

**ALLEVIATING GLOBAL HUNGER: CHALLENGES
AND OPPORTUNITIES FOR U.S. LEADERSHIP**

HEARING

BEFORE THE

**COMMITTEE ON FOREIGN RELATIONS
UNITED STATES SENATE**

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**ALLEVIATING GLOBAL HUNGER:
CHALLENGES AND OPPORTUNITIES
FOR U.S. LEADERSHIP**

TUESDAY, MARCH 24, 2009

U.S. SENATE,
COMMITTEE ON FOREIGN RELATIONS,
Washington, DC.

The committee met, pursuant to notice, at 9:37 a.m., in room SD-419, Dirksen Senate Office Building, Hon. John F. Kerry (chairman of the committee) presiding.

Present: Senators Kerry, Casey, Shaheen, Lugar, and Risch.

**OPENING STATEMENT OF HON. JOHN F. KERRY,
U.S. SENATOR FROM MASSACHUSETTS**

The CHAIRMAN. The hearing will come to order. Thank you all for your patience, and thank you for being here with us today.

We have two really interesting panels today on a topic of enormous global importance, certainly one of the great physical diplomatic challenges of our time, but also one of the great moral challenges that the world faces today, and that is the crisis of the persistence of global hunger.

When you stop and think about it, measured against so many fortunate nations, it's really quite astounding that in 2009 there are over 850 million hungry people in the world. One in seven people on Earth goes hungry every day, and when we talk about "going hungry every day," we are talking about real pain and anguish and suffering that goes with that hunger.

It has been a goal of our country, and of other countries, to try to alleviate this crisis and the suffering that it causes. While other threats force themselves into the front burner and command our attention, hunger and malnutrition remain the No. 1 risk to health worldwide, a risk that will be exacerbated by two relatively new driving forces in today's world; one, the global financial crisis, and two, global climate change.

We're already having a harder time feeding people, and the challenge is only growing more complicated. The reality is that we have a long way to go to achieve the very first millennium development goal, which is to cut in half by 2015 the proportion of people in the developing world who suffer from hunger.

In Africa, things have actually gone backward; one in three people are malnourished, and food security today is worse than it was in 1970. Conflict, poor governance, and HIV/AIDS have all reduced

basic access to food. Now drought, aggravated by climate change, makes the situation even more desperate.

This is important. We need to begin to deal with the growing impact that climate change will have on our struggle against hunger. A recent study in *Science* warns us that as much as half the world's population could face serious food shortages by the end of this century, a burden that will largely be borne by those who have done the least to bring about climate change.

Last year's food riots were a worrisome sign of how a crisis in food security can quickly become a national security issue. The global financial crisis also poses an urgent and an immediate threat. The World Bank estimates that, as a result of this crisis, an additional 65 million people will fall below the \$2-per-day poverty line this year, and an additional 53 million will fall below the absolute poverty level of \$1.25 per day.

If food prices spike in the next months, we risk a double-edged calamity in which farmers in poor countries can't afford to plant, and buyers can't afford to purchase food. So, we need to think about this issue now so that we can prevent the next crisis, instead of simply trying to deal with its consequences.

One of the special challenges of a truly global crisis is that, at the very moment when our assistance is most critical in the developing world, we're under the greatest strain to turn inward and cut our overseas aid budget. To ensure that we're doing our part to feed the world, we have to take a long view. We have to resist the urge to abdicate our responsibility as an economic and moral leader. Our foreign assistance budget directly impacts the number of people that we can help to feed. Moreover, nothing will do more over the long run to address global hunger than fighting poverty. That's why we must demonstrate our commitment by fully funding the President's international affairs budget and initiating a foreign-aid reform process, which I'm already in discussions with Senator Lugar and our counterparts in the House and the administration about, and also, I've been having discussions with Senator Conrad and the budget folks with respect to the urgency of holding on to as much of the President's request as possible. I intend to look closely at introducing authorization legislation to ensure that we have a strong, effective aid program that can tackle the key challenges of our day.

It's a pleasure to be here with my friend and colleague Senator Lugar, who has shown a great deal of leadership over time on this issue. He recently introduced, along with Senator Casey, a food security bill authorizing new resources to fund agricultural development and alleviate poverty, and I commend Senator Lugar, and I look forward to working with him on this important legislation, as well as with my colleague Senator Casey.

Now, while we need to be ambitious, let's be clear, we can't tackle hunger alone. We have to engage a multilateral approach. We have to work in coordination with international institutions, including the World Food Programme, international aid organizations, and the World Bank. And we had a very good meeting with Bob Zoellick, the World Bank, and the committee, just last week.

Today, we're very fortunate to be able to hear from two very knowledgeable panels of experts.

Catherine Bertini served as executive director of the World Food Programme from 1992 to 2002. In 2003, she was awarded the World Food Prize for the efforts to combat hunger. She recently co-chaired a Chicago Council on Global Affairs Report on Renewing American Leadership in the Fight Against Global Hunger and Poverty, with Dan Glickman, who took part in that also, our former Secretary of Agriculture from 1995 to 2001, and the congressman from the Kansas Fourth Congressional District for 18 years before that. Reverend David Beckmann is president of Bread for the World, the leading Christian poverty and hunger reduction advocacy group. And Dr. Robert Paarlberg is a professor at Wellesley College and a world-renowned expert on agriculture, particularly in Africa.

On our second panel, we will hear from two respected scientists on the subject of food security, Dr. Edwin Price, associate vice chancellor and director of the Norman Borlaug Institute for International Agriculture, which studies the economics of farming systems and advises officials in America, and across the developing world, on agriculture policy; and Dr. Gebisa Ejeta is professor of international agriculture at Purdue University. A native Ethiopian, Dr. Ejeta recently returned from a year in Nairobi assisting the Rockefeller and Gates Foundations with the launch of their new joint initiative, the Alliance for Green Revolution in Africa.

