural research plays an incredibly important part of our food and agricultural economies. The need for research in this area is well documented. The complexity needed to be successful and competitive has also increased. Related socioeconomic research is also critical to the strategic advancement of U.S. agriculture and it plays a key role in the planning and development of new curricula and degree programs, as well as in the strengthening of current ones.

While Hispanics represent more than 18 percent of the U.S. population or over 57 million individuals, Hispanic students make up less than eight percent of agriculture majors in institutions of higher education.[2] By comparison, Hispanics make up 29 percent of those working in the agriculture industry, where overwhelmingly, those 2.5 million Hispanics labor as farmworkers cultivating and harvesting crops, raising and tending livestock and doing other work that does not require a college degree.

In 2015, only 15.5 percent of Hispanic adults held a bachelor's degree compared to 26.2 of non-Hispanic whites. In 2014, the median household income of Hispanics was $42,491, whereas the median household income of non-Hispanic whites was $60,256. Bearing in mind these educational and income disparities facing the U.S. Hispanic population, and the low percentage of Hispanic agriculture majors, it's likely that very few are occupying executive, management, or research positions within the sector.[3]

The scarcity of Hispanic participation in agriculture-related academic programs and professional ranks within the industry is made worse by the relatively low level of Federal investments and allocation of resources to HSIs. There are over 100 HSIs that awarded at least 15% of their degrees in agriculture-related fields over the 2 most recent academic years. However, they receive no dedicated funding to promote or sustain the enrollment of Hispanics in agriculture-related academic programs, as well as the development and maintenance of the required research infrastructure. These institutions can earn the designation of HSACUs.

Hispanic-Serving Agricultural Colleges and Universities (HSACUs)

The HSACUs cohort was established as part of the 2008 Farm Bill in response to the low number of Hispanics in agriculture related fields. HSACUs are defined as:

(1) Colleges or universities that qualify as HSIs;

(2) Offer associate, bachelors, or other accredited degree programs in agriculture-related fields; and

(3) Hispanic students must receive at least 15 percent of the degrees awarded in agriculture-related programs over the 2 most recent completed academic years.

A&M-Kingsville enrollment has been over 60% Hispanic since the formation of the HSIs and over 50% of our graduates in agriculture are Hispanic. We have had a long history working with our agricultural industries for over 60 years.

To date, 116 HSACUs have been designated by USDA.

The 2008 Farm Bill established five HSACU programs listed below along with their corresponding funding authorization levels:

(1) *The HSACU Endowment Grant Program ($80 million)*—This program is designed to distribute 60 percent of the interest accrued in the fund among HSACUs prorated based on their Hispanic enrollment. The other 40 percent is equally distributed among HSACUs.

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[1] *http://ehrweb.aaas.org/mge/Reports/Report1/AGEP/index.htm*.

[2] *http://www.pewhispanic.org/2016/04/19/statistical-portrait-of-hispanics-in-the-united-states-key-charts/*.

[3] *https://dl.sciencesocieties.org/publications/sh/articles/54/3/sh2013-54-3-rc*.

(2) *The HSACU Equity Grants Program ($20 million)*—This formula-based grant program is designed to help HSACUs build capacity for faculty training and infrastructure to compete for grant open to 1862, 1890 and 1994 land-grant institutions.

(3) *The HSACU Institutional Capacity-Building Grants Program ($40 million)*—The competitive grant program is designed for institutional-capacity (not including alteration, repair, renovation, or construction of buildings) allows HSACUs the flexibility to best determine how to increase their capacity.

(4) *The HSACU Fundamental and Applied Research Grants Program* [*()$40 million)*—The grant program funds fundamental and applied research in agriculture, human nutrition, food science, bioenergy and environmental science.

(5) *The HSACU Extension Grants Program* ($40 million)—The program is designed to ensure that HSACUs will have access to two major extension grant programs (406 and AFRI). In addition, HSA[CU]s without the research and outreach capacity of 1862 and 1994 institutions will have access to funding for cooperative extension work through special competitive grant program.

The reauthorization of the farm bill in 2014 kept the HSACU programs mentioned above, and added a new competitive grants program in support of Hispanic agricultural workers and youth. However, as the Committee is aware, none of these HSACU programs originally authorized in 2008 have ever been funded by Congress. Consequently, I believe the Committee's intent has never been realized.

A&M-Kingsville, along with several other HSIs raised the funding issue to USDA. As a result, USDA allowed HSACUs to submit a declaration of intent to not be considered an HSACU in order to be eligible for Non-Land-Grant College of Agriculture funding (NLGCA). HSACUs who did not make this declaration remain designated as HSACUs until September 2018. The net effect is to have no funding as HSACUs and no eligibility for the NLGCA.

Agriculture Research at A&M-Kingsville

A&M-Kingsville agricultural students consistently win state, regional and national awards in their respective agricultural fields. These awards reflect the commitment of our faculty, the excellence of our academic programs and the diligence of our students to constantly strive for success. We take great pride in providing all our students with the guidance, services and education they need to reach their goals. However, an area of concern to continue to provide this quality opportunity is the aging agricultural research infrastructure at A&M-Kingsville. It has been highlighted as a problem at our universities across the United States doing agricultural research.

A&M-Kingsville has been working with our agriculture community for many years. Our Citrus Research Center started with the support of our local industry in 1948. We have three agriculture centers of expertise: the Citrus Center, Caesar Kleberg Wildlife Research Institute and the King Ranch Institute for Ranch Management. Our students have gone on to manage multi-million dollar agricultural enterprises and direct Federal agencies to help advance agriculture. Today our faculty and students participate in over $12 million in agricultural research. This includes over $5 million from USDA programs. These USDA funds help us leverage our capabilities to attract the additional $7 million in non-Federal funding. These research funds have shown to dramatically improve our retention, graduation rates and participation in graduate and other professional degrees. This has helped us increase our student retention from 58 percent to 72 percent just this year. While we are proud of the increases we have made this is not enough. We can do better but it will take resources to do so.

We have actively participated in competitive grant programs. This includes the USDA/NIFA/HSI grant program which resulted in ten percent of the students participants in these programs have completed their DVM or MS and/or Ph.D.'s in agricultural fields. One of our student successes has been Veronica Acuna. She completed her Ph.D. and did Postdoctoral research at University of Illinois. Today Dr. Acuna is a faculty member at our Citrus Center helping the citrus industry adjust to the new era of urban agriculture interface, citrus greening and increased competition for available water.

Recommendations for the Next Farm Bill Reauthorization

This Committee has long supported the value of agricultural research through the development of the land-grant system and minority-serving agricultural research programs. They have also recognized in past farm bills, the potential value that HSACUs can contribute to agricultural research.

- We need to continue this cooperative approach and ask the Committee to maintain the authorizations and funding levels for the six HSACU programs included in the 2014 Farm Bill. Implementation of these program authorizations are critically important to advancing Hispanic participation in the agriculture sector. To actually achieve the objectives of the Committee to increase Hispanics in agriculture, we also urge Members of this Committee to work with your colleagues, particularly those on the Appropriations Committee, to provide the funding needed to carry out these programs effectively.
- Given the low numbers of Hispanics in agriculture-related careers, the creation of a pipeline of researchers and research at HSACUs at all levels would strengthen the research capacity of these institutions and help meet employer demands.

Conclusion

Hispanic-Serving Institutions are the most important educational pipeline for increasing Hispanic success in higher education and their involvement in research opportunities. HSIs and HSACUs can better serve the nation if the necessary investments are made in their infrastructure, faculty and students. This was the intent of this Committee when HSACUs were initially created in 2008, and I believe this should be a priority in the next reauthorization of the farm bill.

Thank you.

The CHAIRMAN. Thank you, Dr. Tallant.

Ms. Billy, 5 minutes.

STATEMENT OF CARRIE L. BILLY, J.D., PRESIDENT AND CHIEF EXECUTIVE OFFICER, AMERICAN INDIAN HIGHER EDUCATION CONSORTIUM, ALEXANDRIA, VA

Ms. BILLY. Mr. Chairman, Ranking Member, and Members of the Committee, on behalf of the nation's 34 Tribal colleges and universities, the 1994 land-grants, thank you for this opportunity to testify.

Indian Country includes some of the most isolated and economically challenged regions of the nation, but our lands are rich in natural resources, and our people are among the most resilient in the world. Within this context, Tribal colleges are planting seeds of hope. They are working to strengthen Tribal economies, revitalize our language, and protect, restore, and sustainably use our lands, waters, and traditional foods.

In 1994, Tribal colleges received Federal land-grant status. Today, the 1994s epitomize the intent of the first Morrill Act. We truly are community-based institutions, and we are defined by place. Our stories, songs, and land come from the land, mountains, water, and wind. Most of our land, the remaining Tribal lands in this country, are forested or agriculture lands.

Research conducted by the 1994s touches on big global challenges, but in a way that is related to our land and our place. Most of our research is conducted with scientists and researchers from other land-grant institutions and Federal research centers. First, because our legislation requires it, but second, because we benefit from it. We leverage their expertise, equipment, and connections to maximize our small grants.

Dr. Kerry Hartman at Nueta Hidatsa Sahnish College in North Dakota and his students are working with the Tribal Game and Fish biologists and South Dakota State University to figure out how to develop and maintain an environment that will support native pollinators of juneberries and other traditional plants. Juneberries are an ancient plant. Their high levels of protein, calcium, and antioxidants sustained generations of Native people

throughout the northern plains and woodlands until they fell victim to westward expansion. If we can restore the juneberry's native habitat, we could sustainably cultivate crops for local use and small farm commercial production, helping us to grow our reservation economies and improve the health status of our people. We will also be restoring the cultural identity of the Mandan, Hidatsa, and Arikara people. This project would not happen without USDA's support for specialty crop research. The need for research into emerging technologies for small farmers, invasive species management, sustainable growth, and food security is essential to Indian Country.

Dr. Steve Dalberg at White Earth Tribal and Community College in Mahnomen, Minnesota, is conducting research on land use, water quality, and wild rice productivity. This research is important because wild rice is one of the key cultural, economic, and nutritional resources of the Anishinaabeg people, but they face challenges in protecting it. Some of the challenges are genetic, but many are connected to water quality and land use.

Tribal resource departments face more challenges. They lack the personnel and resources to comprehensively monitor water quality and study its impact on wild rice. The colleges are working to determine whether satellite data can be a cost-effective predictor of wildlife productivity. The key is to find satellite data that correlates with biochemical water quality parameters and rice stands productivity. The college can then share this data with the Tribe, who can then use it to identify areas for further monitoring, making data-driven decisions and targeting limited resources in the most effective way. At the same time, Tribal college students are building research skills that could sustain their Tribal identity and culture and economy. To do this, White Earth is leveraging 1994 research funding with resources from NASA, the U.S. Geological Service EROS Data Center, and the local Agricultural Research Service Lab. According to Dr. Dalberg, the USDA funding is the grease that makes those relationships happen.

As you work to reauthorize the farm bill, we have four quick recommendations. One, acknowledge the value of undergraduate place-based research and education. The farm bill research provision should acknowledge that diversity matters. Students and faculty at 1994s and other minority and small institutions can enhance cultural competency and research capacity for the next generation of scientists and agriculture practitioners. Two, resist efforts to consolidate Federal STEM programs. History demonstrates that small and poor institutions, even those with great ideas, have a difficult time competing against Research I institutions. Three, establish McIntire-Stennis eligibility for 1994s. This is a matter of equity. In 2008, the McIntire-Stennis Act was amended to include Tribal lands in the formula for state forestry programs, but Tribal land-grant institutions were excluded. Please amend the McIntire-Stennis formula to include 1994s with forestry programs. And fourth, let Tribal colleges compete in all the land-grant programs. The 2000 Farm Bill was opened up the Smith-Lever 3(d) Programs to all land-grants except the 1994s: 1994s can't participate in the Children Youth and Families at Risk Program, or the federally recognized Tribal Extension Program, yet ironically, we are the only

land-grants that are actually chartered by federally recognized Indian Tribes. Please open up the 3(d) programs so that we can compete with other land-grant institutions.

Thank you.

[The prepared statement of Ms. Billy follows:]

PREPARED STATEMENT OF CARRIE L. BILLY, J.D., PRESIDENT AND CHIEF EXECUTIVE OFFICER, AMERICAN INDIAN HIGHER EDUCATION CONSORTIUM, ALEXANDRIA, VA

Chairman Conaway, Ranking Member Peterson, and Members of the Committee, on behalf of the nation's 37 Tribal Colleges and Universities (TCUs), which collectively are the American Indian Higher Education Consortium (AIHEC), thank you for the opportunity to testify today and share a few recommendations on the topic of agricultural research in preparation for the next reauthorization of the farm bill.

Background on Tribal Colleges

American Indian Tribal Colleges are public institutions of higher education that are young and geographically isolated—primarily located on Federal trust land. Tribal Colleges are tribally or federally chartered and they have been established for two reasons: (1) the near complete failure of the U.S. higher education system to address the needs of—or even include—American Indians; and (2) the need to preserve our culture, our language, our lands, and our sovereignty.

Collectively, Tribal Colleges have grown from one institution in 1968 to 37 today, operating 75 sites in 16 states and serving approximately 160,000 American Indians, Alaska Natives, and other rural residents each year in academic and community-based programs. They are located in some of the most economically impoverished regions of the country, yet our homelands are rich in natural resources and our people are among the most resilient in the world. Within this context, Tribal Colleges are planting seeds of hope for the future; nurturing languages, cultures, and traditions; helping to strengthen Tribal economies and governments; and working to sustain and revitalize our lands, waters, environments, and traditional foods.

TCUS as Land-Grant Institutions

In 1994, the Tribal Colleges took a significant step toward greater participation in the American higher education system when American Indian reservations became the last lands under the American flag to receive Federal land-grant status, and with that designation, to participate in vital agriculture and natural resource programs operated by the U.S. Department of Agriculture (USDA). This historic—and long overdue—recognition occurred with the passage of the Equity in Educational Land-Grant Status Act of 1994.

As place-based institutions of higher education whose collective mission is to meet the needs of our Tribes and Tribal communities—and most important, to preserve, strengthen and sustain our Tribal lands, languages, and cultures—Tribal Colleges are proud to be part of this nation's land-grant family. It is important to remember that over 155 years ago, the first Morrill Act was enacted specifically to bring education to the people. Today, the 1994 Institutions—more so than many other institutions of higher education—epitomize the original intent of the first land-grant legislation: we truly are place- and community-based institutions. All of the 1994 institutions offer place-based agriculture and natural resource management programs and train a significant number of our Tribal natural resource research and management professionals and small farmers and ranchers. Of the 37 Tribal Colleges, 34 currently are 1994 land-grant institutions, and another—Red Lake Nation College in Minnesota—is expected to join our ranks as a 1994 land-grant institution when the farm bill is next reauthorized.

Being part of the land-grant system is important to us because, as I mentioned earlier, we are people of a place. Place defines who we are. Our stories, songs, and language come from the land, waters, mountains, and wind. Most of our land—the remaining Tribal land in North America—is forest or agricultural land. In fact, of the 55.7 million acres that compose American Indians reservations, more than 75 percent are agricultural and forestry holdings.

The National Institute of Food and Nutrition (NIFA) administers four modest programs for the 1994 institutions: a $3.4 million (formula) agriculture education equity program, which has enabled the thirty-four 1994 institutions to develop and offer small foundational agriculture or natural resource education programs; an endowment program, from which the 1994 institutions share annual interest payments of approximately $5 million (total) each year; a $4.4 million competitive extension program, which supports 1994 outreach activities such as community gardening,

youth summer science and nature camps, agriculture technical assistance, and financial literacy programs; and a competitive research program, authorized in 1998 and first funded in FY 2000 at $500,000. The current appropriation for this program, and its high watermark, is $1.8 million for all 34 institutions. As the NIFA website states, our institutions often serve as the primary institution of scientific inquiry, knowledge, and learning for our Tribal communities. This modest funding assists us in our efforts to protect our reservation forests, woodlands, grasslands, and crops, and monitor the quality of our soil, water, and other environmental factors. Projects range from studying bison herd productivity to efforts focused on the connection between traditional plants and their role in managing diabetes, controlling invasive species, and revitalizing Native species. Each of the 1994 programs, though small, is critically important to the 1994 institutions and the communities they serve.

Under the NIFA-1994 research program, partnerships are required with other Federal land-grant institutions schools of agriculture, or Agriculture Research Service stations. These partnerships assist us in carrying out the grant's primary emphasis, which is training students in science.

Three types of funding are available through the research program: "New Discovery" supports basic and applied scientific inquiry that could be published in a peer-reviewed journal. "Capacity level" grants support local, applied research. "Student Inquiry" funding allows a Tribal College student to build a research project and present the results under the guidance of a 1994 Land-Grant faculty member. 1994 faculty may also receive a grant to study optimal ways to teach Native American students in sciences as they relate to health, conservation and agriculture, and there is a special funding initiative that allows the 1994s to develop scientific capacity throughout the entire 1994 Land-Grant system.

Key benefits of the USDA–NIFA Tribal College Research Grants Program are the collaboration and long-term relationships that the grants help us build with top faculty and scientists at state universities, agencies, Tribal organizations, and research centers. Through a 1994 research grant, scientists, researchers, professors, and career professionals from multiple institutions, agencies, and businesses become readily available sources of support for TCUs, able to respond to questions, suggest methodologies, and share equipment, resources, and facilities. Conversely, the 1994s are a unique resource to their partners. These communities of practice are similar to learning communities; through and within, the 1994s find camaraderie, communication networks, and resources that strengthen our individual research and education projects and serve as laboratories for innovation, technology transfer, and ongoing regional (and national) economic and community development.

1994 Research Examples

Through the 1994 Tribal College research program, White Earth Tribal and Community College in Mahnomen, Minnesota is conducting research on land use and land cover on water quality and wild rice productivity. This research is important because wild rice is one of the key cultural, economic, and nutritional resources of the Anishinaabeg people. The White Earth Band and other Anishinaabeg people are facing many challenges in protecting this resource for future generations. Some of these are genetic, but many are connected to water quality and, in particular, how changes in land use such as agriculture, development, and mining may impact wild rice. Tribal natural resource departments face additional challenges: the lack of personnel and resources to comprehensively monitor water quality and adequately study its impacts on wild rice productivity. The WETCC wild rice research project includes *in* [*situ*] research in existing rice beds and waterways, comprehensive statistical analysis using remote data, and the construction of an online data portal—all three engaging undergraduate student researchers—as well as an innovative and longstanding partnership of institutions and organizations.

Led by Dr. Steve Dalberg, WETCC is working to determine whether satellite data can be useful as a cost-effective predictor related to wild rice productivity. The key is to find satellite data that correlates strongly enough with important biochemical water quality parameters and the productivity of rice stands to be useful. Then, the college will make those data available to Tribal resource managers so they can use them to identify "hot spots" that need further monitoring. This will enable the managers to make informed, data-driven decisions, targeting their limited resources in the most effective way. At the same time, TCU students build important research skills, working with scientists and natural resources practitioners while they learn to manage large, complex datasets that ultimately, could help sustain their Tribal culture and economy for generations to come.

The success of this project has been fundamentally tied to the strength of the WETCC team, which includes many of the principals from the college's long-stand-

ing collaboration with NASA, the U.S. Geologic Service EROS Data Center, and Dr. Abdullah Jaradat and his staff from the USDA Agricultural Research Service Lab in Morris, MN. These partners provide the range of expertise that Dr. Steve Dalberg, the sole scientist on the WETCC's staff cannot begin to duplicate. Without the committed and capable partnerships forged through opportunities from both the USDA–NIFA TCU research program and NASA, this project would not be possible. As with most things in Indian Country, the long-standing relationships we develop are the key factors in our success. According to Dr. Dalberg, "it goes without saying that Federal dollars are the grease that makes these relationships possible."

Since 2001, Dr. Kerry Hartman and his undergraduate students have been conducting culturally and economically relevant research at Nueta Hidatsa Sahnish College, on the Fort Belknap reservation in North Dakota, through the USDA–TCU research program. The goal of Dr. Hartman's current NIFA research project, conducted with Tribal Game and Fish biologists and South Dakota State University, is to figure out how to develop and maintain an environment that will support *native* pollinators of *Amerlanchier cultivars,* or juneberries, and other traditional plants. Juneberries are an ancient plant. Their high levels of protein, calcium, and antioxidants sustained generations of Native peoples throughout the northern plains and woodlands, until native pollinators and juneberry stands fell victim to westward expansion. If NHSC can restore the juneberries' native habitat, they could sustainably cultivate crops for local use and small farm commercial production, helping to grow the reservation economy and improve the health status of their people. They will also be restoring identity and cultural pride within the Mandan, Hidatsa, and Arikara people.

It is important to note that research such as this would not be possible without a focus at USDA on specialty crop research. In rural America and Indian Country, specialty crop research is critically important to building and sustaining a local economy: locally grown, locally produced, locally packaged, and locally consumed. Whether through a separate specialty crop program or the NIFA–TCU research program, we believe this type of research is the most relevant and will yield the largest return in many of our communities. The need for more ongoing research into new and emerging technology uses and impacts; pest and invasive species management; sustainable growth; and food safety/security are essential in Indian Country, as NHSC's juneberry research attests.

Other TCUs are also doing important research. Salish Kootenai College, in Pablo, Montana, conducts extensive research and offers an accredited bachelor's degree program in the Science of Hydrology to address a dearth of American Indian water management scientists. This is particularly relevant to people of the Flathead Indian Reservation because their primary body of water, Flathead Lake, is the nation's largest freshwater lake west of the Mississippi and it is fed by several rivers and streams flowing from the glaciers of northern Montana and Canada.

Ilisagvik College in Barrow, Alaska, is located on the northern-most point of the United States where "the sea is the way of life." Ilisagvik offers a unique Marine Mammal Observer Stewardship degree that combines Inupiaq traditional knowledge, Western science research, and industry standards into a program that is recognized by the Alaska Federation of Natives as "*the* training center for Alaska Natives on Marine Mammal Observation."

United Tribes Technical College, in Bismarck, North Dakota is currently conducting a wide variety of research related to the land, wildlife, and traditional plants of the grasslands and northern prairie. Under the USDA–NIFA TCU research program, UTTC is conducting a small study on new methods to control invasive Kentucky Bluegrass, in partnership with the local Agriculture Research Service station. In partnership with North Dakota State University, the college is engaged in its second student research project on bat ecology in the state of North Dakota. More specifically, this grant supports research on bat foraging ecology habitat structure and distribution across the state. UTTC is also integrating its research programs with extension and outreach activities, conducting significant research on nutrition, health, and native/traditional plants. Under an optimal gardening research effort aimed at boosting production of small farmers, they are studying management strategies and inputs to ascertain cost effectiveness for growers on reservations, given limited access to water and soil inputs. Faculty and students have also conducted important research on healthy eating habits, juneberries, corn varieties, and seed sovereignty among Tribal nations.

These are just a few examples but they demonstrate our fundamental connection to the 1994 legislation: We are people of a Place. Tragically, due to misuse, exploitation, and lack of expertise and training, millions of Tribal acres are fallow, underused, or are being developed through methods that could render resources non-re-

newable. For this reason, agriculture and forestry research, in particular, is critically important to the 1994 institutions and our Tribal communities.

The Need To Grow TCU (1994) Agriculture & Forestry Research Programs

The Production Challenge

The agriculture challenges we face as a nation and world today are well established: constantly and rapidly changing technologies; population growth and predicted food shortages; environmental changes and competition over water and land access and use; obesity and health status; and more. A common thread adding another layer of complexity to each of these challenges is the aging agriculture workforce in the U.S. The average age of farmers and producers in the U.S. is 60 years of age and continues to rise each year. Among Native American farm operators, more than 30 percent are 65 years or older. But for American Indians and Alaska Natives (AI/AN), the issue goes far beyond age. The 2012 Agricultural Census reports less than 38,000 Native American-operated farms, representing only 1.8 percent of the approximately 2.1 million farms in the U.S. Of these Native farms, only eight percent had a market value of $50,000 or more, in comparison 25 percent of all U.S. farms were worth $50,000 or more. The bottom line is that Native farmers and ranchers are already under-represented in the U.S., and their numbers will likely decline even further as today's farmers and ranchers retire.

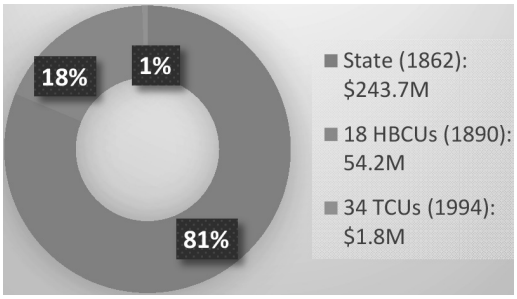
As a nation, we must do more to increase the number of young people seeking careers in the food and agricultural sciences, including agriculture research, agribusiness, food production, energy and renewable fuels, and farming marketing, innovation, and distribution. The need is particularly acute in Indian Country, as the numbers cited herein attest. For Native farmers and ranchers, access to land is not the primary issue, as it is for most potential farmers in the country. (As noted previously, 75 percent of the remaining lands in Indian Country are forested or agriculture lands.) Access to capital, agriculture education and research, and technical assistance are the major barriers for most Native farmers and ranchers. Outreach, technical assistance, and innovative research opportunities through traditional Cooperative Extension and education programs are limited in many Tribal communities, often due to the rural settings and funding limitations. Tribal Colleges often lack the funding they need, as well as critical support from the mainstream landgrant system, to develop and deliver appropriate agricultural programming and research opportunities. Yet, with adequate funding, TCUs can provide relevant, locally and place-based higher and technical/career education that is innovative and which includes important tribally driven experiential learning and community-based research opportunities to aspiring and beginning farmers, ranchers, and agriculture/forestry researchers and students throughout Indian Country.

The Research Challenge

I would like to respectfully suggest that USDA's research portfolio has not benefited in any significant way from the unique value that 1994 institutions can contribute in helping to meet the challenges we face as a nation. The USDA research portfolio is heavily oriented to large capacity and Research I institutions. In 2013, the Government [Accountability] Office issued a report on the participation by Minority Serving Institutions—including the 1994 institutions—in USDA's research programs. The report concluded that MSIs received about two percent of all research funding. (For a copy of the report, please see: *http://www.gao.gov/products/GAO-03-541*.) We believe that the disparity described in the report has probably expanded in recent years, as the program in question was a predecessor to the Agriculture and Food Research Initiative (AFRI). We know it is the case for the 1994 institutions.

Research and experiential learning are critical components of higher education in the classroom, the lab, and for students' careers. Without being able to participate in USDA's flagship research program, AFRI, 1994 institutions are losing out in ways that are almost immeasurable. We strongly urge this Committee to rectify this serious problem in the next reauthorization of the farm bill, and further, to take a look at USDA's overall commitment to research, including facilities at the 1994 institutions.

NIFA Research Programs



In Fiscal Year 2016, the 1994 institutions *competed* against one another for **$1.8 million** in research funding. That same year, the 1862 land-grant institutions (state) received **$236 million** in formula funds, even though ten states are smaller than some of the reservations with a 1994. The 1890 institutions (17 historically black colleges and universities) received **$51 million,** with a guarantee of at least $1 million each.

We are told that nothing can be done—the Federal budget situation is too dire. We disagree. We believe that this Administration and Congress could begin to correct these inequities. We are not asking for handout. We are asking for an investment—a proven investment in Tribal Colleges, which would help our people become—once again—significant contributors to the agricultural base of the nation and the world.

Recommendations for Consideration During the Farm Bill Reauthorization

The 1994 institutions are confident that they have the potential of becoming significant contributors to the agricultural base of the nation and the world once again. More and more AI/AN Tribes and 1994 institutions are beginning to re-assert sovereignty over our food, agriculture, livestock, and fisheries systems. Working with key partners, we are defining policies that are ecologically, socially, and culturally appropriate to our unique circumstances.

Due in large part to our land-grant activities, leveraged with other federally funded STEM programs, our students are involved to some degree in cutting-edge and community-relevant research, particularly research related to the preservation of our natural resources and the exploration of the linkages between nutritional patterns and disease. Much of this research is conducted with other land-gran[t] institutions, resulting in both good science and solid partnerships.

1. Acknowledge the Value of Place-Based, Traditional Research and Education

The 1994 Institutions, along with other Minority-Serving Institutions (MSIs), are uniquely positioned to provide the next generation of technically and culturally competent agricultural scientists and researchers. We believe that our Native American students represent a unique competitive advantage in an increasingly culturally diverse global agriculture science world. Tribal College and other MSI students can succeed in cross-cultural contexts better than anyone, and these types of people will be successful as agriculture scientists working in places that are culturally different from the U.S., such as the Middle East, South America, and Africa. American Indians and Alaska Natives are a unique and important component of any student pipeline that leads to a new generation of agriculture scientists.

The research provision of the farm bill should specifically acknowledge that students and faculty of the 1994 institutions and other MSIs can enhance the cultural competency of the next generation of agricultural scientists, researchers, and practitioners. The cultural competency needed to meet global agricultural challenges will often be as important as scientific and technical competency. Agricultural scientists and researchers working in cross-cultural, international settings will need to be sensitive and respectful of cultural and social norms and values. In many countries, cultural competency facilitates the initial access to local populations before technical and scientific activities can proceed. Indigenous peoples are especially vulnerable to exploitation of cultural and natural assets, such as traditional ecological knowledge and natural resources.

More broadly, research and education provisions of the farm bill must specifically include under-served students at the undergraduate level. The vast majority of the USDA current "education" and research funding supports graduate-level research.

More resources need to be devoted to student success, faculty development, curriculum innovation, international development, facilities development, and critically needed infrastructure support at the community college and early undergraduate level.

2. Resist Efforts To Consolidate STEM Research Programs

As you are aware, the President's Fiscal Year 2018 budget request proposes the consolidation of many Federal STEM higher education and research programs. We expect that other proposals along these lines will be put forth in the months ahead. We believe that the research programs supported by NIFA are important and unique. Consolidation of these programs with other Federal STEM research and education programs is simply a bad idea, particularly for Indian Country. Not only would the agriculture and natural resource focus become lost—which is so important to us for the reasons noted earlier—but also lost will be the multicultural, diversity of thought focus of America's education programs. Under proposals to consolidate and homogenize Federal programs, we stand to lose some important USDA programs, and history clearly demonstrates that small and under-resourced institutions, such as the 1994 land-grant institutions, would fair very poorly in competitions with well-resourced major Research I institutions and large land-grant universities.

3. McIntire-Stennis Amendment To Establish Participation Eligibility for 1994 Institutions With Baccalaureate Degree Programs in Forestry

The McIntire-Stennis Act of 1962 (16 U.S.C. 582a, *et seq.,* Public Law 87–788) should be amended to allow Tribal Colleges (1994 institutions) that offer a bachelor's degree in forestry to receive a share of McIntire-Stennis Act formula funding that flows to a state in which a relevant 1994 institution is located.

Justification: In 2008, the McIntire-Stennis Act was amended to include Tribal lands in the formula calculation for funding of *state* forestry programs, which are centered on forestry research and management. However, the 1994 institutions were not included in the funding formula, nor were states required to include them in funding distributions. This oversight is significant because, as noted earlier, 75 percent of Tribal land in the U.S. is either forest or agriculture holding. In response to the severe under-representation of American Indian professionals in the forestry workforce to conduct research on the AI/AN forestry holdings in Montana and across the United States, Salish Kootenai College (SKC) launched a forestry baccalaureate degree program in 2005.

In 2013, SKC became the first Tribal college land-grant to join the National Association of University Forest Resource Programs, a consortium of 85 forestry schools, the vast majority of which receive McIntire-Stennis funding. However, when SKC recently sought specialty accreditation for its program, the college was told that it was "one forestry researcher short" of the optimum number needed. Participation in the McIntire-Stennis program, even with the required 1:1 match, would help SKC secure the researcher it needs to gain accreditation. Yet, it cannot participate in the program. Once again, TCU land-grants are prohibited from participating as full partners in the land-grant system. And although currently, only SKC has a baccalaureate degree in forestry, considering the wealth of forested land on American Indian reservations, others such programs could arise at the nation's other Tribal land-grant institutions, to further the effort to grow Native researchers in this essential area.

Conclusion

In closing, Mr. Chairman and Mr. Ranking Member, I want to reiterate that the 1994 Institutions have proven to be efficient and effective vehicles for bringing education and research opportunities to American Indians/Alaska Natives and the promise of self-sufficiency to some of this nation's poorest and most under-served regions. The extremely small Federal investment in the 1994 Institutions has already paid great dividends in terms of increased employment, access to higher education and research opportunities, and economic development. Continuation of and significant growth in this investment makes sound moral and fiscal sense. As stated earlier, no institutions better exemplify the original intent of Senator Morrill's land-grant concept than the 1994 Institutions. I am honored to have this opportunity to share our story and a few recommendations with the Committee today. Thank you.

The CHAIRMAN. Well, I am not sure we have ever had our witnesses stick so religiously to their own 5 minutes. Congratulations. You are the best panel ever.

The chair would remind Members they will be recognized for questioning in order of seniority for Members who were here at the start of the hearing. After that, Members will be recognized in order of arrival. I appreciate Members' understanding.

I recognize myself for 5 minutes.

First of all, I thank the witnesses for rescheduling. I had a conflict yesterday, and you were very accommodating to that, so thank you very much.

It is rare an institution doesn't have an aggressive building program going, and yet most of you mentioned a lack of labs and greenhouses, and $8.4 billion in deferred maintenance. Can you help us understand the disconnect between how ag research competes within your own universities and within the state systems to get dollars to create the infrastructure that then can be used to compete for the grants? Can you walk us through some of that? And anyone who wants to start, I appreciate hearing from anybody who has an idea.

Mr. DUNCAN. I will begin. I know that at Texas Tech University we have multiple disciplines on the campus, and so even though we do have significant infrastructure support from the State of Texas, that is a competing thing with engineering and other health-science issues that are on the campus. It is just like anything else, the infrastructure related to agriculture is going to be competing with all of the other disciplines on the campus for those different funds. There is not a specific state infrastructure fund for agriculture, it basically goes to the institutions and it is allocated in that way. The State of Texas has been good though.

And going back to the capacity issue that I talked about, there has been some success in providing infrastructure for institutions through tuition revenue bonds as well as through HEAF funding. And that capacity has helped Texas Tech be able to compete in all of our disciplines, but there is still competition, obviously, and no specific allocation of funds for agricultural loan.

Dr. HUMISTON. I would offer two thoughts. One is, that we as research institutions are equally guilty as the public at large, in that when we have to make choices, hard choices, we tend to go after the researchers because at the end of the day, it is our people that are really getting a lot of the research done.

And we have all got some world-class academic researchers in both ag experiment stations and cooperative extension, and as we have dealt with cuts and increased costs over the past few decades, I believe I know for myself, and some of the others here too, it has been easy to say we could put off fixing that roof or put off buying that new piece of equipment a few more years if we can keep those researchers doing their work. That is one issue that has contributed to this. Unfortunately, that has been going on for decades rather than a few years, and that is why it has gotten so critical at this point.

The other thing, the general public, and in particular large funders, tend to not view agriculture as a particularly sexy topic. We have done such a great job for over 150 years of providing a safe, secure, wonderful, bountiful food supply, people take it for granted. When we are out there trying to do capital campaigns and funds development for our facilities, we are competing against the

moonshot on cancer and similar things like that, and quite frankly, it is a challenge to compete against curing cancer or finding new stem cell uses, or anything like that. I think that has been a factor for all of us.

So those two things in particular.

The CHAIRMAN. A couple of you mentioned the idea about return on investment. If you have thoughts, I don't expect you to necessarily have them this morning, on a way that we could from the Federal standpoint help augment what appears to be return on investment that would allow you to be more competitive. I would be interested in hearing those thoughts as we develop the farm bill. Anyone else have a thought on the challenge of competing against the other legitimate needs that are on every one of your campuses for facilities?

Dr. BURNS. I would just add that in our institution, it is a matter of prioritization; which is the highest priority with respect to our mission with our stakeholders, and so forth, and often agriculture is not high on the list. In general, we fund deferred maintenance with a cost to landline use in Florida, and as you can imagine that fund is decreasing exponentially.

The CHAIRMAN. Dr. Hill?

Dr. HILL. Yes. I am going to say take a lesson from when you required the states to one-to-one match for 1890s, I am going to get to infrastructure, what happened there was the three land-grants in Alabama got together, went to the legislature together, formed an alliance, the Alabama Agriculture Land-Grant Alliance, and we made a breakthrough that no one expected would happen, and we have been really moving in a good direction ever since. So that was 1999. What catalyzed that was what came out of from you all, because the legislatures see that, so if you put together an infrastructure dynamic that encourages, incentivizes the states, and you also incentivize them to work together, then we can do the creative side on our end. I think that would benefit the public. It sure has in Alabama.

The CHAIRMAN. Yes, real quickly, Dr. Tallant. Real quick.

Dr. TALLANT. Yes, real quick. I just want to echo what everybody said. The Texas funds as well, but in my case, I have a university of 10,000 students, ⅓ of my students major in engineering. I have 20 engineering degree programs, and it is a matter of priority, and as what was said before, agriculture, it doesn't always go there. As a result, my College of Agriculture today has deferred maintenance of $12 million. That is a lot of money from my campus. And what would help would be dedicated money, matching or how we did it, but dedicated for agriculture, because there are other competing needs.

The CHAIRMAN. I appreciate that.

Mr. Peterson, 5 minutes.

Mr. PETERSON. Well, thank you, Mr. Chairman.

There was a recent editorial about the creation of the Foundation for Food and Agriculture Research. The article, mentioned that China has an advantage of 2:1 over us in ag research, which ought to make people nervous. From what I can tell this new initiative of the 2014 Farm Bill, FFAR has been successful, and it has been a quicker model and it has responded quicker, and brought some

private resources to the table for agricultural research. But what I am concerned about, and my experience over the years of having to try to advocate for smaller crops in the whole research area, and back when we had earmarks we were able to do that. Now that we don't have earmarks, we really are falling short with some of these smaller crops that don't have the checkoffs, don't have the resources. It is a good idea to maybe bring private money in, but I kind of worry about this whole private-public thing because it is going to maybe allow people to jump the line in the case of some projects. In some rural areas, in Minnesota, we are not going to attract any private money of any kind, for any kind of project. I just wonder if any of you have experienced a situation where this is maybe an advantage to somebody over another because they have the money and somebody else doesn't have the money. Is that an issue that you think we need to worry about? Any of you that want to jump in.

Dr. BURNS. Thank you. Let me comment. Yes, we are losing our edge. We still have very good people, and our international colleagues seek to send others over here to learn what we have to offer. But the fact of the matter is that, because of our infrastructure, because of the decaying nature of it and our ability to invest in it, we simply cannot keep up with making those world-class investments for those facilities, and to keep our people from jumping ship and going to China and other places. It is really important to understand the value of sustained investments for those projects, that are regional in nature. Sometimes we thought that the capacity funds would have been very good for that, because it allows us to make those quick decisions about those needs right away, without the involvement of a longer competitive process. Capacity funds are very, very important in us meeting those kinds of needs and keeping us competitive.

Dr. HUMISTON. Yes, if I could augment that for a second. We actually are working very closely with the Foundation for Food and Ag Research, FFAR, which you mentioned, and that was a particularly good article. I think the concept of FFAR is excellent. The idea of leveraging public dollars with private dollars, I am a big fan of that myself. And FFAR has done an amazing job in a short amount of time, standing up a lot of research, getting a lot of dollars out the door. But the very fact that they have been able to do such an excellent job so quickly is its own testimony to the need for capacity funds. They would have never been able to do such an outstanding job if we didn't already have infrastructure in place, researchers hired, researchers with labs able to step up and say, okay, I can make good use of that money and start solving agriculture's problems today, not a year or 2 from now.

Mr. PETERSON. Anybody else?

Dr. HILL. Yes, I want to add a human dimension to that. I want to invoke the name of George Washington Carver. And where I am coming from is, when you have an outstanding scientist who loves people, who loves agriculture, and spends time with the farmers on the farm, in the lab, and with their students, you get a different product. You get the science changes and it becomes more usable, the results to the farmer in the shorter-term. That is what we need. We need more scientists like that. We have our bench sci-

entists doing all the fancy stuff that goes quickly, but that takes time to reach the people who we are trying to reach now. Capacity funds help, as a matter of fact, that may be the edge for why capacity funds may need to be strengthened, because now you are dealing with both research and the people at the same time, and the majority of the farmers, 80 to 95 percent, are the small and medium sized.

Mr. PETERSON. Thank you.

Thank you, Mr. Chairman. I yield back.

The CHAIRMAN. The gentleman yields back.

Mr. Gibbs, 5 minutes.

Mr. GIBBS. Thank you, Mr. Chairman.

I will follow the Ranking Member's questions a little bit. In agriculture, when you are talking about the challenge of funding, competition, competitive grants, and all that, where the industry has gone, the science of agriculture, I guess can you relate to me how the interaction between the different disciplines are? For example, agriculture has a lot of interaction with engineering, obviously, department of engineering, medicine, so that interaction there are partnerships. Are there hurdles to do more partnerships or long-term contracts, even, with the private-sector to do basic research to help bring in additional funds and long-term arrangements, or is that happening? That was two things, how you interact with the different disciplines, and then how do you interact with the private-sector on long-term research projects? Anybody who wants to jump in can go first.

Dr. HUMISTON. I am trying to make sure I am not hogging the microphone up here. I included a couple of examples in my written testimony, but one I might highlight specific to your question, I am a big fan of collaboration and partnerships. It gives all of us a chance to leverage each other's resources, and in particular, not reinvent the wheel, not duplicate. That is a strategy we are pursuing in California extremely aggressively right now. And one example that shows very high promise is efforts in our central coast. Congressman Panetta, who left already, it is in his region. But we are bringing together our University of California Santa Cruz with our CSU Monterey Bay with three community colleges, a USDA agricultural research facility, and Western Growers, an organization of private farmers. Two or three things happening there, Western Growers has an incubation center they are supporting in Salinas. Hartnell Community College has a couple hundred acres that they use to teach their community college kids various types of workforce issues related to ag and ag-related jobs. USDA is adjacent to that. We have about 300 acres there.

We are actually pursuing a partnership right now to formalize a brand new research and extension center that will be jointly community college, University of California, USDA, in a way that really hasn't been done before, and have the private-sector deeply engaged. I am quite optimistic about our ability to do that. We are looking at similar partnerships throughout the state. Not to say that each of us individually don't need to have the ability to bring our own funding to the table, but that kind of partnership really can stretch, as well as the ability to get the multi-disciplinary——

Mr. GIBBS. Do you see a willingness from in the private industry sector wanting to put resources in to——

Dr. HUMISTON. Well, absolutely, Western Growers, which is a private industry, have put several million dollars in their incubation, ag tech-related——

Mr. GIBBS. Anybody else, maybe Texas, want to comment?

Ms. BILLY. Well, I would like to comment on that. For the Tribal colleges, and other small rural institutions conducting research, getting the private-sector involved is very difficult. We actually have a challenge getting the private-sector to even come onto Tribal land. With the American Indian institutions there is a challenge of not only having to deal with the state regulatory rules, but also the Federal rules on Tribal lands. We can't do bonding and things like that that make it more difficult for private-sector to come onto the reservations, which makes the partnerships with the Federal Government and other Federal entities even more important. And that is one thing that is under-resourced institutions, Tribal colleges do very well mixing using funding from USDA, National Science Foundation, NASA, and other agencies, in a way that is increasing STEM teaching and learning, but also research opportunities.

Mr. GIBBS. Okay.

Dr. HILL. I will give you two examples. One is, one day we looked around and saw biology, chemistry, veterinary medicine, all the ag science, and realized we had a powerhouse that created a Ph.D. in integrated bioscientists, and have never looked back. We didn't even know what we had. Now the private-sector became interested. We have money to help with one laboratory where the future looks good. Another example is we recently had a scientist who had won a NIFA competitive grant in organic farming, and he has four 1862s as his partner. And I was there when they came to campus and kind of blown away. They are really going to do a master piece of work across the South together.

So that is the future.

Mr. GIBBS. Yes. Okay, thank you, Mr. Chairman. I yield back.

The CHAIRMAN. Mr. David Scott from Georgia.

Mr. DAVID SCOTT of Georgia. Thank you very much, Mr. Chairman.

Dr. Hill, let me start off by thanking you, and each of the 19 African American land-grant universities, first, for mentioning our legislation, House Resolution 51. For folks who may not know, H.R. 51 is a very, very strong bipartisan effort to provide our 1890 universities with student scholarships in the amount of $1 million for each of the 5 years, $95 million for all of the 1890s over the 5 year period of the farm bill. This is so important.

And, Dr. Hill, your testimony in touching upon the road. The road that the African American community has had to travel in this country has been a tough road, and it is our dear hope that the Chairman of our Committee will give a schedule to bring up this bill, a bipartisan bill, so we can get it out of this Committee onto the floor and over to the Senate where we have already got Senators lined up to get it on over to the White House for the President's signature. We are at that moment now, and I am sure

that we will have an opportunity to get that bill called up and passed. It is the first step. It is bipartisan.

The other thing is 1890s designation was started by Republicans. What a strong bipartisan effort it would be to lift up the 1890s with this bill and give a shining light out of the darkness. Dr. Hill, you mentioned the one-to-one match for the 1890s institutions' research funding, and that the institution must request a waiver to get the Federal funds without the state match. And while, to my knowledge, no waiver application has ever been denied, that leaves the African American 1890s institutions with ½ as much money as Congress intended. That is like giving you something with one hand and slapping you in the face with the other, and that has to stop. Most states that have both 1862s and 1890 institutions submit a joint plan of agriculture research, so we know USDA has the information.

Let me ask you, Dr. Hill, do states currently fund and match all land-grant colleges at the same level?

Dr. HILL. No.

Mr. DAVID SCOTT of Georgia. All right. The final question is, what can we here in Congress do to encourage states to match each institution in the state at an equivalent amount up to 100 percent? Why not do that? That is what Merrill, the Republican Congressman, said, "Separate but equal." We are separate all right, but we have never been equal. But this year's farm bill, with this money for scholarships, and with us getting some equality in this matching, what a powerful, powerful message that would send. Republicans and Democrats working together to lift up our 1890s African American institutions.

Dr. HILL. I would just respond briefly. I might be the old-timer here, having 40 years in as Dean at Tuskegee, and having worked the legislature in Alabama and worked with Auburn and A&M and all the system. I would just say this, and I recently talked with Sonny Ramaswamy, the new plan of work provides you with an opportunity because the first thing you see on that plan of work is how the funds are distributed for each state. And my recommendation to him was that we do a report card for each state, because they do a summary write-up of how the states do when they send in those reports. I challenge you all to look at your plan of work reports and results for your particular states, and look at those first few pages, that will tell the whole story. And then if we had a report card we can put on there points, and one of the points would be matching, and a state that did everything right but didn't do the matching would not get a good grade on that one. And it would stand out and we would share that with our legislatures, we would have a good conversation.

Mr. DAVID SCOTT of Georgia. Thank you very much, doctor.

The CHAIRMAN. Thank you, Mr. Scott. The gentleman's time has expired.

Mr. Crawford, 5 minutes.

Mr. CRAWFORD. Thank you, Mr. Chairman.

Chancellor Duncan, you represent a non-land-grant university, but you are still very much engaged in agriculture. And I am a graduate of a very similar system; Arkansas State University is very similar to Texas Tech in that regard.

As you mentioned in your testimony, the Competitive Capacity Building Program for non-land-grant institutions, first authorized in the 2008 Farm Bill, has made some significant impacts for a small, $5 million of the fund. How has Texas Tech used Federal funding such as this to advance ag research?

Mr. DUNCAN. Well, it is obviously in infrastructure and improving our labs, and being able to maintain the faculty that we have, combined with a state investment in capacity. One of the points I am trying to make here today is that Texas has invested in the capacity, and since that initiative was started in 2007 we have had five institutions in the State of Texas advance to the highest research category in the Carnegie Classification. And so it is a combination of the funds that the Federal program provides us certainly allow us to augment that infrastructure, but it is still so small, while it moves the needle, it doesn't move the needle enough.

Texas Tech has been in the agricultural research arena for a long, long time, obviously; where it is, where it is located in the epicenter of all these different agricultural activities, but at the same time the capacity has been growing slowly until the state infused that. The point I am trying to make is the Federal investment in capacity to the non-land-grant institutions can make a significant difference in the regional types of research that occur for the better of agriculture. For example, one thing we have talked about is the combination, or the cross-disciplinary aspect of human health and animal health, those are the types of things that with the proper infrastructure, the proper investment in the health science centers, into veterinary medicine, into the colleges of ag sciences and their food nutrition programs, food safety programs, we can really move the needle on food safety, and on one health, which is the health of all of us as it relates to agriculture.

Mr. CRAWFORD. You mentioned the importance of leveraging Federal dollars with state and private dollars. Talk about that, about your plant science department's partnership with Bayer, and some of the examples of public-private partnerships related to your ag activity on campus.

Mr. DUNCAN. Yes. Bayer has been a very significant player in, of course, the cotton world, which we now have one of their greenhouses on our campus, as well as they invested in one of our labs and plant soil science labs on the campus. We were able to get their investment in that by a program called TRIP. It is a state infrastructure program, it is a matching program. For example, for anything above $2 million up to $10 million, the state matches it 100 percent. You can imagine the return on that investment is significant, and is very attractive to private partnerships whenever you can leverage a gift such as that.

Not too long ago, using the TRIP match, we also received a grant from Teys in Australia and Cargill of $2 million, which will be matched with $2 million in the state TRIP program.

It is those types of infrastructure programs that really move the needle for the types of research that we need in agriculture to keep moving us forward, and the growth of our population and also the complexity of agriculture as it exists today.

Mr. CRAWFORD. You also mentioned the importance of non-land-grant universities and the education of underrepresented groups. Does Texas Tech offer scholarships or special programs that seek to engage groups such as first-generation college students, first-generation farmers, minority and rural students in university research?

Mr. DUNCAN. Yes, sir. We have significant programs along that line. Our border regions, and in particular, Angelo State University in our system has achieved Hispanic-serving institution status several years ago. Texas Tech University, which is about 37,000 now, we are on the very cusp of about 24.3 percent Hispanic students, and we will be a Hispanic-serving institution, at least according to our board's predictions as well as their priorities, probably in a year. And those programs really do help us to be able to be attractive to Hispanic students. We are in a great place in Texas as it relates to recruiting and retaining students of Hispanic culture, and it has been an exciting thing. But we do have programs, and that is a very strong priority of our border regions.

Mr. CRAWFORD. Excellent.

I yield back.

The CHAIRMAN. The gentleman yields back.

Mr. Costa, 5 minutes.

Mr. COSTA. Thank you very much, Mr. Chairman, for holding this hearing. And I concur with my colleague from Texas who has talked about the non-land-grant universities, and the fact that in 2008 we did put money aside for research purposes, but it is not nearly enough. And I commit to work with you and work with Members of this Committee to figure out ways that we can expand those efforts, because you, as many of us do, represent a host of universities around this country. Fresno State is one of the premiere ag universities in the West, and clearly does a whole lot of good work, and they work in conjunction with other universities, but clearly they don't have the opportunities that the land-grant universities do. And not to say that we shouldn't be doing more there.

Dr. Humiston, you made in your comments a statement about food security, and I want to tell all of you that are testifying here this morning, each and every one of you play a critical role in food security. And it is something that I continue to come back to, because Americans take our food security, generally speaking, I believe, for granted, period. The fact of the matter is that American farmers, ranchers, dairymen and women, none do it better in terms of our yield, our quality, and our nutritious values of the food products, at a more cost-effective way, so well, in fact, that less than three percent of the nation's population is directly involved, and yet we can also export those food products to people who are hungry around the world.

One of the factors that is attributed to that is our research that all of you are part of in ensuring that food security, and clearly, that must continue.

We use many words here, or we overuse words here, like *unique,* but truly, the relationship that has existed for over 100 years with land-grant universities and others in terms of this partnership is *unique.* It is one of the reasons there is far more acceptance on bio-

technology efforts as it relates to food safety here in the United States than in other parts of the world.

Having said that, Dr. Humiston, you mentioned in your written testimony that the Specialty Crop Research Initiative requires research proposals be multi-state, and, of course, this is difficult in California because we have such a diversity of crops that aren't grown elsewhere. How do you think, with these existing requirements that it is impacting our agriculture, what changes would you recommend? And I have a couple of other questions, so be quick, please. And thank you again for your good work.

Dr. HUMISTON. Thank you. The really quick answer is either get rid of the requirement or the preference for multi-state, or significantly reduce its weighting factor. I don't believe we are the only state with this problem.

Mr. COSTA. Other states have a lot of diversity as well. We worked very hard in the farm bill, in 2008, to address specialty crops through programs like SCRI and OREI. We wanted to ensure specialty crops were properly sized and prioritized within the NIFA research portfolio. What changes do you think we should make there?

Dr. HUMISTON. Well, that is a great question, and the fact that Amazon just bought Whole Foods, for all of us means that the demand for organic is about to skyrocket. Over 82 percent of American households already buy organic. And the problem is our U.S. farmers are having a hard time dealing with that demand, and largely it is because of the lack of research that has been done on organics. We have to step up to the plate or our farmers are going to have a really hard time meeting market demands that are hitting them very soon.

Mr. COSTA. Well, this is something where it would be helpful for all of you to provide additional input to the Committee as we are try to reformulate the farm bill later this year or next year.

I have some other questions but time is running out. Let me mention the citrus industry in California. You are very familiar with the disease research efforts and the extension of both SCRI and the CDRE has been. Can you talk about how the program is vital to not only California's multibillion dollar citrus industry, but Florida as well?

Dr. HUMISTON. And Texas. In fact, I am sure——

Mr. COSTA. And Texas.

Dr. HUMISTON. I am sure the other disease out there——

Mr. COSTA. I would not forget Texas, Mr. Chairman, ever.

Dr. HUMISTON. I am sure the other diseases out there are quite jealous that you have the three states here that are actually dealing with citrus greening. It is a huge problem. And the good news is we are finding some resolutions to it. They are not a fix, there is a long way to go, but multidisciplinary efforts at vector control, quick assessment, being able to jump on it quick, proper pesticide use, *et cetera,* is getting us there.

Mr. COSTA. And those universities in the three states all collaborate?

Dr. HUMISTON. We are sharing a great deal of information, and we have multi-state grants that we collaborate on.

Mr. COSTA. Thank you, Mr. Chairman.

The CHAIRMAN. The gentleman's time has expired.

Mr. COSTA. Thanks.

The CHAIRMAN. What appears to be soon Second Lieutenant Rodney Davis is recognized for 5 minutes.

Mr. DAVIS. Thank you, Mr. Chairman. I am actually grateful that Chairman Conaway has given me the opportunity to once again chair the Subcommittee on Biotechnology, Horticulture, and Research, which is why I am so thankful that each and every one of you are here today to address this very important issue.

As you are all aware, by 2050, the world's population is going to grow to nine billion people, and it is predicted that our farmers will need to double their production to meet the demands of this growth. Now more than ever it is imperative that we have to invest in ag research. I really, truly appreciate all of your testimony.

Many of our country's universities, the greatest obviously being in the State of Illinois, Jodey has gone to witness that. I represent the University of Illinois, our land-grant institution, but also other ag research institutions like Illinois State University and Southern Illinois University at Edwardsville, and all of those institutions and others are at the forefront of ag research. But if we are to feed the world in 2050, we have to answer how do we keep on the cutting-edge of ag research and competition so that our producers will meet that demand?

And with that, Dr. Burns, I would like to ask you a quick question. Can you touch on some of the research your university, the University of Florida, is doing to achieve this goal of feeding the world in 2050?

Dr. BURNS. Thank you. That is a very broad question, and let me attempt to provide at least some insight into what we are doing.

First of all, in terms of biotechnology, we are using some of the most cutting-edge tools, like many of our colleagues here are, to try to advance solutions and provide alternatives. Some of our biggest problems are ones that can't be solved by conventional means, those that continue to be problematic and we continue to throw money and effort in, simply can't be solved by our conventional means and modes. Biotechnology plays a critical role, but it is the acceptance of these tools and techniques and the products that they deliver have been quite problematic.