So, we really have some outstanding testimony today, and I'm confident that the committee is going to benefit enormously from both of these panels and from the hearing this morning. And I hope, as a country, we will benefit by understanding why we need to uphold our end of this bargain and make the commitments that we need to make.

I make an apology up front that at 11 o'clock I have a meeting that I need to attend briefly, and I will leave the committee in the good hands of our ranking member, which only underscores the full bipartisanship of this endeavor. He's promised me he's not going to pass anything unruly in the time I'm gone. [Laughter.]

And so, Senator Lugar, I turn the floor to you.

**STATEMENT OF HON. RICHARD G. LUGAR,
U.S. SENATOR FROM INDIANA**

Senator LUGAR. Well, thank you very much, Mr. Chairman. I join you in welcoming our distinguished witnesses today. Each one of them has made unique contributions to alleviating hunger and promoting rural development.

I appreciate the leadership Dan Glickman and Catherine Bertini provided to the recent outstanding Food Security Report by The Chicago Council on Global Affairs. As a former Secretary of Agriculture and head of the World Food Program, the two have great authority on hunger issues. And I am pleased, also, that we are joined by David Beckmann, who has gained so much respect over many, many years as a consistent and creative advocate on hunger issues.

Finally, the scholarship of Dr. Robert Paarlberg, a born-and-raised Hoosier, as I pointed out as we greeted him this morning, has greatly advanced my own understanding of food security issues. His book, "Starved for Science," is a must-read for anyone

attempting to understand the global food dilemma and how political factors are creating obstacles to the scientific advancements necessary to meet rising demand for food. Dr. Paarlberg also was a primary contributor to the Chicago Council's report.

I'm also pleased that we have two distinguished scientists, as you pointed out, Mr. Chairman, on the second round of hearings. Dr. Edwin Price, director of the Normal Borlaug Institute for International Agriculture, has spent a long career working in the agricultural development field, and Dr. Gebisa Ejeta, a plant geneticist working with sorghum at Purdue University, will provide insights on the state of agriculture in his country of Ethiopia and, more broadly, in Africa.

I would like to also point out, Mr. Chairman, that we invited the Secretary of State, Hillary Clinton, to be part of the hearing today, and she was unable to come because of conflicting schedules, but she writes, in her letter of March 18, 2009, "Combating hunger is a top priority for this administration, and for me personally, and I want to express my sincere appreciation for the leadership you've shown on this important issue. In his Inaugural Address, President Obama stated to the people of poor nations that we would work alongside them to make their farms flourish and to nourish starved bodies. In addition, during my confirmation testimony, I called for a move away from reacting to food crises in an ad hoc fashion, toward making food security a priority in our development programs. The administration's fiscal year 2010 budget request recognizes the need to continue and expand our efforts on food security. We will also work to ensure that our partners follow through on commitments they made on food security at the 2008 G8 Summit."

I appreciate very much Secretary Clinton's comments, which are very appropriate for our hearing today.

We live in a world, as you pointed out, Mr. Chairman, where nearly a billion people suffer from chronic food insecurity, with an estimated 25,000 people dying each day from malnutrition-related causes. And health experts advise us that chronic hunger has major health consequences, including decreased child survival, impaired cognitive and physical development of children, and weaker immune-system function, including resistance to HIV/AIDS. These severe humanitarian consequences of hunger are sufficient cause for us to strengthen our approach to global food security.

But, we have an even bigger problem. A dangerous confluence of factors threatens to severely limit food production in some region as the world's population continues to expand. Between 1970 and 1990, global aggregate farm yield rose by an average of 2 percent per year. But, since 1990, aggregate farm yield has risen by an annual average of just 1.1 percent. The USDA projects that growth in global farm yields will continue to fall. These trends threaten the fundamental welfare of a large share of the world's population.

Here are the basic parameters of the problem:

First, the world's population is projected to increase to about 9.2 billion people by 2050. Growing affluence in China, India, and elsewhere is increasing demand for resource-intensive meat and dairy products. It's estimated the world's farmers will have to double their output by 2050.

Second, food security is closely tied to volatile energy costs. Farming is an energy-intensive business. Crops have to be transported efficiently to market, and petroleum-based fertilizers and pesticides are widely used. Energy price spikes in the future are likely to hit with even greater ferocity than the spike in 2007 and 2008.

Third, water scarcity will worsen in response to population growth, urbanization, land-use pressures, and the effects of climate change. According to a recent report by the Royal Institute of International Affairs, a half-billion people currently live in countries with chronic water shortages, a figure that is expected to rise to 4 billion by 2050.

Fourth, climate change is challenging farmers on every continent to deal with altered weather patterns, novel agricultural pests, and new water conditions.

Now, despite these alarming trends, investments in agriculture have tumbled in recent decades. By 2007, rich countries devoted a mere 4 percent of their foreign assistance to agriculture. In Africa, which has the most severe food problems, donor aid to the farm sector plunged from \$4.1 billion in 1989 to just \$1.9 billion in 2006. Africa's per-capita production of corn, its most important staple crop, has dropped by 14 percent since 1980.

Equally troubling are sharp cutbacks in research into new technologies, farming techniques, and seed varieties that could increase yields, cope with changing climate-change conditions, and battle new pests and diseases, and make food more nutritious.

In recent years, development investment dollars have flowed to urban areas, because cities were seen as the drivers of growth. Likewise, some recipient governments have favored infrastructure projects and urban-focused development assistance for political reasons. In those nations afflicted by corruption, agricultural assistance also may offer less of an opportunity for diversion of funds than an expensive infrastructure project.

Trade policy of both developed and developing countries is too often focused on protecting domestic farmers rather than creating well-functioning global markets. In addition, many governments, especially in Europe and Africa, have rejected the biotechnology advancements that are necessary to meet future demand for food.

Opposition to safe genetic modification technology contributes to hunger in Africa in the short run and virtually ensures that much of the continent will lack the tools to adapt agriculture to changing climate conditions in the long run.