So in the future, it is hoped that, and I hate to bring this up, but citrus greening is a very important problem in our three states and worldwide, technology, gene-editing technology, CRISPR–9 technologies and so forth, are going to be so, so important in solving those problems. Will it take an existential threat, and a take-down of an industry, to see and prove that these are going to be viable technologies, and safe for the consumer.

Mr. DAVIS. You believe biotechnology and some of the biotechnological advances we already have in this country are completely safe, right?

Dr. BURNS. Yes, I do.

Mr. DAVIS. Yes. Thank you. And you believe biotechnology is the key to us being able to grow more food on less land for a much higher population in 2050?

Dr. BURNS. I do think that biotechnology is a tool that we can use to not only produce more food, but importantly, produce more nutritious food.

Mr. DAVIS. And keep being able to produce the foods that we enjoy now, *à la* fighting citrus greening and others?

Dr. BURNS. And others, yes.

Mr. DAVIS. Okay. Thank you very much for your comments.

Dr. BURNS. Thank you.

Mr. DAVIS. It was 25 years ago, or a little longer than that, I have lost count, when I was in college, I listened to a gentleman named Paul Ehrlich tell me about the population explosion, and how by about this time in our world history we would be experiencing massive amounts of starvation. Now, there are areas of the globe that still are much hungrier than we are here in the United States, but obviously, through technological advances and through ag research that many of your institutions and other facilities have done over the years, we have stopped that from happening. It is up to each and every one of you to continue that trend.

Chancellor Duncan, I have never been to Texas Tech, but Jodey says it is awesome. You are a non-land-grant institution. Illinois State University in my district is a non-land-grant institution that has an ag research facility too. From my visits there, it appears that the institutions in your non-land-grant category offer some great opportunities for research in the future too. Do you feel that you need more resources? What resources are the USDA bringing to the table to help institutions like yours, and how can we move ahead in the future?

Mr. DUNCAN. There are two things there that are involved. The capacity is really the significant issue, as we have talked about, but as well as additional money for competitive grants. Professors get disheartened when they produce grants that should be funded, but there is just not enough money. Texas Tech had 12 proposals at one point in time and won two. You have to keep your faculty interested.

But the other thing is, if you look at the total amount of appropriations for the different programs, USDA gets $2.9 billion for this, but if you look at NSF it is $8 billion, NASA gets $10 billion, DOE gets $12.6, and NIH gets $33.1. We eat food every day, and food safety, food security, and the ability to produce high-quality food at a low price, which we have been used to for all of our lives, is going to be significant, and the investment in research in that area would benefit this country greatly.

Mr. DAVIS. Thank you.

My time has expired.

The CHAIRMAN. The gentleman's time has expired.

Mr. Walz, 5 minutes.

Mr. WALZ. Well, thank you, Mr. Chairman. And thank you all for being here. This is a critically important discussion. I know we are preaching a little bit to the choir on this, and that might ring to the heart of some of my questions.

And we certainly, in Minnesota, know the importance of this with the work of Norman Borlaug at the University of Minnesota, which many of us tie back to. But, we have all hit on this important piece of talking to the public; the interesting discussion on cit-

rus greening, and we say it, GMOs and the labeling issue that came up, and talking to the public on the disconnect between where the research is and where the public is at. It is going to be critically important so that they understand.

Dr. Tallant, I had the opportunity to watch and see some of your researchers working on deer research down at your Kingsville station. Fascinating things out there; young, enthusiastic researchers trying to make a difference. But, it is that trying to get the public and build these new coalitions that is important. Mr. Duncan, I align right with you. We need to be clear that we are not pitting our land-grant universities against our non-land-grant. There is critical importance there and both serve a purpose.

I represent Minnesota State University, Mankato. They have come up with a really unique partnership with the greater Mankato growth, the Chamber of Commerce, and GreenSeam. They are branding themselves, because they are at the center of medical research with the Mayo Clinic, with the Hormel Institute, and what they are doing with ag research. They are tying those things together, and explaining to the public that they are one and the same.

Dr. Humiston, you mentioned research may not be the hot topic in agriculture. We need to make it that. We need to show them where it intersects. If you want to talk healthcare costs, the Hormel Institute is working on omega 3 fatty acids and how our food supply impacts that. Now all of a sudden, healthcare costs, healthcare bills, insurance costs are ag issues, and we are seen as the people who can solve that.

I ask all of you, how do you think we talk about this differently? What do you think you are seeing that makes a difference? Because in my part of the world, people now recognize the economy is doing well, ag is at the heart of that, and when ag struggles, we struggle, but the research piece has to remain constant.

I will just throw it to you on that.

Dr. HUMISTON. Well, that is an excellent question. We are doing two things right now in California, and other states are similarly doing the same. One is we are trying to engage more of our citizenry throughout the state in citizen science so they start understanding the role science and research plays in their everyday life, and that is crucial. We are tying in 4–H and other programs to that.

But second, and perhaps more importantly, I am a firm believer that most people really care about their pocketbooks.

Mr. WALZ. Yes.

Dr. HUMISTON. And all too often, what happens is that the agricultural sector gets credit for its raw farmgate, which in California is almost $50 billion. It is a significant number, but when you compare it to the overall economy of California, I can't tell you how many times I get angry every month; at least three or four, when somebody makes the incredibly stupid statement, ag is less than two percent of the GDP of California, why should we even care about it?

Mr. WALZ. Yes.

Dr. HUMISTON. To combat that, we are updating a study that was done about 5 years ago looking at the value of our working

landscapes, which includes agriculture, forestry, fisheries, mining, open space recreation, renewable energy, the whole gamut of it, and we are looking at the full gamut of direct sales and multiplier. That study 5 years ago showed that working landscapes in California were over $300 billion in direct sales alone, and they really didn't even look at recreation on rural landscapes. We are updating that, and quite frankly, it is going to show that our working landscapes in California are well over ⅓, approaching ½ the state's economy. People have to pay attention then.

Mr. WALZ. We have to do a better job of messaging it. I know it too. My time is running out, but I did want to mention in segue, I am trying to figure out this ratio between competitive grants, matching funds, and everything else, because I too, like Mr. Costa and others Mr. Peterson mentioned, worry about the organics because it is a huge growth industry. The market is starting to show, that is what people want. The research is going to have to keep pace with that, and I don't know if the system now disincentivizes that type of research as opposed to some of the mainstream research, and that is what we need to focus on. But you have our commitment. It is a critical role, more so than ever. You are hearing it from all the Members up here who understand it. Now we need to figure out how to engage the public, because that is really where the will to get this done comes from. So thank you all. It is incredible work you are doing, and we are very supportive of it.

I yield back.

The CHAIRMAN. The gentleman yields back.

Mr. Yoho, 5 minutes.

Mr. YOHO. Thank you, Mr. Chairman, I appreciate it. And I appreciate you all sitting here and going through this, and educating us and giving us good information.

Dr. Humiston, you were talking about getting the facilities up-to-date, and it is going to take a combination of local, state, and Federal. We talk a lot about, and seeing the picture up here, we are heading into some tough times financially if we don't change some things up here. And, of course, that is our goal, but austerity measures are coming and we need to prepare for that. And we had the University of Florida up here yesterday, the researchers. Knowing that, and I know this question has been asked about the coordination of research, and if we can belabor citrus greening again, one of the cures is going to be a GMO, one is going to be using an antibacterial. Are you guys coordinating that or other types of research to where, if you are working on a transgenic type of tree, are you guys coordinating that, say, this university is doing that, we don't need to do that, we can stay in touch with them, we are working on, say, a transgenic vector for the psyllid that is spreading that, and somebody else is working on this. Do you guys coordinate to that degree so that we are not duplicating, so that we are getting more research done with less resources?

Dr. HUMISTON. Absolutely.

Mr. YOHO. Okay.

Dr. HUMISTON. In fact, I included an example in my written testimony of how a researcher at UC Santa Barbara looking at thin cell solar technology has now adapted that to an entirely new way to deal with food safety issues.

Mr. YOHO. Okay.

Dr. HUMISTON. Down in the Los Angeles/San Diego area, which is one of the great aerospace sectors of the U.S., we are partnering up with them; NASA, Lawrence Livermore National Lab, to look at things like controlled environment agriculture. Increasingly, we are bringing together these very diverse, multidisciplinary entities and collaborating.

Mr. YOHO. Okay. And, Dr. Burns, knowing one of the cures is going to be a GMO, and, Dr. Humiston, you were also talking about that you guys developed the machine-harvesting of tomatoes, but first you had to make a plant that was more adaptable. I assume that was some kind of transgenic type of modification, or just plant selection. Was it a GMO type?

Dr. HUMISTON. There were both.

Mr. YOHO. Okay. I want to ask the whole panel this. Knowing we are putting money into research and development into the GMO technology, knowing that the narrative on the Internet is they are bad, but we know the Nobel laureate scientists, over 100 of them, have done a retrospective study, talking about the safety of those. Are you guys doing any coordinated research or coordinating marketing efforts as you do the research to show the public that they are safe?

Dr. BURNS. Well, I know we have with the University of California, especially as it relates to the transgenic technologies for the Asian citrus psyllid, we have coordinated our marketing efforts in a proposed way to try to get the word out about the safety of this as well as the synergies that could develop in other areas with developing such a technology, highlighting the screwworm and some of the successes that we have had in those areas. I do think that there is a lot of coordination that goes on that is funded a lot by the USDA, NIFA, SCRI, and so forth.

It is really, really important to emphasize that competitive funding helps make that happen, but in order for us to survive as an industry we must coordinate our efforts, and that is what we have done.

Mr. YOHO. And we had a group of researchers come up yesterday from the University of Florida, and one of the things they were talking about is the cutbacks in this new budget, and they were talking about how much money, and I would like to ask all of you if you have time, how much money of your research dollar goes into research *versus* plant facilities, like the buildings, things like that, if you were to take a percentage of that $1 you get for a research project, how much goes into research itself? Any idea?

Ms. BILLY. Well, I can answer that for the Tribal colleges.

Mr. YOHO. Yes, ma'am.

Ms. BILLY. Our entire research program at USDA is $1.8 million for our 34 institutions. It is a competitive program. All of our money goes into research, and a lot of it by undergraduate students. We are growing that pipeline. And we are able to do that through really strong partnerships with the state land-grants, and the agriculture research centers. That is another area where the agriculture research centers are probably in older facilities that also need to be upgraded and sustained.

Mr. YOHO. All right. I thank you for your answer.

I am out of time. Thank you, Mr. Chairman.

Mr. THOMPSON [presiding.] The gentleman's time has expired.

I now recognize the gentleman from Massachusetts, Mr. McGovern, for 5 minutes.

Mr. MCGOVERN. Well, thank you very much. And thank you for being here, and thank you for all the incredible work that you do. It is nice to witness this bipartisan chorus in support of agricultural university research. I just hope the budget that we enact reflects our rhetoric; because, as you are pointing out, the research that goes on at your institutions is incredibly important, but we need to do more than talk the talk, I mean we need to make sure that the funds are there. I think that is a primary responsibility of government.

I come from Massachusetts. I represent the University of Massachusetts-Amherst. There is incredible research that goes on at that campus. But I support agriculture university research at every level, including basic research.

USDA ARS programs and facilities, for example, are critically important resources for the nation and local economies. They advance cutting-edge research that benefits the national population, while supporting thousands of jobs in their respective communities. A major key to ARS success has been collaborations with universities, and a prime example of one of those collaborations is the ARS Jean Mayer Human Nutrition Research Center on Aging at Tufts University in Boston, Massachusetts, which I am very familiar with. The HNRCA is advancing the country's scientific knowledge on nutrition, food safety and quality, and research that focuses on solving problems that affect everyday Americans. And the current research that goes on at this facility is investigating the role that nutrition plays in cancer and heart disease, infectious disease, and Alzheimer's. It is research to find ways to continue to improve health care and save lives, and generate economic growth for the nation. And one of the things that they have learned there is that diet-related disease has become America's largest single cause of premature death and disability. And as the baby boomer population continues to age, the research at this facility, for example, will become even more important to the nation's health.

Now, USDA Economic Research Service estimated that for every $1 invested in agricultural research, there is an estimated $17 worth of economic impact. You may be reading about this horrible healthcare bill that is making its way forward, that is going to throw millions of people off of health care, I assume that the supporters are backing it because they think healthcare costs are out of control. Well, some of the research that we are talking about here will control healthcare costs. We can avoid healthcare costs if we get this right at the nutrition level. And every single Presidential Administration that I can find has appreciated the importance of HNRCA since the center's inception in 1979, and has always supported it with a robust funding level. However, we go back to this budget question, in the Fiscal Year 2018 budget request, it is proposed that the total termination of this facility at Tufts, along with 16 other ARS laboratories, locations, and worksites. It would also cut ARS overall by 22 percent, targeting human nutrition re-

search for a 50 percent reduction compared to the current enacted levels.

I just want to point out that last week before the Senate Agriculture, Forestry, and Nutrition Committee, ARS Administrator, Chavonda Jacobs-Young, testified that the key to ARS success is strong partnerships and collaborations with university researchers.

My quick question to anybody here, because I am really concerned that we are going to eliminate important research facilities that are vital to so many of the causes that we all say we care about, and it is important that we have to raise our voices in defense of some of these research dollars. Can any of you talk a little bit more about the collaboration between ARS facilities and academic researchers, and why it is so important, and specifically, how do these collaborations support the USDA's capacity to conduct research on national and regional agricultural nutritional priorities?

Dr. BURNS. Thank you. Those programs are specifically important, very, very important to having us continue to provide the knowledge it is going to take to create the next solution that is going to be transferred through technology. It is going to come from who knows where. But these partnerships cannot be dissolved, they have to be funded, they have to be encouraged, they have to be continued, because from that you never know where the next solution is going to come from.

In terms of the University of Florida and its partnership with its sister institutions, as well as with USDA, we have multiple, multiple projects that go on that, without this partnership, they would be half of what they are. The USDA depends on us to do that extension sort of outreach to our constituents, and we depend on them to help us with the cutting-edge research that is moving forward.

So in all of those cases, and especially in the private-sector, they are extremely important.

Mr. MCGOVERN. Yes. I have to tell you, I just want to say it is important that we not only talk the talk, but walk the walk. This research is incredibly important, and we need to make sure it is funded.

Dr. HUMISTON. If I could add real quickly. We view the partnership so importantly. We have placed, and currently have cooperative extension specialists actually functioning in ARS facilities, and they are a key partner in our statewide innovation and entrepreneurship initiative as well.

Mr. MCGOVERN. Thank you.

The CHAIRMAN [presiding.] The gentleman's time has expired.

Mr. Comer, 5 minutes.

Mr. COMER. Thank you, Mr. Chairman. It is great to see so many agriculture institutions represented here today. I have an agriculture degree, and I am proud of that, and it is great to hear the good work that you are doing with the agriculture research. I strongly support funding agriculture research. As a farmer, I understand how important it as we continue to grow and expand our industry.

One question I have, with respect to land-grant funding for extension programs like 4–H and the agriculture extension agents, how has that been affected in your states, the ones that represent

the land-grant universities? I know in Kentucky we have seen some cuts to those programs that are vitally important in the district that I represent. Have those over the last few years been affected much?

Dr. HUMISTON. Clearly, it is a challenge. The Federal funding typically for us goes into the research aspects, and as you said, the county cooperative extension advisors, but we have been real fortunate in California to work closely with our county governments, who have frequently stepped up to the plate providing——

Mr. COMER. Right. With taxing districts right?

Dr. HUMISTON. Pardon?

Mr. COMER. With taxing districts and things to fund that.

Dr. HUMISTON. No, no, just via the county government funding itself.

Mr. COMER. I see. All right.

Dr. HUMISTON. We work in very close partnership with our actual county governments.

Mr. COMER. Okay.

Dr. HUMISTON. In fact, in some counties, it varies a great deal county by county, but in some of them we are a department, the 4–H and cooperative extension is considered a department within county government. In other ones it is more like a joint powers agreement.

Mr. COMER. I see.

Dr. HUMISTON. It really varies.

Mr. COMER. Okay.

Dr. Burns, I am curious, what are some of the types of research that you are doing through the Specialty Crop Research Initiative and the Agriculture and Food Research Initiative at Florida?

Dr. BURNS. With the SCRI we have done pest and disease research that is providing strategies, and importantly, tactics to help our farmers survive, especially not in Florida but also in the Southeast that have the same kind of pest pressures, things like the Strawberry Program that is really very impactful within the Southeast. Food initiative programs and food safety programs that not only do the research, but also provide the critical training across these regions that help train our growers and partners and help them be productive. So those are a couple of important projects.

The other important project that I would like to highlight, on the AFRI side, is our work, again, with citrus, identifying the genetic makeup of citrus, but importantly, some of the genes that are responsible for inferring resistance in things like citrus canker and other important invasive diseases of citrus, that can be used later on downstream in genome editing type of approach to create citrus that is resistant to citrus canker. These are the kinds of things that we like to highlight because they are so very important, built on previous capacity funds and previous work, but also strengthened and accelerated with funds from SCRI and AFRI.

Mr. COMER. Good deal. Good deal.

I am curious, Dr. Tallant, what type of outreach does your university do to recruit top students for science-focused academic programs like agriculture research?

Dr. TALLANT. We have a number of outreach programs that we are doing. I will just name one very quickly. We have a NIFA grant

where our citrus center brings in promising high school kids in the valley, they come work at our citrus center for a whole year, encouraging them to get interested in agriculture and hoping they come to our university, but we are glad if they go to any university.

Mr. COMER. Right. Okay, good deal.

Thank you, Mr. Chairman. I yield back.

The CHAIRMAN. The gentleman yields back.

Ms. Adams, 5 minutes.

Ms. ADAMS. Thank you, Mr. Chairman. Thank you, Ranking Member Peterson. And to all of the witnesses, I want to thank you for your testimony today. It is good to have you back here to discuss this important topic. I am especially pleased to see an old friend, Dr. Alton Thompson, here, North Carolina A&T.

And, Dr. Hill, we spent some time together in February during our bipartisan HBCU caucus with the 1890s roundtable, and you have been a great resource, and it is good to see you again. I am a proud graduate of the North Carolina A&T State University, and know not only it to be a fine school, but also our 1890s. In hopes of driving home the important issues that face our HBCUs, I am going to direct my questions to you, Dr. Hill.

Our 1890 land-grants are HBCUs established by the Second Morrill Act, which has also been mentioned here. But, unfortunately, states have under-funded 1890s, and North Carolina is no exception. I served in the North Carolina House over 20 years, and we continued to talk about this issue, and so it has created a number of challenges for our schools. The current state funding for North Carolina A&T is approximately $1.11 million less than the school's Federal allocation. In other words, they do not receive a 1:1 match from the state. It is a disparity that not only prevents A&T, but many other HBCUs from being able to expand their research and agricultural projects at the same rate and the level of the 1862, which receive above-matching funding in some cases.

You mentioned that, in your state, your schools work together with your legislature. I think that is a great thing. It is probably an example that we all need to follow. But let me ask you if you could describe some of the capacity challenges that Tuskegee has encountered in applying for competitive grants at USDA.

Dr. HILL. Well, thank you for that perspective, and an opportunity to respond.

First, I want to go back to what we did in Alabama just for a second here, because what really allowed the movement to occur were the three deans, and those three deans went to ALFA, the Agricultural Leadership, the forestry commodity, poultry commodity, and all of us got together and we decided we wanted to do something different. So that dean at Auburn was a critical person.

Ms. ADAMS. Yes.

Dr. HILL. And they have a new dean now at Auburn. And so it is a human-human thing, even research, it is the researcher working with the researcher. That is something we just kind of shoot at people, but if we get people in closed doors and work that piece.

The other thing is incentive. Again, like when the legislature came through with the 1:1, Tuskegee went from zero match to some match. We have about 90 percent now. I mean that is awesome. It is a matter of working those pieces.

The other thing we could do is among the land-grant leadership, because my colleagues here, we have our own places where we meet. If my colleagues, and I have some strong ones sitting here to my right in our group, decided they were going to speak up among their colleagues and push this, I believe we could do it, because we have done some other things here. Really, we need to look in the mirror, and we need to go ahead and do that.

What difference does it make? A big difference. Like you say, the $1 million that North Carolina A&T would be able to utilize in terms of keeping those scientists, helping some students, and taking on challenges. And let me make this point: sometimes the 1890s will take on a problem that the big farmers in the state need help. That is what Carver used to do. What we shouldn't do is assume the 1890s are only going to be dealing with small and minority farmers, but what we have to do is leverage the best two scientists, because you have a Carver at North Carolina A&T and you have one at North Carolina State, and they put those two heads together, then you have that breakthrough. We can do that a lot better. I think you all need to incentivize us a little bit more.

Ms. ADAMS. Okay. Well, thank you very much. I am interested also in what you are doing in terms of partnerships as it relates to STEM. I am just about out of time, but if you could give me a quick answer.

Dr. HILL. Yes. Well, STEM, again, at our school, engineering, mathematics, chemistry, we all work together. We have kids there right now all summer long coming, learning, whatever, and then we pipeline them through. What we need to do at the 1890s is look beyond ag into our other science and engineering, get tight, like I know A&T is doing there, and really push the threshold. We should lead the nation in that. We are small enough, we are smart enough, it is time to do it. And California and Florida will come behind us if we did it the right way.

Ms. ADAMS. All right. Thank you, sir.

Thank you very much. I am out of time.

The CHAIRMAN. The gentlelady's time has expired.

Mr. Marshall, 5 minutes.

Mr. MARSHALL. Yes. Thank you, Mr. Chairman. It truly is great to be here and talk about agriculture research. While Dr. Humiston stated that only two percent of the California income is agriculture, in my district agriculture represents 60 percent of our economy. It certainly is very, very important. I am a proud alumnus of a land-grant institution, my alma mater, Kansas State University. I have invested time and energy in understanding what they are doing there for research, and I am very proud of their Wheat Innovation Center, as well as their Biosecurity Research Institute.

As we go forward, one of the things that my professors back home talk about is facilities, and that we have been underfunding or deferring maintenance.

I will go to Dr. Hill first. You guys have quite a bit of deferred maintenance issues going on? Can you just briefly speak to that? And how is it impacting current research?

Dr. HILL. Briefly, yes, yes. I mean serious issues, we just did a master plan, and all the 1890s would have the same dynamics. We have to do selection, we have to figure out which buildings we are

going to tear down, which new ones we need to do, which ones we are going to do renovation. All campuses are making those kinds of selections. This is a highly critical and important issue.

Mr. MARSHALL. Chancellor Duncan, I will kind of follow up with you. The follow-up part of that, if there was infrastructure dollars available, how would you prioritize them at Texas Tech?

Mr. DUNCAN. At Texas Tech, we would prioritize improving the labs. Labs are a continuous obsolescence issue, and as you go forward and research, you can buy a piece of equipment 5 years ago and it is obsolete. And so that is the continuing challenge as it relates to expanding research, and that is across our campus but in particular with the agricultural research that we are doing. Cutting-edge things come across and are developed every week, and so keeping up with that is very significant, and you have to do that in order to be competitive.

Mr. MARSHALL. Okay. I am going to go to Ms. Billy next. One of your facilities is Haskell College in my state, and I am just curious, are you familiar with any particular work, or are you working with Kansas State University or KU, how are those relationships going?

Ms. BILLY. Well, Haskell Indian Nations University has partnerships with both Kansas State and, of course, KU, because KU is right there in Lawrence, Kansas. They are actually doing a lot of research, a lot of STEM-related research, agriculture research, research into not just crops but also range management, climate-related research, and then agriculture-related research related to cows, cattle production, and actually doing some international research in that area. Those partnerships are very, very strong. The larger universities sometimes share their faculty with Haskell and their students often transfer. And the faculty and researchers at the mainstream, the larger state institutions, are actually the mentors for the Haskell students, so it is a really strong, great partnership. And they share their lab facilities as well.

Mr. MARSHALL. Good. I am glad to hear that there is a positive relationship.

I am sure most of you know that NBAF, the National Bio and Agro Research Facility, will someday be in Manhattan, and for the past 2 years we have been pouring concrete there, and it looks like we are now coming out of the ground. I am certainly excited about that. Just curious if any of your facilities are currently working with Plum Island, the animal disease center there, any relationships with any of them, because I would anticipate that someday that will grow into a relationship with Kansas State University as well?

Dr. HILL. Yes.

Mr. MARSHALL. Yes, Dr. Hill?

Dr. HILL. Yes, well, our vets go, and I even visited Plum Island some time ago, but our scientists, because of veterinary connection, have integral relationships with Plum Island.

Mr. MARSHALL. Great. Dr. Humiston?

Dr. HUMISTON. I was just going to say the same thing for our veterinary school, as well as some of our cooperative extension researchers are working very closely.

Mr. MARSHALL. Good. Anybody else working with Plum Island? Okay.

Mr. Chairman, I yield back the remainder of my time. Thank you.

The CHAIRMAN. The gentleman yields back.

Mr. O'Halleran, 5 minutes.

Mr. O'HALLERAN. Thank you, Mr. Chairman.

University of Arizona is our land-grant institution, and I have a number of their research facilities within my district. After having visited them, it is not only that their research is involving the importance of drought management and soil management, but also the insect issues that relate, in my area especially, to cotton. But over and above that, my wife, who is in the business area, tells me that if you start to pull back on research, you start to pull back on your ability to work well into the future. And I just can't imagine how we as an institution can start to look out into the future and say whether it is here in agriculture or National Institutes of Health, or other areas that we are going to pull back, and away, from what I believe is an important feature of public safety to the American people.

As far as collaboration, in Arizona everybody knows about the extension services. They help us out so much in dealing with our water issues and erosion issues, and throughout the entire perspective of what the state natural resources process is, and farming process and ranching.

But I also have a number of Native American Tribes in my district, and I look back at the Hopi, and one of the things that the U. of A. is working on and many institutions is how to deal with drought management and soil management. And you look back in their history and their heritage and talk about dry farming, they know all about dry farming. And I don't understand how we can only be looking at institutions, the 1994 is at $1.8 million. We have to understand that this history and this ability to use that historical perspective is important to the entire process moving out into the future.

And so my question is going to be for Ms. Billy. And what I would like to know is what is the role of the—I have another question that is better. What are the greatest barriers for the 1994s in conducting agriculture research, because you had mentioned in your written testimony that they have a unique value that 1994 institutions can contribute. Could you please elaborate on that?

Ms. BILLY. Yes. Thank you very much. I think that Native world view, any different cultural world view, bringing that into research is really important. And as you said there is actually some really exciting research at Diné College in Arizona that the students are doing on testing different grasslands, some grasses that have grown in Africa and other arid environments, and possibly seeing how they can genetically modify them to work in the Southwest, that are very low-water-requiring and very high protein, which could really change the shape of range management, for example, in the Southwest.

But the biggest challenges are capacity, two parts of capacity. Not having the faculty, because they are small institutions, so those big partnerships with the University of Arizona and other institutions are very important. Not being able to attract the faculty. And then facilities, which everyone has talked about. Sort of iron-

ically, I guess, we actually don't even have in many cases the facilities to be dilapidated because we don't have the funding to actually even build the facilities. We would like to get to that point where we have that, but facilities, even constructing new facilities and then rebuilding the labs that they have is a serious challenge.

And another barrier is that in some instances, and researchers across the United States see this, it is easier to apply in some cases for funding from the National Science Foundation and NASA, and other science agencies, in a lot of cases than it is to apply and compete at USDA. The small programs that we have, a lot of times they are applying to other Federal agencies, which is hurting our agriculture research around the world.

Mr. O'HALLERAN. Thank you. And I will be giving you a call soon.

And I thank you, Mr. Chairman, and I yield back.

The CHAIRMAN. The gentleman yields back.

Mr. Arrington, 5 minutes.

Mr. ARRINGTON. Thank you, Mr. Chairman.

I am very supportive of R&D and America's investment in R&D. It is incredibly important. I agree with Mr. McGovern. I might disagree with him on health care, but I will find common ground with him on R&D, and what it has meant to this economy. We are the envy of the world for a lot of reasons, but one of them is because we have led an innovation, and it is noteworthy to know that GDP growth, some people say upwards of 70 percent of GDP growth is innovation. What you guys do at your institutions is the seed corn for new technologies and startup companies and venture capital flowing to our country from all over the world. And so thank you for what you all do. We need to help you.

And as a Member of the Budget Committee, the only Republican from Texas on the Budget Committee, I want to fight for R&D. I want to solve the budget crisis, the debt crisis, I just think that we can cut the discretionary domestic investment in infrastructure, R&D, and other things, to the point of diminishing returns. We have to get after some mandatory spending cuts. Nobody wants to talk about that, but that is what we have to do. And we have to stave off some of these deeper cuts that we have tried to balance the budget on the backs of some of these programs that I think have been very useful.

As a former Vice Chancellor at Texas Tech for research and technology commercialization, I saw firsthand the value to the educational experience. We want to put the best and brightest in the marketplace. Discovery is a big part of that, right? I have seen the importance to our economy; startups, all the things we mentioned, but I have also seen, and let's take some language out of the Constitution in our mission, the general welfare of the public. The public benefits, CT scan, seatbelts, rocket fuel, on and on, Google, Stamford, and I have witnessed firsthand the practical application and the value of that in the marketplace solving problems for our producers, for our farmers and ranchers, *et cetera.*

My question is, broadly, how do we maximize the impact of Federal R&D? Isn't that the question we should ask as stewards of taxpayer monies? How do we get the best return on investment? Here are three things that come to mind, I would love for you to com-

ment on them. One is the importance of public-private partnerships, and leveraging private monies, and combining Federal dollars to enhance graduate student experience, but also focus on real problems that need to be solved. Dr. Hill, you mentioned, we have to get it out of the lab, into the field, to really make a difference. People understand that. The public gets it when you put it in those terms. I am not against fundamental research, but we have to do more translational research, in my opinion.

Tech transfer, we haven't talked about that yet. How do we translate this into a marketable, patentable product? It is revenue stream back into evergreen some of these research projects, and it is public good, it is products and services that are enhancing the quality of life for Americans, right? What do we do to make that process easier for you guys, and how do we encourage you to do more of it? I will just stop there on that one. I will open it up to anybody. Would you start, Mr. Chancellor?

Mr. DUNCAN. Sure, I will begin. This infrastructure funding is very necessary, as you know, your experience with transfer of technology and commercialization is important as well. You can start these projects, but you have to provide opportunities for your professors to be able, and for your institutions to be able to move these products into the market.

At Tech, we have some demonstration projects on water conservation.

We have scarce resources of water, and they are getting scarcer, and Texas Tech has worked with private industry as well to be able to demonstrate different sorts of technology that have been developed at our ARS Lab there at the Plant Stress and Soil Moisture Lab, and those sorts of demonstrations, getting those things out.

But if you look at the endgame, the overall investment by this country in agriculture we are low compared to the other areas. And I went through that a while ago, but I do think that that is a significant issue that hopefully Congress can look at and investment more for the future, because food security, food safety is going to be a significant issue, going forward.

Mr. ARRINGTON. Absolutely.

We changed our tenure and promotion policy. We put metrics for tech transfer in tenure and promotion. What are the other universities doing with tech transfer, and do you think it is important, and what can the Federal Government do to incentivize more of this? Dr. Hill, any comments, for anybody on the panel?

And I yield back.

Dr. HILL. I want to mention one thing. I hope it touches on your point. I am a state committee chair for FSA, and have worked with R&D for a long time. If there was a way we could get university research better connected with what they do with producers and R&D with communities and businesses, it would get at what you are trying to do, those entrepreneurs, the business partners, all that. We already have extension people working in those areas, but your question now just made me think about that and where there is a big gap. If anybody knows how FSA and the problem they are having getting those microloans and the big loans to the farmers, what happens afterward, our research could be there working through that, and extension people helping to minimize the gap

and pain for both the government side and the farmer and community side. And the entrepreneur piece with R&D, since this is being restructured and reorganized, maybe somebody needs to say something at this point before it gets all structured, to get a university voice in there, and let's start trying some things.

The CHAIRMAN. The gentleman's time has expired.

The long-suffering and patient gentlelady from Delaware, who I skipped, Ms. Blunt Rochester, 5 minutes.

Ms. BLUNT ROCHESTER. Thank you, Mr. Chairman. And I want to thank the panel. This is really interesting to me. I come from Delaware where we have two great land-grant institutions; University of Delaware, which I am a graduate, and also Delaware State University, which is a great HBCU. But I also wear the hat of having been a former senior research fellow at the University of Massachusetts, Boston, and worked on a grant that focused on building the capacity of minority-serving institutions, so I know many of the challenges that you face. But I am on the Subcommittee on Biotechnology, Horticulture, and Research, and so I want to focus my first question on that, and it is to the entire panel.

The United States is currently being outpaced by China in regards to our investment in agricultural research, and Brazil and India are not too far behind. What are the potential implications on the United States food supply and availability of qualified agricultural scientists and researchers? For the whole panel.

Dr. HUMISTON. Well, I will throw a very quick answer out there, because there is a slide available in a report that the Supporting Our Ag Research Group put out recently that very clearly shows as investment in our ag research has gone down, our productivity has. And as investment in Chinese ag research has gone up, their productivity in agriculture has. It is virtually a direct co-relationship.

Ms. BLUNT ROCHESTER. Yes. Anyone else on the panel?

Mr. DUNCAN. Well, as we discussed earlier, and I think that Federal and state investment in infrastructure and capacity that is how you do it.

Ms. BLUNT ROCHESTER. Yes.

Mr. DUNCAN. You have to have continuity, long-term commitment, and predictability of funding so that scientists can develop, programs can develop, and again, biosecurity, food safety, those sorts of issues are the types of things that we have to start really investing in, and the capacity to do that is going to be very important.

Ms. BLUNT ROCHESTER. Dr. Humiston, you actually started talking about the fastest-growing agriculture sectors in farming being organics. For the panel, I am curious, and American farmers are struggling in this area to meet the consumer demand, how are your universities helping organic farmers address challenges and meet the booming demand for organic products?

Dr. HUMISTON. Two things there: One is organics is booming, there is no doubt about it, but almost equally booming is local. There are some people that would prefer to buy a local food product than an organic food product. But both sectors are rapidly growing, and not just in the coastal areas, throughout the nation.

We are doing a variety of things. We have taken the steps to create some of our research facilities having organically certified land so that we could conduct research there.

Ms. BLUNT ROCHESTER. Yes.

Dr. HUMISTON. Frankly, we have had a hard time attracting researchers because of the lack of funding for organic research. But, more importantly, we are trying to make sure that all of our programs, all of our research aims at a triple bottom line sort of sustainability; people, planet, and prosperity. And that ends up being things like integrated pest management, where hopefully if you do everything right, you are organic. But, there is still that once in a rare time you need to use a product, and you use it appropriately and very targeted in a way that is safe for the environment and people.

We are very proud of our world-class integrated pest management program.

Ms. BLUNT ROCHESTER. Yes.

Dr. HUMISTON. Something that we actually manage for the western states too. I think more support for that, more open-ended would be fine, but clearly, organics and specialty crops, which is related in some cases, and frankly, sustainable ag research extension, which helps with all these, they need more focus and we need to understand the needs of them more out in the public.

Ms. BLUNT ROCHESTER. Great. Yes, Dr. Hill?

Dr. HILL. Okay, yes. The project I alluded to earlier about, we have a scientist with a $2 million project with four of the universities, all 1862s. They are testing organic pesticides against major vegetable pests, they are doing on-site, advanced, multi-location, multi-state, on-farm trials, and they have some really sharp people. North Carolina is involved, Alabama, and Pennsylvania. So that now, $2 million over a 3, 4 year period is nothing to actually deal with a regional project. Somebody should be looking at that and say, "Okay, let's reward that diversity and the scientists and quality, and let's give them a boost, tell them to bring four more schools in," Texas, and who do we have, Arizona, and Florida.

Ms. BLUNT ROCHESTER. Thank you. My time has expired.

Dr. HILL. Sorry.

Ms. BLUNT ROCHESTER. But hopefully, if all of you could think of any adjustments that we need to also make to the grant criteria, related to Ms. Billy's comments also about the challenges of applying for agricultural grants.

Thank you, Mr. Chairman.

The CHAIRMAN. The gentlelady's time has expired.

Mr. Dunn, 5 minutes.

Mr. DUNN. Thank you, Mr. Chairman.

I would like to direct my first question to Dr. Burns from the great State of Florida.

In recent weeks, the proposals have resurfaced about imposing a cap, nominally ten percent suggested, on the amount of facilities and administrative reimbursement related to the competitive Federal grants. Could you speculate for us how the University of Florida would utilize, how does that impact your institution's capacity to perform research, going forward?

Dr. BURNS. Well, we depend on our indirect cost recovery to help us with all things related to research, especially as it relates to infrastructure improvements, building capacity and research, doing the administrative side of a research program is tremendous. This indirect cost recovery is very, very important. Cutting that would be detrimental to the research enterprise at the University of Florida.

Mr. DUNN. Can you give, is there a program, is there something immediate that this research is going to go unfunded? Is there a program like that?

Dr. BURNS. Are you asking me if——

Mr. DUNN. Because of the cap. Would you be——

Dr. BURNS. Because of the cap. We would have to strategize and prioritize research programs based on the amount of indirect costs that would come in. It is really important to once again emphasize the importance of full and direct cost recovery on our Federal grants because they are so important to maintain the capacity of research, the administrative side of research, that really is not visible to our stakeholders and to our funding agencies that we all know is really important to sustaining our research programs.

Mr. DUNN. We are going to be down at the University of Florida this weekend, I believe. I hope you will be there and you will be able to make some specific points.

Dr. BURNS. Great.

Mr. DUNN. Let me cast out to the panel also a question on GMOs. It is a recurring theme in the question is GMOs, and all of us with a science background know that GMOs are not inherently bad, and I wonder where the undercurrent comes in our nation at large and our culture that is so anti-GMO, and where can we start this educational process? Is it high school, is it middle school? I toss that out, because I am at a loss to understand it.

Dr. BURNS. Well, I will just throw out some thoughts here. I think that our children and our young adults know where food comes from because we started their education about where it actually comes from early. Educating the public, especially as early as possible, about the benefits and the risks involved in all the things that we do in agriculture is extremely important. Starting people early with education. It has to be balanced, it has to be fair, it has to be honest, and that is one of the main criteria for success is in keeping our population sort of in-the-know about the benefits and potential risks of any of our technologies, including GMOs.

Mr. DUNN. Thank you very much for your comments.

Dr. HUMISTON. I was just going to add, this is something I mentioned earlier, trying to get our citizens more engaged in citizen science. Part of that is a larger effort to just combat the general scientific illiteracy amongst our general population.

And you bring up GMOs, but quite frankly, it leads to lack of understanding over the value of vaccination, over the lack of understanding about the effects of climate change, and a host of other issues. GMOs is just one topic among many that we have really got to start improving STEM education and getting our citizenry more involved in science so that they understand it and are participating in it, and can believe what is coming out of science.

Mr. DUNN. Thank you very much.

Mr. Chairman, I yield back.

The CHAIRMAN. The gentleman yields back.

Mr. Lawson, 5 minutes.

Mr. LAWSON. I was beginning to wonder whether I was still here, Mr. Chairman.

And as a follow-up, I won't go into how much I wanted to talk about the 1890 institutions, because Congressman Scott from Georgia did a very good job, but I would like to ask Dr. Burns, last week Governor Scott signed a bill to allow the University of Florida and Florida A&M University to start an industrial hemp pilot program. What type of support do the two schools need from USDA to make the program work?

Dr. BURNS. As you know, the legislation does not allow for any funding to come to these programs, but it mandates that these programs should occur, and it also implores us to go out and get private investments for these. It does request that we go and we work with our state agencies to provide the rules and the regulations that are going to be important to maintain the Federal balance as well as the state balance in growing industrial hemp. I would say that there are enormous opportunities for researchers to get involved with the private enterprise to do that kind of research, but there are some restrictions on the research as there are in many of the states that are conducting industrial hemp programs.

Mr. LAWSON. Okay, thank you. And during your discussion you talked about alternative crops, which was interesting to me. What can we do in north Florida with alternative crops such as we have now in olives and peaches?

Dr. BURNS. Yes, so we have olives and peaches. Pomegranates are also alternative crops that we are looking at that would be beneficial and maybe adaptable to our conditions. Blackberries are another one. Crossing over into the row crops, we have Carinata, which is a new, for us anyway in Florida, an energy crop that can be directly converted into jet fuel. That is an enormous potential for us because it grows so well in Florida environments. Sesame is another alternative crop for us that has enormous potential. There are some issues and drawbacks with intellectual property and so forth with the companies; but overall, wow, is there a great potential for alternative crops in Florida. Even the Californians are coming with their crops because they want to take advantage of the resources available in Florida, the water, and the humid environment, which are so great for pests, by the way.

Mr. LAWSON. And I am interested in those. Congressman Dunn represents an area that I used to represent in the Senate, which is in Jackson County, and we are going to teach him a little bit more about farming, coming from the medical area. I represented him for 10 years, so I have to look out for him.

But, Dr. Hill, I feel like I grew up on Tuskegee campus, for two or three reasons. My father-in-law finished from Tuskegee, E.T. Brooks, and Henry Brooks, who was very active, is my brother-in-law, and so I really have been on that campus a great deal and I see the kind of research and so forth that is going on there. But my question, if I don't run out of time is, your testimony, you talked about 1890 institutions centers of excellence. Can you talk about how these centers would help propel the 1890 institutions

through the partnerships with the private-sector? We talked about the other universities, but how through the private-sector?

Dr. HILL. Thank you for that. Real quick. You cluster the farmers. You cluster small farmers. You co-op or cluster five or six, you get a contract with a Wal-Mart or Kroger, whatever. The university comes in and leverages their expertise. They market. They make money. It is not like the big farmer. If you run into other problems, you get a middle-sized farmer who has the right mentality, wants to work with them, we get a larger farmer join. So the research is different. It is not just technology, irrigation, solar, *et cetera,* but it is social interaction among humans. And if you can work those pieces, then really the sky is the limit because the buyer wants that, the public wants that, all of the supporting commodity groups in the state want that, our state legislature likes that. All of a sudden you have friends all over the place because you brought people together and they are making a profit. Here, land-grant puts their eye on the profit in a supporting role, with all their economists, all their other people, and you get a different dynamic. It was new for us to do it that way, but it is great.

Mr. LAWSON. Well, thank you.

Mr. Chairman, I yield back.

The CHAIRMAN. The gentleman's time has expired.

Mr. Thompson, 5 minutes.

Mr. THOMPSON. Thank you, Mr. Chairman. Thank you to everyone on the panel that is here.

I am going to just throw this out there. Can you elaborate on the impact of extension and the relationships that extension has with those that they serve in the field and urban areas across America? Is extension adequately funded, is it focused in the right direction? I know it has to with the different things that it addresses.

Dr. BURNS. I can make some general statements in extension, although I am not responsible for the extension programs. The urban sector is growing in Florida by leaps and bounds, as is the requirement and the need and the desire of our urban constituents to engage in some kind of agriculture. Our extension service has been very important at extending some of those agricultural knowledge bases to our urban society.

Having said that, there is some friction between our rural and urban sectors, as I am sure there are in other locations, and some of our rural constituents think that we might be spending too much time in one area than the other, and *vice versa.*

I think that extension continues to be important as we transfer knowledge from the research side into a more applied setting where it can be useful to our constituents.

Dr. HUMISTON. I do oversee extension for the State of California, and I can say very clearly we have far, far more demand than we have resources to make available, both urban and rural.

One thing we are trying to do, again, I have mentioned several times earlier leveraging collaboration, but to Dr. Hill's point, we are trying to help catalyze large regional efforts along the entire farm-to-fork food chain, and use that as economic development opportunities both in urban areas and tied to rural. I mean the reality is we don't want our food processing facilities on our ag land. They belong in cities and rural communities. And there is a part-

nership to be had there, and that is typical of some of the types of community and economic development cooperative extension can be very excellent at.

Mr. THOMPSON. The National Institute of Food and Agriculture's Competitive Grant Program, which is the Agriculture and Food Research Initiative, provides funding to support research education extension activities in six farm bill priority areas; plant health and production and plant products; animal safety, production in animal products; food safety, nutrition, and health; bioenergy, natural resources, environment, agriculture systems and technologies; and agriculture economics and rural communities. It is my understanding that AFRI's funding rate for AFRI applications is 13 percent in a 3 year rolling average. Should the next farm bill authorize AFRI at a higher level?

Dr. HUMISTON. Actually, most of us would be thrilled if it was authorized at the same level, but appropriated up to the full level. It has rarely gotten more than ½, if that, of what has been authorized. It really needs to be a partnership with the appropriators to get the funds in the field.

Mr. THOMPSON. Okay. And my last question is, obviously, biosecurity has come up a number of times in this hearing, and it is crucial to protecting the almost $1 trillion agricultural industry that contributes to the U.S. GDP in 2015. How can NIFA programs at USDA continue to protect the integrity, reliability, sustainability, and profitability of U.S. food and agriculture systems against threats from pests, diseases, contaminants, and disasters?

Dr. HUMISTON. I did offer at least a few points in my written testimony that I will share an example of, and that is, again, partnership. NIFA is a wonderful, wonderful organization, but it can't do everything. No one agency can. Within USDA for California, a very key agency is APHIS, our Animal and Plant Health Inspection Service. Given the wide array of specialty crops we have, as well as Florida, it often feels like we are getting a new pest of some sort every week, APHIS is crucial to us, as is Agricultural Marketing Service, which funds the specialty crop block grants. NRCS, Natural Resources Conservation Service: we just signed an MOU a few weeks ago to greatly improve how cooperative extension, NRCS, our State Department of Food and Ag, and our resource conservation districts can collaborate to deliver on a variety of programs.

So this is where you see some of that crosscutting between titles.

Mr. THOMPSON. Yes.

Dr. HUMISTON. Even though we are the research title, we actually work with quite a few of the others.

One thing I did recommend is that preference be given for cooperative extension to serve as technical service providers within the conservation title. And you could find several other examples like that.

Mr. THOMPSON. Okay, thank you.

The CHAIRMAN. The gentleman's time has expired.

I want to thank our witnesses for being here today. Each of you has presented a compelling case as to why research is important and why it ought to be a high priority. All of you are really familiar with the struggle of setting priorities and making hard choices between the good stuff. It is rare that you have to make a choice be-

tween a good and a bad. We just all have to make choices between the good. And having your input in the public record as a part of the farm bill work that we will do late this winter and early next year, will really be terrific in laying that marker down as to why it is important. The research dollars you have already been getting you are using effectively. And you all presented good ideas on terms of cross-pollinization among institutions and/or the public- and private-sector. And I for one appreciate the time you spent this morning helping to educate not only Members, but also those millions and millions of folks watching on CSPAN this morning that also heard the testimony as well. Again, thank you very much. And this will be a good part of what we look at when we look at the hard decisions that the Committee and I will have to make when we do the 2018 Farm Bill.

Under the Rules of the Committee, the record of today's hearing will remain open for 10 calendar days to receive additional material and supplementary written responses from the witnesses to any question posed by a Member.

This hearing of the Committee of Agriculture is adjourned. Thank you.

[Whereupon, at 12:21 p.m., the Committee was adjourned.]

[Material submitted for inclusion in the record follows:]

SUBMITTED STATEMENT BY AMERICAN SOCIETY FOR HORTICULTURAL SCIENCE

The American Society for Horticultural Science (ASHS), consisting of 2,500 members in all 50 states and 60 countries, is the nation's premier professional society for horticulture research. Our mission promotes and encourages national and international interest for all forms of specialty crops through research, teaching, extension, and collaborative projects between states, regions, and other nations. Supporting capacity and competitive grants, as well as intramural research within the U.S. Department of Agriculture (USDA), we have been actively involved with both title VII (Research) and title X (Horticulture) in the 2008 and 2014 Farm Bills. With Specialty Crops comprising ½ of all "farm gate" value in the U.S., plus its foundation for healthy diets and environmental stewardship for all Americans, ASHS looks forward to backing continued public-private investments for research programs in new farm bill legislation.

Congressional funding for the research and horticulture titles have made great strides in the past 10 years. Measurable increases enshrined in law for programs under USDA's National Institute of Food & Agriculture (NIFA) range from formula and extension funding for Land-Grant institutions, to the all-important Specialty Crop Research Initiative (SCRI), the Organic Agriculture Research & Education Initiative (OREI), the Agriculture & Food Research Initiative (AFRI), Sustainable Agriculture Research & Education (SARE), and Plant Pest & Disease Management mitigation, whose budget includes the successful National Clean Plant Network. The Agricultural Research Service (ARS), USDA's in-house research agency also conducts groundbreaking research, and in recent years, has increased its collaboration with competitive program initiatives. The 2008 and 2014 Farm Bills have also facilitated transition practices from conventional to organic farming, and increased decision making authority at the state level for research allotments via Specialty Crop Block Grants, a program administered by USDA's Agriculture Marketing Service.

As the Senate Agriculture, Nutrition, & Forestry Committee reviews these and other farm bill provisions, we hope this hearing will highlight agriculture research's many contributions to America's economy, and its vital role for maintaining affordable, safe, and abundant food and fiber sources. For our domestic economy, horticulture (fruits, vegetables, and nursery/ornamentals) generates approximately $60 billion annually, while an additional $55 billion comes from landscape services and $20 billion from specialty crop exports. None of this could be sustained without wide-ranging scientific analysis and discovery. Yet these activities cannot be achieved in a vacuum. Accordingly, we hope Congress will accord increased focus in the next farm bill toward the urgent need of upgrading facilities at our historic land-grant colleges and universities. ASHS views knowledge and extension infrastructure on par with roads, bridges, railways, and airports to ensure that our nation remains competitive and productive for the 21st Century. Forged in the crucible of civil war, our land-grant system rose to become a bedrock of American innovation and economic progress. We must not abandon this exemplary model for educating and training future generations of agriculture scientists.

*For more information on ASHS and its policy positions, please contact Dr. Thomas Björkman, ASHS National Issues Committee Chair, at [***Redacted***],* or Dr. John Dole, ASHS President, at [**Redacted**].

SUBMITTED STATEMENT BY NATIONAL COALITION FOR FOOD AND AGRICULTURAL RESEARCH

Chairman Conaway, Ranking Member Peterson and Members of the Committee:

The National Coalition for Food and Agricultural Research (NCFAR) is pleased to submit this testimony for the June 22 hearing record. NCFAR is a nonprofit, nonpartisan, consensus-based and *customer-led* coalition that brings food, agriculture, nutrition, conservation, and natural resource stakeholders together with the food and agriculture research and extension community. NCFAR serves as a forum and a unified voice in support of sustaining and increasing public investment at the national level in food and agricultural science as a top national priority. A membership list is attached as *Exhibit 1.* More information about NCFAR is available at *http://www.ncfar.org*.

NCFAR's support encompasses the entire U.S. Department of Agriculture (USDA) research, extension and education (REE) mission area, including extramural programs in the National Institute of Food and Agriculture (NIFA)—such as the Agriculture and Food Research Initiative (AFRI), and capacity funds to support Experiment Stations and Cooperative Extension—and intramural programs in the Agricultural Research Service (ARS), Economic Research Service (ERS), and National Agri-

cultural Statistics Service (NASS), as well as the U.S. Forest Service research program.

NCFAR urges a balanced portfolio, as the various programs serve important and complementary roles. NCFAR supports mandatory programs in the farm bill that provide funding for research. It is important to include investments in both fundamental and applied research, as well as translational education. In addition, publicly funded research serves critically important objectives that private-sector research cannot fulfill in a number of areas. For example, the results of publicly funded research are available to the public, including policy makers.

Companies are often unable to fund fundamental research that lays the foundation for much of our nation's applied research.

NCFAR applauds the House Agriculture Committee for its bipartisan leadership in establishing the Foundation for Food and Agriculture Research (FFAR) in the 2014 Farm Bill and strongly encourages your continued support for FFAR in the next farm bill.

A group letter to the Committee signed by over 60 organizations supporting FFAR is attached as *Exhibit 2.*

The initial investment of $200 million in mandatory funding through the Commodity Credit Corporation has been instrumental in helping the U.S. agricultural research enterprise foster continued innovation. FFAR's emergence as a cutting-edge research institution, leveraging funds to contribute to the long-term competitiveness of our nation's food and agricultural system is well timed considering the many challenges confronting the U.S. food and agricultural system.

FFAR matches every program dollar with outside funding, multiplying value for American taxpayers and growing the food and agriculture funding pool. NCFAR understands that every Federal dollar invested by FFAR has been more than doubled by its diverse funding partners, and the U.S. government's $200 million investment in FFAR is on track to deliver more than $400 million in vital food and agriculture research programming.

Very much in line with NCFAR's unified and customer-led approach to research policy, FFAR takes advantage of the unique partnership model conceived by this Committee to convene diverse groups that might not otherwise collaborate around common challenges of national and international significance. NCFAR is pleased that FFAR has formed partnerships with farmer and commodity groups, retail and other companies, the public health sector, and leading foundations.

With the farm bill reauthorization process in its early stages, NCFAR has several activities underway with the objective of better informing our leadership, other stakeholders, the Congress, and the Administration in laying the groundwork for a strong research title and supporting funding.

One longstanding initiative is NCFAR's signature 'Lunch~N~Learn' seminar series in which our team works to inform hill staff and other stakeholders by featuring the publicly funded work of leading-edge scientists on a diverse array of disciplines and timely topics. Over the past decade, NCFAR has convened 130 seminars, connecting with over 8,300 attendees. A document providing highlights of the seminar series is attached as *Exhibit 3.* More detail is available at *http://www.ncfar.org/Hill_Seminar_Series.asp*. NCFAR thanks the Committee for providing a host location for many of these seminars on the House side.

NCFAR is taking additional action on several fronts to inform the current farm bill reauthorization process and be a more effective voice for a strong research title.

First, NCFAR's Research Outreach Committee has convened a farm bill task force, which is in the early stages of developing recommendations on the reauthorization of the farm bill research title for our Board to consider. NCFAR is also collaboratively engaging allied groups with the objective of providing timely recommendations to this Committee and the Congress.

Second, NCFAR is involved in planning for a *Summit on Integrated Research, Education, and Extension Priorities to Advance American Agriculture.* The aim of the Summit is to engage stakeholders in developing a vision for what the food and agricultural research, extension and education enterprise should look like to best serve the needs of the food and agricultural system in the 21st century and capitalize on the robust potential of the agricultural, food, and resource sectors to fuel further growth in the United States economy. The summit will focus on four critical areas; fueling growth in the agricultural economy through rapid adoption of innovations; harnessing the power of big ag data in research and extension; advancing the health of U.S. consumers and environmental quality; and assuring the security of U.S. agriculture and food systems. Additional information will be provided in the near future.

Third, NCFAR is actively involved in other collaborative efforts intended to inform and support the reauthorization of a strong farm bill research title, including (1) the

unified messaging effort led by the Riley Memorial Foundation, and (2) the *Breakthroughs 2030* study, initiated by the SoAR Foundation with major funding support from the Foundation for Food and Agriculture Research and being conducted by the National Academies of Science (NAS), to produce a 10 year agenda for food and agricultural research.

NCFAR is "customer-led"—meaning the diverse stakeholders who need and benefit from the scientific outcomes that are produced by our nation's publicly funded research, extension and education system in our own work.

Research is an important means to critical ends—providing science-based information and tools that help those in the food and agricultural system do their jobs for the ultimate benefit of consumers, the nation's economy, and the world.

The same holds true for a myriad of other "customers"—such as farmers and ranchers across the nation; the agricultural input industry; food processors; professionals in the fields of nutrition and health; natural resources and environment; rural communities; and ultimately all consumers of food and natural fiber around the world.

Furthermore, this Committee and other Members of Congress and policy makers at all levels of government are important "customers" of research, extension and education made possible through the research title of the farm bill.

The research title of the farm bill represents the nation's *signature Federal investment in the future of the food and agricultural sector.* In fact, the success of every other title in the farm bill and those who are charged with carrying out their respective missions is arguably dependent in significant part on scientific outcomes and tools generated by programs authorized through the research title, and then funded by Congress.

Research is not an end in itself—rather it is a vital means to help achieve many national priorities. The research title is critical in providing advancements in food and agricultural research, extension and education that help provide the tools needed to sustain and strengthen America's food and agricultural sector, rural communities, and the national economy.

Public investment in food and agricultural research, extension and education today and in the future must simultaneously satisfy a range of needs, including food quality and quantity, resource conservation, producer profitability, and food safety and security, and helping to improve health.

At the risk of oversimplification, Federal funding is the fuel for USDA's REE engine and determines how effectively the important goals of the research title are realized. NCFAR respectfully submits that our nation is not investing enough in in publicly funded research to permit discovery necessary to regain and then maintain our nation's place as the leader in agricultural research.

Investment in food and agricultural science is not only good business, it's good **for** business. By any measure, publicly funded food and agricultural science represents an outstanding investment. Public and private investments in U.S. agricultural research and practical application of results have paid huge dividends to the United States and the world, especially in the latter part of the 20th century. The CARD report entitled "Measuring Public Agricultural Research and Extension and Estimating their Impacts on Agricultural Productivity: New Insights from U.S. Evidence" (Jin & Huffman, 2016) presents a summary of the most recent returns on investment of agricultural research dollars to have a rate of return of approximately 67 percent.

However, the unparalleled success story in the food and agricultural system is in large part the product of **past** investments in food and agricultural research and extension. Federal funding for food and agricultural research, extension and education has been essentially *flat for over 20 years* despite much greater demonstrated needs, and has reportedly declined by about 25 percent in real terms since 2003. At the same time support for other Federal research has increased substantially. Our nation's competitiveness in global markets is at risk, as investments in food and agricultural science by our global competitors have been growing rapidly.

The 2008 and 2014 Farm Bills recommitted to an authorized level of $700 million annually for AFRI. Yet 8 years later, FY17 appropriations for AFRI are about $375 million. NCFAR is on record in support of funding AFRI at the fully authorized level as soon as practicable. Increases in AFRI should represent an addition to funding for REE programs and not come at the expense of other REE programs.

Increased Federal investments in the USDA, REE mission area will lead to advances and breakthroughs in agricultural productivity, improved animal, plant and soil health, and nutrition and lead to healthier citizens, a healthier agricultural economy, and a stronger and more globally competitive America.

Tools provided through publicly funded research, extension and education are needed to help achieve safer, more nutritious, convenient and affordable foods deliv-

ered to sustain a well-nourished, healthy population; more efficient and environmentally friendly food, fiber and forest production; improved water quality, land conservation, wildlife and other environmental conditions; less dependence on nonrenewable sources of energy; expanded global markets and improved balance of trade; and more jobs and sustainable rural economic development.

Societal demands and expectations placed upon the food and agricultural system are ever-changing and growing. Examples of current and future needs include addressing biosecurity; food-linked health costs; development of vaccines and diagnostics, antibiotics, de-wormers, antifungals and parasiticides, antimicrobial use strategies, control and therapy for diseases and infections, transboundary disease and foreign animal disease; environment and conservation; water quality; farm income and rural revitalization; biofuels and climate change; the increasing world demand for food and fiber and improved diets; and needed advances in biotechnology and genetic resources research. A United Nations report projects that we will need to double food production to feed nine billion people by 2050, and that 70 percent of the increase must come through research developing new technologies and increased productivity.

NCFAR appreciates the longstanding support this Committee and its Members have demonstrated over the years to authorize and oversee implementation of a strong research title that can compete more effectively in the funding process, both within the Administration and in the Congress.

NCFAR looks forward to working as a customer-led coalition with this Committee, Congress, the Administration, and other stakeholders to help ensure that the USDA REE mission moves forward as envisioned and receives the resources and funding needed to achieve scientific outcomes that are necessary for the food and agricultural system to address multiple demands, challenges and expectations.

Attachments (3):

- *Exhibit 1*—NCFAR Member List.*
- *Exhibit 3*—'Lunch~N~Learn' Hill Seminar Series Highlights.*

EXHIBIT 2

Hon. [K.] MICHAEL CONWAY,
Chairman,
House Committee on Agriculture,
Washington, D.C.;

Hon. COLLIN C. PETERSON,
Ranking Minority Member,
House Committee on Agriculture,
Washington, D.C.

RE: Support for Foundation for Food and Agriculture Research (FFAR)

Dear Chairman Conaway and Ranking Member Peterson:

The undersigned wish to thank the Members of the House Committee on Agriculture for their bipartisan support in establishing the Foundation for Food and Agriculture Research (FFAR) in the Agricultural Act of 2014, also known as the 2014 Farm Bill. We strongly encourage your continued support for FFAR in the next farm bill. The initial investment of $200 million in mandatory funding through the Commodity Credit Corporation has been instrumental in helping the U.S. agricultural research enterprise foster continued innovation. FFAR's emergence as a cutting-edge research institution contributing to the long-term competitiveness of our nation's food and agriculture sector is well timed considering the many challenges confronting the U.S. food and agricultural system.

The need for advanced solutions remains imperative if we are to continue to lead the world in food and agricultural innovation. Your work in 2014 to create a new institution for leveraged, public-private partnerships and investments through FFAR was as an inspiration. We urge your continued support of FFAR in the next farm bill.

Thank you for your consideration and for your leadership on food and agricultural research, extension and education.

Respectfully Submitted,

National Coalition for Food and Agricultural Research (NCFAR)
Academy of Nutrition and Dietetics
Agricultural Retailers Association
FASS
Global Harvest Initiative
International Alliance for Phytobiomes Research
Iowa Corn Growers Association
Rural Sociological Society
Society for Range Management
Soil Health Institute
Soil Science Society of America

Editor's note: the documents referred to entitled *NCFAR Member List,* and *'Lunch~N~Learn' Hill Seminar Series Highlights,* (as updated) follow the prepared statement of Mr. Wilkins (located on p. 489), published in the March 16, 2017, *The Next Farm Bill: Agricultural Research,* Biotechnology, Horticulture, and Research Subcommittee hearing. For purposes of this publication they are not reprinted here.

American Farm Bureau Federation
American Feed Industry Association
American Seed Trade Association
American Society for Horticultural Science
American Society for Nutrition
American Society of Agronomy
American Society of Animal Science
American Society of Plant Biologists
American Veterinary Medical Association
APLU Committee on Legislation and Policy
Aquatic Plant Management Society
Association of American Veterinary Medical Colleges
Cherry Marketing Institute Inc.
CoBank
Cornell University College of Agriculture and Life Sciences
Council for Agricultural Science and Technology (CAST)
Crop Science Society of America
Experiment Station Committee on Organization and Policy
Farm Journal Foundation
Irrigation Association
Marrone Bio Innovations
Michigan Tree Fruit Commission
Mississippi State University
National Association of Plant Breeders
National Association of State Departments of Agriculture
National Association of Wheat Growers
National Corn Growers Association
National Cotton Council
National Pork Producers Council
North American Millers Association
North Central Regional Association of Agricultural Experiment Station Directors
North Central Weed Science Society
Northeastern Agricultural and Resource Economics Association
Northeastern Weed Science Society
PepsiCo
Pollinator Partnership
Purdue University College of Agriculture
Southern Agricultural Economics Association
Southern Weed Science Society
Supporters of Agricultural Research Foundation
Syngenta
Taylor Shellfish Farms
The American Phytopathological Society
The Fertilizer Institute
United Egg Producers
Universities Council on Water Resources
University of Delaware College of Agriculture and Natural Resources
University of Nebraska
University of Tennessee Institute of Agriculture
Veterinary Regional Referral Hospital, pc
Wade Water LLC
Weed Science Society of America
Western Association of Agricultural Experiment Stations
Western Society of Weed Science

SUBMITTED STATEMENT BY NATIONAL TURFGRASS FEDERATION

The National Turfgrass Federation (NTF), formed in 2007 to coordinate and support turfgrass research within the Federal Government, submits this statement to the Senate Committee on Agriculture, Nutrition, & Forestry to review past, current, and hopefully future successes of farm bill legislation. Dedicated to promoting the value and necessity of turfgrass for society, NTF believes this hearing will help assess successful activities of the 2014 Farm Bill, and explore new and innovative possibilities for its successor in 2018.

Comprising approximately 65 million acres nationwide, turfgrass is America's third largest crop behind corn and soybeans, and the largest, most visible, and diverse of the horticulture crops. Turfgrass forms the foundation for the greening of rural and urban America through parks, recreation and athletic fields, residential lawn care, natural grasslands, roadside and highway medians, commercial and historic properties, golf courses and ornamental gardens—just to name a few! Turfgrass provides excellent buffer zones that filter pollutant water runoff before entering surface and groundwater systems. The importance of turfgrass cannot be underestimated for the preservation and enhancement of a variety of ecosystems. In many arid regions of our nation, especially in the West, new drought-tolerant turfgrass varieties are being discovered, developed and tested which will use less water and fertilizer, thus providing energy and water savings to states, municipalities, and residential homeowners.

Turf has covered a lot of ground in recent farm bills. Courtesy of the 2008 *Food, Conservation, & Energy Act,* turf and sod were designated as specialty crops. This expanded turf's opportunity for competitive research funding, as well as extension outreach initiatives. Turf furthered its research involvement in the *Agricultural Act of 2014* with programs such as the Specialty Crop Research Initiative (SCRI), and Specialty Crop Block Grants. The latter program is especially popular with NTF members as it facilitates cooperative decision making among scientists and their respective State Departments of Agriculture.

Imagine landscapes devoid of green grass, farms and waterways without protective grasslands, or no viable protection for soil erosion. As urban populations expand, maintaining an abundance of turfgrass varieties, that are adaptable to many climates while using sustainable, sensible management that provides environmental protection ultimately relies on quality and adequately funded research. This exploration, analysis, and applications for public use is predicated on continuing vital research programs embodied in title VII (Research) and title X (Horticulture) of this current farm bill. With research accounting for just two percent (2%) of USDA's annual budget, NTF hopes Congress will consider increased funding for these titles wherever feasible. This funding is notably important for land-grant colleges and universities—the foundation of education and training for future generations of agriculture scientists—as well as competitive grants, which build upon regional collaboration for innovative discoveries that provide dividends for American taxpayers and their respective communities.

*For more information on turf research's utilization of farm bill programs, contact Kevin Morris, NTF Executive Director at [***Redacted***]*, or Jonathan Moore, NTF Policy Consultant at [**Redacted**].

SUBMITTED QUESTIONS

Response from Hon. Robert L. Duncan, J.D., Chancellor, Texas Tech University System*

Questions Submitted by Hon. Ann M. Kuster, a Representative in Congress from New Hampshire

Question 1. My first question for the entire panel touches on the organic research being done at UNH. Organic farming is one of the fastest growing agriculture sectors in American, accounting for over 5% of total retail food sales.

How are your Universities helping organic farmers address challenges, and meet the booming demand for organic products?

Answer.

Question 2. Because of the unique requirements for organic agriculture, how is your university ensuring that organic agriculture gets a fair share of dedicated research investment and support at your university?

Answer.

Question 3. If Congress were to devote more research funds toward organic research to help expand our domestic organic production to keep pace with demand, how would that affect the research activities of your institutions?

Answer.

Question 4. Eighty percent of seafood consumed in the United States is imported, resulting in a roughly $11 billion trade deficit for seafood industry. The U.S. has an opportunity to increase aquaculture production and become a world leader in providing safe, sustainable and environmentally friendly seafood through state-of-the-art approaches to farm the ocean.

Beyond a huge economic incentive for the country, this is a food security issue. Agricultural research at the country's land-grant institutions plays a critical role in advancing local economics and the nation in burgeoning markets. Can you describe how increased authorization levels for NIFA Capacity Funds and extramural programs, including AFRI, would boost this type of agricultural research?

Answer.

Question 4a. How can increased authorization levels advance innovative aquaculture practices that will increase food production and security across the country?

Answer.

Question 5. Industrial-scale composting is growing rapidly as states and municipalities increase restrictions on disposal of organic wastes in landfills and work to achieve sustainable waste management systems. As business opportunities increase with the demand for composting, a number of innovations in this ancient technique of organic waste management have been developed and applied. This project demonstrates the significance of Federal agricultural research programs at NIFA as a means to achieve economically sustainable agriculture and food industries—directly impacting farm lands that remain in operation in New Hampshire—and serving as a model for communities across the country.

As a university researcher, can you expand on how increased authorization levels for NIFA in the next farm bill will ensure research continues to advance innovative composting methods and resources for sustainable food systems?

Answer.

Response from Jacqueline K. Burns, Ph.D., Dean for Research and Director, Florida Agricultural Experiment Station; Professor of Horticulture, Institute of Food and Agricultural Sciences, University of Florida

Questions Submitted by Hon. Stacey E. Plaskett, a Delegate in Congress from Virgin Islands

Question 1. I understand that the University of Florida used to receive special research grants under the Tropical and Subtropical Agricultural Research program (or "T–STAR" program) until it was phased out several years ago when a lot of special research grants were done away with.

How is the more general competitive grant program approach, like the flagship Agriculture and Food Research Initiative, meeting your needs and ability to continue the research that was started under T–STAR?

Answer. The loss of the T–STAR program was devastating to programs designed to meet the regional needs of tropical and subtropical agriculture systems. Many of these needs are not adequately covered through AFRI but are crucial to the Caribbean and related regions. This program allowed researchers to conduct more

*There was no response from the witness by the time this hearing was published.

proactive programs that could and would impact regional agriculture systems in the future. Such programs included mitigation strategies for invasive pests and diseases that could negatively impact subtropical and tropical regions and/or travel into the U.S. heartland.

Question 2. How do you see research in tropical agriculture developing since T–STAR was ended?

Answer. There is a void that is difficult to cover with existing programs. In some cases, local industries have developed research priorities that are funded. But the programs have not been sustainable due to downturns or challenges to these industries that require a redirect of funding. A sustainable national program is needed.

Question 3. What can replace the previous program, and how would that benefit agriculture in the Caribbean region?

Answer. Reinstating a version of the T–STAR program for tropical and subtropical agriculture systems would benefit the Caribbean and related regions. It should be competitive, managed by the subtropical and tropical institutions and stakeholders, and directed at the challenges tropical and subtropical regions face.

Thank You.

Response from Hon. Glenda Humiston, Ph.D., Vice President, Agriculture and Natural Resources; Director, Agricultural Experiment Station and Cooperative Extension Service, University of California *

Questions Submitted by Hon. Ann M. Kuster, a Representative in Congress from New Hampshire

Question 1. My first question for the entire panel touches on the organic research being done at UNH. Organic farming is one of the fastest growing agriculture sectors in American, accounting for over 5% of total retail food sales.

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Answer.

Question 2. Because of the unique requirements for organic agriculture, how is your university ensuring that organic agriculture gets a fair share of dedicated research investment and support at your university?

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Beyond a huge economic incentive for the country, this is a food security issue. Agricultural research at the country's land-grant institutions plays a critical role in advancing local economics and the nation in burgeoning markets. Can you describe how increased authorization levels for NIFA Capacity Funds and extramural programs, including AFRI, would boost this type of agricultural research?

Answer.

Question 4a. How can increased authorization levels advance innovative aquaculture practices that will increase food production and security across the country?

Answer.

Question 5. Industrial-scale composting is growing rapidly as states and municipalities increase restrictions on disposal of organic wastes in landfills and work to achieve sustainable waste management systems. As business opportunities increase with the demand for composting, a number of innovations in this ancient technique of organic waste management have been developed and applied. This project demonstrates the significance of Federal agricultural research programs at NIFA as a means to achieve economically sustainable agriculture and food industries—directly impacting farm lands that remain in operation in New Hampshire—and serving as a model for communities across the country.

As a university researcher, can you expand on how increased authorization levels for NIFA in the next farm bill will ensure research continues to advance innovative composting methods and resources for sustainable food systems?

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* There was no response from the witness by the time this hearing was published.

Answer.

Response from Walter H. Hill, Ph.D., Dean, College of Agriculture, Environment and Nutrition Sciences; Vice Provost for Land-Grant University Affairs; Research Director, USDA Evans-Allen Research and Director, George W. Carver Agricultural Experiment Station; Administrator, Tuskegee University Cooperative Extension, Tuskegee University *

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Response from Steven H. Tallant, Ph.D., President, Texas A&M University—Kingsville *

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Answer.

Response from Carrie L. Billy, J.D., President and Chief Executive Officer, American Indian Higher Education Consortium *

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Answer.

THE NEXT FARM BILL
(TECHNOLOGY AND INNOVATION IN SPECIALTY CROPS)

WEDNESDAY, JULY 12, 2017

HOUSE OF REPRESENTATIVES,
COMMITTEE ON AGRICULTURE,
Washington, D.C.

The Committee met, pursuant to call, at 10:00 a.m., in Room 1300 of the Longworth House Office Building, Hon. K. Michael Conaway [Chairman of the Committee] presiding.

Members present: Representatives Conaway, Thompson, Lucas, Rogers, Gibbs, Austin Scott of Georgia, Crawford, Hartzler, Denham, LaMalfa, Davis, Yoho, Allen, Rouzer, Kelly, Comer, Bacon, Faso, Dunn, Arrington, Peterson, David Scott of Georgia, Costa, Walz, McGovern, Vela, Lujan Grisham, Kuster, Nolan, Maloney, Plaskett, Adams, Evans, Lawson, O'Halleran, Panetta, Soto, and Blunt Rochester.

Staff present: Mollie Wilken, Patricia Straughn, Rachel Millard, Stacy Revels, Keith Jones, Kellie Adesina, Troy Phillips, Nicole Scott, and Carly Reedholm.

OPENING STATEMENT OF HON. K. MICHAEL CONAWAY, A REPRESENTATIVE IN CONGRESS FROM TEXAS

The CHAIRMAN. Good morning. This hearing of the Committee on Agriculture entitled, *The Next Farm Bill: Technology and Innovation in Specialty Crops,* will come to order.

I have asked Trent Kelly to offer our prayer. Trent, over here.

Mr. KELLY. Bow your heads. Dear Lord, we just thank you this day for each and everything that you have given all of us. Dear Lord, we just thank you for those that you have blessed with the farms and the land and the resources and the technology to create the greatness of this nation through our farmers who, first and foremost, feed and provide for not only this nation but for the entire world. And we just thank you and ask that all we do in this Committee honor you, and help those farmers to produce. In Jesus' name we pray. Amen.

The CHAIRMAN. Thank you, Trent.

Good morning, and again, thank you all for joining us.

Specialty crops play an important role in the success of U.S. agriculture and are an essential component of our national food policy: the farm bill. Diversity among crops, ranging from fruits, vegetables, tree nuts, and nursery crops to floriculture, makes the task of developing the specialty crop safety net particularly challenging. Despite those challenges, significant investments, including those

made in the 2014 Farm Bill to support the various sectors, have positively impacted our specialty crop producers. It baffles me when farm bill detractors question our commitment to specialty crops, implying that our country lacks a national food policy just because we treat specialty crops differently than traditional commodities.

Over the years, those of us who work on farm policy have worked closely with producers to develop programs tailored to meet the needs of our specialty crop producers. We recognize that the challenges of a citrus producer in California look much different than those of a cotton farmer in west Texas, and we believe our agricultural policies should reflect those differences. The notion that we don't invest in specialty crops simply isn't based in fact. Let me give you a few examples.

The Specialty Crop Block Grant Program helps enhance the competitiveness of specialty crops by facilitating partnerships between USDA and the State Departments of Agriculture to provide funding. The Plant Pest and Disease Prevention Program provides early plant pest detection and surveillance and funds a system of clean plant centers to safely distribute disease-free plant material to producers of nursery stock. The Specialty Crop Research Initiative sets aside mandatory funding to ensure that specialty crops are not sidelined for research funding. And the Market Access Program aids the development, expansion, and maintenance of foreign markets for U.S. agricultural products. In fact, ½ of the participating organizations in Fiscal Year 2017 were focused exclusively on specialty crops. The Food Insecurity Nutrition Incentive Grant Program aims to increase the purchase of fruits and vegetables among participants in the Supplemental Nutrition Assistance Program by providing incentives at the point of purchase. And finally, we have made significant strides over the past several years in expanding crop insurance coverage to a variety of specialty crops, including the Whole Farm Revenue Protection policy that was developed with specialty crops in mind.

The United States has long had an interest in ensuring stable production of our staple commodities, which is one of the reasons we continue to enjoy the safest, most abundant and affordable food supply in the world. But when you pull all of the pieces of the farm bill together, it is clear we have made huge investments to aid specialty crop producers as well.

Looking forward, our goal is to maintain these advancements and address improvements needed in the next farm bill. As we do that, I am particularly interested in the role that technology plays in those advancements.

To that end, I would like to welcome all of our witnesses today, and I look forward to hearing from all of you about ways we can build our public-private partnerships and innovation to benefit specialty crop producers.

[The prepared statement of Mr. Conaway follows:]

PREPARED STATEMENT OF HON. K. MICHAEL CONAWAY, A REPRESENTATIVE IN CONGRESS FROM TEXAS

Good morning and thank you all for joining us.

Specialty crops play an important role in the success of U.S. agriculture and are an essential component of our national food policy—the farm bill. Diversity among the crops—ranging from fruits and vegetables, to tree nuts, to nursery crops and floriculture—makes the task of developing the specialty crop safety net particularly challenging. Despite those challenges, significant investments, including those made in the 2014 Farm Bill to support the various sectors, have positively impacted our specialty crop producers.

So it baffles me when farm bill detractors question our commitment to specialty crops, implying our country lacks a national food policy because we treat specialty crops differently than traditional commodities.

Over the years, those of us who work on farm policy have worked closely with producers to develop programs tailored to meet the needs of specialty crop producers. We recognize that the challenges of a citrus producer in California look much different than those of a cotton farmer in west Texas, and we believe our agricultural policies should reflect those differences. The notion that we don't invest in specialty crops simply isn't based in fact. Let me give you a few examples.

- The Specialty Crop Block Grant Program helps enhance the competitiveness of specialty crops by facilitating partnerships between USDA and the State Departments of Agriculture to provide funding.
- The Plant Pest and Disease Prevention Program provides early plant pest detection and surveillance and funds a system of "clean plant centers" to safely distribute disease-free plant material to producers of nursery stock.
- The Specialty Crop Research Initiative sets aside mandatory funding to ensure specialty crops are not sidelined for research funding.
- The Market Access Program aids the development, expansion and maintenance of foreign markets for U.S. agricultural products. In fact, ½ of the participating organizations in FY 2017 were focused exclusively on specialty crops.
- The Food Insecurity Nutrition Incentive (FINI) Grant Program aims to increase the purchase of fruits and vegetables among participants in the Supplemental Nutrition Assistance Program by providing incentives at the point of purchase.
- And, finally, we have made significant strides over the past several years in expanding crop insurance coverage to a variety of specialty crops, including the Whole Farm Revenue Protection policy that was developed with specialty crop producers in mind.

Yes, the United States has long had an interest in ensuring stable production of our staple commodities, which is one of the reasons we continue to enjoy the safest, most abundant, and most affordable food supply in the world. But when you pull all of the pieces of the farm bill together, it's clear we've made huge investments to aid specialty crop producers as well.

Looking forward, our goal is to maintain these advancements and address improvements needed in the next farm bill. As we do that, I'm particularly interested in the role that technology plays.

To that end, I'd like to welcome all of our witnesses today. I look forward to hearing from all of you about ways to build upon public-private partnerships and innovation to benefit specialty crop producers.

With that, I yield to the Ranking Member for any opening remarks he may have.

The CHAIRMAN. With that, I yield to the Ranking Member for any comments he might have.

OPENING STATEMENT OF HON. COLLIN C. PETERSON, A REPRESENTATIVE IN CONGRESS FROM MINNESOTA

Mr. PETERSON. Thank you, Mr. Chairman. And thank you to our panel of witnesses for joining us today at this hearing on technology and innovation in specialty crop production. I am looking forward to hearing your testimony on the opportunities and challenges the specialty crop sector has and the impact of farm bill programs on your productivity and profitability.

Since the 2008 Farm Bill, I have been particularly interested in the role specialty crop production has in the healthy ag economy and in providing healthy foods to consumers. It is really amazing to see the amount of money that you have invested just to produce

your crops. And while hundreds of acres of corn may be worth several hundred thousand dollars, that same number of acres planted in strawberries may be worth several million dollars. Folks in my area, we don't understand how you guys do it, but hats off to you.

We have tried to address some of these production differences through the farm bill, and I am proud that the 2008 Farm Bill was the first to acknowledge the growing demand for fresh fruits and vegetables, local foods and organic production, and I am also proud that we were able to continue and build on these investments in the 2014 Farm Bill, and I hope this trend continues into the next farm bill.

I believe the specialty crop area is in a very unique position. Consumer demand is increasing but natural resources remain fixed, and the labor supply is shrinking. It seems to me that the key to being successful will be through the wise use of technology and with the optimum regulatory structure that allows innovation to flourish.

Again, I look forward to the hearing, to hearing from the witnesses, and I thank the chair and yield back.

The CHAIRMAN. I thank the gentleman.

The chair would request that other Members submit their opening statements for the record so our witnesses may begin their testimony, and to ensure there is ample time for questions.

And I would like to welcome our witnesses to the table. First off, we have Mr. Paul Wenger, President of the California Farm Bureau Federation, Sacramento, California. We have Mr. Paul Heller, Vice President, Wonderful Citrus—Texas Division, Mission, Texas. We have Mr. Gary Wishnatzki. Is that close?

Mr. WISHNATZKI. Yes.

The CHAIRMAN. All right. Owner of Wish Farms in Plant City, Florida. And I turn to Mr. Panetta to introduce our next witness.

Mr. PANETTA. Thank you, Mr. Chairman. I appreciate that. It is my absolute honor to introduce my friend and constituent, Kevin Murphy. Kevin is the CEO of Driscoll's, based in Watsonville, on the Central Coast of California. My district, the Central Coast of California, proudly produces over 100 specialty crops, with companies like Driscoll's leading the industry. Operating for over a century, Driscoll's produces fresh strawberries, raspberries, blueberries, and blackberries for both domestic and international consumers. Kevin's company has proven adaptive with both conventional and organic production, and will continue to innovate as a way to address challenges with water, labor, and food safety, moving forward.

I personally have witnessed Kevin's and the past CEO and Chairman, Miles Reiter's, ability to not only think outside the box, but to also contribute to our community. And I have no doubt that under Kevin's leadership Driscoll's will continue to build upon the company's history of success. And that is why, Kevin, it is an honor to have you here. I look forward to your testimony.

The CHAIRMAN. And then we also have Mr. Andrew LaVigne, President and CEO, American Seed Trade Association in Alexandria, Virginia.

Mr. Wenger, before you begin, Mr. Costa has asked to say something about you.

Mr. COSTA. Thank you, Mr. Chairman.

President Paul Wenger of the California Farm Bureau Federation is no stranger to the halls here in Washington or Sacramento. More importantly, Paul and his family reflect what is so good about America and California agriculture. Paul and his family have been doing this for generations. We are honored to have him here given his expertise and his advocacy on the subject of this morning's hearing.

Thank you, Mr. Chairman.

The CHAIRMAN. Thank you.

Mr. Wenger, you are recognized for 5 minutes.

STATEMENT OF PAUL J. WENGER, PRESIDENT, CALIFORNIA FARM BUREAU FEDERATION, SACRAMENTO, CA

Mr. WENGER. Thank you, Mr. Chairman, and thank you, Mr. Costa, for those kind words, but thank you, Chairman Conaway and Ranking Member Peterson, for the opportunity to testify here today.

I am a third-generation California farmer, we grown a variety of crops, with almonds and walnuts being our principle commodities. At the outset, Mr. Chairman, I would like to thank you for your efforts to bring the Committee to my home town of Modesto in August for a listening session. We really appreciate that.

California is blessed with the unique geography, microclimates, and water resources, which allows us to be the nation's largest agricultural production and exporting state, growing more than ⅓ of our nation's vegetables, and ⅔ of our nation's fruits and nuts. Of those, we grow more than 99 percent of the nation's almonds, artichokes, dates, dried plums, figs, garlic, kiwi fruit, olives and olive oil, pistachios, raisins, table grapes, and walnuts.

Considering that specialty crop programs receive one percent of the total farm bill funding and four percent of the non-nutrition title funding, it is vital that increased consideration is given to the most critical needs of specialty crops. California specialty crop growers have long led the way in adopting and embracing new technologies and innovation in order to remain competitive and profitable. Until laws and regulations on labor, immigration, taxes, the environment, food safety, crop production, crop protection, and trade better reflect real-world realities of family farming, the best bet for future success growing specialty crops can be summed up in one word: innovation.

The most significant innovation that can be achieved on the farm is increased mechanization. This need arises as the pool of available workers dramatically declines. Specialized equipment, robotics, and other tools can help offset the growing labor shortage. If we don't aggressively invest in development of new technologies, the consequence will be to lose a large share of our nation's specialty crop production. As such, there has never been a greater need for accelerated leaps of innovation for specialty crops.

Of all farm bill research funds, about 15 percent are directed to specialty crops. Mechanization is already in place for a number of specialty crops, such as nuts, wine grapes, and processing tomatoes; however, the production of fresh fruits and vegetables is still

predominantly done by people working in the field, and mostly done by hand.

Our land-grant university system was integral to the development of labor-saving, mechanical technologies. When the University of California, Davis, developed the field harvester for processing tomatoes, just in time for the labor crisis of the 1960s, the process from the initial vision to complete commercial acceptance and utilization took over 2 decades in order to design and build the harvester, and the plant breeding involved to develop a tomato suitable to mechanical harvesting.

We no longer have the luxury to wait decades for similar innovations. Significant investment in plant breeding, mechanical engineering, and broadband is required today. The University of California has estimated an investment of $10 to $20 million will be needed to research and develop critical technologies for each of the specialty crops.

There are several examples of advanced mechanization already underway. Olive growers have been challenged by labor shortages for a crop that can only be handpicked. They have allocated hundreds of thousands of dollars over decades toward developing mechanical harvesting tools to assist the industry with labor-saving options. Grimmway Farms is exploring a concept of utilizing robots and planting in pots, moving the pots to the field, and then returning the pots to a central location to harvest, relieving the need for hand crews. Ongoing research and design of robotic strawberry and lettuce pickers are still years from being field-ready, which has resulted in the production of these and other labor-intensive crops being relocated to other countries.

There are many reasons for optimism as we look to the future, but we must also be realistic. The challenges facing the agricultural production foundation of our country are real and standing pat is not an option. The specialty crops by virtue of their limited relative acres and scope, high-input costs and vulnerability to foreign competition are lacking the same safety net afforded to other growers.

Ronald Reagan, Governor of California and past President, once said about government and business, if it moves, tax it. If it keeps moving, regulate it. When it stops moving, subsidize it.

Mr. Chairman, as your Committee confronts the funding challenges as you develop a new and improved farm bill, I would ask that you would seek to include novel innovations that would leverage the investment of the American taxpayer. Public-private partnerships and developing and installing critical infrastructure that allows rural America the same access to critical communication capabilities and regulatory reform, looking for opportunities to develop, implement, and realize benefits from creative new technologies and innovations, as we seek to provide food and agricultural products for a growing world population. Unfortunately, overly zealous regulations often limit, discourage, and prevent the American ingenuity that has helped us be the most productive farmers in the world.

We look forward to working with you to protect, promote, and advance the critical foundation of the United States called agriculture.

[The prepared statement of Mr. Wenger follows:]

PREPARED STATEMENT OF PAUL J. WENGER, PRESIDENT, CALIFORNIA FARM BUREAU FEDERATION, SACRAMENTO, CA

Thank you, Mr. Chairman, for the opportunity to testify before the full House Committee on Agriculture to discuss the role of farm policy for specialty crop producers, with an emphasis on technology and innovation. I am Paul Wenger, a third-generation California farmer, where my farm includes ground my grandfather purchased in 1910. Originally a dairy operation, we raised cattle for beef for over forty years, before converting to predominantly orchards, planted to almonds and walnuts.

For twenty years, I have served as an officer of the California Farm Bureau Federation (CFBF), the last 8 of which I have led the organization as its President. I am here representing more than 28,000 agricultural members in 53 county Farm Bureaus with members who produce over 400 commodities in our incredibly diverse agricultural state.

Due to California's unique geography, microclimates, and water resources, we are the nation's largest agricultural production and exporting state growing more than ⅓ of our nation's vegetables and ⅔ of our nation's fruits and nuts grow in California. Of those, our state grows more than 99% of the nation's almonds, artichokes, dates, dried plums, figs, garlic, kiwifruit, olives and olive oil, pistachios, raisins, table grapes, and walnuts.[1]

Considering that specialty crop programs currently receive 1% of total farm bill funding and 4% of non-nutrition title funding, it's vital that increased consideration is given to the most critical needs of specialty crops.[2] In my testimony I will share some history of California's specialty crop industry and how the farm bill might address current labor challenges.

I appreciate the opportunity to address this Committee. I commend Chairman Conaway and the Committee for taking time to review the interests of specialty crop growers in California.

Farm Bureau and the Farm Bill

While this hearing's focus is on the Federal Government's role with respect to specialty crops and the need for continuous technology and innovation, it is important to reflect on how we got to where we are in the first place, and so I will begin by going back to the early days of farming in California and providing a brief history of the Farm Bureau organization.

In the mid to late-19th century, a census of California agriculture would have shown that the state was much like the rest of the nation at the time, consisting mainly of wheat and livestock. By 1890, poor soil conditions prompted farmers of that era to join together to improve farming conditions and tackle the many obstacles that stood in their way.[3]

As farmers embraced new technologies for that era, California production began to diversify into grapes, citrus, and other specialty crops, creating the foundation for the cornucopia of crops grown in California today. By the early 20th century, those who lived in my grandfather's generation led the nation in steam and then gas-operated tractors and were among the first in the nation to utilize electrification both for tools and pumping water.[4] They worked with academic institutions and the government to address and solve the problems they faced on the farm. This united coalition of farmers became known as the Farm Bureau, and CFBF is about to celebrate 99 years as a state organization.

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[1] *https://www.cdfa.ca.gov/Statistics*.

[2] CRS Report R43632, Renée Johnson, *Specialty Crop Provisions in the 2014 Farm Bill, Table 2* shows specialty crop spending levels as $773 million in mandatory and $302 million discretionary funding in each year from FY14–FY18. The Congressional Budget Office projected the total cost of the new farm bill to be $489 billion over 5 years, or $97.8 billion per fiscal year. This puts mandatory specialty crop spending at 0.79% of total farm bill funding. Mandatory plus discretionary spending for specialty crops puts the total at 1.1% of total. Since nutrition spending is 80% of total farm bill outlays, the total spent on all non-nutrition title farm programs is $19.56 billion per year. Of that total, mandatory specialty crop is 3.95% and mandatory plus discretionary spending is 5.5%. Numbers cited use the mandatory specialty crop figures.

[3] "The Evolution of California Agriculture: 1850–2000," Olmstead and Rhode. *California Agriculture: Dimensions and Issues,* Jerry Siebert, editor, 2003. *https://s.giannini.ucop.edu/uploads/giannini_public/4e/a8/4ea8b9cc-df88-4146-b1ae-e5467736e104/escholarship_uc_item_9145n8m1.pdf*.

[4] Olmstead and Rhode, p. 12–13.

Within 2 decades of the Farm Bureau's existence, the Great Depression hit and U.S. farm policy began taking shape as the government intervened in agricultural supply and price for that era's largest crops like corn, wheat, cotton, and rice, which eventually became known as "program crops" in what became known as the farm bill. Conservation efforts and crop insurance were also incorporated into the bill. In subsequent decades, each farm bill reauthorization would make tweaks to price and supply calculations for the program crops, while growers of other crops such as fruits and vegetables, were strictly subjected to the whims of the market with little to no government intervention, including access to adequate crop insurance products. These non-program crops came to be known as "specialty crops," which are now officially defined as fruits, vegetables, tree nuts, dried fruits, horticulture and nursery crops (including floriculture).[5]

As a statewide organization that represents both program and specialty crop producers, we have evolved with the changing needs of all farmers and ranchers. In the last few decades, there has been a marked shift in Farm Bureau's mission to identify solutions to the problems faced by farmers. Originally focused on a balance between research and policy, the primary concerns today, especially in California, are almost centrally squared on policy and regulation. At times, burdensome regulations overshadow the everyday problems of farming that can be overcome through technology and innovation.

Despite the regulatory challenges, farmers are willing to embrace technology and implement new innovations to enhance and advance the profitability of their farms. Today's agriculture is built upon the many technological advances developed over the last 150 years.

California farmers and consumers alike have benefitted from the unique system of canals moving water from Northern California into the Central Valley or lifting it over the Tehachapi mountains into Los Angeles and the growing region of Palmdale in Los Angeles County. Innovation in our universities and scientific laboratories have continued to develop new crop protection tools that are focused on treating specific problems, as well as reaching major strides in biotechnology. Farmers have been quick to adapt to the utilization of broadband, GPS guidance, lasers and drones, to become the most cutting edge farmers on [E]arth.

With the many great technological innovations of our day, our success is fragile. Producing specialty crops requires great expense and risk with no real safety net. As a nation, it should be in our interest to protect the specialty crop industry and allow it to thrive so that we do not lose out to competitors.

While specialty crop growers have been remarkably resilient when faced with inclement weather, hostile markets conditions, pests and diseases, labor shortages, or other obstacles to their success, access to effective risk management tools have gone largely unmet.

As crop insurance has broad and generally predictable application among the major farm commodities, there are unique issues within specialty crops that deserve the attention of Congress. For most specialty crops, viable crop insurance programs are still lacking. To encourage maximum producer participation, Congress should pursue risk management programs that meet the needs of every commodity, small and large, in the most efficient and cost effective manner possible.

We strongly support the Whole Farm Revenue Protection (WFRP) program, an insurance policy created as a pilot in the 2014 Farm Bill to build on the successes of the AGR and AGR-Lite policies, that has offered the first insurable product to growers of commodities that have never received support. As the WFRP remains as a pilot program, we will seek improvements to make it more accessible.

Aside from conservation programs like the Environmental Quality Incentives Program (EQIP), which are available to all commodities, it is inequitable that Federal farm policy would focus on a narrow set of crops. The health and economic benefits of ensuring a vibrant domestic specialty crop sector became the impetus for the collective industry uniting to support a new program.

Specialty crop growers were unsuccessful in their bid to be included in the 2002 Farm Bill for assistance in maintaining domestic production, as global competitors didn't face the same burden and cost of regulations as did our domestically produced specialty crop growers. The resulting passage of the Specialty Crops Competitiveness Act of 2004 led to inclusion of a specialty crops title (known officially as the "horticulture title") in the 2008 Farm Bill, which became the first official acknowledgement of specialty crops in the farm bill.

The centerpiece of this almost decade-old title is the Specialty Crop Block Grant, a state administered program that partners with organizations on a cost-share basis

[5] "What is a Specialty Crop?" USDA–AMS. *https://www.ams.usda.gov/services/grants/scbgp/specialty-crop*.

to enhance the competitiveness of these agricultural products. California has benefitted tremendously from this program, with hundreds of grants awarded to address a large variety of industry needs. It has also created new opportunities for specialty crop growers that didn't previously exist. These funds don't go directly to growers, but provide financial support to segments of the industry in need of solutions to perplexing problems.

Overall, we support a farm bill that provides a safety net to growers, protects the specialty crops programs, prioritizes working lands programs, and ensures scientific progress in research. We also support a unified bill that combines the nutrition title with the other farm bill titles.

We have been involved as a member of an American Farm Bureau Federation (AFBF) led committee of 16 states that developed vast resources on the farm bill for Farm Bureau members, policymakers, and the general public that are available at *http://www.fb.org*.

With regard to specialty crops, AFBF policy supports the inclusion of a specialty crops title in future farm bills, additional research into harvest and cultural practices, expanded disease and pest research programs, improved pest exclusion programs, and funding to promote market expansion of U.S.-produced specialty crops. AFBF policy also adopts as a principle for the next farm bill, expansion of the Fresh Fruit and Vegetable Program and maintaining adequate funding for the specialty crop industry with emphasis on fundamental research, marketing and promotions, and pest management programs.

Barriers to Success & Solutions

California specialty crop growers have long led the way in adopting and embracing new technologies and innovation in order to remain competitive and profitable. Until laws and regulations on labor, immigration, taxes, the environment, food safety, crop protection and trade better reflect real-world realities of family farming, the best bet for future success growing specialty crops can be summed up by one word: innovation.

The most significant innovation that can be achieved on the farm is increased mechanization. The need arises as the pool of available workers dramatically declines. Equipment, robotics, and other tools can help offset the growing labor shortage. If we don't aggressively invest in the development of new technologies, the consequence will be to lose a large share of our nation's specialty crop production.

While it is outside the jurisdiction of this Committee, we ask first and foremost that Congress move rapidly toward allowing a legal workforce in the United States to guarantee that future immigrants who desire to work in American agriculture be allowed entry. We strongly oppose a mandatory E-Verify on employers until a satisfactory immigration path for agriculture is realized. We also caution Members that fixes around the edges of H–2A won't alleviate the current labor shortage.

There has never been greater need for accelerated leaps of innovation for specialty crop production. In the past 3 decades, of all farm bill research funds, only 15% have been directed to specialty crops.[6] To get the most bang for the buck, public-private partnerships in the farm bill should be emphasized that address mechanization.

The development and adoption of on-farm mechanization has a storied history. From tillage to planting to harvest, most operations conducted on the farm today are done by machine. For less fragile or perishable crops, like grains, nuts, or fiber crops like cotton, their harvest is completely accomplished by machine. Mechanized machinery for the harvest of a small set of specialty crops such as nuts, wine grapes, and processing tomatoes have been commercialized and are in widespread use. However, the farm operations for fleshy specialty crops (*e.g.,* fresh fruits and vegetables), beyond tillage and fertilization are mostly done by people working in the field. Many vegetable crops (*e.g.,* tomato, or celery) are transplanted, where people manually feed individual seedlings into a mechanism for placement in the soil, while the weeding and thinning of vegetable crops and the thinning of fruit crops is mostly done by hand.

Our land-grant university system was integral to the development of labor saving mechanical technologies. UC Davis' Department of Biological and Agricultural Engineering has a long history of innovation for the mechanization of various specialty crops, such as the development of the field harvester for processing tomatoes. It is

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[6] Helena Bottemiller Evich, *Politico,* "The vegetable technology gap: Washington spends millions on crop research. Why doesn't more go toward the foods we're actually supposed to eat?" March 8, 2017. *http://www.politico.com/agenda/story/2017/03/fruits-and-vegtables-technology-000337*.

important to note that the process from the initial vision to complete commercial acceptance and utilization took over 2 decades.

The innovation traces back to the 1940s when a new type of tomato plant was developed. It produced fruit with a uniform ripening ability (so all fruit ripened at about the same time), the fruit detached easily from the plant, and it produced a flesh and skin that were resistant to the mechanical rigors of machine harvest. About a decade after the breeding work began, a new type of machine was developed that automatically harvested the new type of tomato.

By the end of the Bracero farm labor program in 1964 the UC team had successfully created both the machine as well as the tomato it could harvest. With the ensuing farm labor shortage caused by the termination of the Bracero program, the processing tomato industry successfully made the transformation from an entirely manual harvest in 1961 to 95% machine harvested fruit in 1968. The entire process required a dedicated effort spanning a period of 25 years. The initial labor savings due to the use of mechanized processing tomato harvest was about 50%. As technological enhancements were made to the machine, such as automatic color sorters to remove immature green tomatoes, and improved farming practices were made to better facilitate machine harvest, the labor savings increased to the point where we have achieved a 90% labor savings compared to hand harvest of processing tomatoes today.[7]

To advance the progress for mechanization of specialty crops, a significant investment in plant breeding and mechanical engineering is required. *According to the University of California, funding on the order of $10M to $20M per specialty crop is required to support the integrated multidisciplinary teams of biologists and engineers required to develop prototype smart machines and robotic systems needed to mechanize specialty crops and to simultaneously develop the next generation of machine harvestable specialty crop plants.*

We believe it is important to address the need for mechanization in the next farm bill through a dedicated allocation within the Specialty Crop Research Initiative (SCRI), as well as funding through the Agriculture and Food Research Initiative (AFRI) that has previously assisted mechanization research by promoting and enabling collaboration between land-grant universities and top robotic engineering departments.

There are tremendous opportunities for public-private partnerships in advancing mechanization for additional specialty crops in the future. A great example to highlight is the olive industry's efforts. The California Olive Committee continues to be committed to developing a mechanical harvesting machine suitable for the olive industry, and has been dedicating resources to perform research, cost studies, and experimental testing of both new and existing technologies. Currently, olives are handpicked and due to this, cost as well as availability of adequate labor have been some of the greatest challenges for our olive growers.

Over the past several decades, the olive industry has allocated hundreds of thousands of dollars toward developing mechanical harvesting tools to assist the industry with labor-saving options. Currently, the California olive industry provides over $400 million into the California economy, according to a report commissioned by the California Olive Committee and conducted by Dennis H. Tootelian, Ph.D., Tootelian & Associates.[8] However, due to new California state laws creating further restrictions and mandates on labor, and an increase in California wages and workers' compensation rates, table olive growers are looking at all available tools to reduce costs. By lowering these costs, the California olive industry will be able to compete against other countries who are currently providing subsidies for their olive industries.

The American Olive Oil Producer Association, an SCRI participant, recently wrote House Appropriations with concerns that SCRI funds would be cut. Olive oil has already achieved mechanized harvesting, but improvements can be made in orchard installation, management, harvesting and milling. The industry continues to seek for advancements that can result in the highest quality crop with the best yields and highest rate of extraction of extra virgin olive oil. Technological advances and innovation are imperative to a nascent domestic industry that is competing with traditional "old world" producers.[9]

Similarly, California-based Grimmway Farms, the largest carrot grower in the world, is exploring a concept of robots planting in pots, moving the pots to the field, and then returning the pots to harvest, relieving the need for a large crew.[10]

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[7] *http://ucanr.edu/sites/Postharvest_Technology_Center_/files/231316.PDF*.
[8] *http://calolive.org*.
[9] *http://aaopa.org*.
[10] *http://www.growingproduce.com/vegetables/robots-container-production-and-the-future-of-vegetable-growing/* and *http://grimmway.com*.

Ongoing research and design of robotic strawberry and lettuce pickers are still years from being field ready, which has resulted in the production of these and other labor intensive crops being relocated to other countries.

The opportunity for increased mechanization of specialty crops will be driven largely by the availability of an adequate and affordable labor supply, as well as other cost-benefit considerations, including the international competitiveness of the U.S. industry. Ongoing research and design of robotic strawberry and lettuce pickers are still years from being field ready, which has resulted in the production of these and other labor intensive crops being relocated to other countries.

Just as mechanization helped early California farmers to displace labor, more advances are needed to maintain existing production in light of a diminishing pool of available workers. These advances can only come through equipment, robotics, and other tools that will help offset the growing labor shortage. It will take time and additional funding to get to the point where robotics plant, thin, prune, pick and process every crop, but there are commodities raised in California that must achieve a greater reliance on mechanization or the consequence will be to lose our domestic production of those crops.

Dedicated funding for advancements in technology and mechanization would be widely supported in the farm bill, though we reiterate that this is not an immediate substitute and remedy for the need to enact immigration reform laws that would protect and promote domestic agriculture and ensure the competitiveness of specialty crops.

Conclusion

The bottom line for California agriculture is continual innovation in order to stay competitive. With an uncertain labor situation, additional production costs, and unpredictable weather, California agriculture continues to find ways to adapt to the challenges.

Research and new technologies will be key to helping our specialty crop producers compete, whether it's in improved production which includes mechanization, or more effective and affordable pest and disease protection. CFBF encourages Congress to support research for new technologies in the next farm bill.

I'm reminded by Ronald Reagan's famous quote about government's view of the economy: "If it moves, tax it. If it keeps moving, regulate it. And if it stops moving, subsidize it." Specialty crop producers are already taxed and regulated. Let's all hope we never get to the point where our specialty crop production stops moving.

The CHAIRMAN. Thank you, sir.

Mr. Heller, 5 minutes.

STATEMENT OF PAUL HELLER, VICE PRESIDENT, WONDERFUL CITRUS, TEXAS DIVISION, MISSION, TX

Mr. HELLER. Thank you, Chairman Conaway, Ranking Member Peterson, and other Members of the Committee. I thank everyone here today for the opportunity to come before you to discuss the critical role farm bill funding plays in the continued success of the specialty crop industry; citrus in particular.

My name is Paul Heller, I am the Vice President of Wonderful Citrus' Texas Division. Wonderful Citrus is the largest vertically integrated grower, packer, and shipper of fresh citrus in the United States. In connection with our grower-partners, we farm and process near 60,000 acres of fresh citrus varietals throughout Texas, California, and Mexico, including Texas red grapefruit from the Rio Grande Valley. I am also here representing thousands of small growers who make up the backbone of our industry; myself proudly one of them.

The farm bill has been instrumental in maintaining the health of the specialty crop industry. Among the most critical are crop insurance and the specialty crop provisions which include programs to respond to pest and disease issues. While I will only briefly touch on a few key points here today, I wanted to stress just how critical it is for these programs to continue under the 2018 Farm

Bill. Farming is an inherently risky business, as you all know, and tree crops like citrus carry an even greater risk as they require multiple years of growth to reach fruit-bearing maturity. Unlike annual row crops, citrus trees cannot simply be removed from the ground in order to wait out a natural disaster. As such, the farm bill's crop insurance programs have become a vital risk-management tool for specialty crop producers. For example, south Texas was hit especially hard by tree-killing freezes in 1983, and again in 1989. The primary reason the industry was able to bounce back after these events is because of the protections provided by crop insurance, and the resilience and foresight of the growers that participate in these newly developed insurance programs. Today, growers still depend on the stability of crop insurance, and make serious business decisions based upon these programs. It is absolutely critical that these programs continue to receive the support they need from Congress.

Having some protections against unforeseen disasters is extremely important to growers; however, learning how to mitigate these catastrophes is key. As such, pest and disease issues remain a key priority for Wonderful, and the citrus industry at large. This is especially true as we continue to fight the devastating disease known as citrus greening, or Huanglongbing, also known as HLB. With no known cure for HLB, it is absolutely necessary that the citrus industry take every possible precaution to prevent the spread of the disease, while continuing to search for a treatment protocol. The Federal Government has been a crucial partner in this fight. The citrus industry has been fortunate to have the support of the pest and disease research programs in the farm bill, like USDA Citrus Health Response Program, which has proven instrumental in the battle against not only HLB but fruit flies, canker, and other issues that have come up.

One of the most important aspects of the farm bill overall is industry's ability to leverage public-private partnerships to bring innovation and technology into our businesses. For example, red grapefruit, the basis of our grapefruit industry in Texas, was discovered as a natural mutation on a pink grapefruit tree. It wasn't until the 1970s, through innovative work of researchers like Dr. Richard Hensz at Texas A&I Kingsville Citrus Center, where new varieties of red grapefruit were developed that are the basis of our industry today. This work was made possible in part through Federal funding for the research center, and a successful partnership between growers, industry, and other government institutions. Today, Dr. Eliezer Louzada is continuing this research using advanced biotechnology techniques and plant cell and tissue culture. The citrus center that we depend on today is a lasting example of these partnerships and the benefits they bring to specialty crop producers.

While advances in technology have historically been made on the production side of the citrus business, such as fruit sizing and sorting, our Texas operation uses advanced technologies in many ways. For instance, we are currently piloting new technology that grades the amount of decay that is present on individual pieces of fruit. We also have started using high-resolution surveys of our orchards

to count for missing trees, and are looking at ways to advance that technology to conduct surveys for pests and disease.

There are numerous benefits to bolstering public-private partnerships, especially in research and development. The next farm bill should promote these types of relationships, and leverage the knowledge and inspiration of the private-sector to move the needle on innovative farming practices in the United States.

Once again, I would like to thank the Committee for inviting me to testify before you today on the priorities for the citrus industry in the next farm bill. I am happy to answer any questions at a later time.

[The prepared statement of Mr. Heller follows:]

PREPARED STATEMENT OF PAUL HELLER, VICE PRESIDENT, WONDERFUL CITRUS, TEXAS DIVISION, MISSION, TX

Chairman Conaway, Ranking Member Peterson, and other Members of the Committee, thank you for the opportunity to appear before you today to discuss the critical role farm bill funding plays in the continued success of the specialty crop industry, particularly citrus.

My name is Paul Heller, and I am the Vice President of Wonderful Citrus' Texas Division. Wonderful Citrus is the largest vertically integrated grower, packer, and shipper of fresh citrus in the United States. In connection with our grower partners, we farm and process a number of citrus varietals across Texas, California and Mexico, including Texas Red Grapefruit, and Valencia and Navel Oranges in the southern Rio Grande Valley in Texas. Wonderful Citrus owns, cultivates and harvests nearly 60,000 acres of fresh citrus and ships around the world to ensure a year-round supply. With multiple packing facilities and state-of-the-art grading and packing equipment, Wonderful Citrus is able to ensure quality produce on a global scale. Our citrus can be found across all channels of distribution, with our products most visible in the produce department of grocery stores throughout America under the flagship consumer brands of Wonderful Halos mandarins and Wonderful Sweet Scarletts Texas Red grapefruit.

The farm bill contains many programs that are important to the citrus industry, with the crop insurance program and specialty crop provisions—including programs to respond to pest and disease threats—among the most critical.

Crop Insurance

Farming is an inherently risky business, and tree crops—like citrus—carry an even greater risk as they require multiple years of growth to reach fruit-bearing maturity. Every year, growers face an increasingly long list of uncertainties, including pest and disease issues, devastating drought, floods, heat or frost that can destroy an entire crop. Unlike annual row crops, citrus trees cannot simply be removed from the ground to wait out a natural disaster. As such, the farm bill's crop insurance program has become a vital risk management tool for specialty crop producers to mitigate some of the risks that come with producing high quality fruit for market.

For example, the south Texas citrus industry remains in existence today because of the support of crop insurance programs put into place in the 1980s. It was because of these programs that the industry was able to recover after two severe tree killing freezes in 1983 and again in 1989. Today, growers still depend on the stability of crop insurance and make serious business decisions based upon these programs. Over the years, industry has worked side by side with underwriters and developers to enhance the safety net provided by these programs, while also ensuring that they provide adequate coverage without incentivizing abuse.

Pest and Disease Funding

Pest and disease issues remain a key priority area for Wonderful and the citrus industry at large. This is especially true as we continue to fight the devastating disease known as citrus greening or Huanglongbing (HLB). With no known cure for HLB, it is critical that the citrus industry take every possible action to prevent the spread of the disease while continuing to search for a treatment or other solution. The citrus industry has been fortunate to have the support of the pest and disease research programs in the farm bill to help advance our understanding of disease management and pest mitigation tools. For example, the USDA's Citrus Health Response Program (CHRP) has been an integral part of the battle against Mexican

fruit flies and citrus canker while continuing to make strides in controlling the spread of HLB.

Another example of an essential research program is the HLB Multi-Agency Coordinating Committee (HLB–MAC). The HLB–MAC Fund has been integral in supporting "shovel-ready" short-term projects looking at early detection and treatment methods for HLB and the Asian Citrus Psyllid. While the HLB–MAC Fund is currently supported through the annual appropriations process, it would be preferable if the program were authorized in the farm bill. Regardless, it is essential that programs like CHRP and the HLB–MAC Fund remain intact and receive adequate funding to support the research necessary to advance the U.S. specialty crop industry into the future.

While pest and disease research is critical to the success of our industry, specialty crop block grant funding—money that goes directly into state departments of agriculture—has become an integral part of our ability to combat immediate threats at the local and state level. In south Texas, this funding has been especially important. Recent citrus canker surveys, fruit fly programs, and HLB outreach programs have been critical in raising awareness within not only the farming community, but with the general public as well. The specialty crop block grant program has provided South Texas citrus producers with key programs and invaluable information on various pests and diseases.