Now, without action, we may experience frequent food riots, and perhaps warfare, over food resources. We almost certainly will have to contend with mass migration and intensifying health issues stemming from malnutrition. Our diplomatic efforts to maintain peace will be far more difficult wherever food shortages contribute to extremism and conflict. Our hopes for economic development in poor countries will continue to be frustrated if populations are unable to feed themselves. In short, overcoming hunger should be one of the starting points for United States foreign policy.

With these factors in mind, Senator Robert Casey and I introduced the Global Food Security Act of 2009. This bill is not meant to be a comprehensive solution to the problem, which is beyond the

scope of a single bill, but we are hopeful that it will serve as a practical starting point for improving United States and global efforts in this area and as a rallying point for those who agree that food security should play a much larger role in our national security strategy.

The bill would make long-range agricultural productivity and rural development a top development priority. It establishes a special coordinator for food security and charges the coordinator with developing a whole-of-government food security strategy.

Among other goals, the bill attempts to improve research capacity at foreign universities and the dissemination of technology through extension services. The bill also improves the United States emergency response to food crises by creating a separate emergency food assistance fund that can make local and regional purchases of food, where appropriate.

As a farmer who has seen agricultural yields more than triple during my lifetime on my family's farm in Marion County, Indiana, I have faith that human ingenuity can avert a Malthusian disaster, but we have to have time for innovations to take root, and we have to apply all the agricultural tools at our disposal.

The current effort on food security risks is falling far short of what is needed to guarantee food security. I believe the food security challenge is an opportunity for the United States. We are the undisputable leader in agricultural technology. A more focused effort on our part to join with other nations to increase yields, create economic opportunities for the rural poor, and broaden agricultural knowledge could strengthen relationships around the world and open up a new era of United States diplomacy.

I thank the chairman for holding this hearing. I thank Senator Casey for working with me on the bill. And we look forward to discussion of the legislation with our witnesses.

I thank you, Mr. Chairman.

The CHAIRMAN. Thank you very much, Senator Lugar.

If we could ask—

Senator CASEY. Mr. Chairman.

The CHAIRMAN. Yes, Senator Casey.

Senator CASEY. Just ask consent that my statement be made part of the record.

The CHAIRMAN. Absolutely. And we appreciate, again, as I said, your efforts on this.

[The prepared statement of Senator Casey follows:]

PREPARED STATEMENT OF HON. ROBERT P. CASEY, JR.,
U.S. SENATOR FROM PENNSYLVANIA

I am pleased that the committee is today holding a hearing on alleviating global hunger and the challenges and opportunities it presents for the United States. I thank the ranking member, Senator Lugar, for his efforts to organize this hearing. I have been focused on this issue for the past year, ever since a dramatic spike in commodity prices led to food shortages, social unrest, and a rise in the number of hungry around the world. I worked with other Members of Congress, including Senator Durbin, to boost the level of U.S. supplemental funds to address the immediate consequences of the crisis, but recognized quickly that a "Band-Aid" approach to food shortages could only take us so far.

Accordingly, I was honored to join Senator Lugar in introducing the Global Food Security Act to overhaul U.S. assistance efforts to better address the long-term structural deficiencies that prevent developing nations from attaining self-sufficiency on food production. We must be prepared to provide the tools, skills, and re-

sources so that farmers in developing nations have the capacity to grow their own food and export products to national and international markets. Not only is that solution more efficient, it is also the only moral choice.

Let me address an obvious question. With all the problems America is facing at home, why does the need to address global hunger still matter as an urgent foreign policy priority?

- This is a moral issue that strikes at the heart of our conscience. It is about preserving human life and alleviating suffering. A report released by the European Union last year warned that the combination of rising food costs and higher fuel prices jeopardizes the Millennium Development Goals of cutting poverty, hunger, and disease in half by 2015.
- The cost of not doing anything, of sitting on the sidelines, is unacceptable and could lead an additional 100 million more people sliding into hunger.
- This is also a national security issue, one that will impact the conduct of U.S. foreign policy. We have already seen the devastating effect food shortages have had on developing countries, sparking violence and riots and putting added pressure on already fragile and underresourced governments. We must put in place the tools today to help prevent future food crises down the road.

Given the new threats we face, the United States can serve its national security and humanitarian objectives by fully funding overseas emergency food assistance programs. I know that Senator Lugar has already summarized the key provisions of the Global Food Security Act, but let me offer some additional thoughts. Passage of this legislation would achieve three major objectives:

(1) Enhance coordination within the U.S. Government so that USAID, the Agriculture Department, and other involved entities are not working at cross-purposes. We do that by establishing a new position in the White House, the Special Coordinator for Food Security, who would report directly to the President and who would forge a comprehensive U.S. food security strategy;

(2) Expand U.S. investment in the agricultural productivity of developing nations, so that nations facing escalating food prices can rely less on emergency food assistance and instead take the steps to expand their own crop production. A leading agricultural expert recently estimated that every dollar invested in agricultural research and development generates \$9 worth of food in the developing world. I am especially grateful to Senator Lugar for his bold proposal, called HECTARE, to establish a network of universities around the world to cooperate on agriculture research;

(3) Modernize our system of emergency food assistance, so that it is more flexible and can provide aid on short notice. We do that by authorizing a new \$500 million fund for U.S. emergency food assistance and enabling the local or regional purchase of food when appropriate.

I want to thank our witnesses for their continued commitment to alleviating the global food crisis. I also ask the chairman to enter into the hearing record today a statement of testimony from the Alliance for Global Food Security. The Alliance consists of private voluntary organizations and cooperatives operating in approximately 100 developing nations and would like to share their overall perspective on how the United States can best respond to the global hunger crisis.

The 111th Congress, working with the Obama administration, has the opportunity to shape and pass significant legislation to modernize and expand our food assistance approach. The Foreign Relations Committee is scheduled to mark up the Global Food Security Act next week, and I look forward to expedited floor consideration thereafter.