Technical Assistance for Specialty Crops

The future of U.S. specialty crops are also dependent on our ability to promote our products overseas. Programs designed to open new markets or further develop existing ones are important to specialty crop producers and keep U.S. commodities competitive in the global market. For instance, the Technical Assistance for Specialty Crops (TASC) program that provides funding to U.S. organizations for projects that address sanitary, phytosanitary, and technical barriers that prohibit or threaten the export of U.S. specialty crops, is integral in maintaining the presence of U.S. agriculture abroad. We fully support preserving the funding for these types of programs in the 2018 Farm Bill.

Importance of Private-Public Partnerships

One of the most valuable aspects of the farm bill for Texas citrus producers, and specialty crop producers in general, is our ability to leverage public-private partnerships (and funding) that bring innovation and technology to the entire chain of operations.

For example, red grapefruit, the basis of our grapefruit operation in South Texas, was discovered on a pink grapefruit tree. It wasn't until the 1960s, through the innovative work of Dr. Richard Hensz at the Texas A&M Kingsville Citrus Center, that we had the first true red grapefruit in South Texas. Dr. Hensz's work was made possible through Federal funding for the research center and the cooperation of industry, higher education, and state level support. Today, Dr. Eliezer Louzada continues to build upon Dr. Hensz' research using advanced biotechnology in plant cell and tissue culture.

The Kingsville Citrus Center, which was founded in the late 1940s through the result of public-private partnerships, is also home to our Texas Budwood program. The Budwood program is primarily focused on ensuring the availability of clean plant material to the citrus industry, as well as homeowners and hobbyists across the state. This effort is funded by industry, budwood sales, Federal grants and state higher education funding through classes and degree programs. Our Texas Citrus Center is an example of how public-private partnerships can work to create lasting institutions that support specialty crop producers as well as the general public.

While advances in technology have historically been made on the production side of the citrus business, such as fruit sorting and sizing, our Texas operations use technology to assist in new ways. For instance, we are currently piloting new technology that grades the amount of decay present on an individual piece of fruit. We have also started using high resolution surveys of our orchards to count missing trees and are looking at ways to advance that technology to conduct surveys of pests and disease.

There are numerous benefits to bolstering private-public partnership when it comes to research and development. The next farm bill should promote these types of relationships and leverage the knowledge and inspiration of the private-sector to move the needle on innovative farming practices in the U.S.

Immigration and Stable Workforce

While all of these programs enhance the competitiveness of specialty crops, their value is undermined if fresh produce providers cannot cultivate and harvest their crops. Simply put, much of the agriculture industry relies on foreign-born labor to

get specialty crops from the fields to the marketplace. Should anyone still believe the myth that foreign workers who harvest specialty crops are taking jobs from Americans, I invite them to talk to growers across the country and learn the simple truth. Americans by and large will not do these jobs. But, fortunately for consumers and other workers in the production chain, there are individuals from other countries willing to come to the United States to do these crucial on-farm jobs. We should not punish them for providing an essential service, nor should we penalize the employers in our industry who are doing everything they can to make sure America has an adequate supply of healthy and fresh food.

The only Federal program that provides a legal agriculture workforce, H–2A, is both overburdened and under-performing in providing workers in a timely manner. It's easy to say that the H–2A visa program is badly in need of reform. While specialty crop providers understand why Congress and the Administration have both chosen to focus on policies to strengthen immigration enforcement, we urge you to keep the needs of agriculture in mind when considering any immigration policy. Enforcement-first or enforcement-only policies will be devastating to our industry. It is critically important for the specialty crop industry that any enhanced enforcement is done in a way that supports a workable agriculture guestworker program.

Once again, I would like to thank the Committee for inviting me to testify before you today on the priorities of the citrus industry for the next farm bill.

The CHAIRMAN. Thank you, sir.

Mr. Wishnatzki for 5 minutes.

STATEMENT OF GARY E. WISHNATZKI, OWNER AND CHIEF EXECUTIVE OFFICER, WISH FARMS, PLANT CITY, FL

Mr. WISHNATZKI. Thank you, Chairman Conaway, Ranking Member Peterson, Members of the Committee, and a special note of appreciation to our four distinguished Members from Florida. I thank all of you for your efforts to strengthen agriculture throughout our nation.

I am Gary Wishnatzki, Owner of Wish Farms. My family has been marketing berries for family farms since 1922, and since 1987, we have also been farming.

As a fourth-generation family company, I am proud of our family's legacy of producing strawberries and blueberries. I am also Cofounder of Harvest CROO Robotics, a startup to develop harvest technology. It is a collaborative effort with eight other strawberry companies, both from Florida and California have invested. I serve on the Executive Board of the Florida Fruit and Vegetable Association, the Board of Produce Marketing Association, and I am a member of United Fresh Produce Association as well as the Florida Strawberry Growers Association.

As the Chairman has acknowledged, specialty crop production is a pivotal and growing sector of the agricultural industry. Toward that end, innovation and technology are essential for farmers to continue producing more food for our nation.

In recent years, the industry, as well as others in the specialty crop sector, have been facing serious challenges. Most growers will agree that the availability of labor is the greatest of these challenges. I believe an impending crisis is at hand. Innovation can play a key role in solving this. The primary reason for the shrinking labor supply is simple demographics. The majority of farmworkers come from other countries, particularly Mexico. In the 1960s the fertility rate in Mexico was 6.7. People were coming here because there were no opportunities for them at home. Twenty years ago it had dropped to 2.9. That shrinking birth rate mirrors the declining labor force. The current fertility rate in Mexico is near 2.1. There are more opportunities for workers to stay in Mex-

ico. The Pew Research Center published a paper in 2015 that concluded there are more people going back to Mexico than are coming to the U.S. Our workforce is shrinking and aging.

According to University of Florida economics study, the total cost of producing strawberries in Florida had risen 30 percent over a 5 year period ending in 2015. Labor costs were estimated at $8,400 per acre, while the cost of labor production for Mexican growers was a mere $3,800 per acre. The study concluded: "These challenges are not likely to narrow down in the foreseeable future without a major technological breakthrough, such as mechanization of strawberry harvesting." This study was based on industry costs from 2 seasons ago. Our farm's labor cost this past season was over $13,000 per acre.

Many of the current farm bill programs provide the tools to enhance innovation and technology; however, there is a greater role for the private-sector to play, and I encourage the adoption of policies that recognize and enhance private industries' involvement in vital research in farm bill programs.

Currently, in Florida, there is no private access to agricultural research funds. We will eventually harvest a significant portion of our nation's fruits and vegetables using automation, but depending on the crop, it may take between 5 and 10 years for technology to be perfected to the point that they can be utilized on a large scale. Until that time, our industry has to rely on foreign labor. The current Federal Guest Worker Program, H–2A, has serious problems. The program is in need of a major overhaul, and I believe there is a very simple way to fix it. To be clear, employers in our industry support enforcement of our nation's immigration policies, but those policies must reflect the reality of how vital a foreign-born workforce is to our nation's ability to ensure an abundant supply of fresh fruits and vegetables.

Innovation will be the key to maintaining our nation's ability to feed itself, and this Committee should fight for investments in technology and research for the specialty crop sector. Please consider though that automation is a long-range solution, and we still depend on foreign workers to bridge the gap.

Thank you for the opportunity to testify, and I look forward to answering your questions.

[The prepared statement of Mr. Wishnatzki follows:]

PREPARED STATEMENT OF GARY E. WISHNATZKI, OWNER AND CHIEF EXECUTIVE OFFICER, WISH FARMS, PLANT CITY, FL

Thank you, Chairman Conaway, Ranking Member Peterson, and Members of the Committee for the opportunity to share my perspective on the important topic of the impact and potential of technology and innovation in the specialty crop sector.

I am the owner of Wish Farms. My family has been marketing berries for family farms since 1922 and since 1987 we have also been farming. As a 4th generation family company, I am proud of our family's legacy of producing strawberries and blueberries. I am also a co-founder of Harvest CROO Robotics, a start-up to develop harvesting technology. It is a collaborative effort with eight other strawberry companies from Florida and California invested. I serve on the Executive Board of Florida Fruit and Vegetable Association, the Board of the Produce Marketing Association, and I am a member of United Fresh Produce Association, as well as the Florida Strawberry Growers Association.

I want to thank this Committee for the support you have shown the fresh fruit and vegetable industry through effective policies that address key policy priorities in the farm bill. As you know, United Fresh coordinates the work of the Specialty

Crop Farm Bill Alliance, a coalition of nearly 130 specialty crop organizations across the country, who come together during each farm bill reauthorization cycle to provide recommendations to Congress about specialty crop policy needs. I, and many other fresh produce providers, are grateful that you and your colleagues incorporated the Alliance's recommendations for the 2014 Farm Bill, including:

- $75 million annually for the Animal Plant Health Inspection Service (APHIS) Section 10201 program to prevent the introduction or spread of plant pests and diseases that threaten U.S. agriculture and the environment, as well as ensure the availability of a healthy supply of clean plant stock;
- $9 million annually for the Technical Assistance for Specialty Crops (TASC) program and $20 million for the Market Access Program (MAP). Both of these programs are designed to address various barriers to agriculture exports;
- $184 million for the Fresh Fruit and Vegetable Program, which provides a fresh fruit or vegetable snack to four million low-income elementary school students in all 50 states. As the Members of the Subcommittee may be aware, FFVP has been evaluated by outside experts and found to be highly effective at increasing students' fresh fruit and vegetable consumption;
- $75 million annually for the Specialty Crop Block Grant program to enhance the competitiveness of specialty crops; the 2014 Farm Bill also authorized funding for multi-state block grants; [and]
- $80 million in annual funding for the Specialty Crop Research Initiative to develop and disseminate science-based tools to address the needs of specific crops and their regions.

As the Chairman has acknowledged, specialty crop production is a pivotal and growing sector of our agriculture industry. Toward that end, and given the current state of the farm economy, innovation and technology are essential for farmers to continue producing more food for our nation and building upon public-private partnerships top priorities to remain competitive in the marketplace.

Florida is the second largest producer of specialty crops in the nation growing a wide variety of produce as the nation's primary provider in the winter months. We are also the second largest strawberry producing state, with a farm gate value of approximately $300 million. However, in recent years, the industry as well as others in the specialty crop sector has been facing serious challenges. Most specialty crop growers will agree that the availability of labor is the greatest challenge that we are facing. The cost of rising labor is a secondary problem. I believe an impending crisis is at hand. Innovation can play a key role in solving this problem.

Strawberries, unlike most other fruits, do not ripen after being picked. They also do not ripen all at one time. In Florida and California, strawberries normally require picking every 3 to 4 days. If they are not picked on time, fruit becomes overripe and unmarketable. In Florida the harvest season lasts about 5 months and we typically pick a field 40 times. In California the season lasts even longer, requiring more passes over a field. The importance of picking strawberries on a strict harvest schedule, makes having a dependable way to do so of prime concern to growers. In recent seasons, my farm has had to abandon acreage for lack of labor. Labor shortages have cost us millions of dollars in lost opportunities. Having to walk away from a crop, after it is made is very painful.

Rising costs have been eroding the competitiveness of Florida strawberries and squeezing growers' profit margins over the years. According to a University of Florida economic study, the total cost of producing strawberries in Florida had risen 30% over a 5 year period, ending in 2015. Labor costs were estimated at $8,432 per acre while the cost of labor production for Mexican growers was a mere $3,842 per acre. The study concluded, "*These challenges are not likely to narrow down in the foreseeable future without a major technological breakthrough, such as mechanization of strawberry harvesting. Given the wage differences and the dwindling migrant labor supply, it is imperative for the U.S. (and Florida) industry to develop labor-saving technologies and production systems*". This study was based on industry costs from 2 seasons ago. Our farm's labor costs this past season were over $13,000 per acre. That is more than 50% higher than the costs illustrated in this UF study. Our farm's labor cost are not dissimilar to other producers in Florida.

In California, labor availability and costs are rising at an even more alarming rate. Some of our affiliated farms are reporting paying workers piece rates that convert to over $35 per hour. Strawberries are primarily grown close to the coast because of the cooler microclimates. Housing costs in those coastal communities are expensive compared to housing further inland. Finding affordable H–2A housing is difficult.

It should be noted that primary reason for the shrinking supply of farm labor is simple demographics. The majority of farmworkers come from other countries, particularly Mexico.

Throughout the history of our country, the jobs that Americans do not want to do have been filled by newly arrived immigrants. It is only the newcomers that are willing to do the hard jobs. Understandably, most workers eventually move into other occupations that are not as tedious. Furthermore, most harvesting jobs are not conducive to older people. Workers certainly are looking for a better life for their children and it is rare that the second generation stays on the farm. For years, American farms have depended on the newly arrived immigrants. Today growers are turning to H–2A because the people are no longer coming in the numbers that they once did. Here is why; in the 1960's the fertility rate in Mexico was 6.7. People were coming here because there were no opportunities at home. Twenty years ago it had dropped to 2.9. That shrinking birthrate mirrors the declining farm labor force we have seen over the last 10 years. Today, our 20 year old workers are represented by the 2.9% fertility rate of 1997. What should really scare growers is that the current fertility rate in Mexico is estimated to be at 2.1. That is a preview of what the next 20 years looks like. It is easy to extrapolate that the trend of a shrinking and aging labor force is going to continue, based on these demographics. The fact is there are many more opportunities for workers to stay in Mexico. They simply are not coming anymore. The Pew Research Center publish[ed] a paper in 2015 that concluded there are more people going back to Mexico than are coming to the U.S. The group of workers that we have is shrinking, aging, and becoming less productive.

The other point to conclude from these demographics is that Mexico could soon be short on agricultural labor, as well. Their specialty crop industry is expanding at a rapid pace. Before long, Mexican growers will probably be short workers too. Mexico could eventually be one of the countries that is importing labor itself. When I first founded Harvest CROO Robotics, I did not believe that there was a need to prosecute patents in Mexico, because their labor costs were so low. Based on the current trend, I now believe that will change within the next 10 years. All of our patents have now been filed in Mexico.

It is also important to note that the farm labor shortage is a global problem. Every developed country in the world that is growing strawberries is importing labor from another less-advantaged country. I have had inquiries about our robotic harvester from growers in Canada, Mexico, the United Kingdom, Australia, Hungary, and Switzerland.

Currently our industry has no other option but to rely on foreign-born labor to do the essential jobs needed to get our commodities to the marketplace. The current Federal program for agricultural guestworkers, known as H–2A, has serious problems; too often, the program does not provide work authorizations for the necessary number of workers in a timely manner. To be clear: employers in our industry support appropriate, necessary enforcement of our nation's immigration policies. But, those policies must reflect the reality of how vital a foreign-born workforce is to our nation's ability to produce crops in this country and ensure an abundant supply of nutritious fresh fruits and vegetables for all Americans. H–2A is viewed by most growers as a means of last resort and is badly in need of a major overhaul.

In my opinion, I believe that there is a very simple way to fix H–2A as outlined here.

- USDA establishes quotas for the total number of workers needed monthly for all crops in the U.S.
- Agricultural work visas are issued to workers with agricultural work experience.
- The visas stipulates agriculture as the industry that they are allowed to work in and it stipulates the time they are allowed to stay.
- Workers are not tied to a specific employer and can freely move from farm to farm. This helps ensure fair treatment of workers, because they are not tied to one grower.
- E-verify is implemented.
- USDA establishes a clearinghouse to point workers to areas and farms where they are needed.
- H–2A workers would find their own housing, the same as domestic workers do.
- Guest workers are paid the same wages as domestic workers, with one catch. There is a heavy amount of withholding from their wages that they only receive upon their return to their home country. While in the U.S., they would only re-

ceive a stipend to live on. This should ensure that workers do not overstay their visas.

This plan would eliminate costly and time consuming burdens growers are currently facing.

Many of the current farm bill programs provide the tools to enhance innovation and technology.

However, there is a greater role for the private-sector to play and I encourage the adoption of polices that recognize and enhance private industry involvement in vital research and farm bill programs. Currently in Florida there is no private access to research funds, without partnering with a university. This usually involves giving up intellectual property rights. This is problematic to our outside financial investors. We did apply for and receive a phase one grant from the National Science Foundation under SBIR. That program does not have strings attached. Collaborative private-sector technology startups could advance at a faster pace, if given direct access to agricultural research funds.

I want to thank this Committee for the support shown to the fresh fruit and vegetable industry through effective policies that address key policy priorities in the farm bill. One common thread that runs through this set of priorities is the need to promote ingenuity and development. Innovation holds the promise of providing answers to our industry's most persistent and fundamental challenge: securing an adequate labor force to bring crops from the fields to consumers. Through innovation, we will eventually be able to harvest a significant portion of our nation's fruits and vegetables by automation, but such a time is not going to be reached for a number of years; depending on the commodity, it may take anywhere from 5 to 10 years for automation technologies to be perfected to the point they can be utilized effectively in the field on a large scale.

The bottom line is this: Innovation will be the key to maintaining our nation's ability to feed itself and this Committee should fight for investments in technology and research for the specialty crop sector. Please consider that automation is a long range solution and we still depend on foreign workers to bridge the gap.

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The CHAIRMAN. Thank you, sir.

Mr. Murphy, 5 minutes.

STATEMENT OF KEVIN MURPHY, CHIEF EXECUTIVE OFFICER, DRISCOLL'S, INC., WATSONVILLE, CA

Mr. MURPHY. Thank you, Mr. Chairman, Ranking Member Peterson, and Members of the Committee, for this opportunity to appear before you.

I am Kevin Murphy, the Chief Executive Officer of Driscoll's. Driscoll's is a family-owned company headquartered in California that markets fresh strawberries, raspberries, blueberries, and blackberries that independent family farmers have produced using Driscoll's patented berry varieties. In addition to California, we have growers in Washington, Oregon, Florida, New Jersey, and Georgia.

With over 25 years in the produce industry, I am honored to address the topic of technology and innovation in specialty crops. I have been very fortunate that my career has spanned both the fruit and vegetable industries, and more importantly, given the compa-

nies that I have worked for, I have been at the heart of much of the innovation during this time period.

This farm bill comes at a critical time for U.S. specialty crops. As we scan ahead, there are five very powerful forces at play that will have a profound impact on our existing methods of production. First, there is too much food waste in the system. Roughly 30 percent of all berries produced are not consumed. This waste throughout the supply chain is unacceptable, and we will need new thinking and innovation to resolve. Second, the effects of climate change coupled with diminishing availability of key resources. Lack of water and labor are the largest issues facing the industry today, and are the primary drivers of the need for technology and innovation. Sustained drought conditions make more efficient use of water an absolute necessity, while the lack of farm labor threatens the very future of our industry. Third, the push to eliminate fumigants and pesticides driven by societal and consumer concerns will require, if these tools are eliminated, different forms of production. Fourth, food safety issues related to food products grown close to the soil continues to impact consumer confidence. And finally, new technologies already in use in adjacent industries are migrating to agriculture and will impact future methods of production.

The results of all these forces will be a move towards a more controlled, automated environment. This will require technology and innovation at a pace and scale unseen in our industry to date. The question, in my opinion, is not if this will happen, but when and how. I believe the next farm bill should prioritize research that addresses these issues with a special emphasis on water and labor. To this end, I applaud the formation of the Congressional Agricultural Research Caucus that Representatives Davis and Panetta, my home Congressmen, have formed and led.

As a way of example, I offer some illustrations of the innovation we are working on at the company to resolve or lessen the impact of some of these key issues facing the industry. Increasingly we will grow our berries in containers rather than directly in the soil. These container techniques are common in Europe and are quickly coming here. Tabletops will allow harvesters to pick strawberries standing up; an innovation that is good both for the farmer and the farmworker. Our hope is this will attract a larger pool of available workers. We are also exploring, with the help of others such as Wish Farms, mechanized harvesting where visual systems identify when a berry is ready to be picked, and then a mechanized arm snips the fruit and gently moves it from the field to inspection and packaging. Advances in visual systems are making mechanized harvesting a reality in the berry industry.

We are addressing water shortages. Nearly 10 years ago our community recognized that without significant change, saltwater intrusion into our aquifers along the Pacific Coast would worsen to the point that we would no longer grow in areas ideal for berry production. This intrusion was caused by over-drafting of the aquifer. We worked with various stakeholders from different industries and backgrounds to develop a plan that would restore balance to the aquifer. The plan involves improved irrigation systems, recharge capabilities, well monitoring, and continued dialogue around further opportunities. Use of, and the learning from, organic farming

techniques to reduce our dependency on pesticides and fumigants in both farming and plant nursery practices.

And then finally, as a community-based business, we look to bring innovation to our communities. Innovation here takes different forms, but is no less important. As an example, Driscoll's, along with our local agricultural leadership council, funded translation services for farmworkers who speak indigenous languages. Others are creating innovative housing solutions, daycare, and health clinics.

Driscoll's recognized that these challenges are larger than any one company. Simply put, the size of the issues we confront demand a different and more collaborative approach. We have invested in technology accelerators, and, within agriculture as a whole, ag-tech investment has doubled over the last 3 years. From new production techniques to packaging, to better connecting farmers and consumers, the future will be very different from the past.

Driscoll's has been in business for over 100 years, and has been built on a foundation of innovation. We plan on continuing on this path as we believe it provides us with a competitive advantage. Not surprisingly, I believe this is also true for all U.S. agriculture as we try and maintain our leadership position on the world stage. The farm bill will play a critical role in making this happen.

As this Committee drafts the next farm bill, it must carefully consider how to accelerate innovation in light of the existing efforts of the private-sector. We cannot afford to have our efforts slowed by well-intended but bureaucratic solutions that result in less investment and less innovation. The challenges are too great and the imperatives too near.

Thank you for the opportunity to address you today.

[The prepared statement of Mr. Murphy follows:]

PREPARED STATEMENT OF KEVIN MURPHY, CHIEF EXECUTIVE OFFICER, DRISCOLL'S, INC., WATSONVILLE, CA

Thank you, Mr. Chairman, Ranking Member Peterson, and Members of the Committee for this opportunity to appear before you. I am Kevin Murphy, the Chief Executive Officer of Driscoll's.

With over 25 years in the produce industry, I am honored to address the topic of technology and innovation in specialty crops. I have been very fortunate that my career has spanned both the fruit and vegetable industries, and more importantly, because of the companies that I have worked for, I have been at the heart of much of the innovation during this time period. Fresh Express, where I worked earlier in my career, pioneered the packaged salad category, and Driscoll's has led innovation in the berry industry for many decades. Beyond my personal career experience, I am also a member of the board of directors of Western Growers, and Driscoll's has leadership roles in Produce Marketing Association, United Fresh Fruit Association, and the California Strawberry Commission.

Driscoll's is a family-owned company headquartered along the central coast of California, where the families that began and continue to own Driscoll's have farmed berries for over 100 years. Through traditional plant breeding techniques, the company develops and markets fresh strawberries, raspberries, blueberries, and blackberries that independent family farmers have produced with Driscoll's patented berry varieties. In addition to California, we have independent growers in Washington, Oregon, Florida, New Jersey, and Georgia. Today, Driscoll's represents roughly 30% of the total U.S. berry industry and 64% of the organic segment. By dollar value, berries are the number one selling all fruit or vegetable item in the retail segment.

This hearing comes at a critical time for U.S. specialty crops. As we scan ahead, there are several powerful forces at play that will have a dramatic effect on fruit and vegetable production in the future:

- Too much food waste in the system. Roughly 30% of all berries produced are not consumed. The cost of this waste is ultimately being passed to consumers and will, if unchecked, cause our products to become overpriced and less desirable. Innovation around varieties, supply chain, better production technologies, in conjunction with education, will reduce this waste.
- The combined effects of climate change with limited resources of land, labor, and water. Water and labor are the largest issues facing the industry today and are the primary drivers of the need for technology and innovation. Sustained drought conditions make more efficient use of water an absolute necessity while the lack of farm labor threatens the very future of our industry.
- The push to eliminate fumigants and pesticides, driven by societal and consumer concerns related to their perceived impact on health and the environment. Part of the rise in organic production (11% per annum) is consumers responding to these issues.
- Continued food safety concerns with products exposed to the elements. Specialty crop block grants, funded through the farm bill, are particularly important for food safety research and initiatives. The Center for Produce Safety (CPS) matches block grant funds with industry money for the advancement of vegetable and fruit food safety research. It has been a model of partnership—over the past 10 years, CPS has invested $20 million into 120 projects at 37 institutions in four countries.
- Incorporation of new technologies already in use in adjacent industries. In future years, we will see an increased migration to automation, big data, and visioning systems, along with other innovations within the agricultural sector.

The result of all these forces will be a more pronounced movement toward more precise, controlled and automated environments. This will require technology and innovation at a pace and scale unseen in our industry to date. The question is not "if" this will happen but "when" and "how".

In my humble opinion, the next farm bill should prioritize research that addresses the issues described above with a special emphasis on water and labor. There is a great need to accelerate innovation through research programs, public-private partnerships, and aggregated efforts, and I applaud the formation of the Congressional Agricultural Research Caucus that Representatives Davis and Panetta—my home Congressman—lead.

At Driscoll's, by working with our growers and with industry partners, we are continuing on a path of innovation and technology. The following are examples of that effort:

- Increasingly, we will grow our berries in containers rather than directly in the ground. Through substrate systems growers will have better control over the root-zone conditions, save water, and have greater flexibility to customize soil. These container techniques are common in Europe and other parts of the world and are quickly coming here. Another type of container grower method is to raise the containers to "table tops" so that harvesters can pick strawberries standing up. Additionally, container growing is an example of an innovation that is good for both the farmer and the farmworker.
- We are also exploring mechanized harvesting. With mechanized harvesting, a robotic system uses visual systems to identify when a berry is ready to be picked, and then a mechanized arm snips the fruit and gently moves it from the field to inspection and packaging. For the first time, advances in visual systems that can quickly and accurately assess if a berry is ripe are making mechanized harvesting a reality.
- We are addressing water shortages. Nearly 10 years ago, our community recognized that without significant change, salt water intrusion into our acquirers along the Pacific coast would worsen to the point that we would no longer grow in areas ideal for berry production. Once again, innovation and technology play key roles. To better steward this resource, stakeholders in the Pajaro Valley on California's central coast have gathered to address the imbalance of water supply and demand through individual and collaborative action. Through this partnership, a wireless irrigation network was created to make it more cost effective for growers to use soil sensors. These sensors help growers to irrigate more efficiently and to understand the actual amount of water their crops need in order to grow.
- We worked with the Natural Resource[s] Conservation Service and other stakeholders to create a privately managed aquifer recharge basin in California's

Santa Cruz County that provide storage for collection of storm water runoff and replenishment of groundwater.

- We are innovating with regard to organic farming practices. After investing over 7 years in researching the viability of providing organically grown strawberry starter plants that are disease and pest free for our growers, we announced a broad expansion of organic nursery plant production and are currently the only brand with an organic strawberry nursery certified by the California Certified Organic Farmers.

While traditionally Driscoll's has funded its development of unique berry varieties and specialized production systems and will continue to do that in the future, we also recognize that these challenges are larger than one company. Simply put, the size of the challenges demand a different, more collaborative, and broader approach. We have invested in technology accelerators including the Thrive Accelerator, which is part of Western Growers' Center for Innovation and Technology. The Thrive Accelerator is a technology incubator focused on agricultural innovations in water quality, water use, labor savings, and a sustainable workforce. We have also invested in other accelerators in order to combine adjacent technologies with an agricultural focus. Within agriculture as a whole, ag-tech investments have doubled over the last 3 years with a particular focus on the use of the Internet, sensing technologies, robotics, and mechanization.

Finally, as a community-based business, we look to bring innovation to our communities to address local needs. Innovation here takes different forms but is no less important. Driscoll's, along with our local Agricultural Leadership Council, worked with health providers to create Indigenous Interpreting + that provides translation services for farmworkers who speak only Mixtec or other indigenous languages. We are an active part of Hartnell College's Farmworker Education and Advancement Program, the Salinas school's groundbreaking effort to provide to farmworkers training in agricultural topics that will increase their upward mobility within the agricultural sector. And one of our growers, Reiter Affiliated Companies, created a program called Sembrando Salud to address wellness issues in the farmworker community. Within agriculture, more philanthropic dollars are being provided to solve for local issues such as housing, medical care, and child care services. Co-investment opportunities with growers, foundations, NGOs, customers, and other industries are being prioritized to help bring about collaborative innovation.

All of these innovations require that we stay engaged; collaboration and investment are critical. From new production techniques, to packaging, to better connecting farmers and consumers, the future will be very different from the past. Like many in produce, we are committed to meeting the issues we face. As this Committee drafts the next farm bill, it must carefully consider how to encourage innovation in light of the existing efforts of the private-sector. We cannot afford to have our efforts slowed by well-intended but bureaucratic solutions that result in less investment and less innovation. The challenges are too great and the imperatives too near.

Thank you for this opportunity to address you today. I welcome any questions you may have.

The CHAIRMAN. Thank you, sir.

Mr. LaVigne, 5 minutes.

STATEMENT OF ANDREW W. "ANDY" LAVIGNE, PRESIDENT AND CHIEF EXECUTIVE OFFICER, AMERICAN SEED TRADE ASSOCIATION, ALEXANDRIA, VA

Mr. LAVIGNE. Thank you, Chairman Conaway, Ranking Member Peterson, and Members of the House Agriculture Committee. It is my pleasure to provide this testimony today on behalf of the American Seed Trade Association, and our partners in America's land-grant institution in USDA's research community.

ASTA's diverse membership consists of over 700 companies involved in seed production, distribution, plant breeding, research, and related industries in North America. As our knowledge of plant genetics and biology has grown, breeders have gained access to new tools, technologies, methods, and strategies to more efficiently address evolving farmer and environmental challenges, and to meet

ever-changing consumer demand. Today, breeders use an array of tools such as whole genome sequencing, bioinformatics, molecular marker techniques, and digital imaging, which allow them to improve plants more efficiently than ever before. Through evolving and innovative plant breeding methods like gene editing we can develop new plant varieties without incorporating DNA from outside the plant's family, allowing us to reach the same endpoint as traditional breeding, but in a more precise and targeted manner. Breeders are able to maximize the unique, novel characteristics that are part of a plant's own family.

While no gene-edited products are available in the marketplace today, this breeding method, as well as future innovations in plant breeding, represents exciting opportunities for agriculture. This is especially true in the specialty crops arena where scientists are currently researching gene-editing methods to address costly diseases in crops like citrus, potatoes, grapes, lettuce, and others.

Federally funded agricultural research has played an important role in expanding our understanding plant genetics, leading to new crop varieties, and it is important that the next farm maintains robust funding for that continued research.

USDA investments in gene sequencing of more than 25 agriculturally significant crops, many of those specialty crops, are fundamental to this work. Typically, this research is done in cooperation with partnerships with USDA, universities and industry researchers. Some of the other examples of research that is ongoing now in the specialty crop arena is the work being performed by Dr. Richard Michelmore at the University of California, Davis, where he is focused on enhancing the efficiency of lettuce production. USDA's National Institute of Food and Agriculture contributed to his work through the Agriculture and Food Research Initiative, and it is further supported by the Lettuce Genome Sequencing Consortium. The investment by this private-sector group comprised of ten vegetable seed companies in California is allowing Michelmore and his team to expand the scope of the project. In 2016, AFRI funded a project at the Cold Spring Harbor Laboratories in New York, focused on improving growth and yield in tomatoes. Led by Dr. Zach Lipman, researchers isolated genes responsible for characteristics that can diminish yield in tomatoes. By using CRISPR/cas9 gene editing tools, the team was able to develop tomato plants without those negative characteristics, and maintaining the plant's desired characteristics. And at Cornell University, Dr. Thomas Björkman is using marker-assisted plant-breeding techniques to develop new broccoli varieties that are better suited for production on the East Coast. This initiative is supported by several ASTA member companies and the farm bill's Specialty Crop Research Initiative. Several varieties have already been developed in this program and have been released to the marketplace.

Finally, the Foundation for Food and Agriculture Research, which was authorized in the 2014 Farm Bill announced just recently the creation of the Crops of the Future Collaborative research initiative with eight partners. This project will leverage a $10 million Federal investment in pre-competitive research to hasten yield and nutrition gains in leafy greens, wheat, and corn.

It is clear that research in modern plant breeding requires sustained and long-term funding, for ARS and for our academic community through the NIFA programs. However, the promise of these research investments will only be fully realized if Federal policies foster a climate of continued innovation. Overly burdensome policies around gene editing and other evolving plant-breeding methods would likely limit their use to large row crops, and preclude smaller companies and public-sector researchers from benefitting from the use of these methods. We urge Congress to encourage USDA, FDA, and EPA to have consistent, science-based policies that promote innovation so that everyone can benefit from emerging innovations like gene editing in our future plant-breeding techniques.

In addition to domestic efforts, it is important that the U.S. Government develops an international engagement strategy to communicate with our trading partners in order to prevent trade barriers due to non-harmonized regulations.

Mr. Chairman, Members of the Committee, this is truly a monumental time for the plant sciences, and it is our hope that the Administration, Congress, the research community, and the public at large have the opportunity to benefit from the knowledge and breeding methods that have been evolving since before the time of Gregor Mendel.

Thank you for the opportunity to testify today, and I look forward to answering any questions.

[The prepared statement of Mr. LaVigne follows:]

PREPARED STATEMENT OF ANDREW W. "ANDY" LAVIGNE, PRESIDENT AND CHIEF EXECUTIVE OFFICER, AMERICAN SEED TRADE ASSOCIATION, ALEXANDRIA, VA

Chairman Conaway, Ranking Member Peterson, and Members of the House Agriculture Committee, it is my pleasure to provide this testimony today on behalf of the American Seed Trade Association. Innovative, science-based solutions are fundamental to meet the growing agricultural and food needs of the United States and the world. Since the creation of the American land grant institution system and USDA's agriculture research structure, innovation has been the bedrock of American agriculture production. Since 1948, total U.S. agricultural output has more than doubled. The ability of the farm sector to feed far more people today while using less farmland than 6 decades ago is attributed to the ongoing innovation in agriculture research; and continuing innovation will be critical as we look for ways to sustainably feed nine billion people in the coming years.

Founded in 1883, ASTA works to enhance the development and movement of quality seed worldwide. ASTA's diverse membership consists of over 700 companies involved in seed production, distribution, plant breeding, research and related industries in North America. ASTA represents all varieties of seeds, including grasses, forages, flowers, vegetables, row crops and cereals. Many ASTA members are research-intensive companies engaged in the discovery, development and marketing of seed varieties with enhanced agronomic and end-use quality characteristics. With respect to the U.S. specialty crop sector, the U.S. vegetable seed market was $860 million in 2015, supporting a farm gate value for specialty crops of $11 billion.

The plant world contains hundreds of thousands of species with an amazing array of biological diversity. This diversity has evolved over billions of years of natural and targeted selection, and continues today using the science of plant breeding. As our knowledge of plant genetics and biology has grown over time, plant breeders have gained access to new tools, technologies and strategies to more efficiently address evolving farmer and environmental challenges, and to meet ever-changing consumer demands. Today breeders use an array of tools such as whole genome sequencing, bioinformatics, molecular marker techniques and digital imaging to assist in the breeding process. USDA research programs have played a key role in the development and deployment of these tools. Regardless of the plant breeding method

used, the goal is still the same: to produce a safe, nutritious, food and feed supply and to improve fiber and biofuels through the creation of new plant varieties.

The continued development of new plant varieties is vital to consumers and the agricultural industry because of the constant challenges to meet new market requirements, consumer demands, rapidly evolving diseases and pests, and to increase the productivity and durability of existing crops. To improve crops takes multiple generations of breeding and testing lasting some 5–10 years for each new variety. Today, with an increased understanding of genetics, the capability to sequence plant genomes and the ability to link a specific gene to a specific characteristic, breeders are able to improve plants more precisely and efficiently. Breeders can now make very specific changes in existing plant genes in a way that mimics the changes that occur in nature. New, innovative plant breeding methods, like gene editing, allow plant scientists and breeders to precisely make specific changes to a plant's DNA using a plant's own internal processes. The result can be the activation of a beneficial characteristic (such as drought tolerance or increased nutrition), deactivation of an unfavorable characteristic (such as disease sensitivity) or small changes to the DNA that reproduce a characteristic found within the plant's family (such as a disease resistant characteristic found in a wild relative).

An underlying common denominator for new innovations in plant breeding is that they can achieve the same end-result that could be achieved through more traditional plant breeding methods, but in a more precise and targeted way. This allows the plant breeder to forgo multiple cycles of plant selection from a population of thousands of individual plants and move to testing elite lines sooner. By utilizing the plant's (or its wild relative's) own genetic makeup to create genetic variability, the resulting new plant variety does not contain any "foreign" DNA from outside the plant's gene pool. While no gene edited products are available on the market today, this breeding method represents an exciting opportunity for agriculture. It can be used across all crops to produce better seeds that can thrive despite new and emerging challenges such as changing weather, plant diseases, and pests, while reducing crop inputs. In addition to farmer and environmental benefits, plant breeding innovations can bring benefits to consumers—like produce that is better tasting and has higher nutritional content.

It is important to note that these methods are being improved and are widely available to public and smaller private breeding programs. In the specialty crop arena, researchers are evaluating gene editing methods to address costly diseases in crops like citrus, potato, grape, and lettuce.

Farm Bill Investments

Research programs authorized in the farm bill are critical to advancing agriculture and these programs have shown a high rate of return for the dollars invested. Federally funded U.S. agricultural research has played an important role in expanding our understanding of plant genetics leading to new crop varieties. USDA investments in genome sequencing of more than 25 agriculturally significant crops are fundamental to this work. Within the specialty crop arena, this includes genome mapping for tomato, potato, apple, strawberry, carrot, cranberry, lettuce, peach, papaya, cucumber, black raspberry, watermelon, and pineapple. Typically, this research is done by groups of USDA, university, grower and industry partners. The resulting discoveries can then be further developed for commercialization by large and small companies.

In addition, USDA-Agricultural Research Service genebanks contain invaluable sources of resistance, tolerance, and adaptation to stresses, and genes to improve the quantity, quality, and production efficiency of crops. The GRIN-Global (Germplasm Resources Information Network) information system developed by USDA provides breeders and researchers with descriptions of plant materials which can then be accessed through the National Plant Germplasm System (NPGS) genebanks. In 2015–16 GRIN-Global had more than 1.5 million individual web page visits and the NPGS facilitated distribution of more than 240,000 plant germplasm samples domestically and internationally. New data-mining strategies are enabling researchers to better associate specific genes with agriculturally important characteristics, and build on genetic advances in one crop to improve other crops.

Federal research dollars can be extended and multiplied through public-private partnerships.

We have selected a handful of specialty crop examples to introduce today from a myriad of projects.

Lettuce: is one of the top ten most valuable crops grown in the U.S. with an annual market value of over $2.3 billion. The vegetable seed industry relies on public plant breeders to provide basic genetic resources, new breeding methods, and robust genetic stocks for use in commercial lettuce breeding programs. At the University

of California-Davis, Dr. Richard Michelmore's lab has focused on enhancing the efficiency of lettuce production, allowing for more efficient use of agriculture inputs, and driving the development of consumer-desired characteristics. USDA's National Institute of Food and Agriculture (NIFA) contributed to Dr. Michelmore's work through the Agriculture and Food Research Initiative (AFRI) and it is further supported by the Lettuce Genome Sequencing Consortium. The investment by this private-sector group, comprised of ten vegetable seed companies in California, is allowing Dr. Michelmore and his team to expand the scope of their project.

Tomatoes: In 2016, AFRI funded a project at the Watson School of Biological Sciences at Cold Spring Harbor Laboratory (CSHL) in New York focused on improving growth and yield in tomatoes. Researchers isolated genes responsible for diminishing yield. By using CRISPR/cas9 gene editing tools, the team was able to develop tomato plants without those negative characteristics, while maintaining the plants' desirable qualities. In a separate project, CSHL scientists used gene editing to create tomato plants that flower and ripen more than 2 weeks faster than conventionally-bred varieties. This translates to more plantings per growing season and plants that are suitable for more northerly latitudes. The lab is collaborating with several seed companies to evaluate the agricultural potential of their findings.

Broccoli: is worth nearly a billion dollars in annual sales per year; but due to temperature conditions, production is concentrated in California. At Cornell University in New York, Dr. Thomas Björkman is working to change that. Through funding from the farm bill's Specialty Crop Research Initiative, his laboratory is using marker-assisted plant breeding to develop new varieties that are better suited for production on the East Coast. This initiative is supported by several ASTA member companies who are engaged in an integrated broccoli breeding program with public-sector plant breeders. Several varieties developed through this program have already been released on the market.

Leafy Greens: The Foundation for Food and Agricultural Research (FFAR), authorized in the 2014 Farm Bill, is utilizing public-private partnerships to benefit specialty crop research. FFAR recently announced the Crops of the Future Collaborative research initiative with eight partners. This project will leverage a $10 million Federal investment in pre-competitive research to hasten yield and nutrition gains in leafy greens, wheat and corn.

Imported Seed: Last, The National Seed Health Accreditation Pilot Program (NSHAPP) was funded from dollars designated in the horticulture title for Plant Disease Management and Disaster Prevention Programs (10007)—an important funding mechanism for specialty crops. Under the goal of enhancing mitigation and rapid response, NSHAPP is developing a model for a voluntary system of testing imported seed for pathogens of phytosanitary concern that can be continuously adapted to emerging pathogens. The USDA–APHIS National Seed Health System has coordinated with the seed industry in a unique partnership to screen imported seed with diagnostic testing to prevent the introduction of previously undetectable and economically damaging seed-transmitted pathogens.

Conclusion

Farm bill investments in a broad portfolio of long-term research are needed to sustain the global food supply. Collaboration between the public and private-sector in these programs can ensure that research dollars result in beneficial new products for farmers, consumers and the environment.

It is important to note however, that the promise of U.S. research investments will not be fully realized if an overly burdensome regulatory structure impedes the broad adoption of new and evolving plant breeding methods. We urge the U.S. Government to make a clear, positive statement about the necessity of innovation in agriculture, including innovation in plant breeding. Congress should encourage USDA, FDA and EPA to have consistent, science-based policies that promote a climate of innovation, particularly for university researchers and small companies. The seed industry, and all of agriculture, is global. Therefore, in addition to domestic efforts, it's critical that the U.S. Government develop an international engagement strategy to prevent trade barriers due to non-harmonized regulations.

In summary, Congress must ensure that Executive branch actions including directives, regulatory and trade policies, and budgets foster the growth of a strong 21st century farming economy through sufficient funding of research programs and science-based decision making.

Chairman Conaway, Ranking Member Peterson, and Members of the House Agriculture Committee, the American Seed Trade Association and its member companies look forward to working with you to promote continued innovation to ensure a strong economy, healthy environment, and a safe and secure food supply to meet the needs of the growing population. Thank you for the opportunity to testify today.

The CHAIRMAN. All right, gentlemen, thank you very much for your testimony this morning.

The chair would remind Members that they will be recognized for questioning in order of seniority for Members who were here at the start of the hearing. After that, Members will be recognized in order of arrival. I appreciate Members' understanding.

And with that, I am going to recognize one of the freshmen to go first. That rarely happens in this arena. Mr. Dunn, you are recognized for 5 minutes.

Mr. DUNN. Thank you very much, Mr. Chairman, and thank you for your innovative order of questioning.

Mr. LaVigne, your testimony discussed a number of commodities which have seen enormous benefits with the use of innovative agricultural techniques such as gene editing, and you cited benefits to crop yields, nutritional qualities, and all these things benefit the farmers, the consumers, the retailers, and the processors. What other ways can Congress help you get these innovative techniques and use them to the benefit of all of us?

Mr. LAVIGNE. Thank you, Mr. Dunn. As we look at the evolving biology and understanding of plants' nature today, and the ability to take the characteristics that are favorable to growers' production practices, whether it is for flavor or taste or size, or whether it is for disease resistance or pest resistance, the ability to have a sound policy in the U.S. with respect to plant breeding today is absolutely critical for these tools to be able to be used down through the specialty crop arena. Today, unfortunately, transgenics are not used in the specialty crop arena, they are only used in large row crops. That ship has sailed with respect to technology being able to move into that arena.

As we look at gene-editing tools or techniques, we look at these methods that will continue to evolve because we better understand plants and the nature of what they have within their plant family, we have to be able to use those capabilities within the specialty crop arena. As you heard today, the pressure from pests and diseases is huge, and the ability to create resistance within a plant's family is a great opportunity. That policy has to come from this Administration and help the USDA.

Mr. DUNN. Can you help us target specific regulations that are burdensome to your association members?

Mr. LAVIGNE. Yes, we can. We can. And we are working on that in a couple of arenas with respect to Part 340 reform as well as, as we look at plant-breeding methods.

Mr. DUNN. We will be calling on you for some help in that area.

Mr. LAVIGNE. Thank you.

Mr. DUNN. One last question, Mr. LaVigne, GMOs have had a perception problem in the public in recent years. I would like to know what your association, your members, are doing and what could Congress do to help?

Mr. LAVIGNE. Well, yes, unfortunately, the GMO transgenic——

Mr. DUNN. Speaking of science-based things.

Mr. LAVIGNE. Yes. The GMO transgenic industry we have received quite a black eye as that has evolved, and a lot of the misperception, there is overwhelming evidence and scientific proof that shows it is safe in everything, and good for production. We

have seen that throughout the Midwest and in many other countries.

As we look at it, our focus is going to be on education and working with the ag and food value chain; how do we talk about plant breeding. And unfortunately, hopefully no offense to anyone in the room, but as we have found out in talking to the public, a lot of people took one genetics class in college, and if they passed it and didn't drop it, they didn't take another genetics class; human, animal, or plant. And so we have an uphill road just to talk about the plant-breeding methods we use today, let alone that evolution of understanding of the plant physiology for tomorrow's plant-breeding methods. We have an extensive education program in place working with many of the people at this table, as well as all the way through the grocery chain, to try and educate the public and the food chain.

Mr. DUNN. I hope we can join hands and accomplish that.

With the minute or so remaining to us, Mr. Wishnatzki, you said that you think it is easy to fix the H–2A system. Please enlighten us.

Mr. WISHNATZKI. I am glad you asked me that question.

Mr. DUNN. I am ready to take notes.

Mr. WISHNATZKI. Yes, please do, because I believe it could be a very simple fix if folks would get together and understand what growers need. We don't need indentured servants like H–2A is now, it is akin to that, we need transportable visas that workers could move from grower to grower as needed. I outlined it pretty clearly and very briefly in my written testimony, so you can read that, but the centerpiece to my idea of how simple it is, is if you tied a heavy withholding amount to these workers when they came here and did agricultural work, they would not receive that back to them until they returned to their home country, to me, it is very simple, it is just that they are going to go back because you have golden handcuffs on them.

Mr. DUNN. When we go back to Florida you and I will speak some more. Thank you.

I yield back, Mr. Chairman.

The CHAIRMAN. The gentleman yields back.

Mr. Peterson, 5 minutes.

Mr. PETERSON. Thank you, Mr. Chairman.

This is either for Mr. Wenger or Mr. Murphy, or anybody else who wants to weigh-in. Mechanization can address some of the farm labor issues, but as I understand it, it is not a one-size-fits-all solution. There are some crops that are better suited than others, and avocados, I am told, must be picked by hand. It is estimated that foreign-born labor is nearly ¾ of the hired labor force on America's farms, and some people argue that Americans should do these jobs. Others argue that foreign labor enables us to produce more specialty crops here, and that it in turn creates more jobs for Americans.

So what is your take on this?

Mr. WENGER. Well, I will start out, since we just went through last year a very vociferous debate on the minimum wage and the overtime in California, we had a 10 hour workday, 6 days a week, overtime after 10 hours in a day, and on the seventh day we are

going to be going now by 2022 to a 40 hour workweek, 5 days a week, eight 8-hours a day.

Agriculture doesn't know weather, a time clock doesn't. It was very interesting, when we went through the debate, Mr. Peterson, some of the folks that ended up voting for the overtime bill were talking to field workers, they were asking what they were getting paid, they were getting paid $18 an hour, this one particular worker, and they said what would you get in Mexico, he said $18 a day.

And so as you look to the larger buyers of our products, they are going to look to source it at the cheapest place they can, and that is going to be in Mexico. They don't have the labor standards, they don't have the wage standards, they don't have the worker protections. And I would also say a lot of our growers are in Mexico, and so I know that those abide by the food safety standards that we have here, but many other imported areas don't.

But we raise our kids to go to college and get educated so they can get higher-paying jobs. And they all want fresh strawberries on their plate, they just don't want to pick them. And they are not going to pick them at any wage. They are not going to pick them at $40 an hour, and that is just the way it is. And so we know, as we have heard in the prior testimony, that there is an aging workforce in Mexico. Mostly we have looked for immigrant labor, for folks that are trying to climb that economic ladder, and they have done it quite successfully by coming here and utilizing agriculture in the United States, particularly in California. But that is going to be aging out, so we have to look to the robotics, we have to look to those other things. And you are right, all the peaches, apricots, avocados, strawberries, all the soft fruits, we have to look to ways that a robot can size, can pick that product at the peak point of ripeness where it is not overly ripe, but that it is good enough so that the consumer will have a flavorful product. But it is going to be technology.

Mr. PETERSON. Mr. Murphy.

Mr. MURPHY. To add to that, there are really four things we need to do, quite simply. First, we have to definitely go down the automated route; look for mechanization as best as we possibly can, but that is going to be a 5 to 10 year view.

Second, we have to look to streamline the H–2A program in a way that makes it easier to execute upon and simpler. The numbers need to grow. About five percent of our workforce right now is through H–2A. Because of what Mr. Wishnatzki talked about, that could grow. We would need maybe 50 percent of that workforce to be through H–2A. So that is a big deal.

Then the third element, this one is around the whole idea of creating legal status for the workers that are here. Many of them have been here a long time. In my opinion and from people I have spoken to, most of them do not want to become citizens, but they do want to have some legal status that allows them to work here.

The last thing, is what we are talking about here today, is the collaboration between private industry and government working hand-in-hand to come up with creative solutions.

Mr. PETERSON. Thank you. As many of you know, while I am not an expert on H–2A, I have worked through it in some other instances, besides agriculture, and the bureaucracy is horrendous. I

am skeptical that you are going to be able to get a program at the end of the day through the United States Government that is workable. By the time they get done with it, they are going to screw this up. My idea is to let you guys do this. If somebody is working for you, they have a job, and they are not causing any trouble, they are not in jail, then they can be here and they can work, but there is no citizenship, and when they are done working they go back home. It is just too simple, but that is what needs to be done.

Mr. MURPHY. Yes.

We need you to advocate for us. I know that some of the decisions are not made here in this Committee, but in other committees, but we would respectfully ask that you help us in this endeavor.

Mr. PETERSON. I am there, and we will get some more.

Thank you.

The CHAIRMAN. Our colleague, Bob Goodlatte, is working to fix that, and we are in conversations with him.

Mr. Austin Scott, 5 minutes.

Mr. AUSTIN SCOTT of Georgia. Thank you, Mr. Chairman.

Mr. LaVigne, as you were talking about the perception, I was reminded of a few years ago that my wife and I were at a class before our little girl was born, and I listened to the nurse at the front of the room talk about how bad biotechnology was in agriculture and how good it was in health care. And certainly, the perception, the GMO, it sounds like you are going to become a zombie if you eat something, where, in the end, it is biotechnology. I am interested in your thoughts on how you intend to change the perception. Obviously, people would be paying a tremendous amount more for food today, not only in the U.S. but around the world, and quite honestly, I think that biotechnology is one of the ways that we are going to help eliminate starvation around the world.

And so what ideas do you have about how you are going to change the perception of the use of biotechnology in agriculture?

Mr. LAVIGNE. Well, Congressman Scott, you are exactly right, one of the things that we did early on with biotechnology, and what we are trying to learn from in that arena, is we based everything on science. Trust us, science says it is okay, it is good, all of those things. And it is something that we are dealing with. I would say it is not just in biotechnology, it is within agriculture in general.

There is a perception of this bucolic lifestyle on the farm, and it still should be 40 acres and a mule, instead of how agriculture has evolved because of innovation, and biotechnology was the first one out there that really got the focus. And our efforts here as we talk about plant breeding is how are we as transparent as possible, let's talk about breeding, let's talk about the solution that that plant breeder is trying to find. Biotechnology will be a part of tools, or methods, like gene editing. You will be able to create new transgenics using those methods. But we will also be able to create new varieties using these methods that could be disease-resistant or resistant to pests, or have a longer shelf life, or help even in the mechanization issues, as we did with tomatoes in the early 1970s, I believe.

That is where we have to get the message out that this is nothing new. We know more and more about plant physiology today to

be able to target those characteristics that are naturally occurring in that plant's family.

Mr. AUSTIN SCOTT of Georgia. Well, it is extremely important, especially the ability to grow crops in different areas as the seed becomes more drought resistant, and requires less water, less pesticide, less other things. It is extremely important to the environment. And the facts are, if you look at the science, there is no discussion to be had. This is an emotional argument that is not based on the facts in any way, shape, or form.

Mr. Wenger, you mentioned in your testimony olives and olive oil. That is something that many Georgia farmers are using now to diversify their crop. I was surprised to find out that the grading standard on olive oils, it took 62 years to upgrade that standard, and yet approximately 50 percent of the olive oil sold in the United States does not meet the grading standard. Is that still the case today, any suggestions on how we make sure that the consumer knows that what they are buying on the label isn't necessarily what they are getting?

Mr. WENGER. Yes, it has been a real issue, and I know the olive oil growers, they are now setting up standards that they can work with. But 96 percent of the olive oil consumed in the United States is imported, so there is a huge growth curve for domestically produced olive oil. But again, a lot of folks don't know what is in that bottle. Mislabeling has been a very real issue, and continues to be an issue, and so that is why, through the farm bill, really promoting domestically produced olive oil and that what is in that bottle is what you are getting, that is clearly the direction we need to go.

Mr. AUSTIN SCOTT of Georgia. Yes, we tried to address this in the last farm bill, and unfortunately, we lost, but it is not so much promoting U.S.-grown olives or olive oil from U.S.-grown olives, it is that what is imported and put on the shelves is labeled at the same standard that the U.S. is labeled at. I would appreciate your input and your support as we go forward in the next farm bill to make sure that if somebody is selling what is labeled as extra virgin olive oil, it actually is extra virgin olive oil if it is purchased off the shelf in the United States.

Mr. WENGER. We can definitely get you more information. I know Jamie Johansson, my First Vice President, is a first-generation olive oil grower in California, and so we can get you some more information.

Mr. AUSTIN SCOTT of Georgia. Well, gentlemen, thank you for your testimony. And, Mr. Wishnatzki, I wish it was as simple as you put it. Unfortunately, there are 535 people up here that think they are the best chef in the kitchen.

So, gentlemen, thank you for your time and your testimony.

The CHAIRMAN. The gentleman's time has expired.

Mr. David Scott.

Mr. DAVID SCOTT of Georgia. Thank you, Mr. Chairman.

In my State of Georgia, specialty crops come up to about $2 billion annually in terms of the farm gate value, so it is very important. We have peaches, watermelons, blueberries, pecans, peanuts, onions, you name it. I agree with you, Mr. Wishnatzki, did I do that okay? All right? All right.

Mr. WISHNATZKI. Yes. Thank you.

Mr. DAVID SCOTT of Georgia. This is a crisis. This is a serious crisis. And you mentioned those three things. You mentioned climate, water, and labor. Each of these up here, as we are dealing in Congress, sometimes get us into knots, the real answer is going to come from you all.

Let me ask you if you could give the Committee some examples of how and what type of mechanization will be able to go in, pick blueberries, pick watermelons, be able to know when they are ripe, describe what you are talking about. Give us a look into the future and explain the differentiation, how we can make this happen.

Mr. WISHNATZKI. Sure.

Mr. DAVID SCOTT of Georgia. How do we get them to pick those peaches without squeezing them to death? Go ahead.

Mr. WISHNATZKI. Well, it is a great time in history right now. We are kind of at this crux here where there is this tremendous need for automation, and at the same time the technology is coming of age that we can do this.

I want to qualify what I am saying by, I am not the engineer in this company, I tell people in Harvest CROO Robotics I am simply some of the funding and the inspiration behind it, but I do know enough to be dangerous. But, the one thing about the technology that has changed dramatically just in the last 5 years is the processing power of computer chips. We are doing things on little, small, Nvidia chips that would have taken massive computers not too long ago.

Mr. DAVID SCOTT of Georgia. Yes.

Mr. WISHNATZKI. The stereovision that we are using to identify and go down and pick the fruit at the exact point where it is on the ground, that technology just didn't exist until very recently. We are processing something like 30 gigabytes of data a second, and we are processing these images in 10 milliseconds; $10/1{,}000$ of a second. We are able now to identify the fruit, we have a system with these soft claws that this picking wheel that my cofounder developed and we have patented. That is what is allowing us to get the commercial speed, and it is allowing us to travel around the plant, inspect it very quickly, and go down, dive down and pick the fruit. It is some groundbreaking stuff. On our website we have some information about it if you go to that, and some videos also that show how it actually works.

Mr. DAVID SCOTT of Georgia. And so if we just took one, like blueberries, give us a picture of how that would look in the blueberry field. What would that robot look like? And second, at some point the human quotient has to come in there. I mean you pick them, you have to get them up, you have to put them in something, you have to transport. Where does that start, where does it end, and where does the human quotient come in?

Mr. WISHNATZKI. Sure. Those are good questions. Well, we are focused on the harvesting of strawberries right now, but I know blueberries will be in our future.

Mr. DAVID SCOTT of Georgia. Yes. Well, let's use strawberries, yes.

Mr. WISHNATZKI. Okay. Strawberries as an example. Well, one of the things my cofounder, Bob Pitzer, has mentioned is that there

are a couple of problems here. You have to be able to find them and pick them, but you have also got to be able to transport them out of the field so you need a vehicle that these robots are mounted underneath that is of enough size and mass that you can actually put the finished product on and stack it until you get out to the ends of the rows. And when we do have that, developing it and we have the autonomous system on it now, it is driving using GPS, and collision avoidance using LiDAR technology. This is just a big platform that has 16 robotic picking heads mounted underneath it as this swarm of robots that will be traveling through the fields picking the berries, and then dropping them off at the end of the rows.

Our plan is not to utilize human labor to pack it either. There would be a secondary inspection of the fruit that would actually, after the berries were picked, they would be inspected by another set of cameras, that would then actually have robotic fingers that would put it into clamshells, or probably maybe not clamshells, but a consumer unit that will be transported at the end of the field.

Mr. DAVID SCOTT of Georgia. Thank you.

Mr. WISHNATZKI. Yes.

The CHAIRMAN. The gentleman's time has expired.

Mr. Crawford, 5 minutes.

Mr. CRAWFORD. Thank you, Mr. Chairman.

I want to kind of continue on with the topic that my colleague, Mr. Austin Scott, broached, and that is how we communicate the value of genetically modified crops. In the row crop industry, it has become a volatile issue, most notably, Roundup Ready technology, things like that that the consumer doesn't necessarily understand. But to all of you, what would you suggest in terms of communicating the value to the consumer, because we can get into all the technical, which you did, Mr. LaVigne, and I appreciate that, but the consumers without a science background are making a decision based on an emotional response on some information that is out there in the marketplace.

Can you all weight-in on that? What can be done sort of collectively to soften the blow that has really been harmful to you?

Mr. MURPHY. Well, I will take a first stab at it.

When some of these technologies, most of this technology is being used in research on humans and animals right now. When some of this technology really creates tremendous value around fighting disease and some of these other issues in humans, it will turn. I believe that once the public sees the great value in some of these tools, its perception will change, but it will take time and education. We, as an industry, need to do a better job of talking about it in the right terms, and sort of more consumer-friendly terms. But, the progress that some of these technologies like CRISPR/cas9 will have on human disease fighting, things like Alzheimer's and other stuff like that will get a lot of publicity, and ultimately that will start to lessen the blow. The problem is it takes many years and time. But this technology is here, it is not going away.

Mr. CRAWFORD. I think, and just my observation, having worked in the ag industry for a long time and been an ag communicator, that the ag industry tends to be reactive, and they wait for a consumer perception to occur and then respond. What I am looking for

from the ag industry, and particularly, from you all from the specialty perspective, is how do we blunt that, how do we get out there and advance and paint this picture of what is coming, and prepare the consumers for the good that they can expect from this, as opposed to waiting for the attacks?

Mr. HELLER. No, I think that is a very good point. I will just add a thought to that. Part of it is education of what crop breeding is what has happened historically; these crops that we have today came about. They are through natural mutations. This is just another tool; a more precise tool, in order to improve crops, in order to feed the world. I think that part of it is educating people that this has occurred throughout history. This is why we are different than our forbearers. And that fundamental understanding should help provide a foundation so we can convince people or have people accept different methods of plant breeding that are necessary.

Mr. CRAWFORD. Go ahead.

Mr. WISHNATZKI. Yes. It is my understanding that CRISPR/cas9 is not a requirement to be even labeled as a GMO currently, and the reason for that, they are taking genes, and Mr. LaVigne can correct me if I am wrong on this, but they are taking genes from within the same species; in other words, we are not taking a fish gene and putting it in a strawberry or tomato. They are developing varieties. And I would prefer to call it smart hybridization, because hybridization has been around for many years and that is how we cross everything, but it is all just trial and error. But with this smart hybridization, you are able to get a variety that is close but maybe it has one little defect of susceptibility to a disease. They can snip that bad gene out, put in a good gene from another, say, if we are talking about strawberries, so it is within the same species, you are not taking something else.

Mr. CRAWFORD. This conversation we are having right now, which I find fascinating, but you are scaring the consumer.

Mr. WISHNATZKI. I agree.

Mr. CRAWFORD. And that is my whole point is that we have to stop using the term *genetically modified organism,* it is scary, it sounds very *sciencey.* It instills sort of a fear in the consumer. I would say a mule is a good example of a GMO, somebody mentioned the bucolic picture of farming 40 acres and a mule. They have been around a long, long time, but how do we overcome that negative association? And the science sometimes doesn't help us in that regard.

Mr. WISHNATZKI. Yes.

Mr. WENGER. I just had something real quick. I just spoke to the bioconference, and you are right, with CRISPR/cas9 we are doing it all over again because we are telling everybody what is good for them, and they think there is a profit motivation in that and they don't trust us, so we have to bring other people into the tent, we have to ask them what their concerns are, and we have to address those concerns early on.

Mr. CRAWFORD. My time has run out, but I want to help you in every way I can in that regard.

I yield back.

The CHAIRMAN. The gentleman's time has expired.

Lisa Blunt Rochester, 5 minutes.

Ms. BLUNT ROCHESTER. Thank you, Mr. Chairman. And I thank the panel.

I want to shift gears a little and go back to the conversation about people. Mr. Murphy, you mentioned that automation is a long-range solution, but you still really are relying on workers. And, Mr. Wishnatzki, in your written testimony you said that the jobs that Americans do not want to do have been filled by newly arrived immigrants, since it is only the newcomers that are willing to do the hard jobs; but, you also mentioned that a lot of your workers are moving onto other occupations.

My first question relates to demographic shifts, aging population as well as less people. I am curious about retention. What kind of strategies do any of you use for retention of your employees, if we can start there, and then also if you could talk about turnover rates; like what kind of turnover rates you actually see?

Mr. MURPHY. Obviously, keeping the diminishing workforce we have is really important. You are seeing a lot of farmers start to work closer with their workers around areas that are important to them. For example, childcare, providing clinics. At our company we provide clinics for some of the farmworkers. There are a lot of extended services that we are beginning to provide them that perhaps we didn't do in the past, and that is becoming increasingly more important. Wages, of course, are increasing.

Another thing that we have begun to work on, but it will take a while, as I mentioned in my testimony, we are beginning to try and make it easier for people to pick strawberries, for example. Strawberries are on the ground, you have to bend over, it is one of the hardest jobs you could imagine, so by putting them on what we call tabletops and raising them, people wouldn't have to bend over, it might be easier under tunnels, and systems that will make it more attractive for those people that are there, and potentially attract new people to the industry.

So as others have mentioned, a lot of people working in ag, even though it is backbreaking work, in California do make a good wage; way above minimum wage. They work very hard for it, but they do make that wage. It is not that the wage rate is wrong, it is just that the work is so tough.

So the strategies, certainly in our company and others, is to make it as easy for them to pick as possible, provide alternative opportunities beyond just wage rate to keep them in play.

Ms. BLUNT ROCHESTER. Thank you.

Mr. WISHNATZKI. Yes. Ms. Blunt Rochester, yes, I am sorry. Yes, I just want to add——

Ms. BLUNT ROCHESTER. We are having trouble with each other's names.

Mr. WISHNATZKI. Yes, I am sorry. I just wanted to add, picking strawberries, and many other harvesting jobs in agriculture, it is not a young person's game.

Ms. BLUNT ROCHESTER. Yes.

Mr. WISHNATZKI. And so we don't have the young people coming up in this country, we are not raising our children to become pickers. Quite frankly, we are educating them, we have set up scholarship funds for our folks, both in California and in Florida we have scholarship funds, so our workers have access to education, higher

education, and our workers' kids, chances are they are not going to be strawberry pickers, so where are these people going to come from if we don't have some sort of means to have guestworkers as a viable system for the industry?

Ms. BLUNT ROCHESTER. I was just curious, when you gave your testimony earlier you also mentioned the childcare, you mentioned the health care, you mentioned housing even. Is this the norm or is that unusual?

Mr. MURPHY. No, it is becoming, in California, it is becoming much more of an important factor in attracting that limited workforce.

Ms. BLUNT ROCHESTER. Got you.

Mr. MURPHY. To the extent that you can provide them with housing, there is a vegetable grower in Salinas that has done a really interesting job with housing, and they have created a really sort of prototype for the rest of us to follow in some ways.

You are going to see more and more of this as a way to not only attract workers within the existing community, but also bring people from the outside.

Ms. BLUNT ROCHESTER. Got you. Great. Anyone else want to share on workers and just the recruitment and retention and keeping them?

Mr. WENGER. Well, just one of the problems with the seasonal crops, and it is one thing when you have a larger operation where you keep year-round employment. And so you can have the housing, you can have those workers for the daycare, it is others where you have smaller farmers that have 20, 40 acres of peaches and they need large numbers of people for thinning, they don't need anybody again for quite a while except their two or three people that work with them, then they need large numbers to pick that fruit. And so those are more migrant, and they need to have more portability going from farm to farm. Hard to provide the health care and those other amenities that you can do for a year-round workforce.

Ms. BLUNT ROCHESTER. Great. Thank you.

The CHAIRMAN. The gentlelady's time has expired.

Mr. LaMalfa, 5 minutes.

Mr. LAMALFA. Thank you, Mr. Chairman. Welcome to our panelists, especially our Californians who have to fly the farthest, and I hope you didn't get caught in that air traffic situation that was going on here a day or 2 ago. Thank you for that, and good working with you as well.

The issue with California we have, obviously, as Mr. Wenger laid out, a very, very diverse set of crops for the leader in the vast majority of the, I will say maybe the non-commodity or non-high-volume ones in the state. You mentioned almonds and so many fresh crops and others. Yes, a lot of them are labor-intensive, and when we talk about further mechanization and newer technology, I have lived that myself as a rice grower. We are not so labor-intensive, but even in the late 1970s and 1980s I spent more hours than you want to know about on a laser leveling machine flattening those rice fields. And now we are up to GPS. We cannot only flatten the field within ⅛″, but we can do it taking into account the curvature of the Earth. It is pretty amazing. Monitor technology for the grain

coming in, as well as the yield and the harvester, and later using that to apply fertilizer as is needed. We have some great stuff going, but we need to keep going because as the panel keeps talking about with labor, where is the labor supply going to come from. It isn't completely elimination of labor, but the mixture, the percentage of labor *versus* further mechanization. We have seen this in tomato picking where they can kick out the green ones. Even the green grains of rice.

So when we are looking at the mechanization, if we had all the workforce we needed, Mr. Wenger, do you believe the demand for mechanized and upgraded machinery would still keep growing or still keep needing to evolve, needing our input on that?

Mr. WENGER. I have a couple of comments. One, as somebody that is not a rice grower but has always enjoyed flying over into Sacramento and seeing those gorgeous rice fields, as you contour those fields to meet for your level, and today they are much squarer, I know for a producer it probably gives you more yield per acre, but it does make——

Mr. LAMALFA. When you can get rid of 17 levies in an 80 acre field, and come down with only three levies.

Mr. WENGER. But there is something to flying over those fields in the past and seeing the uniqueness to them.

Mr. LAMALFA. It is not as romantic anymore for the people flying into Sacramento.

Mr. WENGER. Truly. But, yes, with the technology, number one, we know that folks aren't going to do the types of jobs in the field. That is really what we are looking at, even in the processing area, they are still going to be more of those jobs, higher-technology jobs, so a lot of those individuals that get an education, they are going to be still working on farms, running those machines, and doing the servicing of those machines, but we know we are going to have a declining labor force. In California with the 8 hour workday, 40 hour workweek, we are going in that direction. With a lot of the heat illness standards that we have that you have to provide shade after 80°, and all the things that we have to do there, we are being driven to go to mechanization. There is just no two ways about it.

Even if we rub the crystal ball and we had an available labor supply, we are going to be moving towards mechanization. We have to.

Mr. LAMALFA. Let me drill down on the olive oil a little bit Mr. Austin Scott was talking about a while ago. Again, several of us took a pretty good run at that in the last farm bill, in the imported oil, the quality, Americans don't know what good olive oil tastes like in a lot of cases. The quality, the mislabeling of extra virgin, they are getting away with basically fraud on that. And the crops that we can grow; our neighbor, Jamie, he is doing all right in that terrible fire in the Oroville area here, right around here, Johansson, they grow a beautiful olive oil there. And so the need to have truth in the labeling is important, but also to be competitive. The mechanization in the olive industry, now, you can grow olive trees or more like vines these days that can be mechanized, but you still have the ones you have to pick for table olives, so what do you see going in that direction?

Mr. WENGER. Well, clearly, that is where we talk about mechanization and plant breeding, and trellising and the other things we do. One of the questions was about blueberries. Certainly, as we look to the way that we plant blueberries today, maybe they are going to do it differently in the future. There was a group from China—as a walnut grower, our trees are 40′, 50′ tall, they are working on hedge growing where the trees are 9′ tall. Now when you start talking about robotics and other things, and so we have to make sure we are ahead of that curve, because there are other countries that are making those investments to be able to do that. And currently, you are right, for the fresh olives or the processed olives that you would eat on your table or on your pizza, those are larger trees, they aren't mechanically harvested, so maybe we are going to have to look at ways that we can do that, and then utilize the soft touch of a robot to be able to pick those so that we can utilize them for eating and not just eviscerate them for olive oil.

Mr. LAMALFA. Okay. Thank you, Mr. Chairman. I will yield back.

The CHAIRMAN. The gentleman's time has expired.

Mr. Panetta, 5 minutes.

Mr. PANETTA. Thank you, Mr. Chairman. Thank you for having this hearing on this topic. I truly appreciate it, representing the area that I do on the central coast of California. And also thank you to our witnesses for taking the time to provide your testimony and the information that you have provided this morning. You are speaking to me. I hear you loud and clear. It is something that I have been talking about ever since I got here in Congress, and because I have been hearing about it well before I got to Congress, about the issues that our people in agriculture face on the central coast of California.

Obviously, in the past 5, 6 years California has faced, excluding this year, a serious drought. And when you would talk to people in agriculture, you would expect maybe that drought was the number one issue. No, not at all. Hands down, it was labor. It had always been labor, and the lack of labor there in our fields to help produce and harvest the products that you do.

That is why it is important that you are here and that you are talking about it, and I appreciate that. As I see it, there are two avenues that we can go in dealing with this issue. The one avenue is, I believe, Congress' responsibility, via immigration reform. I believe Congress has failed to address that issue, unfortunately. The last time we had it was in 1986 with Ronald Reagan. And I do know that there was a serious attempt at that in 2013 with S. 744, most recently. And there are certain efforts that are happening now in Congress, and we will continue to advocate for you and for those efforts.

But, as we work on immigration reform, the other avenue is though mechanization in order to deal with labor shortages. It is a two-avenue approach, and your being here helps both those avenues; first, advocacy for immigration reform; but, also talking about mechanization.

In the meantime, we have to keep our workers here. And, Kevin, I appreciate that you have started to implement some new processes. I was in the field a month ago with Miles Reiter, the Chair-

man of Driscoll's, and I saw some of these new tabletops that were in the field. Could you tell us about the tabletops? People need to hear about that.

Mr. MURPHY. Yes, so this is a technology that has been around for a long time, especially in Europe. Now, Europe is facing, and has faced in the past, many of the issues that are coming here. They have always had issues with labor; they have never had enough people to pick it. Pesticides, fumigants have been a problem there, methyl bromide has been banned for many years. Some of the issues we are facing they have already faced. What they did, it drove them into substrate type of controlled environment production. The tabletop is a system of tabletops, basically, that are about 4′ off the ground. The product is grown in a substrate, which is a special type of material that is good for the berries, and then it makes it easier for people to pick standing up. As I said earlier, the idea is to attract people to the industry as well as make it easier for folks to do it.

We also think that mechanization might be easier in that system because it is more precise. You are not dealing with the ground as much as you are, these solutions are all going to have to come together. The mechanization of harvesting and the more sophisticated growing techniques as well as the packing techniques all have to be an integrated system.

Sometimes the solution is just not in the harvesting, but in the integration of all these efforts. But I will be honest with you, it is going to take a long time for that to get done. Now, we are going to work hard to try and make it faster than that, but it doesn't all come together easy, as Gary just said, and that is where the government can help, private industry, there are lots of these startup companies that are around. They have come, actually, from companies like Google and others in the Silicon Valley that have this technology. They are young, innovative groups that are coming together, very entrepreneurial, and they want to partner with ag to get some of these solutions going. And I would strongly encourage that this farm bill identifies that. It speaks to our best entrepreneurial spirit, and to the extent that money can be allocated to some of this automation, whether it be the harvesting or the growing, or whatever it is, but that is a spot where money could be allocated to private industry. I don't think the universities in this area are going to be able to do the work that is required. I think they are very valuable for other areas. And as the Chairman mentioned in his speech around pesticides and other things, I think that is very important, but in this fast-moving area of mechanization and robotics, private industry is the way to go. And I would like to see the farm bill in a creative way allocate resources in that manner that could speed it up rather than slow it down.

Mr. PANETTA. Agreed. Thank you.

Thank you, Mr. Chairman.

The CHAIRMAN. The gentleman's time has expired.

Mr. Yoho, 5 minutes.

Mr. YOHO. Thank you, Mr. Chairman. I appreciate you gentlemen being here. And it is very interesting this topic today. It is one that is dear to my heart. I have been in agriculture since I was

about 15 years of age. And you guys have touched on everything that is important that we need to cover.

And so let me start with you, Mr. Wenger. You mentioned your organization's strong support for the Whole Farm Revenue Protection program, created as a pilot in 2014. How does this program better serve many specialty products and producers, and are there specific improvements that you would suggest for this?

Mr. WENGER. Yes, there are a number of them, and so we would look forward to working with you on it. One we think to provide flexibility, keep it a pilot program. It is very complicated, talking to those folks that have tried to utilize it; the paperwork and trying to track everything is very complicated. Also the $8.5 million level is very problematic for a lot of our folks. As Mr. Peterson said earlier, when you look at the value and the investment of some of the specialty crops, recently we had the American Farm Bureau Trade Advisory Committee was out and they were touring the ports, and they met with some of our folks in the Salinas Valley, and one of our growers they were going to lose a $4 million crop because they didn't have the labor to pick it.

Mr. YOHO. Right.

Mr. WENGER. And so, now, that wasn't profit, but that was just $4 million to bring that in. It is a step in the right direction, it just needs a lot more work, but it is something to be able to provide for specialty crops.

Mr. YOHO. If all of you could submit recommendations on how to improve that program, it would be greatly appreciated.

Mr. Heller, you were talking about the Texas Bud Program, how is that working in Texas on the citrus greening? As you know, in the State of Florida, 100 percent of our groves are affected, and this is something that we have to get ahead of, and the cures are going to be an antibacterial, a GMO, or the budding process or natural selection. What are your thoughts on that? How well is that working?

Mr. HELLER. Yes. Clean plant material is the foundation for any good agricultural system, it is absolutely necessary. To your point, the solution for HLB is probably a GMO or some of these gene-editing techniques that are going to have a plant that is either tolerant or resistant to this particular pathogen.

But the program itself is working very well. Again, it is a partnership between industry through check-off programs, private donations, grants through the university systems. And it is really to provide clean plant material not only to the commercial industry, but to growers and hobbyists around the state, because our neighbors need to have clean material as well, otherwise those problems will come from those areas and potentially affect us.

Mr. YOHO. Okay. And, Mr. Wishnatzki, it was great to hear you talk about the University of Florida and promoting IFAS.

Let's see, my question for you, where did it go? You spoke a lot about the labor situation. I feel confident that we will fix this in this Congress.

Mr. WISHNATZKI. Good.

Mr. YOHO. We have an ag guestworker program that we are working on, we are going to talk with Chairman Goodlatte, and Rick Crawford also has a bill. And in concert, I am sure we can

orchestrate a solution for this soon, because it is something that we hear over and over again from all of our producers. But I am also very optimistic about you talking about the mechanization and the robotics. Do you feel that is something that should be industry-driven, the entrepreneur, the innovator out there, and not wait on a Federal Government program?

Mr. WISHNATZKI. Absolutely. I mean the effort I have undertaken has been highly collaborative. I went to a number of competitors that have invested money in this, so I mean that speaks to the need.

University systems are doing a wonderful job for us, and research into pest issues, disease issues, but there needs to be some money set aside for the private-sector, especially in collaborative efforts like the one we undertook, but this mechanization is kind of the last frontier in agriculture because for years there have been ways to harvest crops, destructive ways where you pick them once and you are done. But many of these crops that we are trying to mechanize now are selective in nature, so you have to come back again and again.

Mr. YOHO. We will get there, and you guys leading the charge in the industry is what is really going to be the catalyst for that.

Mr. LaVigne, I just want to talk to you about gene editing. We have heard a lot about GMO, and we have talked, certainly, enough about that, but one of the things with citrus greening is one of the GMOs and we are seeing our processors putting on their bottles non-GMO. They are killing themselves, and they need to educate the public because, as you brought up, gene editing is different than some of the other techniques. Gene editing is facilitating Mother Nature and picking certain phenotypes that we want to express in the plant, and is a natural selection process that we have just kind of sped along. And so the media campaign needs to be behind that to really, really promote that.

And I am out of time, and I can't really have you answer right now, but I look forward to working with you all. Thank you.

The CHAIRMAN. The gentleman's time has expired.

Mr. Costa, 5 minutes.

Mr. COSTA. Thank you very much, Mr. Chairman. This is an important subject as it relates to not just California agriculture, but the entire country.

Mr. Wenger, you and I have worked together for many years. We had the drought that everybody knows about, and then this year we got a lot of rain, and water has not been an issue, but we have had labor as an issue because many folks, especially our annual crops that would have liked to have planted additional acreage, have been unable to do so or have hesitated because the labor force is not there.

How would you describe the acuteness of the shortage of labor in California in the last several years?

Mr. WENGER. Well, it is very severe. We are going out, about 4 or 5 years ago we went out with a labor survey to our folks, and we could see that there was huge competition for folks, and we are seeing that again this year, we are going out with another labor survey. But when cherries are being harvested, a lot of those folks that were in other jobs, doing other needed jobs for growers, and

it was a huge cherry crop this year, so it went out, we are paying above market, we are paying a lot more, and so you saw all of a sudden that your labor force was maybe not in your field, but they went to pick cherries. And so it is a critical issue, and as we are now getting into really the thick of our harvest season, it is going to continue to be an issue.

Mr. COSTA. And the nuances that people don't understand in terms of the weather and the challenges as to you just don't leave the crop on the field, if you have the triple digit temperatures that we are having, it is ready, it has got to get out of the field.

Mr. WENGER. Well, I might just add real quick, Congressman, we are getting really close to where we were in 2006, we saw the high temperatures. A lot of our peach growers, they saw fruit that was not ripe in the morning, was overripe by the afternoon. We saw—they had to go through and select——

Mr. COSTA. No, and it happens that quickly——

Mr. WENGER. It happens that quickly, and so it takes a lot of labor. And so really a lot of the labor went out of——

Mr. COSTA. And what are the crops that mechanization is not able to handle? I don't know if you have a quick list you can go through, because there are a couple of other questions.

Mr. WENGER. Any of the soft—like somebody said, all the ones that when they drop on the ground go plop probably are the ones that are going to be most difficult. We will get there. It is going to take time, it is going to take trellising, it is going to take different cultural practices, and it is going to take money.

Mr. COSTA. And the private-public partnerships between the land-grant universities have been significant over decades in terms of developing the mechanization. But even then, as we all know, labor and 70 percent of our workforce in California and elsewhere is undocumented, is a challenge. Now, the blue card legislation that Senator Feinstein and others of us are working on is a partial solution, would you say?

Mr. WENGER. Yes, it's a part of the three-legged stool. We need to figure out a way to get those here that don't have good documentation, documentation, we need to improve H–2A, and we have to have some kind of a system that allows for portability.

Mr. COSTA. Yes. Mr. Wishnatzki, you stated in your testimony about the Pew Study, which I happen to have right here, that says a net loss of $140,000 from 2009 to 2014, family reunification is the top of the reason for the return. I will make an editorial note, maybe we don't need to build that wall that somebody else is supposed to pay for because, frankly, that is not the challenge, from my perspective. But even if we got that legislation through, and I believe you are all familiar with it, it comes short because, to your point, all of you made the comment that the people that are coming to work in the fields today, when you provide scholarships for their children, when you provide additional support, the next generation is not going to want to be working in the fields. And so if you don't provide for continued opportunities for people who do want to work in these fields, it is only a partial solution. Would you care to opine, any of you?

Mr. WISHNATZKI. Yes, sure. I mentioned before it is a young person's game. The industry is always dependent on the new people coming here.

Mr. COSTA. Mr. Murphy, would you agree?

Mr. MURPHY. Yes. Yes, I would agree.

Mr. COSTA. Okay. We need to address that in any legislation that may or may not have a chance of moving forward here this year or next year. I don't know that I share our colleague's optimism that we are going to get this done, we certainly need to get it done in some bipartisan fashion.

Mr. MURPHY. Yes. Congressman, one point we are not talking about the loss of product that is not grown because of labor. I know in the berry industry in California we have cut back on strawberries by as much as ten percent because most of the growers are nervous they can't pick it. The losses we are talking about are not the crops that were not grown. The demand is there for the product, it is just not getting grown because of fear of labor shortages. If you add that up, it becomes a pretty big number.

Mr. COSTA. Well, and then you have automation that is going to take some of these jobs away. I mean I saw a dairy machine, I have some familiarity with that industry that is totally automated. I mean you don't need a person to milk the cow.

Mr. MURPHY. Yes.

Mr. COSTA. This will continue, and we need to work together as we look at the farm bill, Mr. Chairman, to figure out ways in which we can combine the best of both worlds.

Thank you.

The CHAIRMAN. The gentleman's time has expired.

Mr. Allen, 5 minutes.

Mr. ALLEN. Thank you, Mr. Chairman. And as I sit and listen to our discussion today, there is grave concern about labor shortages in this country, particularly as we grow the economy. And, in fact, we have 6½ million job openings out there in high-tech and high-paying professional jobs right now. In my industry, construction, alone, we anticipate over one million job shortages, as the economy grows. This is a pressing problem, and I just wanted to kind of hear from the panel, what is the most critical need as far as the farm bill and this Congress in dealing with this? Would it be immigration reform, and I am not talking about just dealing with Mexico and maybe South America, but I am talking about dealing with the world, because we know there are people looking for work all over the world. There are refugees looking for work all over the world. Would you consider that the major initiative we need to tackle immediately to solve this problem?

And, Mr. Wishnatzki, would you comment on that, and then the rest of the panel as you see fit?

Mr. WISHNATZKI. Yes. One of the issues is that we are getting, you alluded to, there are people around the world that need work, and I don't think Mexico is a long-term solution for our labor. It is short-term, because they are getting ready to be faced with the same issues we are having here in this country, as their population levels off and ages. The growers in Mexico have already contacted me, one in particular from Baja, California, sees the handwriting on the wall. It is going to be an ongoing issue there as well.

Mr. ALLEN. Do you see us addressing this immigration reform, we have talked about welfare reform and getting folks off welfare and back to work. We have 45 million people on the SNAP program right now that are requiring help, and obviously if we reduce that number and those folks become taxpayers, we have an opportunity to balance our budget. We need that to happen, but also the immediate need is for this Congress to put this as a priority to address this labor problem, not only inside the country but also as far as what we are going to do as it would be, like a guestworker program, I guess. Any other comments?

Mr. WISHNATZKI. I would agree with Mr. Murphy that there are two prongs. I mean we have to first make sure we have workers for the short-term, but we have to address the longer-term which is automation.

Mr. ALLEN. Yes. Okay. Any other comments?

Mr. WENGER. No, I was just going to mirror exactly what he said, we have to get the automation, but first and foremost, our growers are very susceptible, if we, for some reason, had an e-verify system that went into place without some way to make sure that our workforce has documentation that allows them to be here, and we are not talking about citizenship, we are just talking about legal documentation that allows them to be here, it would be devastating for our producers in the field. And so first and foremost, we need to figure out how to get those folks good identification, but we need to continue to work on because of the aging workforce. And it is interesting talking to some folks from Chile. They are moving to almonds and walnuts as well, and away from a lot of the fresh fruits. And as I asked them why they are doing that, it is because of perishability, seasonality, and labor supply. It is not just here in California or the United States.

Mr. MURPHY. I would agree with those comments. It is going to have to be a guestworker program, you have to get the immigration sorted out. The farm bill can really address the automation part by collaborating with private industry to get some of that working. There are different parts of government that need to come to play.

Mr. ALLEN. How about our colleges and universities, are they in play on this automation?

Mr. MURPHY. They are, but the automation is really happening in the private-sector. And it is moving so fast, certainly, where we are from in the Central Valley, we are right next to Silicon Valley, and so a lot of the stuff that Google and any of these other folks that are innovating on are really close to us, and they are really interested in doing that. There is a really good collaboration going on. Western Growers, which I am a board member of, has an accelerator program where they bring entrepreneurs in to help get them going. That would be another area you could team up with. There are lots of opportunities to help move that along in an aggressive way.

Mr. ALLEN. Good. Thank you.

I am out of time. I yield back.

The CHAIRMAN. The gentleman yields back.

Mr. Lawson, 5 minutes.

Mr. LAWSON. Thank you very much, Mr. Chairman. And welcome, gentlemen, to the Committee.

I live in north Florida, where we have specialty crops like tomatoes. When I talk to some of the tomato growers, they are very worried about immigration, being able to get those crops out, and some of the tomato growers who are right on the border with Georgia pretty much have the same problem. What I am going to do is to focus my question, because I have a million questions I would like to ask all of you, but I am going to ask this one. Since Florida is the second largest producer of specialty crops in the nation, and innovation and technology are essential to farmers remain competitive in the marketplace, can any of you talk about the farm bill program, such as the Specialty Crop Block Grant Program, does it play a role in producing innovation and technology?

Mr. WENGER. Yes, I will speak real quickly. The uniqueness of the Specialty Crop Grant Program is it allows you to really focus on things as they are happening. And so you look to the farm bill, it is a bigger picture, longer-term, but as we went through the recent drought, 4 years of drought, we saw a lot of specialty crop grants that went to innovations to be able to squeeze the most crop per drop, and things like that. I believe the Specialty Crop Grant Program and the research dollars are very, very important to meet the needs as they are happening, that we can't foresee maybe a few years down the road. To have that block of money there, it is extremely important.

Mr. LAWSON. Okay, thank you. And I would like to ask another question since I have Mr. Wishnatzki, who is knowledgeable with the University of Florida. What is IFAS doing to solve the problem with the irrigation program for strawberries? Is it that serious, have they recommended some research to improve it?

Mr. WISHNATZKI. Yes. There have been some uses of the block grants. I know the University of Florida has been instrumental in a few different things. Improved irrigation, I think that is what you were referring to, to reduce water usage that has been very helpful. And we have several other programs that relate to blueberry sustainability, looking at mechanization there. There is also diversification on strawberries where they are looking at other crops that can be double-cropped, because in Florida we have the luxury of planting a secondary crop after the strawberry crop is on the way out. There has been a lot of research, and the University of Florida in particular has done really well. There is a research center in Balm, Florida, and Dr. Natalia Perez has done a lot of work with plant pathology, looking at different diseases, and there has been a lot of utilization of the block grant program for that.

Mr. LAWSON. Okay, thank you.

Earlier, it was mentioned that 30 percent of the berries you can't get out of the field. What contributes to all this? Is that the labor force or what is it?

Mr. MURPHY. Yes, if I am correct, we aren't even growing the potential that we could grow out of California, for example, in strawberries because there are not enough people to pick them, so there is a loss of production. But in my testimony, I talked about the waste associated. Is that what you are referring to?

Mr. LAWSON. Right.

Mr. MURPHY. There is 30 percent, a lot of it occurs throughout the supply chain. In fact, a good chunk of it actually occurs in the

consumer's refrigerator. When you think about it, farmers throw good berries away because they can't pick them or they go bad, and then we lose them throughout the supply chain, and ultimately the consumer throws them away. And we have done some studies, they don't always, there are other studies that are being done, but roughly ⅓, 30 percent of berries that had the potential to be eaten are not actually eaten. If you think about the amount of resources and money wasted in that, that is an obvious opportunity. And there is an opportunity in the farm bill to continue to work on that throughout the supply chain.

Mr. LAWSON. Okay. And real quick, do the food banks and all of those other different agencies that work to get food to give to people in need, do you all have a great relationship with them?

Mr. MURPHY. Yes, we do. We are the largest supplier of produce to the food bank. We are happy to do that in California. Millions of dollars. We are happy to do that, but that shouldn't be our purpose.

Mr. LAWSON. Okay. Mr. Chairman, with that I am going to yield back, but I know I still have about 100 more questions to ask.

The CHAIRMAN. I appreciate the gentleman's restraint.

Mr. Denham, 5 minutes.

Mr. DENHAM. Thank you, Mr. Chairman. This is a very important topic, especially in light of our challenges on immigration reform.

The CHAIRMAN. Would you turn your microphone on please? We can't hear you.

Mr. DENHAM. As we have discussed many times in this Committee, the need for labor is of huge importance. I am one that wants to continue to fight to make sure that we have full reform on immigration policy, making sure that we can guarantee to the American public not only do we have secure borders and internal security, but obviously that we have a guestworker or guest labor program that allows us to continue to have the safest, greatest agriculture in the world.

But with that comes opportunities to mechanize. As we have in the Central Valley, what we grow, we are very mechanized, but in the Salinas Valley especially, lettuce, spring mix, especially strawberries, many crops have not gotten to that point yet, and there are some that may never get there. The question is will we outsource, as we currently are much of that produce, to Mexico and other countries because of their labor source, and possibly even sacrifice on the food safety side, or will we actually be able to address both labor and mechanization so that we can continue to have the best and most abundant agriculture anywhere.

And I know this Committee especially, when it comes to the farm bill, we have done more not only on the specialty crops but also with ag research.

I wondered specifically, Mr. Murphy, first if you could talk on some of the research that is being done by the UC system or even CSU in our community college level to help automate on the berries, which I believe is one of the most difficult crops to actually mechanize.

Mr. MURPHY. Yes. There is no question, most of the work on the mechanization of the harvesting of berries is being left up to pri-

vate industry right now. Mr. Wishnatzki has a very interesting project which we are close to. We are involved in a project as well. We are all looking at these various projects. To the extent that we tap into the universities, that is happening. What we do see outside of mechanization is a lot of input and work with universities, especially around pesticide use we are seeing quite a lot of work. The funding that came out of the farm bill, around food safety was a really good example of how this should work, where industry, particularly in the Central Valley, came up with their own approach to food safety, and through some of the money through the farm bill and some of the thoughts that came out of that farm bill, we have been able to really kick it up a gear after that spinach food safety issue. So that is another area.

Most of the university stuff in research is done on stuff not related to automation. But ultimately in this area, as I said earlier today, it is really going to be a public-private-sector work in this regard. That is where most of the energy is right now. And as I said earlier with Google and others getting involved, that is where that energy is.

Mr. DENHAM. Thank you.

And, Mr. Wenger, glad to have you here once again. Incidentally, Mr. Wenger is a constituent of mine, so not only am I a member of the Farm Bureau, but glad to have you here as a constituent.

If you could answer the same question, especially when it concerns both the industry as well as your member companies that are either expanding to other countries either due to mechanization unavailable to certain commodities, or by just the lack of labor. And maybe you can also touch on the H–2A program, and I know that there are a number of your members that have really, really tried to make that work, are still seeing a huge shortage.

Mr. WENGER. Yes, time is short so we won't be able to spend much time on it. H–2A is certainly for a lot of those folks that have a longer-term and a set number, when they need a set number of workers for a set time, H–2A works for them. It is very difficult to get through the H–2A program though. We need to make it less cumbersome. But we still need a portability system that allows workers to go from field to field, crop to crop.

I might just add real quickly, as we talk about all these issues and we talk about regulations, and we talk about innovation, in California, in our highly regulated area, especially when you think about the cap in trade that is now going on in Sacramento, when we talk about facilities limits on the amount of emissions that you can have for our processing plants and others, it is even bigger than what we want to talk about. When we think about innovation for mechanization and the striving for a Tier 4 final engine, that we have the uniqueness of so many different types of engines that we don't have companies making the engines for them to drive the machines for the mechanization.

So there is a lot more we can talk about when we have time to talk about it, but certainly, regulation does drive innovation, but in California, unfortunately, we are seeing that regulation is stifling it.

The CHAIRMAN. The gentleman's time has expired.

By the way, Mr. Costa claimed him as a constituent as well, so are you saying that Mr. Wenger committed voter fraud? He votes for both of you guys?

Mr. DENHAM. He farms in a lot of areas.

The CHAIRMAN. Yes.

Mr. Soto, 5 minutes.

Mr. SOTO. Thank you, Mr. Chairman. I have the honor of representing central Florida where we have a ton of citrus, a ton of cattle, and then also a very big blueberry and strawberry industry in our area.

I wanted to first start off with Mr. Heller. We were really fortunate to get over $125 million in citrus greening research money, an additional $41 million, I believe, was added in there in this last omnibus. And it basically addresses the fact that we have had a 70 percent reduction in production of citrus in Florida.

I was wondering, what is the reduction in Texas right now?

Mr. HELLER. Yes. Each region of the country is in a different state in the disease progression. In Texas right now there has not been a significant reduction in productivity within our groves. We are probably 5 to 7 years behind the disease curve or cycle as it is occurring in Florida. We are hoping and learning that things will be different, or learning from Florida's experience and hoping we can manage differently.

But certainly, those funds that you mentioned and those dollars, while they haven't found a solution, they have been instrumental in building a foundation and understanding of the disease, or bringing us closer to hopefully what will be a solution for all the different regions across the United States.

Mr. SOTO. And so you believe that we will still need substantial resources to continue to address the citrus greening condition?

Mr. HELLER. Yes. This problem is not solved, Mr. Soto. I think that continued funding will be necessary. Again, there is a lot of work to be done, and there is probably not one answer. There are going to be many different types of science that will come into play, so funding does need to continue on this issue. And there will be other pest and disease issues, so this has been a very important tool for citrus producers. Again, the different regions; California, Texas, Florida, we want to see it stay in the farm bill. Thank you.

Mr. SOTO. Mr. Chairman, just a note, we can head this thing off at the pass still if we continue, both for your state and mine, if we continue to fund it.

Mr. Wishnatzki, welcome to Washington. It is an honor to host you up here.

Mr. WISHNATZKI. Thank you.

Mr. SOTO. In Polk County, we have a ton of blueberries and strawberries. And I want to compliment our berry growers for hitting the mark this year. Last year blueberries did not meet that 3, 4 week window. We are the only berries in the United States, which is a very unique situation for us. Obviously, strawberries have been more consistent to hitting that mark.

So my first question is: how are the crop insurance tools to help with these highs and lows of, if you miss that 3, 4 week window?

Mr. WISHNATZKI. Yes. Quite frankly, we are not using crop insurance in strawberries because I don't believe there is anything spe-

cific to strawberries, to the best of my knowledge. The whole farm insurance is something that we are beginning to look at, but I don't believe any of our associated growers are utilizing that program right now either.

Mr. SOTO. What about for blueberries?

Mr. WISHNATZKI. And blueberries, the same thing. I don't——

Mr. SOTO. Do you think it would benefit, since we have such highs and lows, depending if you hit that window, if you all had better access to crop insurance?

Mr. WISHNATZKI. Absolutely. If there was a means to help level out some of those dips, because quite frankly, Florida strawberries over the last 5 years have been very challenged because of several issues related to competition and related to labor availability.

Mr. SOTO. And I wanted to go into labor. If we had a revised farmworker, guestworker program where it was a 3 year or 5 year term, rather than a 1 year, that would only be revoked if that individual committed a crime, and they would have to go back each season, would that be a benefit to the industry?

Mr. WISHNATZKI. Absolutely. If there was a means to keep folks here. In Florida, the work goes on into the summer. There are usually a few slower months, they would probably find other work in other neighboring states, but having the availability of labor and having them there would be a great benefit. And I am not sure that that is possible getting that through, but it would be a benefit if it was.

Mr. SOTO. Anything is possible with an Act of Congress, sir.

I wanted to finish by talking about a lot of our specialty crops that have faced stiff competition by other countries that have far lower costs. How key is the Specialty Crop Block Grant and other programs in addressing trade inequities?

Mr. WISHNATZKI. Is that question for me?

Mr. SOTO. Yes.

Mr. WISHNATZKI. Yes. Yes, it is vital. We need to fund our land-grant universities with these funds because there are so many problems with pests, diseases that come about that we really depend on that resource. In no way, shape, or form would I advocate that funds be taken from that to go to something else. I mean automation is important as well, and there needs to be additional funds made available for that.

The CHAIRMAN. The gentleman's time has expired.

Mr. Thompson, 5 minutes.

Mr. THOMPSON. Thank you, Mr. Chairman. Gentlemen, thank you for being here for this important hearing, important topic.

In the House of Representatives, jurisdiction over the domestic nutrition and food assistance programs is split between this Committee and the Education and the Workforce Committee. I chair the Subcommittee on Nutrition in the Agriculture Committee, and am a senior Member of the Education and the Workforce Committee. I am curious about your experience with specialty crops and programs like Fresh Fruits and Vegetables Program and the SNAP program that allow recipients to make specialty crop purchases at farmers' markets, and how do you think these programs are working? And I throw that out to whoever would like to respond.

Mr. MURPHY. Well, I can't respond to the specifics of the programs, maybe you will ask some other folks here, but I have a real passion, we need to have the kids stop eating candy and start eating fruits and vegetables. And so anything, anything that can help our kids eat berries instead of candy is a good thing. So that would be my perspective. And I am actually encouraged to see in general consumers doing a lot more of that. Younger families, you see them eating a lot more berries, and that is great for our business, but it is also great for their health.

That is my point, but how the programs work I would have to ask some of these other folks here.

Mr. WENGER. Yes, having the SNAP program is very important, going to farmers' markets is great as long as it can be monitored, having the EBT cards and whatnot to allow folks to have specialty crops, and also having it to when the freshness and they are available, the canned, frozen, or dried, for those that would be out of season is still very, very important. But, as you said, having these nutrition programs access to crops grown here in the United States is extremely important. The SNAP program is extremely important for that.

Mr. THOMPSON. Anyone else care to weigh-in? If not, let me go to my second question.

Now, some of you mentioned both the Specialty Crop Research Initiative and the Agriculture and Food Research Initiative as ideal places for mechanization funding through the next farm bill. A significant effort was made in the last farm bill to ensure research projects supported under the Specialty Crop Research Initiative were based on both scientific merit and relevance to the industry. What are some of the specific examples of the ways your industry has benefitted from SCRI as a result of that?

Mr. HELLER. I can speak to the citrus perspective there. The Citrus Disease Subcommittee provides the relevancy guidance, I guess, to the scientific community with regards to HLB. As I mentioned earlier, the progression of the disease within each individual region of the United States is different, so growers' needs are different. Having that as part of the discussion and the focus has been very beneficial to guiding the research in the direction to address not just a particular part of the country's needs, but the whole country. That grower-stakeholder involvement is very important.

Mr. WISHNATZKI. Yes. Dr. Jack Rechcigl, who is the head of the Gulf Coast Research Center, he made me aware of a program that is a multi-state interdisciplinary project on tomatoes, which is not my area of specialty, but I had asked him prior to coming here about giving me some examples of just what you are asking, and that project actually brings together 13 researchers from six different universities, representing five states working towards a common goal to improve the tomato health, *Xanthomonas* is actually what they are trying to solve. Yes, there are many more examples of that.

Mr. THOMPSON. Sure. That was a great example.

Mr. LAVIGNE. Yes, the Specialty Crop Block Grant Program too, as I mentioned in our presentation, Cornell University has used it to help develop varieties of broccoli that are much more acclimated

to produce on the East Coast *versus* the dry weather of the West Coast and the Valley. And so Dr. Björkman there at Cornell has done great work in identifying those characteristics within broccoli that are more favorable for a moister, humid climate on the East Coast, enabling farmers to produce it out this way.

Mr. THOMPSON. While I have your attention, Mr. LaVigne, I am interested in the lettuce public-private partnership that you discussed at the University of California, Davis. Can you talk about how NIFA and AFRI funds have been used in collaboration with private dollars?

Mr. LAVIGNE. Yes. The Lettuce Consortium out there in the Salinas Valley came together with Davis and USDA, NIFA, to really look at the challenges of mildew and other production issues that are impacting lettuce production. There are a lot of issues of pest and disease that reside in the soil that you have to rotate the crop and you have a limited amount of time. You had seed companies come together for the private funding, brought germplasm to the table, their own private germplasm, working with the University and USDA and Federal dollars to develop varieties that are more acclimated to address those issues, resistance when they could induce resistance, and really move forward with varieties that meet that new packaging that the consumer wants, but also enable them to produce, as well as possible, with limiting the inputs, also if possible.

Mr. THOMPSON. Thank you.

The CHAIRMAN. The gentleman's time has expired.

Ms. Kuster, 5 minutes.

Ms. KUSTER. Thank you, Mr. Chairman. And I just want to note how bipartisan the approach is today on terms of labor, immigration, comments of immigration reform, and also our agreement on eating fruits and vegetables. I talked to my 25 year old son on the phone last night, he had been to the dentist, and it turns out I was right all those years that I was recommending fruits and vegetables instead of candy, and now he has come around to our approach. I would love to work with you to encourage that diet.

In our home State of New Hampshire, specialty crops are particularly important, and we have berries, we have apples and leafy greens, and I just want to highlight a new startup operation, it is called Leaf Farms, a new branch of Pleasant View Garden, and it is a fully automated indoor greenhouse, able to produce up to a dozen varieties of lettuce and other greens, delivering their products within 24 hours of harvest locally, which you can imagine for us when it is 10° in the winter, the idea of fresh lettuce is very exciting.

So it leads me to my question about moving on from the immigration issues for labor, we have talked about mechanization and automation, what resources are needed to support the development of mechanization, and stated a little bit differently, in our current education system, do we have the right mix of teaching and techniques and skills for staff to service robotics and various technology? And I guess this came up also in California, but just looking to the future of more automated agriculture, what should we be thinking about for education and skills training?

Mr. MURPHY. In my testimony I mentioned five very powerful factors that are coming together here around pesticide and fumigants and climate change and availability of resources. And my conclusion from this is that those are all driving us towards more automated, controlled environments. The example of Leaf is what you talked about is the sort of extreme edge of that work. Quite frankly, in the U.S. we are behind. In Asia this is something they have been doing. There are over 500 factory farms alone in Japan. Theirs are being driven by the similar issues, plus they don't have a very good climate.

It is still on the cutting edge, or maybe in some cases some people would say the bleeding edge, but there is no question that there will be some part of our production that moves in that regard. It just makes too much sense. In other words where you have your nursery producing plants in these growth chambers that ultimately go into what we would call these factory farms or growth chambers that you can grow the product, and you actually can distribute it right to the store within a few kilometers.

Ms. KUSTER. I am sorry, just to bring this up, because we had talked earlier about you said berry picking is for the young, are there opportunities in our current labor market for this approach, and what kind of skills would be needed to do these jobs of servicing the machinery and even the other STEM jobs that you have talked about, the kind of high-tech growing?

Mr. MURPHY. Yes, it would just require more education, because it becomes automation rather than manual labor. There is no question that that would be part of the equation.

Ms. KUSTER. Great.

Mr. LAVIGNE. I think you are seeing some very creative co-operations out there today. Universities, the land-grant side of a university, reaching across campus and talking to the engineering department.

Ms. KUSTER. Yes.

Mr. LAVIGNE. And you now see them talking to community colleges so that they can work in curicula with respect to irrigation systems and the computer systems and GPS and drone technology. And so a lot of the land-grant institutions are reaching out to Lake City Community College in north Florida, from the University of Florida, or the community college in Salinas Valley and Davis working with them. That encouragement to work somewhat outside of the mold that we have in the current land-grant institution and those creative deans that are saying we can find additional labor here to help our customers, the growers out there.

Ms. KUSTER. My time is up, but one of the local farms that I visited, the roof of the building opens and closes based upon the time of day and the precipitation. Totally computerized. It is really quite extraordinary.

So thank you. I yield back.

The CHAIRMAN. The gentlelady's time has expired.

I recognize myself for 5 minutes.

Again, thank you, gentlemen, for being here. We have had a lot of complaints about the implementation of the Food Safety Modernization Act, and can I get your thoughts on its implementation?

Are there things that are being done correctly or incorrectly that you would share with the Committee?

Mr. WENGER. I might just start by saying we certainly know, and the folks dealing with the leafy greens in Salinas Valley and the Leafy Green Marketing Agreement, what we did under the Food Safety Modernization Act. Unfortunately, any well-intentioned plan can sometimes run amuck, and certainly, as we have seen the implementation of the Food Safety Modernization Act, it has become its own cottage industry. And so what we see in California is a lot of folks doing what should have been the first point of processing is now going out into the field. And some of the water monitoring and everything that you have to do that really has no reflection on the safety of the food once it gets to the processor and to the consumer.

So while it is well-intentioned, there needs to be a lot of work to make sure and bring it back to the focus of its original intent.

The CHAIRMAN. Other comments?

Mr. LAVIGNE. From the seed side, Mr. Chairman, we are experiencing some challenges that we are working with FDA as they look at the implementation. You can imagine when you have seed that is cracked or not able to be used for planting because the shell is damaged, it still has a nutritional value across the board, and it can be used in feed. And so it is now being considered in some cases an ingredient in feed when there is really no risk at all, given the way that we produce seed and the way that seed is handled.

So we are working with them. It is one of those cases that just went a bit too far, and trying to get them to back off of that as we go forward.

The CHAIRMAN. What has been your experience dealing with, we don't have jurisdiction over FDA, so I can criticize them in this room, but what is your experience with them in terms of cooperation and help? We all want safe food, but we also want regulations that make sense, that you can live with. From working with them directly, what has been your experience?

Mr. WISHNATZKI. Yes, my experience, I am on the Board of Florida Fruit and Vegetable Association, and they had a representative that came and spoke with the board, and I got the impression that they are doing a lot with outreach and trying to identify the pain points and what things are wrong. From my perspective, I believe they are doing a pretty good job. It is a big undertaking.

Mr. LAVIGNE. Yes, they have been very receptive in listening to the issues, trying to find a way out of evaluating where the risk is and then determining: we don't see a risk here so how do we move you out of this process so there is not an issue, and all the seed plants across the country don't have to register as food facilities.

The CHAIRMAN. Right. Anybody else? Go ahead.

Mr. WENGER. Well, I was just going to say, as we start to maybe look for some retrenchment and going back, it is as if we are not for safe food. And so that puts you in a very paradoxical position that if you say let's take a look at it again, that somehow you are saying we are not wanting to deliver safe food, and that is just not true. We have to take a look at practical things that we can do to make sure that food is safe.

The CHAIRMAN. Yes, I got you.

A couple of you mentioned innovation. Are there regulatory barriers to the work you are trying to do with robotics, or whatever the innovations you have out there? Are there things that we need to consider removing from the regulatory scheme that slow innovation from actually getting done, and at a speed that you think you can make it happen?

Mr. WENGER. Yes, it just seems like, especially in California, every time you want to come up with a new idea, you have to do it many times over. We could have a long discussion on that, Mr. Chairman, but yes, it is even, what I said earlier, coming down to engines. We have cleaner and cleaner engines, but they are just never clean enough.

The CHAIRMAN. Absolutely. Right.

Mr. WENGER. And so as we are asking people to invest in new mechanization that would be robotic, so it would be drones and other things, there will be some offsetting things with it, but let's not let the perfect be the enemy of good.

The CHAIRMAN. Yes.

Mr. WISHNATZKI. I just want to add, at this point, my harvester robotics company is still in development, so you might ask me this question in a couple of years when we begin commercialization what kind of things we are running up against because I suspect that we are going to find some regulatory problems down the road, but at this point in time we are still just developing.

Mr. MURPHY. Our biggest issues are the crop right now. It is a very soft berry, and are trying to sort that out, but down the road there will probably be an issue at some point.

The CHAIRMAN. Okay. Well, as you do come across those regulatory schemes or problems that are not working, we would be keen on understanding it and trying to figure out how we can work with that.

My time has expired. I now recognize Ms. Plaskett for 5 minutes.

Ms. PLASKETT. Thank you, Mr. Chairman. Good morning, gentlemen.

Mr. LaVigne, I wanted to ask you, the 2014 Farm Bill provided for significant investment in agricultural research for specialty crops. There was an $80 million per year for Specialty Crop Research Initiative, and $85 million a year for Specialty Crop Block Grant Program. Could you give examples of cutting-edge research that has emerged from these programs?

Mr. LAVIGNE. There are a number that have come through that the researchers are looking at with respect to the specialty crop arena in the disease pressure that growers are experiencing. I did mention one earlier that is key is the broccoli production. It was very, very difficult for growers to produce broccoli on the East Coast. Mildew and other issues were devastating crops. Through molecular marker techniques and working with the Specialty Crop Block Grant Program, they were able to develop varieties that are more favorable for the East Coast.

Very similar to tomato production in California, in looking at how the process is done and what diseases were impacting them most, how do you improve the varieties enabling them to be less susceptible to those diseases.

We have really tried to focus on those areas where you had a collaboration between the grower community, in our case, the seed companies and the breeders and the university, USDA, to address those localized programs, and those Specialty Crop Block Grants were invaluable to those processes.

Ms. PLASKETT. Do you feel as we are working through the farm bill coming up now that this is the right amount of money or that additional funding should be provided for this kind of research?

Mr. LAVIGNE. Well, that is always the question. In this area, we can always use additional resources. As we see climate change issues, we see pest and disease moving, Mother Nature is a wonderful adaptor, and as we develop varieties that are resistant, as we develop other agrochemicals that will help us produce, she adapts. And so we have to be able to do that as well, and the Specialty Crop Block Grants enable our research and science community to be able to develop those varieties that can address those, so it is invaluable to have it. It is always good to have more available as we address the challenges.

Ms. PLASKETT. You talked about disease, at the University of the Virgin Islands, in our extension program, they deal a lot with supporting our local farmers in not so much disease as also water issues, irrigation, other kinds of crop safety, and I wanted to know if you could address some of that, some of these irrigation programs, or do you see that happening in other places as well? Do any of you?