The CHAIRMAN. If we could start, Director Bertini, with your testimony, then Mr. Glickman, Mr. Beckmann, Mr. Paarlberg, in that order. And I'd ask each of you, just so we can maximize the give-and-take here, if you'd summarize your comments, in about 5 minutes. Your full testimony will be placed in the record as if read in full.

Ms. Bertini.

STATEMENT OF HON. CATHERINE A. BERTINI, FORMER EXECUTIVE DIRECTOR, WORLD FOOD PROGRAMME, SYRACUSE, NY

Ms. BERTINI. Thank you very much, Mr. Chairman, Senator Lugar, members of the committee. Thank you for inviting us; but,

more important, thank you for having this hearing and taking seriously the issues that the chairman and Senator Lugar have just raised, because it has been for too long that the U.S. Government has not put agricultural development, and especially support for smallholder farmers in developing countries, high on the agenda for our foreign policy. And the fact that you are having this discussion today, are debating this important legislation that Senator Lugar and Senator Casey have put forward, and have invited us to participate, means that that has changed, and we thank you and commend you for that.

Dan Glickman and I have had the opportunity, as has been stated by the Senators, to co-chair The Chicago Council on Global Affairs' Global Agricultural Development Project. We have met and worked with a group of individuals who have been our colleagues in the U.S. Government and in U.N. organizations in the past and have put forward suggestions, which are summarized in our joint testimony for your consideration here today, and for the consideration of the Obama administration.

We have underlined some of the issues that both Senators have discussed this morning and how important it is that we address the needs of the almost 1 billion people who are desperately hungry, and note that about two-thirds of those people live in sub-Saharan Africa and South Asia. We also note that the vast majority of those families are headed by women, the vast majority of the farmers are women, and since 80 percent of the farmers in sub-Saharan Africa and 60 percent of those in Asia are women, the needs of women should be addressed as well.

Most of these hungry poor live in rural areas, have no access to roads or transportation, and live in areas that are challenged with not enough water, inadequate rainfall, and barely enough, if any, irrigation. These numbers can increase dramatically if we do not help people be able to help themselves by increasing their agricultural productivity, but we think there is an incredible opportunity for the U.S. and international organizations to work in this area, and we think what's critically important is U.S. leadership—leadership from you, from the Senate, from the House, and from the Obama administration—leadership where the U.S. can say, "This is important to us," but, as both Senators have said, where we work together with other countries and other international organizations.

We note that we have led our food foreign policy with food aid. And, having run the World Food Program, I know how important that is and that we help people stay alive with food. We can't diminish that. We can improve it. But what we should lead our policy with is, how can we help people become self-sufficient in agriculture? How can we help women and men improve their livelihoods by improving their own agriculture production?

Years ago, we were leaders in this area, in the Green Revolution and in many other programs through our land grant universities, in research, and in other ways. But, we have fallen back very dramatically. We have fallen back on scholarships—we used to fund hundreds of scholarships and now we fund only about 42. We used to train over 15,000 students in agriculture in the developing world, now we train about 1,000 students. We used to have many

specialists in our USAID that would help work on these programs, and now we have about 22. And we spend about 20 times as much on food aid to sub-Saharan Africa as we spend on helping farmers be able to help themselves.

If we are to be leaders in this area, then we can see many benefits for the United States. We can see national security benefits, because hunger and poverty have empirically been political flashpoints. In May 2008, the food crisis caused food riots in several countries, and helped unseat at least two governments in this world in the last year.

We see that there are commercial benefits, commercial benefits to our own agriculture if we are able to support the economic development and well-being of countries in Africa and South Asia and elsewhere because, after all, long term, the markets for our own farmers are, in the developing world, far beyond the markets that are available in developed countries.

Institutionally, we can improve our own operation of our own aid programs, and we can coordinate much better with providing leadership to the U.N. organizations in working with foundations such as the Gates Foundation and the Rockefeller Foundation.

This is also a wonderful way to restore American standing and leadership in the world, because it reintroduces America as a force for good on a critical global issue.

And finally, of course, we see this as a moral responsibility for Americans, to help our sisters and brothers from around the world who are hungry, and, by providing leadership in agricultural development. A survey done by The Chicago Council found that 40 percent of Americans believe that it is important to address the challenge of poverty, and it should be done through support agricultural productivity in the developing world.

Thank you, Mr. Chairman.

The CHAIRMAN. Thank you very much, Ms. Bertini.

Mr. Glickman.

**STATEMENT OF HON. DANIEL R. GLICKMAN, FORMER
SECRETARY OF AGRICULTURE, WASHINGTON, DC**

Mr. GLICKMAN. Thank you, Mr. Chairman, Senator Lugar. It's an honor to appear before both of you today. And, Senator Shaheen, who succeeded me at the Institute of Politics and, I understand, did a much better job than I did, but I'm delighted that she is here.

The CHAIRMAN. Are you planning to run for the Senate, too, now?
[Laughter.]

Mr. GLICKMAN. No. Anyway, thank you all. And I want to echo the comments of Catherine Bertini.

We prepared this book, which you all have a copy of. This is a strategic plan, actually, on how to change America's leadership in the world as it relates to global hunger and poverty. I think you all should have this. If you don't, we'll get you all copies of this.¹ We had a distinguished, bipartisan group of leaders, from Tom Pickering to Peter McPherson to Per Pinstrup-Andersen, Rich

¹ The publication referred to by Mr. Glickman, "Renewing American Leadership in the Fight Against Global Hunger and Poverty, The Chicago Initiative on Global Agricultural Development," The Chicago Council on Global Affairs, 2009, will be maintained in the committee's permanent records.

Williamson, a whole bunch of people who helped us put this together. The idea was to put agricultural development at the center of U.S. foreign-assistance policy, because we believe it's perhaps the most important way to alleviate hunger and poverty in the world. Catherine talked about a lot of the statistics, here. But, I do believe that, by acting decisively and in our own national interests, our country can play a central role in saving millions, if not tens of millions, of lives in the poorest nations of the world, as we did during the Green Revolution.