Mr. WENGER. Yes, recently, some of the SCRI funds were used by University of California and the Almond Board to come up to monitor the amount of water used by almond trees, and to have real-time water usage. As you probably heard, during the drought, a gallon an almond, and it seemed to be everywhere on the press. And so utilizing these funds that were available and other such funds to be able to look for that technology that leaves water in the system for other uses. So they have been used.

Ms. PLASKETT. One of the things that I am interested in hearing from you all, Mr. Wenger, others, if you could talk about is, you have talked quite a bit about specialty crops, in the Virgin Islands we have special specialty crops. Probably, very tropical, but also very small in terms of our ability to compete with foreign crops that come in, whether it be from Guatemala or others, there is no way on our islands we are going to be able to grow as much mango as Guatemala does or other places like that. What support can these programs give to the diversification of crops here in the United States to sustain farmers who are not operating on huge, enormous tracks of land?

Mr. WENGER. Well, that is what really helps with the block grants. It does leverage the money from the taxpayer, and so you have others that join in for whether it is research or whether it is doing marketing. Some block grants have been used for, as we were saying before, with the olive oil industry to be able to help market locally, or domestically produced olive oils against imports that maybe aren't adequately marked. And so having those funds help the smaller grower, and it leveraged the taxpayer dollar at the same time.

Ms. PLASKETT. Do you find that most of these smaller growers end up being in what would be termed as the *fancy foods* area or things like that?

Mr. WENGER. Some of them, and a lot of them come together in co-ops and whatnot, and so can work together to be able to apply for these grants, and to meet that very specialty designer food market.

Ms. PLASKETT. Yes, I know I am running out of time, but the cooperation and the co-ops are going to be really key. In the Virgin Islands we are really looking to creating cooperatives among the smaller farmers for food processing plants to be able to qualify for that and support it, and the block grants are really helpful.

Thank you so much, Mr. Chairman.

The CHAIRMAN. The gentlelady's time has expired.

Mr. LaMalfa, did you have additional comments?

Mr. LAMALFA. Yes, please, 3 minutes?

The CHAIRMAN. Three minutes.

Mr. LAMALFA. Okay, thank you, Mr. Chairman. I appreciate it.

I want to talk to Mr. Murphy for just a bit. We are talking about new technology and innovation here, and sometimes it isn't available, and so what we see with the need for methyl bromide, we don't really have a good replacement for this in certain applications. I am working on a bill, H.R. 1891, to allow a little broader use, *et cetera,* but could you comment please on what the bill is seeking to do is that right now the power lies with the EPA to decide an emergency use. It still has an ability for emergency application under EPA guidance. What I am seeking to do is to keep it around as an emergency tool, but also switch that authority to the USDA, which has a much better idea of what is going on with crops, *et cetera.* You mentioned lack of access to any kind of fumigants, what would be your comment to me about this barrier we have to be able to do to utilize it, especially for our strawberry growers we have in northern California and around the country?

Mr. MURPHY. Certainly, methyl bromide was a fantastic tool for our industry for many, many years. Its most urgent use is actually not nurseries. What we need to have is clean plants so that we can send those to our farmers around the country and make sure that they have good plants that they can grow. If there was any area that needed particular attention, that would be the area that I would focus on; making sure that our nurseries have that capacity and that capability. So that is really important.

Mr. LAMALFA. Clean nursery plants, yes.

Mr. MURPHY. Clean nursery plants, because one plant in the nursery generates maybe ten daughter plants that ultimately get sent out, so its use in that concentrated form is very, very valuable. And there is really no solution in the nurseries that we have come up with at this point that is viable. We are doing a lot of work on different forms of disinfestation of the soil using all sorts of anaerobic processes; there is chloropicrin, there are lots of things going on, but the net of it all is we haven't reached a stage where we have the same capacity that methyl bromide has.

Mr. LAMALFA. Basically, on those seed ones it is very critical.

Mr. MURPHY. Well, it is more in berries we plant propagate, so it is for the propagation of the plants in the nurseries.

Mr. LAMALFA. Yes, okay. Thank you.

Mr. Wenger, please comment on that from a California perspective with methyl bromide and an emergency USDA usage. I will stop.

Mr. WENGER. Well, I was here many, many years ago talking about that very issue about replacements for methyl bromide, and I can remember that even those that were in favor and being challenged by the Chairman at the time, what are the alternatives, and the response was there is no silver bullet. It will take multiple different technologies and chemicals to do what methyl bromide does in one fell swoop. It has been used very safely, and is an issue that there really is no replacement for methyl bromide, and it is going to create a lot of other undesirable alternatives that we are going to have to look at.

Mr. LAMALFA. Okay. Well, Mr. Chairman, I appreciate the time. Thank you.

The CHAIRMAN. The gentleman's time has expired. Ms. Plaskett, do you have anything else?

Ms. PLASKETT. Nothing else.

The CHAIRMAN. All right, thank you.

Well, gentlemen, thank you very much for being here today. We have covered a variety of subjects, and all of them important to the specialty crop industry. We have beat the labor issue to death. It is a fixable problem that Chairman Goodlatte, Chairman of the Judiciary Committee, has jurisdiction over. All of us are in conversation with him about his proposed plan that would work to expand the H–2A program, make it more workable, make it where folks could stay here and work; the dairymen, the processors who need folks every single day, and crop producers who need them from time to time. The idea of an immediate e-verify and the impact it would have on the workforce is not lost on Mr. Goodlatte or the rest of us in terms of how we implement that. The opportunity to create programs would be evergreen in the sense that as people do decide to do something else, that a worker is going to come in behind them and replace that aging workforce as it moves forward. And then the inextirpable drive and move toward mechanization and robotics will continue at a fast pace. Necessity is the mother of invention, so to speak. We will have to fix that. If you look at the big row commodity crops; corn, and cotton in particular, not a lot of sweat labor left in that.

So thank you for sharing your ideas with us.

Under the Rules of the Committee, the record for today's hearing will remain open for 10 calendar days to receive additional material and supplementary written responses from the witnesses to any question posed by a Member.

This hearing of the Committee on Agriculture is adjourned. Thank you.

[Whereupon, at 12:15 p.m., the Committee was adjourned.]

[Material submitted for inclusion in the record follows:]

SUBMITTED STATEMENT BY BARBARA P. GLENN, PH.D., CHIEF EXECUTIVE OFFICER, NATIONAL ASSOCIATION OF STATE DEPARTMENTS OF AGRICULTURE

Statement of Interest

Chairman Conaway, Ranking Member Peterson, and distinguished Members of the House Committee on Agriculture, the National Association of State Departments of Agriculture (NASDA) applauds the Committee's work to reauthorize the farm bill prior to its expiration in 2018, and NASDA appreciates the Committee holding a hearing on "The Next Farm Bill: Technology & Innovation in Specialty Crops" on July 12th. NASDA stands ready to assist Congress in developing a robust and comprehensive farm bill prior to the expiration of the Agricultural Act of 2014 to ensure our farmers, ranchers, and rural communities have the tools and infrastructure necessary.

About NASDA

NASDA represents the Commissioners, Secretaries, and Directors of the state departments of agriculture in all fifty states and four territories. As elected and appointed officials, our members serve as strong advocates for American agriculture and are partners with a number of Federal agencies in regulating, marketing, and providing services to the agricultural community. As the chief agriculture officials in their states, NASDA members are keenly aware of the changing dynamics, increasing challenges, and new opportunities in agricultural production across the country and have a deep appreciation for the important contribution agriculture makes to our nation's security and economy.

NASDA Farm Bill Perspective & Specialty Crops

Agricultural producers, the rural economy, and communities of every size rely upon a forward looking and fully funded farm bill. In the House Committee on Agriculture's Budget Views and Estimates letter earlier this year, you described the economic hardship facing rural America. NASDA is concerned with efforts to reduce spending on vital agricultural programs and instead calls for enhanced investment in American agriculture that provides producers the tools they need to succeed. The farm bill is also vital to providing consumers access to the safest, highest quality and affordable food supply, which is essential for our nation's economy and security.

NASDA's priorities for the next farm bill focus on enhanced funding for invasive species programs, the Specialty Crop Block Grant Program, and the Market Access Program. The next farm bill should also provide investments in critical research, resources for farmers to comply with FSMA, new tools and resources for animal disease coordination, and investments in flexible, locally-driven conservation practices.

Building on these, NASDA, has also worked in conjunction with our state partners at the National Governors Association and the National Conference of State Legislatures, to outline key areas of importance for states in the upcoming farm bill:

- Provide sufficient resources to implement critical farm, conservation, forestry, pest and disease, and trade programs;
- Invest in the security of our farm economy by continuing to provide producers tools to mitigate and manage risks;
- Support essential research, especially on the safety and security of the food system and protection of our natural resources;
- Invest in voluntary, incentive-based conservation programs that are implemented in coordination with state and local intergovernmental partners;
- Ensure sufficient investment and stable resources for rural areas, including high speed Internet;
- Minimize burdens on food producers, processors, and distributors so that they can continue to provide the safest, highest quality, and affordable food supply for consumers; and
- Provide states, as partners with the Federal Government, maximum flexibility and opportunity for innovation to create efficiencies, coordinate funds and achieve program priorities.

NASDA has likewise outlined specific priorities regarding upcoming appropriations affecting a host of programs and industries. Our letter to the House and Senate Appropriations Committee's is attached for your reference.

Among NASDA's priorities in the specialty crop space for the 2018 Farm Bill are to enhance funding and flexibility for the Specialty Crop Block Grant (SCBG) program to meet demands including Food Safety Modernization Act implementation; increase funding for the Plant Pest and Disease Management and Disaster Prevention Programs (known by its section number, 10007) to include a stable source of

funding for the USDA Office of Pest Management Policy; and to sustain funding for the Specialty Crop Research Initiative.

Among these programmatic funding priorities, NASDA wishes to highlight an area of policy that we request the Committee consider. Specifically, NASDA is concerned with efforts to restrict how the various State Departments of Agriculture may use funding from the SCBG program and notes that the statute directs the Secretary of Agriculture to make grants to states for each of the fiscal years to be used solely to enhance the competitiveness of specialty crops. Since the program was funded in 2006, NASDA Members have partnered with the U.S. Department of Agriculture's Agricultural Marketing Service (USDA AMS) to distribute over $537 million in grants to local commodity groups, colleges and universities, municipalities, tribal organizations, and nonprofits. These locally responsive projects are fulfilling the statutory mandate of increasing competitiveness, not just by increasing consumer access to safe and healthy food but also by expanding economic opportunities across the rural-urban spectrum.

NASDA notes that while overall spending was reduced by $16.5 billion in the 2014 Farm Bill, Congress saw the importance of the SCBGP and increased funding by $270 million over 10 years. The budget situation is even tougher for the 2018 Farm Bill. But NASDA encourages Congress to enhance investments in this vital program. More funding means a more competitive specialty crop industry in our rapidly expanding health-focused consumer base.

While we highlight this program as a success, program funding recipients have growing concerns that the flexibility the SCBG program was built upon is eroding due to increased and unnecessary bureaucratic processes. This is especially evident in the establishment of certain performance measures for the program. While we all want to ensure the wise use of tax dollars, we are concerned these bureaucratic requirements—especially new sales reporting requirements for marketing projects—are simply not feasible for many of the kinds of projects that have made this program so successful, and we ask this Committee to take these concerns into consideration as we work towards a flexible, locally responsive program in the next farm bill.

Support for OPMP

The U.S. Department of Agriculture's (USDA) Office of Pest Management Policy (OPMP) was created as part of the 1998 Agricultural Research, Extension, and Education Reform Act in order to provide leadership in coordinating interagency activities with the EPA, the U.S. Food and Drug Administration (FDA), and other Federal and state agencies to coordinate agricultural policies within the Department related to pesticides. The law further requires OPMP to consult with and provide services to producer groups and interested parties.

The Congress believed creating OPMP was necessary to focus and coordinate the many pest management and pesticide-related activities carried out within the Department. From the legislative history, it is apparent Congress felt strongly this was a necessary step for USDA to effectively carryout its statutory responsibilities with respect to pesticide issues and pest management research.

The law creating this office established that the Director of this office would work with EPA, State Departments of Agriculture producers, producers, and other appropriate groups to develop effective, efficient mechanisms for gathering data necessary for making regulatory decisions. To achieve the many objectives the law envisioned in creating this office, it was expected the office would be created within and staffed by an official within the Office of the Secretary.

Congress was particularly concerned the Director of the OPMP be someone the Secretary had trust and confidence in to ensure that the department would be an effective and forceful advocate within the Administration on issues within the purview of this office. As such, the law requires the Director of the OPMP report directly to the Secretary or Deputy Secretary of Agriculture.

We ask that Members of this Committee use your considerable influence to ensure OPMP is vested with the authority and political leverage intended by the statute under which it was created. OPMP is an essential resource and indispensable partner to State Departments of Agriculture in its delivery of expertise on pesticide regulatory programs.

Conclusion

NASDA requests the Committee carefully consider the needs and challenges with making our specialty crop producers more competitive. The Committee will address a number of complex issues when crafting the next farm bill, but due to the tremendous support from NASDA and the specialty crop grower community—the SCBGP should not be one of those issues. The SCBGP represents a very modest investment

of resources in the farm bill, but yields tremendous gains for a more competitive specialty crop industry and healthier communities. NASDA stands ready to work with the Committee to maintain flexibility for this critical program.

Thank you for your consideration of this testimony, and please contact Amanda Culp ([**Redacted**]) if you have any questions.

ATTACHMENT 1

We Need A Farm Bill.

Good Food. **More Jobs.** ***Conservation.*** *Thriving communities.*

These are all things we can get behind.

As the chief agriculture officials in their states, members of the National Association of State Departments of Agriculture (NASDA) are keenly aware of the changing dynamics, increasing challenges, and new opportunities in agricultural production across the country and have a deep appreciation for the important contribution agriculture makes to our nation's security and economy.

The farm bill impacts everyone.

Agricultural producers, the rural economy, and communities of every size rely upon a forward looking, and fully funded farm bill. NASDA calls for enhanced investment in American agriculture that provides producers the tools they need to succeed. The farm bill is also vital to providing consumers access to the safest, highest quality and affordable food supply, which is essential for our nation's economy and security.

Priorities

- Conservation.
- Trade Promotion.
- Specialty Crops.
- Invasive Species.
- Animal Diseases.
- Research.
- Food Safety.

Our Priorities for the Next Farm Bill

Trade Promotion

The Market Access Program (MAP) promotes American-grown and produced food and ag products that are in competition with heavily subsidized foreign products. For every $1 invested in export market development programs, $24 is returned in export revenue. This means significant positive effects for farmers & ranchers like increased income and more American jobs in the farm and food sector. Funding for the Market Access Program (MAP) should be increased from $200M to $400M to better promote America's food and ag products in demand across the globe.

Conservation

Conservation programs provide financial and technical assistance needed to conserve our nation's natural resources and meet increasing regulatory demands. The next farm bill must make substantial investments in voluntary locally-driven, flexible, and efficient conservation programs. Additional investments are needed to continue targeted conservation, address water quality challenges and face regulatory pressures.

Specialty Crop Block Grants

The Specialty Crop Block Grant (SCBG) Program provides important tools to enhance specialty crop production, while also advancing foods with critical health benefits to the American people. To the extent additional funding is available, funding for the SCBG Program should be increased and Congress should ensure a flexible, locally responsive, and state-led program.

Invasive Species

Invasive plants and pests are an often catastrophic threat to farmers and ranchers. To address this increasing threat, bold action is required. Building on the successes of the invasive species programs created by the 2014 Farm Bill, Congress should bring additional tools to bear on this serious economic threat. Funding for the highly successful "Plant Pest and Disease Management & Disaster Prevention" and the "National Clean Plant Network" should be increased to in order to provide additional tools for domestic invasive species issues. Enhanced funding and coordi-

nation of invasive species under the direction of the USDA Office of Pest Management Policy and involving other departments and agencies of the Federal and state governments should be considered to strengthen programs and maximize the value of the Federal funding.

Animal Diseases

A proactive, multi-faceted animal disease program is needed to safeguard animal agriculture, promote sustainable economic development and prevent catastrophic events that could threaten our nation's food supply. Expanding on the authorization for the National Animal Health Laboratory Network, and modeled after the aforementioned invasive species programs, this program will bring together the Federal Government with states, industry, universities, and other agricultural stakeholders to reduce the impact of high-consequence animal diseases, provide rapid detection and response capabilities, develop disease prevention and mitigation technologies, support a vaccine bank infrastructure, prevent the entrance and spread of foreign animal diseases into the U.S., and identify & support critical research needs.

Research, Education, and Economics

Robust funding for agricultural research and extension programs, and infrastructure, particularly within our nation's many outstanding agricultural colleges and universities, is vital to ensuring producers remain competitive domestically and globally. The farm bill must also ensure adequate funding for research focusing on the safety and security of the food system and improving and protecting our natural resources.

Food Safety

The Food Safety Modernization Act (FSMA) is a landmark bill which has overhauled American food safety regulation from response-driven to preventive and farm-focused. Congress should address the variety of implementation challenges with the final FSMA rules. The next farm bill should provide resources to assist producers in complying with FSMA, especially via low-cost loans for infrastructure upgrades.

ATTACHMENT 2

March 29, 2017

Hon. THAD COCHRAN,
Chairman,
Senate Committee on Appropriations,
Washington, D.C.;
Hon. RODNEY FRELINGHUYSEN,
Chairman,
House Committee on Appropriations,
Washington, D.C.;
Hon. PATRICK LEAHY,
Ranking Minority Member,
Senate Committee on Appropriations,
Washington, D.C.;
Hon. NITA LOWEY,
Ranking Minority Member,
House Committee on Appropriations,
Washington, D.C.

Dear Chairman Cochran, Chairman Frelinghuysen, Ranking Member Leahy and Ranking Member Lowey:

As Congress prepares Fiscal Year 2018 (FY18) appropriations legislation for Federal agencies, the National Association of State Departments of Agriculture (NASDA) encourages you to support vital programs to ensure a safe, affordable, and abundant food supply. Ahead of the 2018 Farm Bill, support for discretionary programs under your Committee's jurisdiction is more important than ever. Amidst the farm economy downturn, investment in these programs demonstrates support for America's farmers and ranchers and commitment to agriculture programs. Many economic analyses predict record levels of farm foreclosures and ripple effects throughout rural communities.[1–2] We respectfully request that you preserve and enhance the various rural programs under your jurisdiction for FY18.

NASDA represents the Commissioners, Secretaries, and Directors of agriculture in all fifty states and four territories. As elected and appointed officials, NASDA members are strong advocates for American agriculture and are partners with a

[1] Federal Reserve Bank of St. Louis. (2017, February 9). *Agriculture Finance Monitor.* Retrieved from *https://files.stlouisfed.org/files/htdocs/publications/ag-finance/2017-02-09/2016-fourth-quarter.pdf.*

[2] ERS, USDA. (2017, February 24). 2017 *Farm Sector Income Forecast.* Retrieved from *https://www.ers.usda.gov/topics/farm-economy/farm-sector-income-finances/farm-sector-income-forecast/.*

number of Federal agencies in regulating, marketing, and providing services to the agricultural industry. One of NASDA's top priorities is the principle of cooperative federalism—a robust partnership and role for states in Federal policymaking. Effective Federal-state partnerships are critical to a host of federally-mandated regulatory programs, as well as key services the agriculture industry depends upon. Enhancing resources for states to deliver these programs and ensuring no unfunded mandates on the states are especially critical.

Food and Drug Administration

Integrated Food Safety System

- **Fund Food Safety Modernization Act (FSMA) State Implementation Programs at $100 million.**

NASDA urges the Committee to provide sufficient funding for Food Safety Modernization Act (FSMA) implementation. **NASDA requests the Committee to continue to increase funding for the state implementation activities that are required by FSMA.** While FDA is charged with writing the rules, significant implementation and enforcement activities under FSMA are the primary responsibilities of state agencies. It is crucial that Congress provide sufficient resources so as to avoid unfunded mandates on the states and to ensure farmers have the tools and education necessary to comply with these new Federal requirements. Moreover, NASDA continues to insist that FDA get the rules right. The combination of problematic elements of these regulations coupled with inadequate funding for their implementation will ultimately subject producers to inconsistent and arbitrary enforcement, putting their farms in economic jeopardy while doing little, if anything to enhance food safety. Funding to ensure parity between imported and domestic food is also necessary.

NASDA continues to estimate state programs will need an investment of $100 million annually to ensure the systematic and timely implementation of the elements of FSMA for which states have primary responsibility. To date, funding for states has focused on implementing the Produce Safety rule, but funding is also necessary for the development and operation of programs associated with the *Preventive Controls: Human Food* and *Preventive Controls: Animal Food* rules. Specifically, NASDA estimates the following funding levels for state programs are necessary:

- **Produce Safety:** $40 million annually for state programs.
- **Preventive Controls:** Animal Food: $20 million annually for state programs.
- **Preventive Controls:** Human Food: $40 million annually for state programs.

NASDA appreciates the initial investment in food safety and state programs Congress made beginning in the FY16 omnibus bill. It is hoped that the availability of additional funding, coupled with what has been provided, will ultimately allow states to fully implement effective programs.

Center for Veterinary Medicine (CVM)

- **CVM program areas at least $196.7 million.**
- **National Antimicrobial Resistance Monitoring System (NARMS) funding at $10.8 million.**
- **Combating Antibiotic Resistance Initiative at $35 million for USDA.**

NASDA supports funding of at least **$196.7 million for CVM, which oversees the safety of animal drugs, feeds and biotechnology-derived products. Though questions exist related to FDA's approach to regulating animal biotechnology, funding must be adequate to ensure efficient pre-market review.** Further, we request that the **new user fees established by the Animal Drug User Fee Act (ADUFA) of $22.977 million be included** in the FY18 appropriations bill. ADUFA establishes a system of performance standards to improve the new animal drug review process at CVM. The review process has improved as CVM has met the performance standards. To maintain this success, we request the fees be integrated into this year's appropriation bill. The appropriation is entirely budget neutral as the money is provided by the animal health companies.

NASDA strongly supports the continuation of the **National Antimicrobial Resistance Monitoring System (NARMS) presently funded at $10.8 million.** NASDA thanks Congress for increasing NARMS funding for meat testing by $3 million in previous years. Continued funding will help detect trends in antibiotic resistance. NASDA supports an **additional $35 million for the USDA and $1 million for the Food Drug Administration—Center for Veterinary Medicine (CVM)** for research, monitoring, and surveillance under the **National Action Plan for**

Combating Antibiotic Resistant Bacteria (CARB). Finally, NASDA supports developing scientifically valid methods to better understand antimicrobial drug use practices in animals and the public health impacts of resistant bacteria.

U.S. Department of Agriculture

Agricultural Marketing Service (AMS)

- **Protect the Specialty Crop Block Grant (SCBG) Program's mandatory funding of $85 million.**

NASDA urges the Committee to protect the Specialty Crop Block Grant Program's mandatory funding of $85 million. The SCBG Program provides important research, education, and marketing tools to enhance specialty crop competitiveness, while also advancing foods with critical health benefits to the American people. NASDA also urges the Committee to protect these funds from arbitrary reprogramming efforts from within the Administration.

Agricultural Research Service (ARS)

- **ARS at $1.3 billion.**
- **Office of Pest Management Policy (OPMP) at $5 million.**
- **Fully fund National Agricultural Law Center (NALC).**

NASDA supports funding of at least $1.3 billion for ARS. ARS' intramural research and their partnerships with universities and industry are uniquely suited for projects requiring a long-term investment while maintaining the capacity to respond to emerging problems.

NASDA urges the Committee to **fund the Office of Pest Management Policy (OPMP) at a minimum of $5 million,** which includes a requested increase above the $3 million authorized by the Agricultural Act of 2014. **We further request assurances USDA–ARS executes this complete funding allocation to OPMP.** OPMP plays a critical role in coordinating policies and activities at USDA related to pesticides. Furthermore, OPMP provides a crucial source of leadership in the coordination of interagency activities between USDA, the EPA, the FDA, and state agencies.

NASDA encourages continued extramural funding for the National Agricultural Law Center (NALC), and its partners in the Agricultural & Food Law Consortium (Consortium) through the USDA–ARS National Agricultural Library. The Consortium supports development and dissemination of objective, scholarly, and relevant agricultural and food law research and information to producers, policy makers, extension, others and NASDA leadership and members as they are a formal NASDA partner. Led by the NALC, the Consortium includes the National Sea Grant Law Center at the University of Mississippi School of Law, the Agricultural & Resource Law Program at The Ohio State University, and the Center for Agricultural & Shale Law at Penn State Law. Requested report language: *The Committee expects USDA–ARS National Agricultural Library extramural research and information consortium projects to be funded at no less than the Fiscal Year 2014 levels.*

Animal and Plant Health Inspection Service (APHIS) discretionary programs

- **APHIS discretionary program areas at a minimum of $950 million.**
- **Fully fund Cooperative Agricultural Pest Survey (CAPS) Program.**
- **Fund Wildlife Services at $120 million.**
- **Fund Feral Swine Control at $20 million.**
- **New research funding for National Animal Health Monitoring System (NAHMS).**
- **Fully fund National Animal Health Laboratory Network (NAHLN) at $15 million.**

NASDA members are key regulatory partners with USDA–APHIS in protecting American agriculture and rural economies from the threats posed by animal and plant diseases and pests. It is estimated that plant pests alone cost the U.S. economy over $100 billion a year. NASDA recommends **a minimum of $950 million in discretionary funding for APHIS.** Any reductions to APHIS' budget will result in deterioration of essential services and impair the Agency from carrying out its fundamental mission, which is "to protect the health and value of American agriculture and natural resources."

We urge the Committee to fully fund the Cooperative Agricultural Pest Survey (CAPS) program, which is an important state-Federal cooperative program that conducts science-based national and state surveys targeted at specific ex-

otic plant pests, diseases, and weeds identified as threats to U.S. agriculture and/or the environment. A strong agricultural pest detection system is essential to providing a continuum of checks from offshore programs, domestic port inspections, and countrywide surveys.

NASDA encourages the Committee to **adequately fund APHIS's critical Wildlife Services (WS) programs at $120 million.** In cooperation with state departments of agriculture, industry and others, WS leadership and expertise is needed to resolve conflicts between humans and wildlife, protect public health and safety related to water quality and safety of air travelers, and protect agriculture from detrimental animal predators through identification, demonstration, and application of the appropriate methods of control. Periodic efforts to reduce or limit the use of funds for core WS missions should be rejected. NASDA also **supports $20 million to the national control program for feral swine.** These invasive species cause an estimated $1.5 billion annually in damages to pastures, crops, and natural areas.

NASDA supports fully funding **the National Animal Health Monitoring System (NAHMS)** for antibiotic research. Further, funding of this system must be **new money** not redirected USDA funds. **Antibiotic use data collection should be collected through the NAHMS,** which conducts national studies on the health and management of U.S. livestock populations. NAHMS has defined protocols in place, is already on-farm collecting data, and provides confidentiality protections.

NASDA was pleased the 2014 Farm Bill authorized $15 million annually for the National Animal Health Laboratory Network (NAHLN), but even if fully funded, NAHLN will need additional funding beyond what is authorized. NAHLN is a cooperative effort composed of USDA–APHIS, NIFA, university, and state veterinary diagnostic labs. NAHLN is an early warning system for emerging and foreign animal diseases, and **we urge Congress to provide the full authorized funding in FY18.** This funding will help expand surveillance and surge capacity of the NAHLN by: increasing the number of participating state labs; developing infrastructure for electronic data transmission; and, increasing efficiency and effectiveness of lab personnel training and employment.

Food Safety and Inspection Service (FSIS)

- **Remove Prohibitions on USDA Horse Meat Inspections.**
- **Fund State Food Safety and Inspection at $63 million.**

We encourage the Committee to **resist attempts to include language that would prohibit funding for USDA horse meat inspection for human consumption.** A 2011 GAO study concluded that removing funding for USDA horse meat inspectors has resulted in widespread starvation, abandonment, unnecessary suffering of horses and unwanted horses being shipped farther to processing facilities in Canada or Mexico.

NASDA urges the Committee to restore funding for State Food Safety and Inspection programs to $63 million and refrain from further cuts. This funding is critical for states that provide state meat inspections under a variety of programs regulated by FSIS.

Foreign Agricultural Service (FAS)

- **Protect mandatory funding for the Market Access Program (MAP).**
- **Protect mandatory funding for the Foreign Market Development (FMD) program.**

Funding for the Foreign Agricultural Service (FAS) is a key NASDA priority, and is vital to ensuring American agricultural producers and related businesses are able access important export markets. NASDA recognizes industry requests to enhance this program and urges the Committee to **protect mandatory funding invested in the Market Access Program (MAP).** MAP encourages the development, maintenance, and expansion of commercial agricultural export markets. The program especially helps small businesses in urban, suburban, and rural areas access foreign markets and increase export opportunities. In addition, we encourage you to **protect mandatory funding invested in the Foreign Market Development (FMD) Program,** thereby helping to foster trade opportunities with American businesses in emerging markets.

National Agricultural Statistics Service (NASS)

- **Funding for NASS of at least $176.6 million.**

NASDA urges the Committee to fund NASS at a minimum of $176.6 million as NASS data is vital to keeping agricultural markets stable, efficient, and fair by making available objective data to commodity market buyers and sellers. NASS provides objective, timely, accurate, and essential statistics in service to U.S. agri-

culture. NASS statistics provide the information necessary for producers, agribusinesses, farm organizations, economists, and others for critical decision making in agricultural marketing and investing.

National Institute for Food and Agriculture (NIFA) Discretionary Programs

- **National Agriculture in the Classroom at $1 million.**
- **Agriculture and Food Research Initiative (AFRI) at $700 million.**
- **Veterinary Medical Loan Repayment Program (VMLRP) at $6.5 million.**
- **Veterinary Services Grant Program (VSGP) at $3 million.**
- **Food Animal Residue Avoidance Database (FARAD) at $2.5 million.**
- **Section 1433 at $10 million.**

NASDA encourages funding for Agriculture in the Classroom (AIC) Programs at $1 million. This funding supports state programs that provide tools to improve agriculture literacy among Pre K–12 teachers and students. **NASDA recommends this programming remain under USDA's scope due to its closely aligned mission areas.**

NASDA strongly supports providing $700 million for the Agriculture and Food Research Initiative (AFRI). AFRI competitively funds new projects and addresses emerging issues in food, agriculture, and natural resources research. Studies show that every dollar invested in agricultural research returns over $20 to our economy. NASDA is supportive of language directing AFRI to address pollinators, antibiotic resistance and advancing drug approvals to treat minor species. Within NIFA, NASDA requests funds for the following, emphasizing impacts on animal agriculture:

- **$6.5 million, or level funding, for the Veterinary Medical Loan Repayment Program (VMLRP).** Since 2010, 286 veterinarians have participated in the VMLRP and nearly 860 have applied. NASDA also urges Congress to exempt VMLRP awards from withholding taxes.
- **$3 million for the Veterinary Services Grant Program (VSGP)** in FY 2018 with future increases to the full authorized level of $10 million. Congress needs to begin initial funding for the newly authorized competitive grant program to address gaps in rural areas.
- **$2.5 million for the Food Animal Residue Avoidance Database (FARAD).** This program has received level-funding in the past at $1.25 million. In 2013, there were more than 7.5 million animals impacted in nearly 2,000 residue avoidance cases handled by FARAD.

The 2014 Farm Bill includes enhancements to **Section 1433, Continuing Animal Health and Disease, Food Security, and Stewardship Research, Education and Extension Programs.** The expanded Section 1433 maintains the program for animal health and disease and adds a competitive grant program focusing on priorities in the areas of food security, one health and stewardship. NASDA recommends funding of $10 million for fiscal 2018, less than half of its authorized level of $25 million.

Natural Resources Conservation Service (NRCS)

- **Protect mandatory Environmental Quality Incentives Program (EQIP) funding at $1.75 billion.**
- **Ensure Conservation Stewardship Program (CSP) availability at 10 million acres.**
- **Protect mandatory Regional Conservation Partnership Program (RCPP) funding at $110 million plus eligible funds from EQIP, CSP and ACEP.**
- **Protect mandatory Agriculture Conservation Easement Program (ACEP) at $250 million.**

NASDA encourages Congress to protect the mandatory funding for the farm bill title II working lands conservation programs. Voluntary, incentive-based conservation programs are necessary to advance agriculture's efforts to improve water and air quality, soil health, and address water quantity concerns. These programs also help producers avoid overly burdensome regulatory pressures.

Specifically, we urge Congress to maintain all mandatory conservation program funding for FY18. Additionally, NASDA encourages Congress to provide the maximum possible funding for Conservation Technical Assistance which provides the direct, on-the-ground assistance producers need to address specific concerns.

U.S. Forest Service

- **Forest Inventory and Analysis program at $83 million.**

The Forest Inventory and Analysis (FIA) program provides critical information on the state of our nation's forests. We ask the Committee to reverse recent spending cuts and **fund FIA at a level of at least $83 million.** The program inventories America's forests and provides unbiased information for monitoring trends in habitat, wildfire risk, insect and disease threats and other resource questions.

Environmental Protection Agency

Office of Pesticide Programs (OPP)

- **Fund OPP at $128 million.**
- **Pesticide Program Implementation Grants at $15 million.**
- **Pesticide Enforcement Grants at $19 million.**
- **State Pollinator Protection Plans at $5 million.**

NASDA encourages the Committee to adequately fund EPA–OPP at $128 million to ensure the agency has appropriate resources necessary to support FIFRA-related activities, training, resources to facilitate state meetings, and field training resources. NASDA urges the Committee **to fund EPA State Pesticide Program Implementation & Enforcement Grants at $34 million** ($15 million for Pesticide Program Implementation and $19 million for Pesticide Enforcement grants). **NASDA supports funding of at least $5 million for OPP to support existing resources available to states and tribes to develop pollinator protection plans. This funding is critical for states in developing and implementing state managed pollinator plans.** NASDA supports OPP's work to improve pollinator health through research and technical analysis on pollinators and improving understanding to promote pollinator health through the regulatory processes.

Office of Water

- **Clean Water Action Section 319 Program at $164.9 million.**

NASDA requests a minimum of **$164.9 million for the Clean Water Act Section 319 program** but, the national need is much greater. These funds are critical for state non-point source water quality efforts.

Army Corps of Engineers

Army Corps of Engineers

- **Fund costs of construction and expansion of the four priority inland waterways projects at $363.8 million.**
- **Fund at least $800 million for inland waterways operations and maintenance.**
- **Fund Operations & Maintenance (O&M) at $3.137 billion.**
- **Appropriations at levels called for in WRRDA 2014 for the Harbor Maintenance Trust Fund.**

We support **$363.8 million in funding** for the Corps to ensure funding of the **Inland Waterway Trust Fund (IWTF) for inland waterway modernization, replacement, rehabilitation, & expansion projects** (including the Olmsted, Lower Mon, Kentucky Lock Expansion and Chickamauga projects) is maintained at the highest level supportable by the inland waterway diesel tax revenues expected for FY18 by Treasury for the IWTF. NASDA supports the **Corps of Engineers' Operations & Maintenance (O&M) funding level of $3.137 billion** for the operations and maintenance activities of the Corps including inland/coastal navigation.

We request reaching the **Harbor Maintenance Trust Fund (HMTF) Target levels** outlined in the 2014 WRRDA bill, including 74% of HMT received the prior fiscal year for FY18.

Conclusion

NASDA asks that you give our requests careful consideration as you work to fund the nation's agricultural policy priorities in Fiscal Year 2018. NASDA is a partner and co-regulator with Federal agencies in the implementation of a host of food, agricultural and natural resources programs. NASDA Members have a unique wealth of information, experience, and expertise but require resources to implement and execute their responsibilities. We realize how difficult your task is but know that investing in the outlined programs will be beneficial now and in the future. NASDA stands ready to work with you and your staff to expeditiously pass the agriculture

appropriations bill. Thank you for your consideration, and please let us know if you have any questions.

Sincerely,



BARBARA P. GLENN, PH.D.,
Chief Executive Officer.

CC:

Representative ROBERT ADERHOLT (R–AL), *Chair,* Agriculture Appropriations Subcommittee
Representative SANFORD BISHOP (D–GA), *Ranking Member,* Agriculture Appropriations Subcommittee
Representative KEN CALVERT (R–CA), *Chair,* Interior Appropriations Subcommittee
Representative BETTY MCCOLLUM (D–MN), *Ranking Member,* Interior Appropriations Subcommittee
Senator JOHN HOEVEN (R–ND), *Chair,* Agriculture Appropriations Subcommittee
Senator JEFF MERKLEY (D–OR), *Ranking Member,* Agriculture Appropriations Subcommittee
Senator LISA MURKOWSKI (R–AK), *Chair,* Interior Appropriations Subcommittee
Senator TOM UDALL (D–NM), *Ranking Member,* Interior Appropriations Subcommittee

Fiscal Year 2018 Appropriations Priorities

Food and Drug Administration

Food Safety System

- Increase for the Food Safety Modernization Act (FSMA) implementation to $100 million.

Center for Veterinary Medicine (CVM)

- CVM program areas at $196.7 million.
- National Antimicrobial Resistance Monitoring System (NARMS) funding at $10.8 million.
- Combating Antibiotic Resistance Initiative at $35 million for USDA.

U.S. Department of Agriculture

Agricultural Marketing Service (AMS)

- Protect the Specialty Crop Block Grant Program's mandatory funding of $85 million.

Agricultural Research Service (ARS)

- Fully fund ARS at $1.3 billion.
- Fully fund Office of Pest Management Policy (OPMP) at $5 million.
- Fully fund National Agricultural Law Center (NALC).

Animal and Plant Health Inspection Service (APHIS)

- Fund APHIS discretionary program areas at $950 million.
- Fully fund the Cooperative Agricultural Pest Survey (CAPS) Program.
- Fund Wildlife Services at $120 million.
- Fund Feral Swine Control at $20 million0
- New research funding for National Animal Health Monitoring System (NAHMS).
- Fully fund National Animal Health Laboratory Network (NAHLN) at $15 million.

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- Remove Prohibitions on USDA Horse Meat Inspections.
- Fully fund State Food Safety and Inspection at $63 million.

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- Protect mandatory funding for the Market Access Program (MAP).
- Protect mandatory funding for the Foreign Market Development (FMD) program.

National Agricultural Statistics Service (NASS)

- Fund NASS at a minimum of $176.6 million.

National Institute for Food and Agriculture (NIFA)

- National Agriculture in the Classroom at $1 million.
- Fully fund Agriculture and Food Research Initiative (AFRI) at $700 million.
- Level funding for Veterinary Medical Loan Repayment Program (VMLRP) at $6.5 million.
- Fund Veterinary Services Grant Program (VSGP) at $3 million.
- Fund Food Animal Residue Avoidance Database (FARAD) at $2.5 million.
- Fund Section 1433 at $10 million.

Natural Resources Conservation Service (NRCS)

- Protect mandatory Environmental Quality Incentives Program (EQIP) funding at $1.75 billion.
- Protect acre availability in the Conservation Stewardship Program (CSP) at 10 million acres.
- Protect mandatory Regional Conservation Partnership Program (RCPP) funding at $110 million plus eligible funds from EQIP, CSP and ACEP.
- Protect mandatory Agriculture Conservation Easement Program (ACEP) at $250 million.

U.S. Forest Service

- Forest Inventory and Analysis program at $83 million.

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- OPP at $128 million.
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- Fund Operations & Maintenance (O&M) at $3.137 billion.
- Appropriations at levels called for in WRRDA 2014 for the Harbor Maintenance Trust Fund.

ATTACHMENT 3

May 17, 2017

Hon. MITCH MCCONNELL,
Majority Leader,
United States Senate,
Washington, D.C.;
Hon. PAUL RYAN,
Speaker,
United States House of Representatives,
Washington, D.C.;
Hon. CHARLES SCHUMER,
Minority Leader,
United States Senate,
Washington, D.C.;
Hon. NANCY PELOSI,
Minority Leader,
United States House of Representatives,
Washington, D.C.

Dear Leader McConnell, Speaker Ryan, Leader Schumer and Leader Pelosi:

On behalf of the nation's governors, legislators and chief state agricultural officials, we urge Congress to make enacting the next farm bill a priority prior to the current bill's expiration in 2018.

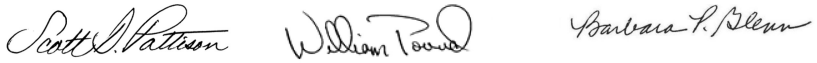
As the chief executives, elected representatives and agriculture officials in our states, we have long advocated for certainty and stability for our farmers and ranchers as they make long-term decisions impacting their communities that are impor-

tant for our nation's economy and national security. We recognize the value of a healthy agricultural economy and the important role Congress plays by investing in American agriculture to provide producers the tools necessary for success. Amidst the farm economy downturn, Federal investments in these programs remain especially crucial. As Congress considers legislation to define future agricultural, conservation, nutrition and forestry policy, we urge you to consider these principles:

- Provide sufficient resources to implement critical farm, conservation, forestry, pest and disease, and trade programs;
- Invest in the security of our farm economy by continuing to provide producers tools to mitigate and manage risks;
- Support essential research, especially on the safety and security of the food system and protection of our natural resources;
- Invest in voluntary, incentive-based conservation programs that are implemented in coordination with state and local intergovernmental partners;
- Ensure sufficient investment and stable resources for rural areas, including high speed Internet;
- Minimize burdens on food producers, processors, and distributors so that they can continue to provide the safest, highest quality, and affordable food supply for consumers; and
- Provide states, as partners with the Federal Government, maximum flexibility and opportunity for innovation to create efficiencies, coordinate funds and achieve program priorities.

Governors, state legislators and state agricultural directors remain committed to a robust state-Federal partnership, and look forward to working together on this critical legislation.

Sincerely,



SCOTT D. PATTISON,
Executive Director and CEO,
National Governors Association;

WILLIAM T. POUND,
Executive Director,
National Conference of State Legislatures;

BARBARA P. GLENN, PH.D.,
Chief Executive Officer,
National Association of State Departments of Agriculture.

CC:

Chairman ROBERTS, Senate Committee on Agriculture, Nutrition, and Forestry
Ranking Member STABENOW, Senate Committee on Agriculture, Nutrition, and Forestry
Chairman CONAWAY, House Committee on Agriculture
Ranking Member PETERSON, House Committee on Agriculture
Chairman ENZI, Senate Budget Committee
Ranking Member SANDERS, Senate Budget Committee
Chairman DIANE BLACK, House Committee on the Budget
Ranking Member YARMUTH, House Committee on the Budget

SUBMITTED STATEMENT BY JACK GRIFFIN, CHIEF EXECUTIVE OFFICER, METROPOLIS FARMS

Chairman Conaway, Ranking Member Peterson, and Members of the Committee, thank you for this opportunity to submit my written testimony for the record of the Committee's hearing on Technology and Innovation in Specialty Crops. I commend the Committee for choosing this topic for hearing in preparation of the next farm bill.

My name is Jack Griffin and I am the President of Metropolis Farms in Philadelphia. Metropolis' primary farm is in south Philly, in a warehouse, on the second floor. Our farm is in Rocky Balboa's neighborhood. It's not your typical farming community.

We are not your typical farm, though, either. We are an urban, indoor farm. At our Philadelphia headquarters facility, we produce crops on hydroponic trays that are $36^{2\prime}$—9′ long, 4′ wide—that stack up to 15′ high in a modular tower with four levels. One tower, harvested three times per year, can grow the equivalent of up to an acre on an outdoor farm. We are currently supplying customers in the Philadelphia area with produce.

Metropolis uses zero soil, and approximately 95 percent less water than conventional specialty crop farming, even though our production is hydroponic. Moreover, the way our towers are configured inside our warehouse, and with the use of the ambient temperature effects of the hydroponic systems, we use between 70 to 80 percent less energy than conventional greenhouses. Finally, our system is portable and light enough that we can locate in most existing underutilized building spaces.

Mr. Chairman, innovation is at the core of Metropolis Farms. I have spent most of the past 4 years doing research and development to improve indoor farming, and we continue to learn and adapt new processes. Our systems are able to grow not only the leafy and micro-greens that so many assume is the limit for indoor ag, but the Metropolis Farms system also produces flowering plants such as tomatoes, peppers, strawberries and other fruits and vegetables. Also, we successfully have produced trial crops of sunflowers and other minor oilseed crops. And our innovation continues. We are developing a system to grow stevia, the low-calorie sweetener, and because of our tight control of the growing environment we can repeatedly produce plants with the highest concentrations of the desired stevia glycosides.

The most accurate description of our business is that we are a technology company which owns and operates farms, and sells farming systems to other farmers. Our focus on innovation is not only targeted to more efficient and cost effective crop production—although that is obviously of paramount importance—beyond that, we are focused on bringing down the financial barriers to entering into farming. One of the things I soon discovered upon entering the indoor farming space was that so much of the technology was,as the financial world might term it, over capitalized.

Indeed, the pre-existing technology for farming was expensive. Ironically, I also found it not to be that efficient. To build an indoor farm with most of that technology, it would cost literally millions for such things as LED lighting, stainless steel water piping which allows for steam flushing to disinfect and remove the inevitable bacterial build-up of a hydroponic system, and state-of-the-art climate and pest control systems.

Metropolis' innovations are based on a systems optimizations approach rather than being focused on a specific new technology. The result is a much more effective and efficient, not to mention less costly, farm system. We developed customized ceramic lighting which generates more light with less heat, and thus reduce cooling loads. We've developed a piping system with PVC piping which can be disassembled, cleaned, and re-assembled in less than an hour for regular maintenance after harvest and before planting. This is both a cost saving and phytosanitary improvement over current systems and practices. Our farms also integrate hybrid carnivorous plants that attract insects away from the crops, and then eat those insects as a means of natural pest control.

These innovations represent just a few of the Company's more than 20 patents and trade secrets which have been applied to more than a dozen development projects around the country. Future innovation is targeted for nursery applications. Indeed, our systems can develop rapidly propagating crops for transplanting to outdoor farming which can help improve farm infrastructure and productivity.

Our latest innovation is in development. It will be a 100,000$^{2\prime}$, fourth floor space in South Philadelphia. This operation will grow the equivalent of more than 660 acres of produce per year. It will be the world's first solar powered indoor farm, with a 1,750 panel, 400 kW rooftop solar array that produces an average of 525 MWh of electricity per year; this represents the largest solar array for any purpose in the City of Philadelphia. In short, we removed many of the climate and environmental risks of outdoor production, and will be applying back the most beneficial input of traditional outdoor farming: solar energy.

Let me re-emphasize a point made previously; the ability to put our modular systems on upper floors in a warehouse building is a major financial savings. The repurposed building where the solar farm will be located rents ground floor space for $25 per square foot per year; the 4th-floor space rents for less than $^1/_{16}$ that rate. Indeed, at the heart of all this innovation has been a focus on keeping everything cheap and simple to operate. As stated earlier, Mr. Chairman, Metropolis Farms wants to break down the barriers to entry when it comes to farming—at least indoor farming.

I believe that indoor farms, at a minimum, can:

- provide opportunities for current conventional farmers looking to fill seasonal demand for certain produce and crops;
- assist with job training in high unemployment areas of our major cities; and
- open new avenues for military veteran farmers, especially wounded veterans.

I know this Committee is committed to helping veterans and last year held a hearing on Veteran Contributions to National Food Security. Helping veterans is also a passion of mine as I come from a family that has produced a long line of U.S. Marines. In trying to develop sound occupational safety practices within our farm systems we've also been able to make Metropolis Farms systems adjustable to be handicap accessible; wheel chair bound farmers and employees can conduct a harvest in a Metropolis Farms operation. We'd like veteran farmers to be able to take advantage of this innovation.

Therefore, one of the policy recommendations I have is that the next farm bill adequately ensure that indoor farming qualifies under the Beginning Farmer and Rancher Development Program, especially the five percent of funds set-aside to meet the needs of veteran farmers and ranchers, as well as the Agribility program, which provides assistance to farmers and ranchers, including veterans with disabilities.

Beyond just veterans' programs, I urge the Committee and Congress in the next farm bill to ensure that indoor agriculture not be excluded from programs for which such similar ag operations would otherwise qualify. These would include Farm Service Agency operating loans, which heretofore, only micro-loans have been offered to indoor farms.

Such programs would also include Farmers Market Promotion Program, Local Food Promotion Program, Specialty Crop Block Grants, Value-Added Producer Grants, Farm to School Grants, Local Utility Program and even Rural Development's Business and Industry Loans.

Furthermore, as the report language from the House Agriculture Appropriations bill says, "USDA should consider intramural and extramural research where the Department and its stakeholders can work towards advancing technologies" in new types of agriculture, including urban, vertical, indoor and other production systems. Research is important to keep these new innovations matriculating towards commercialization.

I commend the Committee for its 2 year, top to bottom review of the Supplemental Nutrition Assistance Program (SNAP) and the reform themes that emerged from that review. I believe that indoor farming has a place in addressing nutrition policy generally and SNAP specifically moving forward.

There were three specific "findings themes" in the Committee's December 2016 report on the *Past Present and Future of SNAP* that specifically caught my eye as an indoor farmer and systems builder:

> *Unemployment and underemployment are leading causes of poverty, and promoting pathways to employment is the best way to help individuals climb the economic ladder out of poverty and into self-sufficiency.*
>
> *Better enforcement of work requirements is needed in some states, and enforcement needs to be coupled with more effective SNAP employment and training (E&T) programs.*
>
> *Americans in both urban and rural communities cannot improve their diets without adequate access to healthy food.*

In many areas, especially urban and food desert areas, indoor farming can provide employment and training as well as access to food and nutrition. While much of conventional agriculture suffers from a shortage of available labor, indoor farming can bring ag production to areas with a shortage of jobs. I urge you to consider ways that urban indoor farming can provide solutions to SNAP and other nutrition policy issues.

Finally, there is a simmering issue with regard to the USDA Organic certification and whether it should apply to hydroponics, aquaponics, aeroponics, or containerized systems. There is fierce opposition among some in the traditional commercial organic sector to even having this question on the National Organics Standards Board (NOSB) agenda. This so-called Keep the Soil Movement argues that new alternative, innovative systems are at odds with the spirit of organic certification. However, what is indisputably true is that demand for organic produce, or at least produce grown without certain synthetic pesticides, herbicides and fertilizers, vastly outpaces domestic production, and under the National Organic Program which requires producers to go through a 3 year transition before they can marketing products labelled organic, that gap is not going to close quickly.

The response from the USDA Agricultural Marketing Service's National Organic Program was to travel to Mexico in June 2017 to train organic certifiers there to develop U.S. equivalency. While I understand we trade, especially in produce, with Mexico, I believe that domestic U.S. producers including indoor producers who otherwise qualify under the NOP production practices—except for the presence of soil biological activity—deserve the benefit of the doubt in gaining certification under

some USDA administered label in order to satisfy U.S. consumer demand. This would benefit both U.S. consumers and U.S. agriculture.

Mr. Chairman, indoor farming systems—whether urban or rural—are by definition an innovation that adds another building block to the future of American agriculture and helps to make our entire food and fiber production chain stronger. However, I believe this sector is often overlooked. I noted a while back that the Agricultural Act of 2014 required USDA to report to Congress on local food production trends. Surprisingly, indoor farming is not mentioned in the report. In that regard, I hope that my testimony will provide some insight into indoor farming and its potential so that appropriate policies can be in place and barriers to growth can be removed.

Thank you for this opportunity to provide my testimony.

SUBMITTED QUESTIONS

Response from Paul J. Wenger, President, California Farm Bureau Federation

Question Submitted by Hon. Alma S. Adams, a Representative in Congress from North Carolina

Question. As you know, we have to operate within certain budget constraints as we begin writing this farm bill. Our districts and states have multiple priorities that need to be funded in the farm bill.

For example, District 12 which I represent in North Carolina is in desperate need of a strong nutrition title and the SNAP program remaining intact. Given this fiscal reality, what recommendations do you each have for the Committee as we begin to address specialty crop concerns in the reauthorization of the farm bill?

Answer. Farm Bureau understands the importance of keeping the nutrition title in the farm bill. As an organization, we believe SNAP should remain an integral part of the USDA. In California, we produce most of the fruits and vegetables consumed by Americans, and we believe a strong horticulture title is important to ensure that these healthy products remain viable for all consumers. As we further develop farm bill priorities, we will send them to the Committee with specific ideas for improvement.

Response from Paul Heller, Vice President, Wonderful Citrus, Texas Division

Question Submitted by Hon. Alma S. Adams, a Representative in Congress from North Carolina

Question. As you know, we have to operate within certain budget constraints as we begin writing this farm bill. Our districts and states have multiple priorities that need to be funded in the farm bill.

For example, District 12 which I represent in North Carolina is in desperate need of a strong nutrition title and the SNAP program remaining intact. Given this fiscal reality, what recommendations do you each have for the Committee as we begin to address specialty crop concerns in the reauthorization of the farm bill?

Answer. Wonderful Citrus acknowledges that the farm bill is an extremely important piece of legislation for a number of essential programs across the U.S. agricultural, nutrition, and food assistance sectors. While we understand that finding the right balance between these competing priorities can prove challenging, we cannot over stress the significance of these farm bill programs for the continued success of the specialty crop industry. The industry would not be where we are today without these key programs supported by the U.S. farm bill. This is especially true as it relates to our ability to leverage private-public partnerships to bring additional innovation and technology into the farming sector. It is essential that the reauthorization of the farm bill continue to support these vital specialty crop programs.

Specialty crops represent a unique sector of the agricultural industry. The production of fruits, vegetables, tree nuts, nursery and greenhouse commodities accounts for over 44% of farmgate value for crops, yet only 3% of U.S. cropland is actually dedicated to growing these unique commodities. The farm bill provides growers with the stability and confidence to continue foraging ahead in an inherently uncertain industry, especially when it comes to tree crops, which require many years of maturity before bearing harvestable fruit. As such, we respectfully request that the Committee keep the following in mind when addressing the future of the specialty crop related farm bill programs.

Crop Insurance

Crop insurance must remain a bedrock program in the farm bill. Every year, growers face a series of unpredictable challenges, from weather related incidents to pest and disease issues. The stability the farm bill crop insurance programs provide give growers the confidence to plan for the future and make difficult business decisions in an uncertain environment. These crop insurance programs must be protected in the reauthorization of the farm bill in order to continue to encourage growth and innovation in the specialty crop sector.

Industry has been working side-by-side with underwriters and developers to enhance the safety net provided by these programs, while also ensuring that they provide adequate coverage without incentivizing abuse. While we understand that the future of these programs are sometimes put into question, the truth is that without these assurances, many specialty crop producers—citrus especially—would be out of business with the first bad frost. Crop insurance has become a vital risk management tool for specialty crop producers to mitigate the risks that come with producing high quality fruit for market and must be protected.

Pest and Disease Funding

It is absolutely imperative that we continue to support pest and disease research, effective mitigation measures and innovative response programs that help industry combat the ever expanding domestic pest and disease threats. While industry is extremely proactive with treatments and prevention, it would be impossible to stay ahead of the curve without the public-private partnerships that fuel these essential research programs. Section 10201 of the 2008 and 2014 Farm Bills has provided critical funding and direction for innovative initiatives to identify and mitigate offshore threats, and improve pest detection and rapid response. Policies established under both of these farm bills provide great opportunities for reduction in risk, establishment of a consistent and clear communication structure, and provide for problem resolution with built-in accountability. We believe Congress should continue these important programs and build on their successes over the last 10 years.

These pest and disease programs have been especially vital to the domestic citrus industry in recent years. As you know, the citrus industry is currently grappling with an unparalleled pest and disease threat in the bacterial disease known as citrus greening or Huanglongbing (HLB). HLB has already caused a reduction in Florida citrus production by over 60 percent since 2007, and caused all citrus producing counties in Texas to be put under quarantine. While there is still no known cure for HLB, great strides have been made through Federal, state and industry collaborations funded in part by the farm bill.