I can't resist bringing a movie analogy in for a moment. In the movie "Schindler's List," you may recall, at the end, Schindler said he didn't do enough to help, to which one of his captives said, "In the words of the Talmud, if you save one life, you save the entire world." And I think what we're talking about here is, by saving more than one life, we can save the entire world many times over, because there is a prescription to make people self-reliant so that they can become productive citizens and get themselves out of poverty, and end malnutrition. And that's the important thesis of this particular report.

The most critical requirement for a renewed U.S. effort in the fight against global poverty is leadership, and in particular, the interest and commitment of the President of the United States, the White House, the infrastructure of our Federal Government, and especially of the United States Congress. Without executive and legislative leadership, these issues tend to kind of drift. And I think it's one of the reasons Senator Kerry talked about looking back at the foreign assistance programs again on a more comprehensive level.

This is a major effort. It will cost, however, modestly—our indications are, first-year costs of \$340 million, increasing to about a billion dollars annually when the proposal reaches full funding.

The key recommendations are: Increasing support for agricultural extension and education in sub-Saharan Africa and South Asia and increasing support for agricultural research in sub-Saharan Africa and South Asia. As Senator Lugar talked about, the problems of climate, drought, pest resistance all will increase in this changing world, and we desperately need the kind of research that was done during the Green Revolution that changed the lives of a whole continent. In addition to that, we have to look at the way the U.S. development assistance and agriculture development policy is implemented, including improving interagency coordination for America's agricultural development assistance efforts. And to coordinate this, we need somebody in the White House, we believe, that's kind of in charge of this, overall, to keep pushing, and we propose an Interagency Council on Global Agriculture, led by a National Security Council deputy charged with the responsibility of managing this whole affair. We also believe that AID needs a significantly strengthened role in our government, needs to have independent budget authority, and needs to be tasked with, in fact, taking the lead to getting the job done.

We talk, in our report, about the congressional capacity to partner in managing agricultural assistance policy. And I think it is fairly self-evident. We cannot, on our own, solve the problems of global poverty, but our actions can serve as a catalyst for public-

private partnerships that will engage the relevant stakeholders and ensure that action is effective. So, we draw on resources and expertise of the U.S., of nongovernmental institutions, universities, private companies, and we build with partnerships with folks located in sub-Saharan Africa and South Asia, as well.

This is an opportunity to reintroduce America as a leader in the world and a force for positive change, and it's something that people will relish, I believe, all over the world as they try to rebuild their local systems of government and their economies. And the recommendations discussed will have significant and lasting impact on our international partners, as well.

So, saying that, Mr. Chairman, I'm delighted to have been a part of this effort. I'm especially delighted to have worked with Catherine as she led the effort to feed millions of people over the years. And with the research arms of our government, particularly at USDA and other places, as well, we have the capability to really have a remarkable and lasting impact on the lives of tens, if not hundreds, of millions of people.

Thank you very much, Mr. Chairman.

[The joint prepared statement of Ms. Bertini and Mr. Glickman follows:]

JOINT PREPARED STATEMENT OF COCHAIRS OF THE CHICAGO COUNCIL ON GLOBAL AFFAIRS' GLOBAL AGRICULTURAL DEVELOPMENT PROJECT—DAN GLICKMAN, FORMER U.S. SECRETARY OF AGRICULTURE, WASHINGTON, DC, AND CATHERINE BERTINI, FORMER EXECUTIVE DIRECTOR, U.N. WORLD FOOD PROGRAMME, SYRACUSE, NY

Chairman Kerry, Senator Lugar, and members of the committee, thank you for giving us the opportunity to appear before you to discuss our recent work to identify opportunities for the U.S. to reassert its leadership in the fight against global hunger and poverty.

The Chicago Council on Global Affairs convened the Global Agricultural Development Leaders Group in fall 2008 to examine the risks posed by rural poverty and food insecurity in sub-Saharan Africa and South Asia, the role of women in farm families in bring about change, and the opportunities for the United States to better address the challenges of global hunger and poverty through agricultural development. This Leaders Group, which we cochaired, brought together individuals with expertise in food and agriculture, foreign policy, development of U.S. public policy and international organizations. The work of this group was supported by a committee of experts with strong knowledge of agricultural research, infrastructure and agricultural development, trade, regional affairs in sub-Saharan Africa and South Asia, and international economics. The conclusions and recommendations of the Global Agricultural Development Leaders Group are put forth in the recent report, "Renewing American Leadership in the Fight Against Global Hunger and Poverty."

Our study concludes that the Obama administration and 111th Congress have a unique opportunity to restore America's global leadership in the fight against global hunger and poverty. Over 700 million people live in rural areas of sub-Saharan Africa and South Asia, and struggle to provide food and income for their families through farming. The United States has the agricultural expertise, institutions, and experience to provide critically needed support to increase the productivity and incomes of smallholder farmers in these regions. What is required is the vision and commitment of American governmental and private sector leaders, working alongside their African and South Asian counterparts, in the years to come.

The 2008 global food crisis renewed attention to the persistent problems of hunger and poverty in the developing world and aroused concern about global food security over the long term. Sub-Saharan Africa and South Asia are home to the largest numbers of poor, hungry, people in the world, most of whom are female, smallholder farmers. Rural poverty is projected to worsen in the years ahead due to continued population growth, growing pressures on limited land and water supplies, and climate change. In Africa, food production has fallen behind population growth for most of the past two decades, and the number of undernourished people is expected

to increase another 30 percent over the next 10 years to reach 645 million. Under a “business-as-usual” scenario, with climate change taken into account, the number of undernourished people in sub-Saharan Africa could triple between 1990 and 2080.