The future of domestic citrus production is contingent upon our ability to find a cure for HLB. As such, we encourage the Committee to continue supporting the USDA's Citrus Health Response Program (CHRP), the Huanglongbing Multi-Agency Coordination Group (HLB–MAC), and dedicate resources for the Tree Assistance Program (TAP), which has been instrumental in slowing the spread of HLB by encouraging growers to replace diseased trees.

In addition to the aforementioned programs, we would be remiss if we did not also address the critically important specialty crop block grant (SCBG) and Specialty Crop Research Initiative (SCRI) programs in the farm bill. The 2008 and 2014 Farm Bills included key provisions which dedicated research funding to address industry priorities in specialty crop research and extension. Both of these programs are based on competitive processes, require stakeholder involvement, and have already had significant positive impact on industry.

The SCRI, managed through the National Institute of Food and Agriculture (NIFA), has been instrumental in addressing critical needs in the areas of plant breeding, innovative technology development, and refining methods to prevent, detect, monitor and control for food safety hazards in the production of specialty crops. Similarly, the SCBG is a much needed effort to help specialty crop producers balance the uncertainties of agriculture production with improvements to their products and the access consumers have to those products. Additionally, this program has become an integral part of industry's ability to combat immediate pest and disease threats at the local and state level. When isolated pest and disease outbreaks occur, it is the state departments of agriculture that are best suited to eradicate the problem before it has the opportunity to permeate and spread. Without this funding, we are likely see otherwise manageable local pest and disease issues escalate to a multi-state and national level.

Market Access and Trade Programs

The U.S. has some of world's best growing regions for specialty crops, especially in California. As such, we grow, process and market our produce not only to domes-

tic consumers, but internationally as well. U.S. specialty crop growers face significant obstacles in the development of export markets for their commodities and unique challenges due to the perishable nature of our products. Our ability to bring nutritious food to people around the world would not be possible without the support of programs like the Technical Assistance for Specialty Crops (TASC), which provides funding to U.S. organizations for projects that address sanitary, phytosanitary, and technical barriers that prohibit or threaten the export of U.S. specialty crops. As such, we strongly support the continuation of these types of programs in the reauthorization of the farm bill.

Response from Gary E. Wishnatzki, Owner and Chief Executive Officer, Wish Farms *

Question Submitted by Hon. Alma S. Adams, a Representative in Congress from North Carolina

Question. As you know, we have to operate within certain budget constraints as we begin writing this farm bill. Our districts and states have multiple priorities that need to be funded in the farm bill.

For example, District 12 which I represent in North Carolina is in desperate need of a strong nutrition title and the SNAP program remaining intact. Given this fiscal reality, what recommendations do you each have for the Committee as we begin to address specialty crop concerns in the reauthorization of the farm bill?

Answer.

Response from Kevin Murphy, Chief Executive Officer, Driscoll's, Inc.

Questions Submitted by Hon. Alma S. Adams, a Representative in Congress from North Carolina

Question 1. The topic of food waste has become a growing concern. In your testimony, you stated that approximately 30% of all berries produced are not consumed. This is particularly concerning to me as I represent a district in which food deserts and lack of access to food is prevalent. What are some examples of innovation surrounding better production technologies of berries that have or can lead to reduced food waste?

Answer. In order to reduce food waste we are looking at increasing the yield per plant, obtaining on-farm efficiencies, incorporating new technology applications and executing waste diversion plans. Examples of on-farm efficiencies include movement to production systems using substrate and trellising. Substrate is the soil-less growing of plants in a media that has biological activity, organic matter and can provide nutrition to the plant. Trellising is a technique that keeps plants off the ground, improves production and increases usable space. These types of systems make it easier for harvesters to find and pick the fruit in a timely fashion meaning more fruit is available for consumption. New technologies like visioning systems allow for more precision packaging and production capabilities. We are developing alternative product streams to provide fruit to consumers that meet their specific needs. Our long term vision is to influence the behavior of consumers and retailers to reduce waste at home and in-store. For highly perishable goods the majority of food waste takes place at this point in the value chain.

Question 2. As you know, we have to operate within certain budget constraints as we begin writing this farm bill. Our districts and states have multiple priorities that need to be funded in the farm bill.

For example, District 12 which I represent in North Carolina is in desperate need of a strong nutrition title and the SNAP program remaining intact. Given this fiscal reality, what recommendations do you each have for the Committee as we begin to address specialty crop concerns in the reauthorization of the farm bill?

Answer. I appreciate the opportunity to provide insight into innovation within specialty crops—specifically within the berry industry. Congress has a momentous task of balancing the priorities of its constituents. Given that, we acknowledge the Specialty Crop Block Grants have been very important for food safety research and initiatives. These Federal research dollars can be extended through public-private partnerships as has been done over the last 10 years through the Center for Produce Safety.

* There was no response from the witness by the time this hearing was published.

Response from Andrew W. "Andy" LaVigne, President and Chief Executive Officer, American Seed Trade Association

Question Submitted by Hon. Alma S. Adams, a Representative in Congress from North Carolina

Question. As you know, we have to operate within certain budget constraints as we begin writing this farm bill. Our districts and states have multiple priorities that need to be funded in the farm bill.

For example, District 12 which I represent in North Carolina is in desperate need of a strong nutrition title and the SNAP program remaining intact. Given this fiscal reality, what recommendations do you each have for the Committee as we begin to address specialty crop concerns in the reauthorization of the farm bill?

Answer. Agriculture is an industry that affects every district and every state in the country. The funding authorized through the farm bill affects all Americans directly or indirectly. Continued dedicated funding for research in specialty crops can lead to improved vegetable and fruit varieties that offer higher nutritional content for consumers. As highlighted in my testimony, there are multiple avenues through the farm bill that fund such research. The Foundation for Food and Agriculture Research recently announced the Crops of the Future Collaborative research initiative with eight private industry partners. This project will leverage a $10 million Federal investment in pre-competitive research to hasten yield and nutrition gains in leafy greens, wheat and corn. This is just one example of how Federal research dollars can be extended and multiplied through public-private partnerships, which is a key tenant of the seed industry.

Other federal grants such as the Specialty Crop Research Initiative and the Agriculture and Food Research Initiative are typically matched by funding from private industry partners. This is critical, because federally funded U.S. agricultural research has played an important role in expanding our understanding of plant genetics leading to new crop varieties. USDA investments in genome sequencing of more than 25 agriculturally significant crops are fundamental to this work—without Federal investments, it is likely these advancements would have taken much longer to achieve. Within the specialty crop arena, this includes genome mapping for tomato, potato, apple, strawberry, carrot, cranberry, lettuce, peach, papaya, cucumber, black raspberry, watermelon, and pineapple.

These projects ultimately benefit the American consumer. Through research authorized by the farm bill, consumers might one day be able to purchase lettuce with increased vitamin content due to federal investment in plant breeding research.

The July 12 hearing also touched on the very real challenges facing the specialty crop industry. Diseases such as citrus greening and downy mildew are very real threats, and continued research is necessary to effectively combat these threats. As our world's population grows from today's seven billion people to an estimated nine billion by the middle of this century, agriculture is faced with the continued challenge of meeting the rapidly growing demand for food, feed, fiber and fuel.

The seed industry is a research-driven industry that cannot innovate without investment from the public-sector. While the seed industry invests significant amounts into R&D, the Federal investments in long-term research like mapping genomes or operating gene banks can't be undertaken by private industry. The investment is so long-term and success is so uncertain, no company is able to shoulder the risk. Furthermore, these resources should be publically available. However, the resulting discoveries can be further developed for commercialization by companies of all sizes and the private-sector can collaborate on projects.

While research may seem an innocuous area of funding that is ripe for cuts, we strongly urge the Committee to at a minimum keep funding research at current levels. It is our hope to see those authorized funds increased, even though we recognize the fiscal climate the Committee is operating under. Specialty crop research depends on Federal funding. Without this dedicated funding, innovation in specialty crops will lag, and American agriculture will suffer.

THE NEXT FARM BILL
(PATHWAYS TO SUCCESS FOR SNAP HOUSEHOLDS)

TUESDAY, JULY 18, 2017

HOUSE OF REPRESENTATIVES,
SUBCOMMITTEE ON NUTRITION,
COMMITTEE ON AGRICULTURE,
Washington, D.C.

The Subcommittee met, pursuant to call, at 10:01 a.m., in Room 1300 of the Longworth House Office Building, Hon. Glenn Thompson [Chairman of the Subcommittee] presiding.

Members present: Representatives Thompson, Crawford, Davis, Yoho, Comer, Marshall, Faso, Arrington, McGovern, Adams, Evans, Lujan Grisham, Lawson, Panetta, Soto, and Maloney.

Staff present: Caleb Crosswhite, Callie McAdams, Jennifer Tiller, Mary Rose Conroy, Rachel Millard, Stephanie Addison, Kellie Adesina, Lisa Shelton, Liz Friedlander, Troy Phillips, Nicole Scott, and Carly Reedholm.

OPENING STATEMENT OF HON. GLENN THOMPSON, A REPRESENTATIVE IN CONGRESS FROM PENNSYLVANIA

The CHAIRMAN. This hearing of the Subcommittee on Nutrition entitled, *The Next Farm Bill: Pathways to Success for SNAP Households,* will come to order.

Good morning, everyone, and welcome to today's Nutrition Subcommittee hearing. Thank you to everyone for taking the time to be here, particularly our three witnesses.

As you know, over the past 2½ years the Committee has undertaken a comprehensive review of SNAP. The review has helped provide Members with a better understanding of SNAP, the population it serves, how it is administered, and ways it can be improved. While witnesses in previous hearings have touched on education and employment pathways for SNAP households, today's discussion is dedicated to examining ways for eligible SNAP households to improve their education and labor force involvement as they aim for independence.

Career pathways are not a new approach to helping individuals move up the economic ladder and out of poverty, but there are new avenues to preparing work-capable SNAP recipients for employment and education. Pathway approaches, which we will hear about today, reorient existing education and employment services from endless disconnected programs to a structure that syncs employer needs with individuals' education, training and employment needs. This cohesive approach brings together resources, funding,

data, policies, partnerships, and perhaps most importantly, shared performance measures that continue to allow for the development, scaling, and sustainability of these pathway programs.

And my work with the Career and Technical Education Caucus has enhanced my awareness of the importance of career and technical education, or skills-based education, as we work to advance policies that improve skilled labor education and support job growth. I share that same passion here and hope to discuss and explore ways to couple services with employment and training to ensure our work-capable SNAP recipients move to a sustainable point of self-reliance.

Again, I want to thank all of our witnesses for sharing their time and expertise.

[The prepared statement of Mr. Thompson follows:]

PREPARED STATEMENT OF HON. GLENN THOMPSON, A REPRESENTATIVE IN CONGRESS FROM PENNSYLVANIA

Good morning, and welcome to today's Nutrition Subcommittee hearing. Thank you to everyone for taking the time to be here, particularly our three witnesses.

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Career pathways are not a new approach to helping individuals move up the economic ladder and out of poverty. But there are new avenues to preparing work-capable SNAP recipients for employment and education. Pathway approaches, which we will hear about today, reorient existing education and employment services from endless disconnected programs to a structure that syncs employer needs with individuals' education, training and employment needs. This cohesive approach brings together resources, funding, data, policies, partnerships, and perhaps most importantly, shared performance measures that continue to allow for the development, scaling and sustainability of these pathway programs.

My work with the Career and Technical Education Caucus has enhanced my awareness of the importance of career and technical education as we work to advance policies that improve skilled labor education and support job growth. I share that same passion here and hope to discuss and explore ways to couple services with employment and training to ensure our work-capable SNAP recipients move to a sustainable point of self-reliance.

Again, I want to thank all of our witnesses for sharing their time and expertise. I now recognize Mr. McGovern for any opening comments he would like to make.

The CHAIRMAN. I now recognize my friend and colleague, Mr. McGovern, for any opening comments that he would like to make.

OPENING STATEMENT OF HON. JAMES P. MCGOVERN, A REPRESENTATIVE IN CONGRESS FROM MASSACHUSETTS

Mr. MCGOVERN. Thank you, Mr. Chairman. I want to thank the witnesses for being here. I want to applaud some of their innovation, and look forward to hearing their recommendations.

I am not going to refer to my prepared text for a minute because I am a little concerned as we gather here. This is our twenty-third hearing on SNAP, and I just read the Republican budget where there is a proposal out there for a $10 billion cut in SNAP: $10 billion. In the last farm bill there were savings of $104 billion; $92 billion came from SNAP.

I know it has become convenient for some to look at SNAP as an ATM machine to pay for other things, but SNAP is a vital, impor-

tant program that millions of families rely on to put food on the table. And it is not a particularly generous benefit. The average benefit is about $1.40 per person, per meal. You can't even buy a cup of coffee for that. That is why many SNAP recipients end up at food banks at the end of the month.

Yes, we need to figure out ways to help get people to be secure and have a job, and we are all for work, but understand one thing, 67 percent of the people on this program are not expected to work or cannot work; they are children, they are senior citizens, they are people who are disabled. Of those who can work, a majority work. Let's get that on the record. I am tired of the perception that somehow everybody on SNAP is lazy or doesn't want to work. The fact is the majority of them who are able to do work. The question is why do they earn such low wages? Why does work pay so little in this country? Of those who are not working, who we believe are able to work, we need to explore this population. These able-bodied adults without dependents face a policy where if you don't have a job within 3 months, or you aren't in a work training program, you lose your benefit for 3 years. Well, that population is complicated, and I have come to learn that in that population you have people who are chronically homeless, you get people who can't read, we have people who foster kids who are aging out of foster care, we have people with undiagnosed mental illnesses, and now we are learning we have a lot of veterans that are falling into that category.

I would like to ask unanimous consent to insert in the record an article that appeared in *The Washington Post* on May 22 that talks about one Navy veteran in Maine who was thrown off of the benefit because he couldn't get work within the prescribed period of time, and who was living off of squirrels that he was skinning and eating, that was his only source of food because he lost his food benefit.

The CHAIRMAN. Without objection.

[The article referred to is located on p. 1435.]

Mr. MCGOVERN. I point this out because, if we are talking about how we help transition people who can work into the workforce, we need to understand that you don't do it by cutting the program by $10 billion. And we talk about things like the cliff, we have to understand that it is not just SNAP. It includes housing, it includes daycare, it includes a lot of things that are not part of what this Committee has jurisdiction over. I would urge my colleagues that the perception in Washington about SNAP, and about those who receive the benefit, does not reflect the reality. Yes, we can find people who abuse the program, I am sure, and we can find people that ought to be in a job and who are not, but the vast majority of people in this program would prefer not to be. Being poor in this country is hard work, and I would like to think that we would recognize that, and this budget that has been unveiled today does not.

By the way, not only are there cuts in SNAP, we see cuts in things like Pell Grants. You want children of SNAP families to be able to have a future, then the one thing you don't do is cut their education benefits. I appreciate the chair's indulgence, but I am really angry at this budget.

I will just say one final thing. If this is the budget and this is what we are going to see in the farm bill; a cut of $10 billion, and I think that may be a floor, not even a ceiling, then I will predict right here and now we will not have a farm bill. I certainly will do everything I can to kill a farm bill that has a $10 billion cut in it.

I yield back my time.

The CHAIRMAN. Just to clarify, because we are probably seeing the same budget information, the $10 billion, there were no specifics that it was coming from SNAP. It was the agriculture budget.

I would like to——

Mr. MCGOVERN. If I could just say to the Chairman, I am looking at the summary and all the references are to SNAP and more hurdles and work requirements. I don't see any relationship to any other programs in it. Again, in the past SNAP has accounted for $92 billion of the $104 billion in savings.

Thank you.

The CHAIRMAN. The chair would request that other Members submit their opening statements for the record so the witnesses may begin their testimony, and to ensure that there is ample time for questions.

I would like to welcome our witnesses to the table. I very much appreciate their participation, and bringing their expertise here for this very important topic on nutrition. Dr. Harry Holzer the John Lafarge, Jr., SJ Professor of Public Policy, McCourt School of Public Policy, out of Georgetown. Mr. Eliyahu Lotzar, how did I do?

Mr. LOTZAR. Pretty good.

The CHAIRMAN. We are off to a good start then. I have always learned that there is only one thing you come into this world with and you leave with, and it is your name, and so I hate to mess those up. Those are important. Student Success Coordinator, Onondaga Community College Economic and Workforce Development and Pathway to Careers, out of Syracuse, New York. Ms. Heather Reynolds, President and Chief Executive Officer, Catholic Charities Fort Worth, Fort Worth, Texas.

Dr. Holzer, please being when you are ready, 5 minutes for your oral testimony. The written testimony for all three of you have been distributed ahead of time to all Members of the Subcommittee. And the light system is pretty simple, the first 4 minutes will be a green light, the final fifth minute is a yellow. When it hits red we just ask that you wrap up whatever thought that you are on at that point.

Dr. Holzer, please go ahead with your 5 minutes of testimony.

STATEMENT OF HARRY J. HOLZER, PH.D., JOHN LAFARGE, JR., SJ PROFESSOR OF PUBLIC POLICY, MCCOURT SCHOOL OF PUBLIC POLICY, GEORGETOWN UNIVERSITY, WASHINGTON, D.C.

Dr. HOLZER. Thank you very much, Chairman Thompson, Ranking Member McGovern, Committee Members. Thank you for inviting me today to testify on the role of employment in the workforce policy for SNAP recipients.

I can support an agenda to increase work and earnings among SNAP recipients, especially in the currently tight labor market, but

such an agenda must recognize the great variation among recipients in their training potential, their basic skills, their job readiness, and their need for work supports. It must allow different rules and services for different categories of recipients. One size cannot fit all. Any major changes should be based on rigorous evidence of cost-effectiveness, which is currently scant. And to implement such changes, every state agency should receive enough resources to assess each recipient's abilities and needs, to provide a range of work or training options to them, both within mandatory or voluntary SNAP E&T programs. Changes like these would take considerable time to implement and must be done carefully and appropriately.

I would like to make three additional points this morning. First, the most effective forms of workforce training in terms of generating long-term improvements in worker employment are those that actively engage employers. The best models here are sector-based training and work-based learning, like apprenticeships, especially in high-demand occupations and industries for any state or region. And, of course, the high-demand industries tend to be health care, construction, advanced manufacturing, IT, transportation logistics, and even the higher end of retail and hospitality. More SNAP recipients should have access to such models of education and training, which would benefit themselves but also benefit employers who are seeking more skilled workers. It would reduce SNAP expenditures over time and raise overall economic productivity. But only workers with fairly strong cognitive and employability skills will benefit from such training, and I believe we should use the roughly 3,000 local One-Stop offices, or American Job Centers, to more fully assess recipients and link them with appropriate training opportunities.

Second, most workers can also benefit from steady work experience over time, though the earnings and productivity gains that that approach generates are smaller than we get out of training. Some workers, in order to work, will need more support such as active job search assistance and placement activity, transportation or childcare, if we want them consistently to work. And individuals who are deemed hard to employ, with a set of multiple work barriers such as very poor skills, very little work experience, physical/psychological disabilities, or substance abuse, that population will have difficulty accumulating positive work experience in the job market. We have also found that job search or workfare alone for these populations has very limited effects on their subsequent earnings.

Third, any expansion of work requirements under SNAP should be imposed carefully, allowing for clear exemptions that are consistently applied for those with physical or psychological ailments, substance abuse problems, or those caring for small children, even if those children are above the age of 6. The Federal Government should provide additional administrative funding if we require work activities to a greater extent, as well as funding for the worker service opportunities and supports that many SNAP recipients will need if they are to work. Indeed, for those who cannot find employment, training or some positive work experience or activity this should be provided. I recently authored a paper with Robert Doar

of the American Enterprise Institute, and Brent Orrell of ICF, two friends of mine who are conservatives, and we came up with a set of policies if we are going to implement stronger work requirements. One of the principles was if people cannot find a job on their own, they should be offered some positive activity, even for 5 or 10 hours a week, before they are sanctioned or kicked off the rolls. In our view, there was a package of supports and also subsidized jobs that would have to go along with the imposition of stronger work requirements. And since we have relatively little clear evidence right now on how such changes to work requirements would affect SNAP recipients, we believe we should pilot and evaluate any major changes before implementing them to see how they really work. And a set of rising work supports, like more generous EITC or child care and transportation should be provided along with this.

The evidence right now, the rigorous evidence and research does not suggest strong negative effects on employment from current SNAP policies and, therefore, we shouldn't make that assumption; and, therefore, argue for much more stringent requirements when the current evidence does not support that point of view, even if, theoretically, we can find some cliffs.

I am going to stop there. Thank you for inviting me today, and I look forward to a robust discussion afterwards.

[The prepared statement of Dr. Holzer follows:]

PREPARED STATEMENT OF HARRY J. HOLZER, PH.D., JOHN LAFARGE, JR., SJ PROFESSOR OF PUBLIC POLICY, MCCOURT SCHOOL OF PUBLIC POLICY, GEORGETOWN UNIVERSITY, WASHINGTON, D.C.

Thank you for inviting me today to testify on the role of employment and workforce policy for SNAP recipients, as you consider *The Next Farm Bill: Pathways to Success for SNAP Households.*

I can support an agenda to increase work and earnings among SNAP, especially in the currently tight labor (though it will not be tight indefinitely). But such an agenda must recognize the great variation among recipients in their training potential, basic skills, job readiness and need for support. It must allow different rules and services for different categories of recipients—one size cannot fit all. Any major changes should be based on rigorous evidence of cost-effectiveness, which is currently scant. And, to implement such changes, every state agency should receive enough resources to assess each recipient's abilities and needs, and to provide a range of work or training options to them—both within mandatory or voluntary SNAP E&T programs. Changes like these would take considerable time to implement, and are very different from the current approach in the mandatory programs (which mostly provide just job search or "workfare" to participants).

I'd like to make the following additional points this morning:

1. The most effective forms of worker training, in terms of generating long-term improvements in worker employment and earnings, are those that actively engage employers. The best models are sector-based training and work-based learning (like apprenticeship), especially for high-demand occupations and industries in any state or region. More SNAP recipients should have access to such models of education and training, which would benefit themselves and employers seeking skilled workers, reduce SNAP expenditures over time, and raise economic productivity.[1]

   Sector-based training involves a partnership between local or regional employers, a training provider (often a community college), and an intermediary. Rigorous evaluations indicate strong impacts on the earnings of disadvantaged workers, lasting for as long as 6 years. Apprenticeships also generate strong impacts on earnings, with little fadeout over time. When workers earn a post-secondary credential from such training, like a certificate or an associ-

[1] See the National Skills Coalition (2014).

ate's degree, the training is more likely to have lasting impacts, and to be portable across firms and sectors. Career pathways, in which workers can "stack" certificates and combine them with appropriate work experience, show promise as well. The high-demand sectors now include health care, advanced manufacturing, information technology, transportation/logistics, and the high ends of retail and hospitality.[2] But only workers with fairly strong cognitive and employability skills will benefit from such training. The roughly 3,000 local "One-Stop" offices in the U.S. (now called American Job Centers) could help assess recipients and link them with training opportunities, when appropriate.

2. Most workers can also benefit from work experience over time, though the earnings and productivity gains it generates are smaller than those of the training approaches described above. But some workers need more support—such as active job search assistance and placement, transportation, or child care—to consistently work. And individuals deemed "hard-to-employ," with multiple work barriers, will have difficulty accumulating positive work experience in the job market.[3] Job search or workfare alone for these populations have very limited effects on their earnings.

   With additional resources, assessments of worker characteristics could be provided through SNAP agencies or local job centers. But the more "barriers" to work any recipient has—such as very poor skills, limited work experience, physical/mental disabilities or substance abuse—the less likely they are to sustain work experience leading to wage growth over time.

3. Any expansion of work requirements under SNAP should be imposed carefully, allowing for clear exemptions that are consistently applied for those with a range of physical/mental ailments or substance abuse problems, and for those who care for small children. The Federal Government should provide additional administrative funding if required work activities are expanded, as well as funding for the work or service opportunities and supports many SNAP recipients will need.

   I recently embraced an agenda for strong work engagement among SNAP recipients in my paper with Robert Doar and Brent Orrell (published by the American Enterprise Institute in 2017), but with some caveats. SNAP recipients who care for small children, or who have clear disabilities (physical or psychological) or substance dependencies, should be exempted from any newly required work activities. For those who cannot find employment on their own, a public or private work (or training) activity should be provided. Indeed, an expansion of subsidized jobs in the private or public sectors is a sensible complement to any expanded work requirements.[4] And no worker should be sanctioned who has not at least been offered an *appropriate* work or service activity by SNAP administrators—though that is currently the practice for many ABAWDs operating under a 3 month time limit on their recipiency.

   New funding for expanded administrative activity and for work opportunities would be critical, either through E&T program grants or reimbursement grants. Since we have relatively little clear evidence of how any changes to work requirements would affect SNAP recipients, we should pilot and evaluate any major changes before implementing them on a wide scale (and also see what we learn from the pilots from the 2014 Farm Bill). And they should be accompanied by rising work supports, such as funding for child care and transportation as well as a more generous Earned Income Tax Credits for childless adults, from other parts of the Federal budget.

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[2] See Conway and Giloth (2014) for an overview of sector-based training strategies, and Maguire, *et al.* (2010) and Elliott and Roder (2017) for evidence of their large and lasting impacts on the earnings of disadvantaged workers. For discussion and evidence on apprenticeship programs see Lerman (2014).

[3] Evidence of lower work activity among those with multiple barriers can be found in Danziger and Seefeldt (2002).

[4] See the Center for Poverty and Inequality at Georgetown University (2016) for evidence on the positive impacts of subsidized jobs for the poor.

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The CHAIRMAN. Thank you, Dr. Holzer, for your testimony. Appreciate it.

Now recognize Mr. Lotzar for 5 minutes of testimony.

STATEMENT OF ELIYAHU LOTZAR, M.S.W., STUDENT SUCCESS COORDINATOR, DEPARTMENT OF ECONOMIC & WORKFORCE DEVELOPMENT, ONONDAGA COMMUNITY COLLEGE, SYRACUSE, NY

Mr. LOTZAR. Mr. Chairman, Mr. McGovern, Members, thank you for inviting me here.

This testimony will outline a method we use at Onondaga Community College that helps SNAP beneficiaries start on the path out of unemployment, and out of the ALICE category, asset limited income constrained employed.

Our career training programs emphasize soft-skills training and relationships with employers and with students. Under the leadership of Michael Metzgar, our team has implemented this model at colleges in Arizona, New Jersey, and now in Syracuse, New York.

Syracuse has the highest rate of extreme poverty for African Americans and Hispanics of any city in the country. In 2010, there were 19 neighborhoods where over 40 percent, that is 4-0, of the residents lived below the poverty line. SNAP is necessary.

Syracuse is also a refugee resettlement city. I believe that approximately ½ the students in our workforce programs either receive or have received SNAP benefits. Many of our students are third-generation recipients of one or another benefit program, and this influences their mindset.

Some have grown up with the expectation that because their parents or neighbors received benefits and lived in very poor conditions, they will too. We try to help our students overcome that mindset. The mindset of survival and extreme poverty is not a career success mindset, and any program to raise people out of extreme poverty needs to address that mindset change.

We currently operate seven programs in health care, food service, and technical-mechanical studies. The programs all include ten elements. First, find out which industries are hiring locally, now and for the next 18 months. Second, choose entry-level jobs that provide a living wage and a path to a sustainable wage. Three, keep tuition costs within Pell eligibility levels that, I am sorry to hear, may be changing, so that students graduate with no debt. Four, let employers tell us what to teach. We use a Canadian process called DACUM, Developing a Curriculum. Five, teach employability skills, not just academic and technical skills. Soft skills training

helps with mindset change. Six, provide proactive, in-program retention efforts to help people overcome barriers by connecting them with college and community resources. Seven, utilize competency-based education. Most employers are not interested in students' grades. They want to know can they do the job. Therefore, when a student demonstrates competency, they finish school. Eight, at the end of our in-house education we send students out to an employer for 100 hours of observation on-the-job. If the person obtains employer approval, they receive the certificate and move on to element nine, which is to help them get a job by connecting them with employers. If they haven't already been offered a job during our practicum, we help them connect with another employer. Number ten, maintain contact with students up to 2 years post-graduation to gather data and reconnect them with employers, if necessary.

Now, not everyone comes from extreme poverty. Some turn to us to avoid supplemental assistance. I will give you one example, some details have been changed for privacy, and then I will finish with recommendations. Anifa was born and raised as a Muslim in Yemen. I know it is a little different from what I wrote there, one of those details. At a certain point, she converted to Christianity. Death threats and attempts on her life ensued, including when an uncle tried to kill her. She married and they applied for refugee status in the U.S. Arriving with her husband and his family in Syracuse, she was soon working as a cashier, and he as a delivery driver, but then he was caught in a car accident and she sustained a work injury. Neither could work, but she pressed on. Anifa received a grant from our Chamber of Commerce to join OCC's Food Service Program. She wanted to nourish others. Unfortunately, her husband's family frowned upon her moving forward into an independent career while he was still unemployed. Domestic violence ensued. That is where relationships come in. Her instructor in the student success team helped her finish her studies and start a small business by guiding her through a Workmen's Compensation claim, the challenging law process, finding a women's shelter, improving her English, and dealing with a new culture, all in under a year. As we have nurtured her, she is starting to nurture others with her food business. Not easy. It demands a relationship, but it is worth it.

The bigger picture is a serious challenge. As the wealth gap widens, it becomes more likely that currently poor and impending poor will need food assistance. A counterbalance to the extremes of wealth aggregation and wealth emptiness is human relationships. Not just touchy-feely, but as a strategy.

We recommend that you support the programs with three essential elements: employer relationships, student relationships, and soft skills education. Training out of poverty is possible. We can vouch for that.

Thank you.

[The prepared statement of Mr. Lotzar follows:]

PREPARED STATEMENT OF ELIYAHU LOTZAR, M.S.W., STUDENT SUCCESS COORDINATOR, DEPARTMENT OF ECONOMIC & WORKFORCE DEVELOPMENT, ONONDAGA COMMUNITY COLLEGE, SYRACUSE, NY

Introduction

This testimony will outline two steps necessary to support those SNAP beneficiaries who have a reasonable chance of utilizing community college education to access stable income sufficient to remove the need for receiving SNAP benefits. One step is traditional career training; the second step is mindset change. The two steps do not need be sequential. They are mutually supportive: traditional career training can help change mindset, and mindset change can help success in career training. These are not the only steps that could be taken, but they are options that community colleges can offer. In this testimony I will outline the methods we in the Department of Economic and Workforce Development at Onondaga Community College (OCC) employ to provide that training. Our recommendation is that the Committee do all it can to promote the structure we utilize for providing opportunities for some people to break their tethers to life in financial and health poverty.

Acknowledgements

Much of how I see the paths for SNAP recipients is through the organizational framework developed by Michael Metzgar, currently Associate Vice President of Economic & Workforce Development at Onondaga Community College (OCC). In his three iterations of Workforce Development at community colleges—University of Advancing Technology in Arizona, Raritan Valley Community College in New Jersey, and OCC in New York—he repeated the model that is outlined in this document. I would know little about Workforce Development without having spent years working for him. The Committee would have benefitted had he been able to prepare and deliver testimony.

Local Context of Testimony: the Challenge

The content of this testimony is limited to one person's opinion. It is based largely on personal experience of nearly 3 decades spent in social work, education, and business. It is not based on peer reviewed primary research. Part of that personal experience is all that I have gained from colleagues at two community colleges—one serving two counties in northwestern New Jersey, two of the wealthier counties in the country, and one serving five counties in Central New York, counties which are largely rural and are focused in some of the poorest urban [ZIP C]odes in the country. Last year, the city of Syracuse, NY, was listed in local newspaper and TV as the U.S. city with the highest rates of poverty for African Americans and Hispanics, the 28th overall poorest in the country.

Who Our Students Are

In the last 2 years here in Syracuse we have served approximately 450 students in our programs. From anecdotal knowledge, I would say that more than ½ of them, or someone in their immediate family, receive SNAP benefits, and more than that are eligible. The South Side of Syracuse—one of the primary locations from which we recruit, and perhaps the most challenged part of the city—has been a complete food desert up until earlier this summer when our first supermarket opened, a Price Right Supermarket. Before that, people used their food benefits at small corner stores which did not have much fresh food.

Syracuse is a refugee resettlement city. Refugees have been arriving for decades in Syracuse, and our North Side is home to populations from many different countries, including countries in Asia, the Middle East, Africa, and Latin America. Many of our program participants are refugees or immigrants.

Our students—most of whom are first generation to attend college—also include many in third generation poverty. Among these students is a mix of those whose families have always worked and never or almost never taken benefits, families that have survived from a combination of work and public assistance. Some have grown up with the expectation that because their parents received benefits and lived in very poor conditions, they will too. *That's just how it is* is a mental framework that surrounds some of our students. Even the question, "What else can you do?" is not a question that residents of the poorer neighborhoods in Syracuse can ask themselves for long, since the options available to them—minimum wage jobs and slightly higher—are the only opportunities that they can see.

How We Find Our Students

Intentionally, we recruit for our programs primarily through the governmental workforce system of the Department of Labor. Our goal is specifically to provide employment opportunities for the long term unemployed, the serially unemployed, and

the underemployed. We work with employment counselors at the One Stop (the operational arm of the Workforce Investment Board—WIB) and job coaches at "*JobsPlus!*" (the local organization that distributes Temporary Assistance from the DOL). Both organizations exist to channel the unemployed back into jobs. Our training programs are an option for their clients.

Our Program

Our programs currently cover three fields: Healthcare (Medical Billing, Certified Nurse's Aide, Phlebotomy, soon to be Medical Assisting), Food Service (Restaurant entrepreneur, Line Cook), and Technician (Machine Operator, Warehouse Technician, and soon to be Natural Gas/ Utilities Techn[i]cian).

Our programs include several elements:

1. **Analysis of which industries are hiring** in Syracuse, in Onondaga County, and in the five surrounding counties within the next 18 months. We will not train people for jobs that may be the wave of the future but would still leave them out to sea upon graduation. For this we use the expensive but very good Burning Glass data.
2. **Living wage to sustainable wage.** We will not train for a job that will not produce a living wage ($12.75/hr in Syracuse if employers usually provide insurance; $15.25/hr if they do not) within the first 6 months of graduation. The entry level job must also lead to a path for obtaining better jobs within industry such that a person has a path beyond what United Way calls the ALICE level (Asset Limited Income Constrained Employed).
3. **Employer-driven curriculum.** We gather employers to tell us what they need from our students when they graduate in order for them to want to hire our students upon graduation. Everything they tell us is necessary then becomes a necessary component of our education; what they do not consider necessary we do not include. We have nice-to-have elements too where possible. The owners and supervisors create a name for the entry level job that we are discussing, and they tell us which soft skills are needed (more on soft skills in a section below). The expert workers in a subsequent panel tell us what all the tasks are that the employee must perform in order to accomplish all their duties. We use a Canadian process called DACUM—Developing a Curriculum. It is necessary sometimes to slightly modify the multi-day process to fit employer availability. This is accomplished in half a day, then another full day. We take the data from the employer and expert worker panels and then utilize our own curriculum developers together with an industry partner or an instructor we have, and turn it into curriculum. The curriculum contains three elements:
    a. *Academic Knowledge:* creating a conceptual grasp of the industry, the job, its processes and language
    b. *Technical Ability:* a person has to demonstrate that she or he can perform the tasks necessary. This differs from regular academic learning, but is in line with traditional vocational learning.
    c. *Soft Skill Ability:* we teach employability skills, including both behavioral elements and also that which undergirds the behavior: beliefs, attitudes, assumptions, in short: mindset. A graduate must not only be able to understand the job and to do the job, but must have the transferable skills/ soft skills/21st Century skills/non-cognitive abilities/employability skills to get and keep a job in a middle-class work environment.
4. **In-Program Retention Services.** Staff proactively engages students to discover barriers to their successful completion of our training programs. We are connected with 23 Community Based Organizations, plus college resources, to help provide resources such as bus passes, food, clothes, women's shelter, educational tutoring, counseling, transportation, and child care. We also act as cheerleaders, metaphorically speaking.
5. **Competency Based Education.** Most of our programs do not give letter grades. We believe that employers are not interested in what grades so much as whether they are prepared to do a good job. When a student learns the material, they finish. Some programs allow students to finish and to start at different times, and we continue to work in that direction.
6. ***Practicum.*** Our in-house teaching involves varying degrees of classroom and hands-on education. At the end of our program, when we believe we have trained them well, we send them to an employer for 100 hours of observation in a workplace situation. Sometimes the employer lets us know of poor em-

ployability skills; sometimes the employer hires the person on the spot; sometimes the employer approves but has no availability. If the person passes the employer approval in the practicum, they receive a certificate from OCC, and are moved to the next stage.

7. **Channel to Employment.** The same employers with whom we established relationships to gather the data for curriculum are those we return to offer them good employees. Sometimes the students find themselves jobs before we do. Sometimes they ask us for work before they finish the program and we help them secure part time work during the program. About 75% of our students reach the end of the in-house studies. About 85% of those attend a practicum. About 25% of those are offered jobs before the end or at the end of their practicum. About another 25% of those who finish practicums secure work, either through their own efforts or through our assistance by connecting them with employers with whom we are in contact, within the first 3 weeks of the end of the program. The other 50% tend to accept non-related jobs or do not find work, or we lose contact with them and we do not know their situation. We are arranging to receive Unemployment Insurance (UI) Wage Data which will tell us everyone's status with a 6 month data delay.
8. **Maintain Contact.** We maintain contact with the students once they graduate, especially if we are still helping them find employment. Once they find employment, we try to check their employment status at 3 months, 6 months, a year, and 2 years. We have found some difficulties with this segment of the process due to time/resource constraints/prioritization, and changing rapidly contact information of the graduates.

Recommendations

The recommendations are simply to help reproduce our program in one form or another. Training out of poverty is possible. It takes dedication and resources. There are enough dedicated people, and resources are being devoted too. The key difference is to help create public awareness, and an education system to support it, which accepts starting a career after high school as an honorable path. There is good work being done in South Carolina, in Vermont, in various places around the country. The point is that skills now must include not just the academic and technical, but the employability skills. According to Gallup-Lumina Foundation, employers consistently report that students are under-prepared. Academic research also shows that the skills which employers value most highly tend to be soft skills such as communication, and characteristics such as integrity, honesty, and self-management.

To teach these things, we need to realize that there is a great chasm that a student who grew up in poverty has to jump. It is deep and it is scary. If I go out of my house and expect to be accosted by a gang member, and this is becoming more and more common; if the only way that I know to gain power and respect is to sell drugs, then I'll need to drop my a veneer of bravado which covers my low self-efficacy. I'll need to be rather more reserved. I'll need to change my language, my gait, how I wear my clothes, how little or much I speak. I'll need to code-switch. And hardest of all, I'll need to believe that the system which failed my parents won't fail me. This takes time. The recommendation is that this type of employability education which is based on employer feedback, emphasizes soft skills, and connects people with employers, start in high schools. It's happening slowly; it just needs support in order that more people will be able to feed themselves and their families, and feed themselves well, and do it with a minimum of public assistance.

Here's Why: An Anecdote

I was brought up with Talmudic expression: "Save one life and you've saved the whole world." Policies need to support people of course, and they always intend to; the question is just how. If you can build personal relationship into your policies, that would be huge.

I'll call her Samantha and I'll change just a few details for privacy sake. Samantha arrived to the U.S. about a year and a half ago, and to our Food Service Manager program about 6 months ago. She arrived from a small city in Afghanistan as a refugee. She was raised Muslim, but at a certain point she and her family, and what would become her husband's family converted to Christianity. Death threats ensued, even two attempts on her life, including when her uncle tried to kill her. She and her husband and her husband's family went through the 2 year process and were awarded refugee status by the U.S. Government. Arriving in Syracuse it was not long before he was working as a delivery driver and she was working as a cashier in a supermarket. But then he was caught in a car accident, and she sustained a work accident. She soon heard about our program and before she finished

recovering she joined us in order to promote her cooking with her own restaurant. Unfortunately, life happened again and without her family here, her husband's family frowned upon her moving forward into an independent career. Domestic violence ensued. Her instructor and the two Student Success Coordinators were able to guide her through a workman's compensation claim, the challenging law process, helped find her a woman's shelter, helped her improve her English, help her start her own food business, deal with an emotional divorce that she never had dreamed of, get set up in a new life situation. Through all this Samantha remained grateful and worked hard to move forward with her dreams. As we have nurtured her, she continues to nurture others. Not easy. But worth it.

The CHAIRMAN. Thank you, Mr. Lotzar, for your testimony.

And now Ms. Reynolds, go ahead and proceed with your 5 minutes of testimony whenever you are ready.

STATEMENT OF HEATHER REYNOLDS, PRESIDENT AND CHIEF EXECUTIVE OFFICER, CATHOLIC CHARITIES FORT WORTH, FORT WORTH, TX

Ms. REYNOLDS. Okay. Chairman Thompson, Ranking Member McGovern, and Members of the Subcommittee on Nutrition, thank you for having me. My name is Heather Reynolds, and I am CEO of Catholic Charities Fort Worth.

We have one goal; to end poverty one family at a time. Here is what I know. When our organization shifted from serving families to ending poverty with families, we quickly saw that we needed to invest our resources differently. My message to you today is simple; we need you to invest differently too.

The farm bill, specifically as it relates to the Supplemental Nutrition Assistance Program, should be a pathway for success for Americans. Families in poverty face many challenges, from food to housing to toxic stress. These benefits address one of these critical needs; however, these alone do not propel an American family forward. Reform must focus on shifting to a comprehensive solution to moving people out of poverty.

First, benefits should not have a sharp cutoff based on earnings at 130 percent of the Federal poverty line. Eligibility requirements need to provide a gradual decline in benefits until participants reach a living wage. Programs with sharp cutoffs have you, the Federal Government, working against those of us in the field. We are serving a single working mother with one child. She makes $25,000 a year, and utilizes $357 a month in food stamp benefits. We are walking with her as she pursues her dreams to become a nurse, and to support her son free of government assistance. Her first step is to become an x-ray technician; a certification that takes her 6 weeks of study to achieve. She finds a job earning $1 more an hour while she continues her education. The bad news, she now makes too much to qualify for these benefits. Even worse, with her increased wages, losing this benefit means a net decrease in her overall income.

We have made the working poor our people at Catholic Charities, but you and I often aren't working toward the same goals because the minute a family starts moving forward with our help, they are pushed backwards because of the way benefits are structured. It makes more financial sense to stay on public assistance because earnings cannot increase fast enough to outpace lost benefits.

My second point, without intensive case management, families will not move forward. And I do not mean the transactional model

of case management, I am advocating for someone who can come alongside the families that we serve, understand their needs, and work with them for the long-haul until they reach a place of self-sufficiency.

We run several randomized controlled trials with the University of Notre Dame's Lab for Economic Opportunity. One of those is called Stay the Course. We know that a credential is a game changer between minimum and living wage employment, but a major provider of those credentials; community college, have graduation rates under 20 percent nationwide. We know low-income students often don't graduate because life happens, and education is often the first thing to go. We designed a study to fix this. Participants were divided into groups of students who received case management and financial assistance, those who received just financial assistance and those who received no help at all. After 1 year of study, we saw that students who received only financial assistance actually did worse than those who had no services at all. Yet, those with case management, with some assistance, were more likely to reach their goals. After 6 semesters, those in case management were twice as likely to persist in their education, and females were four times more likely to walk that graduation stage.

A second example is Padua, another trial we are running. Our key intervention is case management to move families out of poverty. Of the families involved, 80 percent are women, 23 percent are married, 50 percent have a high school diploma or less, the average family earns $18,000 a year, and 60 percent are on food stamps. But after just 1 year of intensive case management, we see some pretty incredible changes. Monthly labor earnings are up by 17 percent. There is a 21 percent increase in the hourly wage, a 30 percent rise in full-time employment, a 19 percent decrease in spending, and a 41 percent drop in credit card debt. This further emphasizes my point. It is not just my gut that tells me case management makes the difference, it is data and analytics that show me when we work with families in poverty through case management, amazing things happen.

My message today is that we need to invest differently. More Americans will experience income stability if we get these Federal programs right. Farm bill reform must include fixing the welfare cliff problem, and doing more than giving away money. We must break this cycle of poverty for families and for their children.

Thank you.

[The prepared statement of Ms. Reynolds follows:]

PREPARED STATEMENT OF HEATHER REYNOLDS, PRESIDENT AND CHIEF EXECUTIVE OFFICER, CATHOLIC CHARITIES FORT WORTH, FORT WORTH, TX

Chairman Thompson, Ranking Member McGovern, and Members of the Subcommittee on Nutrition, thank you for having me. My name is Heather Reynolds and I am CEO of Catholic Charities Fort Worth. We have one goal—to end poverty, one family at a time.

Here's what I know: When our organization shifted from *serving* families to *ending poverty* with families, we quickly saw that we needed to invest our resources differently. My message is simple. *We need you to invest differently, too.*

The farm bill, specifically as it relates to the Supplemental Nutrition Assistance Program, should be a pathway to success for Americans. Families in poverty face many challenges, from food, to housing, to toxic stress. These benefits address one

of these critical needs. However, these **alone** do not propel an American family forward.

Reform must focus on shifting to a comprehensive solution for moving people out of poverty.

First, benefits should not have a sharp cut-off based on earnings at 130% of the Federal poverty line. Eligibility requirements need to provide a **gradual** decline in benefits until participants reach a living wage.

Programs with sharp cut-offs have you—the Federal Government—working against those of us in this field. We are serving a single working mother with one child. She makes $25,000 a year and utilizes $357 in food stamp benefits a month. We are walking with her as she pursues her dream to be a nurse and to provide for her son.

Her first step is to become an X-ray technician, a certification that takes her 6 weeks of study to achieve. She then finds a job earning $1 more an hour, while she continues her education. The bad news? She now makes too much to qualify for these benefits. Even worse, with her increased wages, losing this benefit means a net decrease in her overall income.

We have made the working poor our people. But you and I are not working towards the same goals. Because the minute a family starts moving forward with our help, they are pushed backwards because of the way you structure benefits. It makes more financial sense to stay on public assistance, because earnings cannot increase fast enough to outpace lost benefits.

Second, without intensive case management, families will not move forward. And I don't mean the transactional case management model of the past. I am advocating for someone to come alongside a person, understand all their needs, and work with them for the long haul until they are out of poverty.

We run a randomized control trial with the University of Notre Dame's Lab for Economic Opportunities.

We know that a credential is the game-changer between minimum- and living-wage, but a major provider of those credentials, community colleges, have graduation rates under 20%. We know low-income students don't graduate because "life happens" and education is often the first thing to go. We designed a study to fix this. Participants were divided into groups of students who received case management ***and*** financial assistance, those who only received financial assistance, and those with no assistance at all. After year one, we saw that the students who got only financial assistance actually did **worse** than the control group. Yet, those who received case management **with** some assistance were more likely to reach their goals. After 6 semesters, those in case management were twice as likely to persist in their education.

A second example is Padua, another trial. Our key intervention is case management to move families out of poverty. Of the families involved, 80% are women, 23% are married, 50% have a high-school diploma or less, earns $18,000 a year, 60% receive food stamps.

After just 1 year, we have seen notable changes. Monthly labor earnings are up by 17.4%, a 21% increase in the hourly wage, a 30% rise in full time employment, a 19.5% decrease in spending, a 41% drop in credit card debt. This further emphasizes my point—it is not just my "gut" that tells me case management is critical. It is data and analytics that prove that Federal programs cannot just be financial assistance to people in need. We need comprehensive case management to move a family out of poverty.

You will not hear from me to "invest more." My message today is to *invest differently.* More Americans will experience income stability if we get these Federal programs right. Farm bill reform must include fixing the welfare cliff problem and doing more than giving money. We must break the cycle of poverty for parents and their children. Thank you.

The CHAIRMAN. Ms. Reynolds, thank you for your testimony.

The chair would like to remind Members that they will be recognized for questioning in order of seniority for Members who were here at the start of the hearing. After that, Members will be recognized in order of arrival. I appreciate Members' understanding.

I will take the liberty of taking my 5 minutes first for questioning.

On June 15, 2017, the President issued an Executive Order to expand apprenticeships in the United States. The Executive Order aims to expand apprenticeships by further enabling individuals to

participate in paid and relevant workplace experiences and opportunities. Apprenticeships can potentially offer affordable pathways to secure positions with more sustainable wages.

Can anyone speak to the value of apprenticeships, and what both the initial investment and long-term outcomes look like? Please, go ahead, Dr. Holzer.

Dr. HOLZER. Well, I am a very strong supporter of an effort to expand apprenticeships. They have strong impacts on the earnings of the workers who receive the training, long-term impacts, they also please employers who engage them because they know that they are training the workers for the skills that, in fact, they are looking for. These programs are best when they are also combined with some classroom training at a community college and some broader credential.

Then the key question is why are there only ½ million registered apprenticeships in the country, and what can we do to improve employer take-up? I applaud efforts by the Trump Administration, by the Obama Administration, to try to move that ball forward. It is a positive policy.

The CHAIRMAN. Go ahead.

Mr. LOTZAR. Yes, I can add just a little from the recipient side.

I know that when I talk to people to interest them in our programs, the one program that we have that leads to an apprenticeship, every time I say the word, people perk up their ears and it feels like a very safe path because there is, not to harp, a relationship in there where they feel like they are going to be taken care of and guided through it. And indeed, they are. Aside from it being really good economically, people are just very ready for it. And as a matter of fact, our manufacturing program, we have shortened it and worked with our local manufacturing association to where we have a guarantee that if somebody graduates our program and stays in a job for 6 months, they will put them into an apprenticeship program. And it is just very appealing to people who want to go that path.

The CHAIRMAN. Very good.

Ms. Reynolds, you had touched on something that I have spent considerable time looking at, from different examples, all the 70+ welfare programs that we have, and I know today our focus is SNAP, but can you give any other examples, other situations that you observe where poverty cliffs really have worked against someone who started and they were in an eligibility level, and then they were successful, because you start out, but it is one step at a time, where the poverty cliffs have worked against the goal of moving individuals to self-reliance?

Ms. REYNOLDS. I will never forget, about a year ago I was sitting in an appointment shadowing one of our case managers working with a woman, and the case manager was talking to this woman about starting savings behaviors, even if it was just going to be $1 a week, but just to get in that pattern. And the woman shared, I am a great saver, and the case manager said, "Well, tell me more," and she said, "Oh, yes, yes, yes, I save, every time I go and use my debit card, I pull out cash back of $10 and I save it." And I thought, well, that is a good strategy. And he said, "Well, how much do you have saved?" And she goes, "I don't know, about

$8,000." And he goes, "Great, okay, let's talk about that. Where do you have it?" Dah, dah, dah. She had it in the back of her closet. And the reason she had it in the back of her closet, because she was about two steps, which would take about another 6 months, away from getting to a living wage, and she knew if she put that money in a bank she would lose all public benefits, it would cause her and her family to go into debt before she could actually make it.

What we often find is people are having to make these financial decisions and financial choices that they shouldn't have to make. Oftentimes work doesn't pay in our country, and we need to make work pay in our country because the more we can pull people forward and invest in them for the long-haul, the more people who aren't going to need SNAP and TANF and housing in the future.

The CHAIRMAN. Right. Right.

Thank you. Dr. Holzer, your testimony speaks to the needs of workers with skills, experiences and needs across the spectrum ranging from those who need simpler supports, to those with multiple barriers to achieving sustainable employment. How can SNAP best engage and support workers from these various backgrounds so that they can all move toward self-sufficiency, and what are the different strategies, policies, and investments needed to engage those who are work-capable in the labor market?

Dr. HOLZER. It starts with careful assessment, and at least in many parts of the country, too little assessment goes on of worker skills and worker needs.

When you have strong assessment, and I would look to some of the SNAP E&T pilots funded in the last farm bill, my impression is that some of them try to do more careful assessment. One group of folks are those who are trainable, who have strong, cognitive experience, have had some attachment to the workforce, have employability skills, and they could be referred maybe through the local workforce agency, through the local job center, to sector partnerships, career pathway programs, or even apprenticeships in the high-demand industries.

A second group may not be quite ready for that, but might, with the appropriate supports, be able to work steadily if the supports include childcare assistance, transportation, *et cetera.*

And then, of course, the third category I consider those who are harder to employ because they have multiple barriers.

We start with the assessment, we refer people to existing services that are appropriate for what the assessment tells us. If there is insufficient funds, maybe we expect SNAP to provide some of those additional services or experiences, but, of course, that would take more money, not less, in the budget.

The CHAIRMAN. Okay. Dr. Holzer, thank you.

I now recognize the Ranking Member.

Mr. MCGOVERN. Well, thank you very much. Mr. Chairman.

I just want to just go back to my opening statement when I sounded the alarm bells about the budget. The reason why I am so concerned, I am just looking at the summary of the budget that was released, when it comes to talking about cuts and savings and the farm bill part of it, there is no mention of any farm programs, no mention of crop insurance, no mention of anything other than

SNAP and work requirements and more hurdles. I think that is the intention here, and I didn't hear anybody here say that the way we help people get out of poverty is to cut SNAP by $10 billion.

Ms. Reynolds, I am a believer in comprehensive case management as well, but there is a cost to doing that. And if we believe in case management, we have to do more than say we believe in case management. We have to have the resources there to actually support the kind of comprehensive case management that you are talking about.

On the cliff, states currently have the option to lift the income limit through broad-based categorical eligibility. Thirty states have used this option for flexibility. I remember during the last debate on the farm bill, we had some of my colleagues on the Republican side talking about eliminating categorical eligibility and taking away states' ability to be flexible. Even with the elimination of these waivers for the ABAWD population, that is taking away states' flexibility. What happens if a factory closes in a particular community, what happens if there is, all of a sudden a, real big dip in the economy? States need to have that flexibility to be able to provide people with basic food assistance.

Dr. Holzer, I mentioned earlier there are lot of people who are working who are on SNAP, and part of the problem is that wages are low. You have people who could be working and still be so poor that they fall into this category where they have to receive benefits from the social safety net. Can you explain a little bit about the prevalence of low-wage jobs in the economy, and if the goal is to help SNAP participants no longer need nutrition assistance, what kind of investments do we need to make? And without access to skills training, how likely is it that lower-skilled workers can earn their way off of SNAP?

Dr. HOLZER. You are correct, there are tens of millions of low-wage jobs in America today, depending on how we define that. By all measures, there are many of them. They are concentrated in agriculture, retail trade, the lower end of the service sector. There are also jobs that pay better, but increasingly in America it is only possible to get one of those middle-paying jobs with some amount of post-secondary education or training, including on-the-job training. And that has been the big change from earlier decades in America. Historically, there were production jobs in manufacturing, clerical jobs, that pay well for high school graduates and even high school dropouts in some cases. Those have largely disappeared. The remaining work options available for people with only high school, as I said, are in those lower-wage sectors where the earnings, even working year-round, full-time, do not get a single earner above the poverty line.

The way forward is to get people more post-secondary education or work experience, but of the type that employers value. What we do in America is we send many millions of students to college, including community colleges, but too many of them fail to complete any credential, or they get credentials, like an Associate's Degree in liberal studies, that employers don't value. I think we need both.

There are a lot of employers right now, especially in the tight labor market, who need more skilled workers. There are lots of options in community colleges and in other contexts that provide that

training, and we have to get more people who are capable of getting the training into those situations to create the skills that can lift people up.

Mr. MCGOVERN. And by the way, going back to something Ms. Reynolds said, we ought to be talking in general terms about how you end poverty. I believe we ought to be asking the question how do you end hunger in this country. I have proposed for several years that there should be a White House conference on food nutrition and hunger to try to get a comprehensive plan together.

But we also need to know the people in the population we are dealing with, this able-bodied adults without dependents population, I would suggest we do a hearing on that population because it is complicated. They are eligible for SNAP only 3 months out of every 3 years, unless they work. In your opinion, is that a realistic time, knowing that this is a complicated population, to expect them to be able to transition?