The source of these problems is not solely fluctuating food prices on the world market, but low productivity on the farm. The production growth needed will have to come from improved farm policies, technologies, and techniques, including those that address the effects of climate change.

Rural hunger and poverty decline dramatically when education, investment, and new technologies give farmers better ways to be productive. This happened in Europe and North America in the middle decades of the 20th century, then in Japan, and then on the irrigated lands of East and South Asia during the Green Revolution in the final decades of the 20th century. The problem for sub-Saharan Africa and poorest areas of South Asia is that these original Green Revolution improvements had only limited reach.

The early achievements of the Green Revolution were nonetheless dramatic enough to create a false impression that the world’s food and farming problems had mostly been solved. As a consequence, the international donors who had provided strong support for agricultural innovation and investment in the 1960s and 1970s began pulling money and support away. America’s official development assistance to agriculture in Africa declined approximately 85 percent from the mid-1980s to 2006. In FY08, the United States spent 20 times as much on food aid in Africa as it spent to help African farmers grow their own food.

America must reassert its leadership in helping stimulate higher agricultural productivity in sub-Saharan Africa and South Asia—through agricultural education and extension, local agricultural research, and rural infrastructure—so the rural poor and hungry can feed themselves and help support growing population under increasingly challenging climate conditions. Without American leadership, little will happen.

While the United States can and must take the lead, its leadership must base its actions on new approaches suited to new realities on engaging partners across the spectrum of government and institutions that can and should be playing a much stronger role. A strong American initiative will encourage America’s partners to bring their own resources to the table. Governments in sub-Saharan Africa and South Asia will also be asked to fulfill their pledges to restore the priority of rural poverty reduction. Finally, the United States must listen and respond to the needs of women in these poor rural areas, who make up the vast majority of farmers in sub-Saharan Africa and South Asia.

A number of statistics demonstrate what the result of investments in agricultural development can be. Economists project with some confidence that every 1-percent increase in per capita agricultural output tends to lead to a 1.6-percent increase in the incomes of the poorest 20 percent of the population. According to a recent study by the International Food Policy Research Institute in Washington, DC, if total investments in agricultural research and development in sub-Saharan Africa were increased to \$2.9 billion annually by the year 2013, the number of poor people living on less than \$1 per day in the region would decline by an additional 144 million by 2020. If annual agricultural research and investments in South Asia were increased by \$3.1 billion by 2013, a total of 125 million more citizens in this region would escape poverty by 2020, and the poverty ratio in the region would decrease from 35 percent to 26 percent.

The United States has a vital interest in playing a leadership role in the fight against global hunger and poverty. America’s diplomatic, economic, cultural, and security interests will be increasingly compromised if our government does not immediately begin to change its policy posture toward the rural agricultural crisis currently building in sub-Saharan Africa and South Asia. Through renewed leadership on these issues, America can strengthen its moral standing, renew ties and relationships in regions of heightened strategic concern, increase its political influence and improve its competitive position, hedge against the serious future danger of failed states, open the door to increased trade and cultural exchange, and strengthen American institutions.

First, strong American involvement in the fight against global poverty is consistent with our Nation’s highest values and aspirations. Americans are deeply uncomfortable with hunger, whether they see it face to face in their own neighborhoods or broadcast from Asia and Africa on a television screen. A public opinion survey commissioned by the Chicago Council found that 42 percent of the America people believe that it is not just “important” but “very important” that the United States make combating world hunger a priority in the conduct of foreign policy.

Diplomatically, both Africa and South Asia are already regions of heightened concern for the United States. Finding a constructive new way to engage governments

in these two regions can help restore America's policy influence. An initiative that mobilizes the talent and influence of America's best institutions—especially its universities—to address rural poverty and hunger in these regions is a wise and efficient deployment of America's "soft power."

In Africa, more than 800 state-owned Chinese enterprises are currently active, many working in infrastructure projects greatly appreciated by the Africans, even though they are linked heavily to petroleum and mineral extraction. The United States has recently invested a great deal in Africa's health needs and in the provision of humanitarian relief. But the United States would have far more political influence in Africa if it also provided a stronger support for the fundamental investments needed to stimulate economic growth.

In South Asia, an agricultural development initiative would help the United States strengthen its relations with the governments of this region beyond geostrategic or security issues. In Pakistan, for example, the United States urgently needs to find a way to stabilize and gain influence in a nation beset by economic distress, social fragmentation, political instability, and now insurgency. Out of the \$1.9 billion in overt U.S. aid to Pakistan in fiscal year 2008, only \$30 million was development assistance. A new initiative to support agricultural research and education in Pakistan would be one way to implement the valuable 2008 Biden-Lugar vision for increasing nonmilitary aid to Pakistan. Agriculture accounts for 25 percent of the gross domestic product in Pakistan and employs more than half of the total population. Currently, only half of Pakistan's population enjoys adequate nutrition.

National leaders in Africa and South Asia are fully aware of the peril they now face from growing rural hunger and poverty, and they have repeatedly stated they would welcome a bold new American initiative in support of increased local food production. Since the 2003 meeting of African Union governments, where the heads of nations pledged to increase investments in agricultural productivity, the New Partnership for Africa's Development (NEPAD) established the Comprehensive Africa Agriculture Development Program (CAADP) to provide an operation framework to coordinate donor investments in agricultural development. If the United States were to become a leader in support of these efforts, stronger political ties would be established with dozens of African states.

An initiative to address rural hunger and poverty will also bring long-term economic and cultural benefits to the United States in a time when our Nation is steadily developing deeper ties with Africa and South Asia. Americans and Africans are becoming far more closely connected every year in areas such as trade, investment, health, and the arts. In 2007, U.S. total exports to sub-Saharan Africa totaled \$14.4 billion, more than double the amount in 2001.

Faster economic growth in Africa and South Asia will create new trade and investment opportunities for American business. Already in South Asia, where GDP growth averaged above 8 percent between 2005 and 2008, American investors and exporters are making important gains. A renewed American focus on alleviating poverty reduction in rural areas will pay significant economic dividends in the long run.

National security interests are also impacted. Hunger and poverty are humanitarian flash points. We saw during the 2007–08 interlude of extremely high world food prices that human distress in this area can lead to violent political confrontation. When international rice and wheat prices spiked in April 2008, violent protests broke out in a dozen countries, resulting in nearly 200 deaths and helping unseat governments in Haiti and Mauritania. In Cameroon in February 2008, riots left 24 dead. In India, at least six died in a mob attack on West Bengali rice sellers in rationing protests. In Bangladesh in April 2008, 20,000 textile workers rioted over wages and food prices.

Supporting rural development and poverty alleviation provide a valuable hedge against future political confrontations and the serious future danger of more failed states—more Somalias, Zimbabwes, Sudans, and Afghanistans.

Finally, a renewed U.S. effort to support global poverty alleviation provide opportunities and benefits to key institutions in the United States including American NGOs working in agriculture and development, land-grant universities, and America's private philanthropic foundation. University leaders in the U.S. will especially welcome revitalized support for educational exchanges and research ties to sub-Saharan Africa and South Asia. The U.S. land-grant university system is world renowned and deepening these universities' partnerships with counterparts in the developing world will improve American understanding of contemporary social realities in both South Asia and sub-Saharan Africa.

Although there are urgent priorities confronting the new U.S. administration and Congress, the time is still ripe for a new initiative to combat global hunger and pov-

erty. Renewed American engagement would signal a dramatic shift in America's relations with the developing world. It would be a first, yet transformative step, with the promise of lasting impact. Moreover, global food shortages triggered by much higher prices have focused greater political attention on food and hunger issues. This creates a unique opportunity for action. Finally, the rural poverty and hunger crisis will only grow larger with every year of inaction. Postponing action on this Initiative beyond 2009 could mean, in the reality of American politics, a delay until 2013 or even 2017, allowing an already desperate situation to deteriorate even more.

The Global Agricultural Development Leaders Group developed five recommendations for how the United States Government can better address the challenge of global hunger and poverty, and achieve the benefits discussed. These recommendations, and supporting action points, make up the Chicago Initiative on Global Agricultural Development. The suggested actions focus on sub-Saharan Africa and South Asia, the two regions where hunger and poverty are the furthest from being solved and where they will continue to worsen in the years and decades ahead under a "business-as-usual" scenario. They are targeted at smallholder agriculture, as the majority of the rural poor rely on agriculture for their livelihoods, and the history of economic development tells us that broad-based agricultural change is an essential and early step that must be taken across societies. They also acknowledge that women play a particularly critical role in the agricultural sector, and must be central to any new U.S. approach. The actions suggested recognize that strong U.S. leadership is needed, but it should listen to the needs and aspiration of those in Africa and South Asia, and respect and nurture local initiatives and leadership. Finally, these recommendations represent only an initial, small, but potentially transformative step toward reducing hunger and poverty in sub-Saharan Africa and South Asia.

Recommendation 1—Increase support for agricultural education and extension at all levels in sub-Saharan Africa and South Asia

Education and training are essential to successful agricultural development. In the United States, farming did not become highly productive until average rates of public high school completion in rural America began approaching the urban level. These better educated American farmers prospered by leading the world in the uptake of improved farming technologies, many of which were developed by agricultural researchers at America's publicly funded land-grant universities. Between 1959 and 2000 the percentage of farm-dwelling Americans living below the official poverty line dropped from more than 50 percent to 10 percent, a lower poverty rate than nonfarming Americans. Public investments in agricultural research, education, and extension have also increased farm productivity and reduced rural poverty in other countries and regions. Yet in the impoverished communities of South Asia and sub-Saharan Africa, this important tool has hardly been put to use.

Building on its own institutional experience in this area, the United States should now play a central role in helping sub-Saharan Africa and South Asia improve agricultural education and extension to benefit the rural poor. First, USAID can increase its support for students, teachers, researchers, and policymakers in sub-Saharan Africa and South Asia seeking to study agriculture at U.S. universities. In the past, the U.S. has been generous in its support for international agricultural students, with a successful result. In support of the original Green Revolution in the 1960s and 1970s, roughly 800 Indian agricultural scientists were supported in the United States for advanced training in agriculture and natural resource protection. However, U.S. support for such programs has waned in recent years. In 1990, USAID was funding 310 agricultural-focused students annually from developing countries; today only 82 are supported. USAID-sponsored scholarships to Africans for overseas post-graduate training in agriculture fell from 250 in 1985 to just 42 by 2008. We can trace much of the strong performance of Indian, Brazilian, and East Asian agriculture directly to the trained cadres of national agricultural educators and scientists who spent time at universities in the United States; increasing the number of students trained at U.S. universities is critical to supporting overall development of Africa and South Asia's agricultural sectors.

The United States must also increase the number and extent of American agricultural university partnerships with universities in sub-Saharan Africa and South Asia, so these regions can take over agricultural leadership training in the long run. In Africa currently, enrollment rates for higher education are by far the lowest in the world. The gross enrollment ration in the region for 18- to 23-year-olds stands at only 5 percent, compared to the 19 percent for East Asia. Institutions are typically short of trained faculty, with often only 30 to 70 percent of required faculty postings unfilled. The enrollment in South Asia is only slightly better at 10 percent. Economists have recently calculated that higher education is a good investment. A

1-year increase in tertiary education stock can boost per capita income by a potential 3 percent after 5 years, and eventually by 12 percent. To better support universities in sub-Saharan Africa and South Asia, the United States should provide funding to create and deepen partnerships between U.S. land-grant universities and counterparts in developing countries.

In addition to supporting universities and their students, the U.S. should provide direct support for agricultural education, research and extension for young women and men through rural organizations, universities, and training facilities. Small-holder farmers yearn for education and training, both inside and outside a university setting, but many institutions have difficulty providing this training due to minimal operating resources. USAID should do more to help provide such resources and support training institutions, farmer-to-farmer volunteer programs, and training tools similar to 4-H, and Future Farmers of America.