Ms. REYNOLDS. What we see in Fort Worth really depends on the level of post-secondary education they have. That is our experience too; we need people to complete some sort of credentialing in order to do that. A journey out of poverty is not a 6 month journey, for most families it is not a 12 month journey. Usually it takes several years to move a family from a place of how the Federal Government defines *poverty,* to living wage income with a small amount of savings and no inappropriate debt.

Mr. MCGOVERN. Thank you.

I yield back.

The CHAIRMAN. The gentleman yields back.

I now recognize the gentleman from Arkansas, Mr. Crawford, for 5 minutes.

Mr. CRAWFORD. Thank you, Mr. Chairman. I appreciate it.

Mr. Lotzar, you had a couple of recurring themes in your testimony I would like to get you to expand on. One of those is changing the mindset. You mentioned that a couple of times. Changing it from what to what? Talk about that a little bit.

Mr. LOTZAR. The main thing is changing it from nothing is going to work, there isn't any hope, those people over there are using the language that I hear, they are going to have the good stuff and I am not. It is changing it to, no, actually, this whole business of prioritizing work, and if I can organize myself to, no, I am not going no matter what, I am not going to let my kids stop me from going to work, I will find some way to get them on the bus to go to school, whatever it is, prioritizing work. There are a whole set of assumptions in a middle class, which is where we are trying to get people to a middle class lifestyle, that many of us don't even notice because I don't know that we accept them.

A mindset shows up in behavior, so you ask somebody, "Well, are you work-ready," and they will say, "Yes, sure, of course," and then we say, "Okay, do you have a photo ID?" Well, no. What employer is going to hire you unless you can even prove that, for instance.

It is, like Mr. McGovern said, it is complicated. Last week I was in somebody's apartment; one of our students, and as I walked in, it is a very friendly place around, okay, nevertheless, there are, I don't want to say things like that here, there is urine in the hallways, there are signs saying if you throw-up, clean it up. And I

walk in, because he hadn't been showing up to class and I wanted to find out where he was, and he was just getting it together because the week before his cousin had been shot. Not everybody is like this, I understand I am going to the extreme. And a couple of days before, his best friend had been shot, and so his mind just could not handle continuing his training. He was 19 years old, he was so into it, really wanted to do it.

Mr. CRAWFORD. Yes.

Mr. LOTZAR. But what I am saying about where his mindset was, was just survival, let me survive.

Mr. CRAWFORD. Right. That dovetails with the other recurring theme that you brought up, soft skills.

Mr. LOTZAR. Yes.

Mr. CRAWFORD. Okay, so soft skills are not something that institutions of higher learning invest in typically because those soft skills are usually acquired through modeled behavior. How do you address that? I mean, okay, you have to change the mindset. To do that, you have to equip them with the kind of soft skills that are necessary to support a move into the economy.

Mr. LOTZAR. Yes.

Mr. CRAWFORD. How challenging is that for you as an educator?

Mr. LOTZAR. Super challenging, especially because we try to do very short-term programs. In our programs that last a year, much less challenging. We can see more changes. Six months, it is kind of hard. Three months, it is very, very, very hard. But what we do is we actually found an assessment from a company called Learning Resources, Inc., that does a very good job at assessing employability skill level, the kind of soft skills that you need just for work, which includes character, decision-making, stuff like that.

Mr. CRAWFORD. Yes.

Mr. LOTZAR. We test them on that, we work with them with the results, we use other tools, we use a feedback tool. A lot of feedback has to keep happening. up-front we let them know, listen, when you leave the program you are going to be a different person than when you start.

Mr. CRAWFORD. Yes.

Mr. LOTZAR. And this is just standard education for being a phlebotomist or something.

Mr. CRAWFORD. Let me move into the next question. Okay, so we go from changing the mindset, trying to acquire a skill set with regard to soft skills, preparing you for the workplace. Now, as an educator, you are actually going into a curriculum to get a credential or a certification or something that is attractive to an employer. What about entrepreneurship training? You had a story about the young lady who kind of lifted herself up, pulled herself up by her bootstraps. Entrepreneurship training, is that attractive to people that are in this socioeconomic strata?

Is it difficult for them to comprehend or grasp that?

Mr. LOTZAR. Yes and no. Sorry. I think a lot of people think they can, but don't realize the amount of stuff you have to understand and really handle in running a business. I mean the idea of a P&L sheet is a little bit far away for a lot of people, but the desire and the motivation, yes, it is there.

Mr. CRAWFORD. Yes. Well, that is going to be the challenge. We talk about STEM education, manufacturing jobs, and so on, there is very little attention paid at that level to entrepreneurship potential, and I hope that that is something that we can expand on, going forward.

My time has expired. Thank you, Mr. Chairman.

The CHAIRMAN. The gentleman's time has expired.

Now, I am pleased to recognize the gentleman from California, Mr. Panetta, for 5 minutes of questioning.

Mr. PANETTA. Thank you. I appreciate it. Thank you. I have to commend Chairman Conaway for advocating for a robust budget for the Agriculture Committee. I know over the last couple of weeks he has been fighting away in order to make sure that we are fully funded. But, clearly, as you heard from Mr. McGovern, there is a concern based on that $10 billion cut to the SNAP program, and how that would impede our ability to reach certain populations and basically raise them out of poverty through employment and training initiatives; the one you spoke about.

I guess my question though is, right now, you have a certain amount of funding and you have SNAP that is addressing certain communities, but are there still needs that are not being met right now, and what are those, with the funding that you have?

Ms. REYNOLDS. I can speak to that. One of the things we see that is not being addressed is the idea of serving families holistically. We have SNAP, we have TANF, we have housing, we have childcare, there are so many wonderful public benefits that our country offers, but families are whole families, their problems aren't just food, their problems aren't just housing, their problems are upward mobility, their problems are stability. Without holistic, comprehensive, long-term case management we don't really stand a chance as a country of moving families forward. Even investment in workforce and community colleges, which I am a big believer in, if we were investing there, yet folks aren't completing their post-secondary education, it really doesn't allow families to move ahead.

Dr. HOLZER. If I could add to that, please. Within the SNAP population, and if we talk about the roughly ⅓ of adults in the program, the vast majority of them do not get any involvement with an E&T program within SNAP, or with any other local workforce or community college effort. The population is not being touched at all. I am open to some mix of somewhat greater pressure to engage in these activities, but at the same time also funding for more services, more supports, more of the assessments we have talked about, maybe referrals to the local job centers, the one-stop-shops, for referral out. But right now, given the budgets of most of these agencies, there is no money there to engage any more than the roughly three million people right now. That is a very small fraction of adult SNAP recipients.

Mr. PANETTA. Got you.

Dr. Holzer, how small a budget that we could be contending with, I mean how would that impact SNAP E&T implementation in your state?

Dr. HOLZER. I live in the State of Maryland. I am not enough familiar with that state. If there have to be cuts in the overall SNAP budget, we don't want that to come out of food allotments. The log-

ical place for these cuts to occur would be in other activities that are regarded perhaps as less essential. I would fear that cuts in the budget, that they would first come out of the kinds of assessments and supports that really we have all talked about that I think are necessary to help people.

Mr. PANETTA. Great.

Mr. LOTZAR. Can I just add a teeny bit?

Mr. PANETTA. Please.

Mr. LOTZAR. When the SNAP budget was cut before, we saw a huge increase of our students needing food. And that is one of the reasons why a lot of people drop out, because who can think of these long-term things? What we have done is we have really put a lot of effort into our own food bank right at the college where, no questions asked, if you say you need food, you go in, and we have been gathering resources. However, Syracuse is a city, it is sitting in the middle of huge amounts of agriculture. We are lucky we can do that, we can pull a lot of food. Not everybody can.

Mr. PANETTA. Fair enough.

Thank you. I yield back my time.

The CHAIRMAN. The gentleman yields back.

I now recognize the gentleman from Illinois, Mr. Davis, 5 minutes.

Mr. DAVIS. Thank you, Mr. Chairman.

I may not have heard it, but did you mention that you represent the salad bowl of America yet today, Jimmy? It is coming later, okay. Second round of questions. I thought I might have missed that. I was a little concerned that we might have had some issues here. And I noticed you yielded some time back, so I was a little worried about you.

With all seriousness, thanks, everyone, for being here. This is a problem that we recognize on a bipartisan basis, that we want to get the benefits and the food to those families and those individuals who need it the most.

I have been very active working with our local food banks and food bank directors in central and southwestern Illinois, and had the chance to visit the Central Illinois Food bank, and their Executive Director, Pam Molitoris, a long-time friend of mine. And while with her, we talked about bringing to light some of the success stories of individuals and families who have gotten SNAP benefits, and how they have used them to work themselves and their families into a better situation to achieve their American Dream.

And, Ms. Reynolds, I enjoyed hearing some of the stories that you relayed.

And as a matter of fact, I want to also commend the Chairman of the Subcommittee, Mr. Thompson, for focusing this hearing on pathways to success for SNAP recipients.

I want to relay one story from central Illinois that Pam gave me. She shared with me that at the age of 15, a woman named Kelly had a newborn baby and needed assistance in providing for her child. She applied for and received both food stamps and WIC to assist her and the child during their season of need. And 7 years later, when Kelly was 22, she graduated college and was fortunate to no longer need SNAP assistance. Kelly's child now has grown up and has a Master's Degree in education, and has made Kelly a

grandmother. Kelly believes that were it not for her ability to receive these benefits during her season of need, both her and her child's lives would be drastically different.

We hear these stories, we see these stories often, and this is the type of success story I hope we can all gather around as we move into the next farm bill and begin this debate, in a bipartisan way, so we can get to success to help families like Kelly's.

I also represent a lot of rural areas, and that is my concern, my question is to whomever wants to answer it first. There are a lot of issues that aren't addressed in rural areas like they may be addressed in places like Syracuse, where there is easy access to transportation, easy access to good foods, that may be grown in Jimmy's district. We may not have access to those foods in rural areas, although we should. What are your ideas for addressing the problem of access to these benefits, and being able to use these benefits once they are given in rural areas, because there are a lot of communities I represent where the only store is a convenience store and a gas station. Where is that access to good food for those individuals who may not live in urban areas? And also what flexibility may they need to be able to get the sustenance to be able to be that success story like Kelly?

Who wants to start? Tick-tock, tick-tock. Dr. Holzer?

Dr. HOLZER. A scholar at the University of Washington named Scott Allard has done some research in this area, and he has documented really exactly what you said, Congressman, that in the rural areas, the availability of the support services is a great deal lower. And so the perception is accurate. Again, it would probably take an injection of funds, but we need to improve people's transportation to available jobs, more robust placement services, maybe at the local American Job Center. I mean there are fewer employment opportunities in these areas as well, outside of agriculture.

Mr. DAVIS. And agriculture is not a bad employment to be in.

Dr. HOLZER. It may not be. It tends to be, on average, quite low wage, but again, with the right work supports, it is fine to help move people in. But again, having them access the services is more challenging, and probably would require some extra resources to overcome that.

Mr. DAVIS. Okay. Ms. Reynolds?

Ms. REYNOLDS. I am a social worker by trade, not an economist, but I have grown very fond of economists over the years, specifically in our work with University of Notre Dame. And I would say rural poverty is a really serious thing. We serve a 28 county diocese. Catholic Charities, throughout the nation, serve a lot of rural areas. And all in all, I don't think that there is a lot of innovation that has occurred in rural communities like it needs to be. My encouragement would be investment in innovation pilots throughout America, specifically in rural areas, that are rigorously evaluated, so we can understand what really works and what makes the difference, and then double-down there.

Mr. DAVIS. That may be a very good idea for the next farm bill.

I am out of time. I yield back.

The CHAIRMAN. The gentleman's time has expired.

Now, I am pleased to recognize the gentlelady from North Carolina, Ms. Adams, for 5 minutes.

Ms. ADAMS. Thank you, Chairman Thompson, Ranking Member McGovern, and thank you all to the witnesses for your testimony.

Food insecurity and poverty are persistent challenges for many of the communities in the 12th District of North Carolina that I represent, and SNAP is a vital part of the solution to these problems. However, while education and training is a hugely valuable and vital service that SNAP can provide, SNAP is not a work program; it is a nutrition program meant to help those who are struggling to put food on the table. And while we should always look for ways to improve SNAP, we should not forget this ultimate mission.

Dr. Holzer, SNAP E&T programs are required to provide supportive services such as transportation and childcare to the participants, but in many states it seems like they aren't providing these services, or they are providing them at a very low reimbursement level. Can you speak to how important these services are to supporting low-wage workers, and helping them find and maintain employment?

Dr. HOLZER. Very simply, they are extremely important. The first service that people need, and both my colleagues have addressed this, is getting a connection with employers that a lot of people simply can't generate on their own. If we don't want the SNAP E&T program to do that, then we would need to improve people's access to the local job centers where people are experienced, or to have a job developer reach out to employers. But once that connection is made, and once it seems like an employer is willing to hire a person based on their skill level, childcare for parents with small children, if they don't have childcare but they are already of school age, then the number of hours is quite restrictive, makes it hard to work. The childcare is really critical, and, of course, transportation matters as well for people. Especially, if you are talking about people living in an impoverished neighborhood, whether it is urban or rural, and the employment may be available, but it might be over some significant distance, to which public transportation is not available, providing the transportation could be a key factor.

Ms. ADAMS. Okay. There is no approach now to provide training for long-term employment, because that is really what it is going to take.

Dr. HOLZER. As I indicated, if we are looking for the biggest increases in earnings capability, that does come from training, plus the kinds of services that we have all talked about, but again, often linked to employment in specific sectors. The sector-based training or work-based learning are the best models. And again, that involves linking with the right employers, and also making sure that the individuals in question are trainable in the sense of good basic skills and job-readiness.

Ms. ADAMS. In view of what you have just said, do you think it is right to sanction SNAP participants?

Dr. HOLZER. Do I favor sanctions?

Ms. ADAMS. Yes.

Dr. HOLZER. There are circumstances in which that might be reasonable. My own view is that everybody should be offered an appropriate activity; a work activity or a training activity, before they are sanctioned. If a reasonable and appropriate SNAP activity is presented to people not working, and if it is turned down, sanctions

may be appropriate. I am very concerned about sanctions on families with small children where the cuts can actually do real damage, because it creates food insecurity, it creates stress on the children. That is why I am always reluctant to sanction those kinds of families. But again, I oppose it unless appropriate activities are provided for people who cannot provide them themselves.

Ms. ADAMS. Okay. Thank you very much, Mr. Chairman. I yield back.

The CHAIRMAN. The gentlelady yields back.

I now recognize the gentleman from Florida, Mr. Yoho, for 5 minutes.

Mr. YOHO. Thank you, Mr. Chairman. I appreciate it. I appreciate you all being here.

My background is that I am a veterinarian, and I grew up kind of poor, and my wife and I were on food stamps when we were 19, so I understand the importance of that. We were on that for about 6 weeks, and it was a benefit to have, for sure. Our goal was to get in it, get off of it as quick as we could, and we did. And so our goal, like today in this farm bill, is to make sure that the program is there for those that need it, and that we have the integrity of the program long-term, and our country is facing economic hardship if we don't change some things. And so reforms need to be made. Reforms, not cuts, because what we want to make sure is that the people that truly need this, have this.

We have seen several states implement work requirements; Alabama, Maine, Kansas, Florida. We have seen a decrease of people on the assistance program. In your experience, have you seen any deleterious effects to the people that have been removed from those programs? Anybody?

Mr. LOTZAR. I am still stuck on the work requirements thing. I work with a large social service agency that distributes temporary assistance.

Mr. YOHO. Yes.

Mr. LOTZAR. And one of the things about work requirements is that it turns into the speed with which a person can find a job, any job, I don't care, meaning the job coach needs to get their 150, 250 people into jobs. Those jobs almost inevitably are jobs that are undesirable to the person, and they will be right back where they started in a matter of weeks or maybe months.

Taking a pause and allowing a person to; first, encourage training, and second, move into a really sustainable career is going to help.

Mr. YOHO. Okay. Go ahead, Dr. Holzer.

Dr. HOLZER. I don't know of any specific studies in those four states that address that question.

Mr. YOHO. Okay.

Dr. HOLZER. We do know that in the aftermath of welfare reform 20 years ago, you had mixed effects. Some people did better, they were able to move to more consistent formal work. Some people did worse. There has been a documented increase in struggling families. And we know that for a lot of those families the access to food stamps has often been what keeps them above water.

Professor Kathryn Edin at Johns Hopkins University has documented very, very low-income families; families with very little ac-

cess to cash, and the access to food stamps is really critical. We also know how deleterious the effects of toxic stress is on children in families where their food stamp benefits are cut.

Even though I don't know specific studies of what you have talked about, there is broader evidence to suggest we move very, very carefully in that area.

Mr. YOHO. Yes, I look forward to getting that information.

Ms. Reynolds?

Ms. REYNOLDS. Yes, thank you for your question. I would say three things. The first is that I commend the idea of this is a program for those who need it. What I would really encourage first is that there are a lot of people who need food stamps in our country and experience food insecurity that are working, but they are still having to make choices between food on the table for their children at night or medication that they or their children might need.

We have to really look at benefits expanding to get to a place of self-sufficient wages.

Mr. YOHO. Well, let me ask you something on that since you are with Catholic Charities.

Ms. REYNOLDS. Yes.

Mr. YOHO. How important is it with the faith-based communities, food banks, things like that, supplementing things like this in a community, because community is where it needs to be healed *versus* the Federal Government, and everybody looking for the Federal Government. What are your thoughts on that?

Ms. REYNOLDS. Great question.

It is a both-end-type model. I mean we need you and you need us. We need our friends at the community college to provide excellent education, and we need to partner with our community colleges to help ensure that students are graduating through——

Mr. YOHO. Let me go to Mr. Lotzar right now, because you are at the community college level. And what I have heard and what I have seen is, we are teaching basic skills at a community college level. Where have we broken down so that people aren't prepared by the time they get there, because what we are doing is we are treating a symptom? How do we change that narrative? And I know it is beyond the scope of this hearing, but it seems like we are not as prepared as we should be at the community college level.

Mr. LOTZAR. No, it is important. Yes, it is true. The answer is we need to start working in the high schools already from tenth and eleventh grade, make sure that there are student retention efforts in the high schools, and basic skills training in the high schools.

Mr. YOHO. I would propose we need to work earlier than that; like at the elementary and at the family level in the beginning so that by the time they get to the junior college, they are focused on a career. And I know not everybody is, but——

Mr. LOTZAR. Exactly. People have to change the model of college honestly, to get to the employment thing.

Mr. YOHO. Thank you.

I appreciate your input. I am out of time. Thank you, all.

The CHAIRMAN. The gentleman's time has expired.

Now, I am pleased to recognize my colleague from Pennsylvania, Mr. Evans, for 5 minutes.

Mr. EVANS. Thank you, Mr. Chairman.

I would like to yield a few seconds to the Ranking Member.

The CHAIRMAN. The Ranking Member is recognized.

Mr. MCGOVERN. Thank you. I just want to respond to my colleague from Florida when he asked whether there were any bad impacts from some of these increased, more stringent work requirements that some states have imposed, and the answer to that is yes. And there are lots of stories, but again, I will go back to this *Washington Post* story that I referenced in the beginning, which begins, "for a period last year after he lost his food stamps," as a result of Maine's increased, more stringent work requirements. "Tim Keefe, an out-of-work and homeless Navy veteran, used his military training to catch, skin, and eat squirrels, roasting the animals over an open fire outside the tent he pitched in frigid Augusta, Maine." It goes on to explain his plight. But this is not unusual, and that is why we need to understand the population of people that we are dealing with. It doesn't all fit into a nice neat category. This is a very complicated population. And if we want to end poverty we need to understand the people we are dealing with.

And I thank the gentleman for yielding.

Mr. EVANS. Thank you.

In listening to all of testimony this morning and obviously going through it, I just want to ask a real succinct question and go down the line.

Does kicking people off of SNAP encourage work?

Dr. HOLZER. I would argue that if the only thing you do is kick people off SNAP, the answer is very little, because the rigorous evidence——

Mr. EVANS. Does that mean yes or no? I am trying to understand.

Dr. HOLZER. If that is the only thing we do, the answer is probably no.

Mr. EVANS. Okay. Can we go to the next person?

Dr. HOLZER. Sure.

Mr. LOTZAR. If you take away their SNAP benefits, they are not going to be thinking about work, they are going to be thinking about quick cash.

Mr. EVANS. So that means what, yes or no?

Mr. LOTZAR. What that means is not sustainable work, but bringing in income by any means, usually means it is not reported, and certainly, they are not paying any income tax on it, and it is something that can often land people in jail.

Mr. EVANS. Okay. Yes, Ms. Reynolds?

Ms. REYNOLDS. No.

Mr. EVANS. Okay. I would like to go to Ms. Reynolds a little bit. In your testimony you said at the end of it about how we must invest differently. Be very specific here, what do you mean when you say we must invest differently? If you had your chance, how would you suggest we invest differently?

Ms. REYNOLDS. Many of our Federal safety net programs are judged by the number of people who are receiving them or rolling off the rolls. And at the end of the day, what we need to be concerned about is the number of Americans who are living a life of stability. For me, I feel like we need to invest differently up-front

so long-term we don't have to invest as much, because we are moving more families out of poverty, allowing them to provide for themselves.

Mr. EVANS. Yes. We know that many SNAP participants are actually working while receiving benefits, and many more work immediately before participating in programs. It seems this is just that for those in the program there isn't an unwillingness to work, but rather the growing role of low-wage work in the economy. Can you explain a little bit about the issue around low-wage jobs? And I will go down the panel on this one. Give some explanation about this.

Dr. HOLZER. We have had a large growth in the low-wage sector in America. As I indicated earlier, there used to be good-paying jobs available to people without post-secondary education or training. Those have largely disappeared. Now, you have extremely large bodies of employment for folks with very little education, often in the low-end of the service sector or in retail trade or in agriculture, which means that more working people need supports. Food stamps are just one kind of support. I am also a big fan of things like the Earned Income Tax Credit which incentivizes people to work more to get the aid. The economic changes have simply created a situation where if we want people working and surviving and being able to raise families, we need to raise the number of supports, along with the right incentives, to make that happen.

Mr. EVANS. Yes.

Mr. LOTZAR. Yes, exactly. There are a lot of low-wage jobs which people do have, which will leave them in ALICE, but more than that it is a generalized structure of how a lot of our very large corporations work, which aren't based locally, in that people will have jobs and they don't know next week how many hours or which hours they are going to work, and they are tethered to 3 hours here and 6 hours there. If there is any pressure that can be put on corporations to have an understanding that you need to have a long-term employment and stable employment, and it is not just about their bottom line, that would help.

Mr. EVANS. Yes.

Ms. REYNOLDS. We see the working poor every day not able to receive benefits because of the benefit income cutoff. Like I said in my testimony, I couldn't encourage more for us to consider benefits not cutting off at the Federal level or the state levels until we get families to self-sufficient wages.

Mr. EVANS. I yield back the balance of my time. Thank you, Mr. Chairman.

The CHAIRMAN. The gentleman's time has expired.

I now recognize Mr. Marshall, from Kansas, for 5 minutes.

Mr. MARSHALL. Well, thank you, Mr. Chairman.

My first question is going to be for Mr. Lotzar. Mr. Lotzar, I am a community college graduate. My wife, a community college graduate, got her nursing degree. We have ten, eleven community colleges, technical colleges in my state, and they do the best job of quickly pivoting to the needs of what that community needs for good-paying jobs. Specifically, I am going to mention Cloud County Community College wind energy, it is a 2 year program. The kids can't finish even 1 year before they get grabbed and they are mak-

ing $50,000–$60,000 a year, which is a very livable amount of wage in my area.

How do you measure success? What are you doing to gather data to measure success?

Mr. LOTZAR. Success in community colleges is usually measured by completion rates, which, as Ms. Reynolds said, are pretty abysmally low. I know at our college 47 percent of the people who start don't finish. 15.4 percent of people who intend to do a 2 year degree do it in 2 years, everybody else, 3, 4, 5, 6, or they don't. But there is another measure of success that we do in our workforce development department, which is how many people have jobs in the field that they went and trained for, at least 2 years out after school. How do we measure for that? We keep calling.

Mr. MARSHALL. Yes.

Mr. LOTZAR. Yes.

Mr. MARSHALL. Yes, one of my technical colleges in the aircraft industry, which has a 99 percent success rate of getting a good job when you are done, I think that is a great way of measuring success.

Ms. Reynolds, I will come to you. Catholic Charities is alive and well in my district and does such a great job. I am an obstetrician working with my pregnant moms, as well as our immigration issues.

Talk about case management a little bit. What is the secret to successful case management? Be more specific.

Ms. REYNOLDS. Great. A case manager is one who spends about half their time connecting a client, and helping problem-solve what a family is facing. That is childcare, that is transportation, that is housing, all of those sorts of things. That is enrollment in community college. And then the other half of their time they are functioning as a coach, a therapist, that sort of thing. The toxic stress people in poverty face is very real. The lack of belief in oneself is very real. The hopelessness that we find them in is very real. And if we don't have someone walking alongside of them, when they fail a class at a community college, saying we know you failed, but you can do this, let's move forward. Oftentimes they don't succeed. For us good case management is somebody who is meeting very regularly with a client, face-to-face with a client, seeing a client make progress toward their goals, we measure success every 21 days, progress on their action step. And a case manager is really playing that role of accountability partner, cheerleader, coach, therapist, whatever hat that that client needs at that time.

Mr. MARSHALL. Thanks. Yes. One of my colleagues asked me why do I do so many town halls and roundtables, and part of my job is to encourage the encouragers, to encourage your people who are out there doing these jobs, and just to tell them that they are doing a great job.

I am going to come back to my friend from the community college. In your testimony, let me get it right here, the power of case management and helping move—back to you, okay, train people in jobs that may not exist in your region. My community colleges do a great job of pivoting very quickly to the needs. I mentioned the wind energy, Garden City has a diesel engine program, we have lots of tractors in Kansas, so they train them how to work on diesel

engines. K State Salina has a maintenance program for UAVs, which is growing tremendously in my district. How does your community college try to deal with the anticipated needs of the future of jobs rather than yesterday's jobs?

Mr. LOTZAR. Yes. What we have tried to do, as a matter of fact, is look for the future jobs that are happening right around the corner. That is why I said we look 18 months out when we talk to employers, and we use a database called Burning Glass, it is a private thing, kind of expensive, but really good, done by a bunch of geeks from Boston. Sorry.

Mr. MARSHALL. Technical term?

Mr. LOTZAR. I think so, yes. When we find only 18 months out which jobs are hiring, then we can start training. When we looked for programs, such as Green Jobs, we run a risk in our area because they may show up, they may not. Curriculum development takes at least 2 years and then some. It is going to be another half a year at least before somebody signs up for college, and then they start, and the 2 years to learn is really 4 years. You are looking at 7 years from the time you had the idea about what is going to happen, so you need to focus on very short-term job opportunities.

Mr. MARSHALL. Yes. Before I yield back, do you realize that there is a reception night for rural community colleges in D.C.? Talk to my staff.

I yield back.

The CHAIRMAN. The gentleman yields back.

I now recognize the gentleman from Florida, Mr. Lawson, for 5 minutes.

Mr. LAWSON. Thank you very much, Mr. Chairman. I really enjoyed the testimony that you all are giving this morning.

In my district one out of every four Floridians are food-insecure, and I have six of eight counties with the highest food insecurity in the state. This issue strongly influences how I look at agriculture and the farm bill. Today, with this discussion of SNAP and E&T, I want to remind the Committee that in 2016 only five states ensured that all SNAP beneficiaries in their state that were subject to 3 month time limit were provided E&T training, which is critical. That is unacceptable and we need to address the problem in the 2018 Farm Bill.

Dr. Holzer, in my district, we have the second highest poverty rate in the State of Florida. I represent many folks who are looking for work and are trying their hardest to provide for their families. When the mandatory ABAWD work requirement went into effect in 2016, the Florida Department of Children and Family estimated that 591,000 were removed from SNAP in the first year. How can we amend current law so that the vulnerable in communities are not excluded from the nourishment that they deserve?

Dr. HOLZER. Well, Congressman, I would change policy and practice with regard to the ABAWD population. As I indicated earlier, I would more carefully assess their employability and provide both what some people in the field call accommodation of help and hassle; pressure to engage in services and activities, but also assistance and help in doing so. And, frankly, one thing that could be considered is, in return for that engagement, to suspending the time limit more easily.

Right now the time limit is suspended for people who engage in work or a prescribed number of activities for 20 hours a week. I would probably increase the assistance, maybe drop the work hours, just to make it easier for more people to do something productive but still have access to the food stamps that they often need, as a work support.

Mr. LAWSON. Okay. And, Ms. Reynolds, this question is directed to you. I grew up in the country where people, to a large extent when I was growing up, were not on SNAP or any other program. They provided for themselves and helped each other. How do you deal with the situation where some people who are on this program that shouldn't be there? And people are very smart, so every time the Federal Government implements some requirements, a lot of people are very smart how to get around those requirements. When I am working on this, I am trying to see, I know people who need it the most really need it, but there are a lot of people who are gaming the system. How do you go and deal with that? What do you do in order to stop that?

Ms. REYNOLDS. That responsibility in our community falls to the State of Texas. What we see a lot in our organization is, we work with a lot of families, most of the time our families aren't on a lot of benefits that they do qualify for. One of our goals or measures of success is families being off of public assistance, however, what we often see is we enroll them in public assistance until we can move them further along the spectrum to eventually get them off of public assistance.

We have seen the anecdotal story of somebody who is taking advantage of the system, but generally speaking, what we see at Catholic Charities Fort Worth is people who want more for their children than what their life looks like today.

Mr. LAWSON. Okay. I will yield back in a minute. In Duval County, there are about 200,000 people that go without food every day, and you won't be able to answer this question, but I would like to know, and I have gone to food banks, helped with meal deliveries who get nonperishable items, and so forth, how do we get nourishment to these people, especially kids, and that is an issue.

But, Mr. Chairman, I will just yield back. That is just something on my mind.

The CHAIRMAN. The gentleman yields back.

Now, I am pleased to recognize the gentleman from New York, Mr. Faso, 5 minutes for questioning.

Mr. FASO. Thank you, Mr. Chairman, and thank you for holding this important hearing today. And thanks to the witnesses for coming.

I also am on the Budget Committee, and I would just note that we have heard a lot about the budget. The budget does presume $10 billion in reduced spending over 10 years, and it is important to note that this program will spend somewhere between $600 and $700 billion over that 10 year period. The presumption is that if there were more stringent work requirements, that there would be certain reductions in levels.

Now, I don't know how this will manifest itself, but I can tell you that I don't think I have heard virtually anything here today that one would disagree with. I mean you hear the needs, the problem

with the income cliff. I hear this all the time from employers, small-business employers in particular, who tell me people will come to them looking for work and they will decline a job because of the prospect of losing benefits because of the dramatic income cliff. And there is no doubt that I hear from food pantries and others that the need and the demand for their services are more significant now than they have been in recent years. There is something going on. Then I hear from employers constantly who tell me they have jobs, they just can't find qualified people.

What percentage of those people, Ms. Reynolds, do you think, on food stamps generally throughout the country, are getting the kind of coaching that you are talking about would be so important to getting people into jobs and helping them move in a direction so they have less dependency on these programs?

Ms. REYNOLDS. I would say a very slim margin. And if I could encourage one thing and one thing alone today, I love how your colleague talked about one of his roles was to be an encourager of encouragers, because we have a team just at our Catholic Charities of over 400 people who dedicate their life to trying to move families out of poverty. Make it easier on us, make it easier on our team at Catholic Charities and Catholic Charities throughout the country, and allowing these benefits where it makes sense for families to move ahead.

Mr. FASO. What if we were to presume some savings in EBT in SNAP benefits, and plowed those savings into the kind of coaching and educational opportunities for people that Dr. Holzer was referring to and that Mr. Lotzar is conducting at the community college level?

Ms. REYNOLDS. Yes. I am probably not familiar enough about where savings could be realized, but I do think it is really important that we invest differently, that we invest up-front, and we invest in intensive case management.

Mr. FASO. Yes, Dr. Holzer.

Dr. HOLZER. If I could just address that. The vast majority of adults on SNAP never set foot in an American Job Center. There are over 3,000, what we used to call One-Stop Shops, around the country that are there to help connect people to jobs. They never get those services. They never get the counseling available in those centers that would help them identify appropriate education and training activities to improve their employability. Anything we could do within SNAP to better connect people to the labor market services that are already there, would be a big step forward.

Mr. FASO. Maybe a means by which we could perhaps bridge some of the Republican-Democrat philosophical divide would be to actually take savings, if they accrue, and plow them into those kind of efforts.

Here is the crux of the matter, it seems to me, that the public is oftentimes very frustrated by what they perceive to be the abuse of the system. An under sheriff in my district related to me not a month ago, every single drug dealer he arrests has an EBT card for food stamps on them, and yet we know, and I have met with the mental health associations in my counties, the important need for people, they may not be single adults, but they may, because of mental health difficulties or other difficulties, what was related

about the veteran in Maine, these people simply don't have the capacity to work for a variety of reasons, whether it is mental health, whether it is drug addiction, whatever. There has to be some means by which we can move many more of the people who are in SNAP now and move them into productive employment by getting at this income cliff that Ms. Reynolds; any comment that Dr. Holzer or Mr. Lotzar have about the income cliff from your experience?

Dr. HOLZER. It is one thing to find an income cliff theoretically for someone who finds themselves at a certain point in the earnings and hours distribution. It is another thing to find a lot of people at that cliff and for it to affect their behavior.

The rigorous evidence to date does not show large negative effects on employment because of the SNAP program. It is not like 20 years ago before welfare reform where the old welfare system really did disincentivize a lot of people. In SNAP right now, the rigorous evidence, and I would refer you to work by Diane Schanzenbach of Northwestern.

Mr. FASO. Yes.

Dr. HOLZER. There is almost no evidence of negative effects on work by men, and modest effects on women. It is not zero, but this notion that massive amounts of work are being deterred is probably not accurate, based on the current research.

Mr. FASO. Thank you, Mr. Chairman. I yield back.

The CHAIRMAN. The gentleman yields back.

I now recognize the gentleman from Florida, Mr. Soto, for 5 minutes.

Mr. SOTO. With the Chairman's indulgence, I would like to yield 30 seconds to Mr. McGovern.

Mr. MCGOVERN. Thank you. And I appreciate what the gentleman just said, but I just want to point out one thing. The SNAP program is one of the most efficiently, effectively run programs in the Federal Government, and as Mr. Evans pointed out, the primary focus of this particular program is to make sure people have food and nutrition.

Now, we can talk about better case management, which involves coordination with a whole bunch of different programs, which is a good idea, but let's understand about this particular program. And when you cut this program, what you are doing is you are taking food away from people.

The benefit right now is about $1.40 per person, per meal. That is it. That is why so many people on SNAP end up at food banks. And in 2016, we threw a million people off of the program because the waivers disappeared. Those people aren't working, by and large, many of them. Those people have just been cut off of their food benefit because waivers haven't been extended. They are going without food. They are ending up in food banks.

If we want to talk about a holistic approach, that is a good conversation to have, and within the context of this farm bill, finding $10 billion worth of cuts in SNAP is a terrible thing to do, and it is going to make people's lives more difficult, and make it more difficult to do the kinds of things that the panelists here have suggested.

I thank the gentleman for yielding.

Mr. SOTO. Thank you, Mr. McGovern.

As we know, ⅔ of the folks on the program are children, seniors, the disabled. Seventy-five percent of households where someone is able to work, is working. And we already passed a major reform for able-bodied adults where they get 3 months every 3 years. We are talking about a really narrow section of SNAP. Now, it is important for Americans to understand that because people get the sense there are all these folks who are able to work, and they are just getting SNAP the whole time.

I want to start briefly with, let's say we have seniors or those with disabilities who want to work maybe a part-time job. We are not forcing anybody to do that, but I know some folks want to still get out of the house and make a little money. What can we do to help out seniors and those with disabilities who choose to want to work a part-time job or something of that nature? That is for the whole panel.

Dr. HOLZER. I would start with assessing their needs and capabilities, and taking advantage of existing labor services in our American Job Centers and try to connect them with employers.

Frankly, and it is out of the domain of this Committee, I would also like to see some reforms in SSDI, in the Social Security Disability Insurance program, which right now is not optimally set up to encourage people with disabilities to work. Because a lot of the disabled folks are not only on food stamps, but on SSDI. Instead of kicking them off food stamps, we can think about changes in that program that would incentivize greater work and then get them those services.

Mr. SOTO. Sure. Since my time is limited, I am going to go to my second question, which is dealing with able-bodied adults.

How are we identifying these folks who come off of this 3 months, every 3 years, and what do you think we could be doing better to make sure they have appropriate work and education? And I give that question to both Mr. Lotzar and Ms. Reynolds.

Ms. REYNOLDS. It is my belief that the biggest thing we can do for these families is walk with them. And that doesn't occur over a few months, that occurs with somebody providing good case management services to them. That really is about a transformational relationship over several years.

Mr. SOTO. Now, are these folks identified and then relayed to your organizations efficiently right now?

Ms. REYNOLDS. Say it again.

Mr. SOTO. Are these folks, able-bodied working adults, who are off of this 3 months, do we efficiently right now identify these individuals for your groups to help out with?

Ms. REYNOLDS. In some communities. It depends on local collaboration relationships that occur. We tend to be a larger provider of case management and assistance in our local communities, so we get a large number of referrals coming through our doors.

Mr. SOTO. And, Mr. Lotzar, if we identify these folks properly and efficiently, what could we be doing better to assure they have appropriate work and education?

Mr. LOTZAR. Yes. Short-term work training programs, because you can't take a long time. You can't do an Associate Degree. It is the very short part that helps, first. Second, like I said, you have

to work on the desire for a different kind of lifestyle, which people say is there, and it is there, but a demonstration of, I don't want to say regular, a working lifestyle that is full-time work, that is meaningful work.

It takes a lot, and the way to do that is really with the case management, with relationships. And case management doesn't have to happen in any particular organization, but short-term programs that deal with the person. There we go.

The CHAIRMAN. The gentleman yields back.

I now recognize the gentleman from Texas, Mr. Arrington, for 5 minutes.

Mr. ARRINGTON. Thank you, Mr. Chairman. And I apologize for coming in late, but we have things that are scheduled at the same time, unfortunately. And so being from west Texas, I always find that being rude to walk in a conversation and then act like you have been there for the whole time.

I am just curious, have there been studies about SNAP recipients engaging in community college, education, skills training, and how many SNAP recipients avail themselves of those opportunities? And I mean is there any study like that? I didn't see anything cited, yes, sir?

Dr. HOLZER. There isn't a lot on SNAP recipients because we know that very few of them are engaged in meaningful employment and training activities, and I think we all share the goal of seeing more of that for this population, we do have studies on similar low-income individuals participating in community college programs, and we have some sense of the different programs that work for those folks. Some of them are Associate Degree programs, some of them are certificates, but again, if they have connections to employers in high-demand fields, we have evidence of success there. And we would like to see more SNAP recipients engaged in those efforts.

Mr. ARRINGTON. If very few are engaged in that, how do you incentivize this community to engage and avail themselves? I am a believer in the education and skills training to empower people, improve their lives.

Dr. HOLZER. Well, there are incentives for the individuals, and there are also incentives for the states that implement a lot of these programs. One can imagine, for instance, bonuses to states that engage more of these individuals in meaningful activities or that improve their outcomes. At a minimum, reporting requirements can matter, and bonus for states that manage to raise the number of people engaged, again, in meaningful activities. Performance measures, although those can have a downside because they can encourage the agencies to cream and do things like that. The incentives for the states and the local agencies matter. And for the individuals themselves, there is often an incentive already; that is higher earnings, as long as that money is there for the assessments and the support services needed to get them there.

Mr. ARRINGTON. Okay. Mr. Lotzar, do you have a comment on that? And then I just want to ask you about how you align market opportunities with your educational programs. Community colleges are the best at that, by the way, speaking as a former Vice Chan-

cellor at a major research university. Kudos to the community colleges out there doing great work for our country.

Mr. LOTZAR. Thank you.

Mr. ARRINGTON. Any comments on the previous question, and then that latter comment that I made?

Mr. LOTZAR. Yes. On the previous question, I just wanted to say that there is incentive for individuals, and that is earning more income, but there has to also be modeling, there has to also be demonstration on the parts of people who grow up knowing SNAP and relying on SNAP, and not just SNAP but SSI or SSDI, that connecting through short-term programs at community colleges, I am just one of these flag-wavers, that leads to a successful, stable income that is reliable. There has to be modeling. And how you incentivize it, I don't know. He had some good points with the state there.

The second question you asked was how do we find out which jobs are the right ones?

Mr. ARRINGTON. Yes, but let me skip over that one. I am on the VA Committee, again, at my university back home, the one I served at in the administration, we received a lot of funding from the VA to provide great education for our veterans, and were proud to do so, and won awards by having a veteran-friendly campus, *et cetera*. But there are some that are really critical about the for-profit guys. Some have gone out of business, and they worry about veterans going to schools or institutions of higher ed that may not be performing and delivering quality education. My thought is, rather than us picking and choosing at the Federal Government, why don't we have some outcome-based funding? Why don't we give some of the money up-front, and then if the population that we are interested in is persisting, is graduating, and is getting employment, then we put a little bit more money as a reward to those institutions. Why not do something like that with this population, quite frankly, with every population that the Federal Government is spending taxpayer dollars on?

And I yield back, Mr. Chairman.

The CHAIRMAN. The gentleman yields back.

Before we adjourn, I invite the Ranking Member to make any closing remarks that he has.

Mr. MCGOVERN. Let me thank the panel for your excellent testimony and your presentations. You have made a challenge to all of us to be thinking more holistically about how we deal with the issue of poverty and hunger in this country.

And I am going to close the way I began, by just expressing my deep concern over our funding priorities here in this Congress. The notion that we would even entertain cutting SNAP by $10 billion, to me, goes against everything that I heard today in terms of how we ought to be approaching this issue. People on SNAP are a very diverse population, and as I mentioned at the beginning of the hearing, 67 percent of those on the program are not expected to work; they are kids, they are senior citizens, they are people who are disabled. Of those who can work, the majority are working. Yet wages are so low that so many of them still need to rely on this program.

Of those who are not working, the population is very complicated, and it includes returning veterans, it includes people who are chronically homeless, people who have undiagnosed mental illnesses. It is a complicated population and we need to treat it as such. But, we need to reassess what our priorities here are in this Congress. I appreciate very much your presentations and look forward to working with you in the future.

I yield back. Thank you.

The CHAIRMAN. The gentleman yields back. And I thank the Ranking Member.

First of all, I want to thank the witnesses for, once again, bringing your perspectives, your experience, and I can tell your passion on the topics and the issues that were discussed today. I greatly appreciate it.

I want to thank my colleagues. The Ranking Member does better math than I, I can't keep track of how many hearings we have done, but it was quite a few.

Mr. MCGOVERN. Twenty-three.

The CHAIRMAN. Twenty-three, thank you, 23 hearings, and it is a passion of all the Members of the Subcommittee. We have great participation, and I think that is reflected on how important that this topic is. And we have done this with transparency. And I would agree, we found very few instances of fraud and abuse, and we are looking to see how we can make this program more effective to help American families.

I want to thank the staff who do all the really heavy lifting on both sides of the aisle, that help prepare us for this.

My principles are pretty clear, and I talk about them a lot. The fact is nutrition matters, and farmers feed, that is why I can't think of a better place for a nutrition title than as a part of the farm bill. And we have one other, would the gentlelady like to ask questions for 5 minutes? If so, I will yield to the gentlelady from New Mexico.

Ms. LUJAN GRISHAM. How about if I do a hybrid in respect to the chair and the Ranking Member, because I am so late. And I really appreciate the conversation, so I want to certainly associate myself with those closing remarks.

And the one point is that I would just love to make to the group, that in the testimony where work requirements and getting folks out of poverty is certainly an issue that is bipartisan, a one-size-fits-all model, I agree, never works. And recognizing that there are states like mine with such extreme poverty, have some of the hungriest families still in the country, the highest unemployment or nearly so, we shift positions where we are worst and then second worst. And there is not a job market in any community that is having any impact on our overall economy. No job training, no investments, no state policy that works currently. We have to be very careful about a Federal mandate that would create, whether perverse incentives or not, the right opportunities for states like New Mexico to make productive decisions that support families who are really in need.

Mr. Chairman, that was very kind of you. I thank the panel, and I thank my colleagues for this hearing today. Thank you.

The CHAIRMAN. The gentlelady yields back.

The focus of today's hearing was improving pathways to success for SNAP households. SNAP households, a great Illinois philosopher, Representative Rodney Davis, used a term that I love, used in today's hearing about serving those folks who are in the season of need. And that is certainly what our focus is on. The good news is we are building on a record of bipartisan work and accomplishments. The Workforce Innovation and Opportunity Act that was passed and signed by President Obama, and which really was focused on restoring greater access to more effective job training. That is the One-Stops, the Career Links were made reference to. And we have some great reforms that, in a bipartisan way, we have accomplished those. And that was just a few years ago. And then most recently we passed unanimously the Strengthening Career and Technical Education of the 21st Century, which again is about restoring rungs on the ladder of opportunity, greater access to more effective skills-based training. Coupled with our Nutrition Subcommittee work that we have been doing and preparing for, we are providing and looking for greater access to more effective skills-based training and coordination with, obviously, meeting nutrition needs. Our success—when we will be successful we are going to see, I believe, more unemployed become employed, more underemployed to have sustainable employment, and lower wages to better wages.

It has been noted throughout the hearing this morning that the budget resolution released this morning calls for $10 billion in reconciliation reductions from the Agriculture Committee. Several folks have offered suggestions in the press over the past few weeks for ways to cut SNAP to achieve those savings. I want to remind everyone it is up to the Agriculture Committee, how any required savings would be achieved. Not the Budget Committee and not folks who are freelancing in the press. And I would also note that we are only required to respond to reconciliation instructions that make it through the Senate and into a conference joint budget resolution.

For the time being, we are going to keep our eye on the ball, and that means staying focused on the next farm bill.

Under the Rules of the Committee, the record of today's hearing will remain open for 10 calendar days to receive additional materials and supplementary written responses from the witnesses to any question posed by a Member.

This hearing of the Subcommittee on Nutrition is adjourned.

[Whereupon, at 11:42 a.m., the Subcommittee was adjourned.]

[Material submitted for inclusion in the record follows:]

SUBMITTED ARTICLE BY HON. JAMES P. MCGOVERN, A REPRESENTATIVE IN CONGRESS FROM MASSACHUSETTS

Trump to poor Americans: Get to work or lose your benefits

The Washington Post
Wonkblog/Analysis
By Caitlin Dewey and Tracy Jan
May 22



A group of homeless men and women receive meals from volunteers on May 18 in Morgantown, West Virginia. West Virginia is one of the nation's poorest states where nearly one in five struggled to afford basic necessities in 2015. (Spencer Platt/Getty Images)

For a period last year after he lost his food stamps, Tim Keefe, an out-of-work and homeless Navy veteran, used his military training to catch, skin and eat squirrels, roasting the animals over an open fire outside the tent he pitched in frigid Augusta, Maine.

The new additions to Keefe's diet resulted from a decision by state authorities to tighten work requirements for recipients of the social safety net—forcing the 49 year old, who lost his job at a farm equipment factory because of an injury, off the food stamp rolls.

"I was eating what I could find, and borrowed from friends and strangers," Keefe said in testimony to the Maine legislature. "There were many times . . . when I would go 2 or even 3 days without food. If one was inclined to lose a lot of weight, I could recommend this diet wholeheartedly."

Now the Trump Administration in its first major budget proposal has proposed more stringent work requirements—similar to those in effect in Maine and other states—to limit eligibility for food stamps and a host of other benefits as part of sweeping cuts to anti-poverty programs.

The White House budget proposal, due to be unveiled on Tuesday, would reduce spending on anti-poverty programs from food stamps to tax credits and welfare payments by $274 billion over a decade, largely by tightening eligibility for these programs, according to Administration officials. With additional reforms on Medicaid and disability insurance, total safety net cuts would top $1 trillion over 10 years.

Making low-income Americans work to qualify for so-called welfare programs is a key theme of the budget. "If you are on food stamps and you are able bodied, we need you to go to work," said budget director Mick Mulvaney during a White House briefing on Monday.

He said the strengthened requirements in the budget focuses on putting the 6.8 million unemployed or underemployed Americans back to work. "There is a dignity to work," he said, "and there's a necessity to work to help the country succeed."

The White House did not offer details Monday on how the work requirements would be implemented, other than saying it would be "phased in" for able-bodied adults without dependent children.

The White House estimated the combined reforms to the Supplemental Nutrition Assistance Program, better known as food stamps, would generate nearly $193 billion in savings over a decade.

In addition to SNAP reforms, Trump will propose taking the earned income and child tax credits away from undocumented immigrants working in the United States, many of whom pay taxes or have American born-children. That reform alone would save $40 billion over a decade, according to the White House.

Anti-poverty advocates say the White House could implement its desired reforms to SNAP in two ways: require recipients to work more than the current minimum of 20 hours a week, or cut the unemployment waivers in areas with high joblessness rates.

The influential Heritage Foundation, as well as a number of House conservatives have championed a crackdown on waivers, leading many anti-poverty advocates to conclude that is the most likely way the White House would implement its proposed reforms.

Robert Rector, a senior research fellow at the Heritage Foundation who has asked the White House to prioritize work requirements, said the Trump Administration needs to "go after" the four million able-bodied adults without dependents in the food stamp program.

"You say to them, 'We will give you assistance, but come to the office 1 day a week to do job search or community service,'" Rector said. "When Maine did that, they found almost immediately that their caseload dropped 85 percent."

Critics say such a change could endanger people like Keefe, a veteran who has been unable to find a job after injuring his wrist on the job at a plow factory in Rockland, Maine. As a result, Keefe now is medically unable to lift more than 25 pounds—which disqualifies him from other work in manufacturing.

The Navy veteran was one of several thousand former food stamp recipients who lost benefits when Maine, in 2015, declined to renew its waiver and reinstated statewide work requirements. He has spent much of the last year living in a tent.

"I don't wanna worry no one," said Keefe, who recently testified to Maine's Committee on Health and Human Services about the impact the work requirement had on him. But, he added: "I hope they understand that people fall through the cracks."

The Trump Administration is considering other changes to SNAP. While details remain sparse, Mulvaney said the Federal Government would be asking states to share in the costs for the food stamps program, through a phased-in "state match" so they have a "little more skin in the game."

"We believe in the social safety net. We absolutely do," Mulvaney said. "What we've done is not to try and remove the safety net for folks who need it, but to try and figure out if there's folks who don't need it that need to be back in the workforce."

Suspending employment waivers would hit hard in areas with high unemployment such as southern and central California, where the unemployment rate can spike as high as 19 percent, as well as cities such as Detroit and Scranton, Pa., where joblessness remains rampant. The change would also hit hard in large portions of New Mexico, Oregon, Washington, Georgia, Kentucky, Tennessee, West Virginia, Idaho and Michigan.

"It's unconscionable, cruel and ineffective," said Josh Protas, the Vice President of Public Policy at MAZON, a national anti-hunger organization. "I'm honestly not sure what their goal is."

Critics say the changes in unemployment waivers would be devastating for Native American families living on reservations in North and South Dakota, Arizona and Montana where there is chronic poverty and high unemployment.

"The President's budget proposal will force kids in rural America to go hungry while wasting billions of taxpayer dollars on misplaced priorities like a wall that won't keep us safe," said Senator Jon Tester (D–MT), in a statement to the *Post.* "Parents in Montana and across Indian Country should not have to choose between food for their tables, gas for their cars, and shoes for their kids."

The number of Americans on SNAP remains high, however. In 2016, 44 million Americans receive the benefits, compared to just 28 million people in 2008.

"They have not come down like we would expect them to do," Mulvaney said. "That raises a very valid question: Are there folks on SNAP who shouldn't be?"

Anti-hunger advocates argue that, generally speaking, there are not. Because SNAP benefits decrease gradually with increased income, there is no incentive for people to avoid work to get benefits—a phenomenon economists call the "welfare cliff." And benefits are too small for people to subsist on them without working: The

average food stamp benefit was $465 a month for a family of four in 2015. Most people are on the program for between 7 and 9 months on average.

"The notion that people would prefer not to work to get that benefit, give me a break," said U.S. Representative Jim McGovern, (D-Mass.) a longtime anti-hunger advocate. "This is a lousy and rotten thing to do to poor people. They look at SNAP as an ATM to pay for their other priorities."

Additionally, ¾ of households using SNAP contain children, seniors, or people with disabilities, said Elaine Waxman, a senior fellow in the Income and Benefits Policy Center at the Urban Institute. Without SNAP, the country would have had three to 4.5 million more people in poverty during the recession, she said.

More than ¼ of able-bodied adults without dependents on SNAP do not have a high school diploma, Waxman said; another 57 percent don't have college degrees—putting them at a disadvantage when it comes to finding work.

A number are also veterans, young adults aging out of the foster care system, and felons recently released from jail. SNAP recipients who cannot find work, for these or other reasons, are supposed to attend job training programs—but they're not widely available because of lack of funding.

"This is the trick. On the one hand, you want people to do something, when in fact a lot of folks may not realistically be able to find a job," Waxman said. "Most states don't want to put the money in. This is a dilemma that we're in."

The evidence that stricter work requirements actually cause people to get jobs is mixed, at best. In Kansas, which reinstated the requirements in October 2014, 40 percent of unemployed adults were still unemployed a year after being kicked off SNAP. Among former SNAP participants who lost benefits, the average annual income was only $5,562, according to the Foundation for Government Accountability, a right-wing think tank based in Florida.

Progress has also been hotly debated in Maine, a state that conservatives regularly hold up as evidence that stricter work-requirements are effective. When the state dropped its waiver in 2015, the number of unemployed adults in the program immediately fell by nearly 80 percent.

But a May 2016 report by the state found that nearly 60 percent of those affected individuals did not report any income in the year after they left the program—suggesting they were still unemployed or underemployed a year later.

On the national level, Michael Tanner, a senior fellow who focuses on social welfare issues at the Cato Institute, a libertarian think tank, said he doesn't think similar mandates will have a huge impact on moving large numbers of recipients into employment or result in significant budget savings. Most SNAP recipients who can work are already working, and many of those who are not meet one of the various exemptions such as being disabled.

"It's making a statement that Republicans think people who are on public assistance should be doing all they can to get off," Tanner said, "and that means working whenever possible."

McGovern, who sits on the House Agriculture Committee, said he was surprised to learn about the White House proposal given Agriculture Secretary Sonny Perdue's testimony before the Committee last week saying he did not favor any major changes to the food stamps program.

"It's been a very important, effective program," Perdue said, according to a recording of the hearing. "As far as I'm concerned we have no proposed changes. You don't try to fix things that aren't broken."

The Trump Administration is advocating other "fixes" to the safety net, as well. The budget will also propose requiring people to have a Social Security [N]umber to collect tax credits. Mulvaney said it is unfair that taxpayers support immigrants working illegally in this country.

"How do I go to somebody who pays their taxes and say, 'Look, I want you to give this earned income tax credit to somebody who is working here illegally? That's not defensible," Mulvaney said.

Rector, of the Heritage Foundation, said he also hopes Trump will prioritize work requirements for those receiving housing subsidies. Mulvaney did not address that on Monday.

Diane Yentel, President of the National Low Income Housing Coalition, said the majority of Americans receiving housing subsidies are elderly, disabled or already include someone who works. Of the remaining households, nearly half include a preschool child or an older child or adult with a disability who needs the supervision of a caregiver.

Establishing work requirements for the remaining six percent of households who are 'work able' but not employed would require state and local housing agencies already facing funding shortfalls to establish cumbersome monitoring and enforcement systems for a very narrow segment of rental assistance recipients, she said.

"This is neither cost effective nor a solution to the very real issue of poverty impacting millions of families living in subsidized housing or in need," Yentel said in a statement to the *Post.*

Correction: *This story incorrectly stated the average annual income for SNAP participants in Kansas who had lost and then found jobs was $5,562. That figure applied to all SNAP participants who had lost the benefit.*

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