The U.S. Government can also support education and training through building a special Peace Corps cadre of agriculture training and extension volunteers to work with African and South Asian institutions to provide on-the-ground, practical training, especially with and for women farmers; and supporting primary education for rural girls and boys through school feeding programs based on local or regional food purchase.

Recommendation 2—Increase support for agricultural research in sub-Saharan Africa and South Asia

Basic and adaptive agricultural research must be at the foundation of any serious effort to increase agricultural productivity. Studies that calculate annual rates of return on alternative investments for increasing growth and reducing poverty in poor countries find that investments in agricultural research have either the highest or second highest rates of return. The International Food Policy Research Institute estimates that if public investments in agricultural research are doubled during the next 5 years, and those levels are then sustained, and if the increased investments are allocated to meet needs in sub-Saharan Africa and South Asia, the resulting improvements in agricultural output would lift 282 million people out of poverty by 2020.

In spite of its proven success, U.S. investments in agricultural research have dramatically declined in recent years. U.S. funding of national agricultural research institutions has declined by 75 percent since the 1980s. Its support for the Consultative Group on International Agricultural Research, the leading network of international research centers responsible for developing innovations in agricultural science useful to poor farmers in the developing world, has been cut by 47 percent. And its funding for collaborative research projects between American and developing country scientists dropped 55 percent.

New research for many of Africa and South Asia's local crops such as millet, cassava, and cowpea, will be needed to enhance productivity depending on the region's climate and agroecology. The need for research will only increase as the effects of climate change begin to impact these regions.

The Chicago Initiative on Global Agricultural Development suggests the United States better support agricultural research through increasing funding for National Agricultural Research Systems in sub-Saharan Africa and South Asia, the Consultative Group on International Agricultural Research, and collaborative research between scientists in the U.S. and developing countries.

Recommendation 3—Increase support for rural and agricultural infrastructure, especially in sub-Saharan Africa

Improved infrastructure must be an essential component of any serious effort to increase the productivity and income of poor farmers. The rural poor in Africa and South Asia need improved access to low-cost irrigation, transportation, electrical power, storage, and marketing systems for their crops. Rural infrastructure in Africa is seriously underdeveloped. Roughly 70 percent of all rural dwellers live more than a 30-minute walk from the nearest all-weather road. Only 10 percent of the land is irrigated. Without roads, safe water, electrical power, and communications, poor farmers will be held back because they lack affordable access to innovative new technologies, essential inputs, and market for their output. Unfortunately, profit-making private companies have little incentive to invest in infrastructure.

However, public investments in rural infrastructure are a proven key to poverty reduction. In India, according to calculations done by the International Food Policy Research Institute, investments in rural roads were even more powerful than investments in agricultural research and development for the purpose of lifting people out of poverty. Similar impacts have been measured in Uganda and Ethiopia. The World Health Organization has calculated that if all Africans were simply provided

with improved water and sanitation services, along with household water treatment at point of use, the annual health, financial, and productivity benefits would exceed the annual costs by a ratio of about 14 to 1.

Africa's total rural infrastructure needs are substantial, far more than the United States can or should attempt to finance on its own. Instead, the U.S. should also use its considerable funding commitments in the area of infrastructure, recently made through the Millennium Challenge Corporation, to leverage larger and better focused rural infrastructure efforts by others.

First, the U.S. should encourage a revival of World Bank lending for agricultural infrastructure in sub-Saharan Africa and South Asia, including lending for transport corridors, rural energy, clean water, irrigation, and farm-to-market roads. In recent years the World Bank has taken a revived interest in infrastructure, including in Africa. It committed \$2 billion to such projects alone in FY08. Working in consultation with African institutions, and partner donors from the European Union and Japan, the United States should now insist upon a sustained increase in World Bank lending for rural and agricultural infrastructure. The effective delivery of this message will require close and sustained cooperation between the administrator of USAID (including MCC) and the Treasury Department, traditionally the agency responsible for representing U.S. interests with the World Bank. Bipartisan congressional support for this priority will also be essential since World Bank leadership is sensitive to congressional approval.

The U.S. should also accelerate the disbursement of the Millennium Challenge Corporation funds already obligated for rural roads and other agricultural infrastructure projects in sub-Saharan Africa and South Asia. As of 2008, the MCC had awarded 18 grants, 11 of which are toward African countries. Although the total dollar commitment of these grants is significant—\$4.5 billion—and the grants' heavy focus on infrastructure correct, the slow pace of progress on the implementation of these commitments has hindered their impact. For example, the MCC signed its compact with Benin in February 2006, but nearly 3 years later only 8 percent of the funds have been disbursed. Moreover, the MCC compact with Ghana was signed in August 2006, and more than 2 years later only 6 percent of the funds have been disbursed. Congress must assist in finding a means to shorten the timeframe between country selection, compact signing, and fund disbursement.

Recommendation 4—Improve the national and international institutions that deliver agricultural development assistance

Successful assistance policies cannot emerge from inadequate institutions or from institutions that do not coordinate with each other and lack strong political leadership. A strong institutional framework is required to turn good ideas into operational policies and ensure that any added budget resources appropriated by Congress will be put to proper and effective use.

The Chicago Initiative recommends several institutional improvements. First, clear lines of authority and command must be established inside the executive branch, emanating first from the White House, then through a single lead agency for international rural and agricultural development and hunger reduction. We believe a revitalized and strengthened USAID should be that lead agency. Its administrator should chair both the MCC and PEPFAR, and the agency should have an independent relationship with the Office of Management and Budget. Second, in order to play this enlarged role in the area of agricultural development, USAID must be given enhanced professional staff resources in addition to an increased budget. The number of agricultural specialists on USAID's staff has dropped from 181 in 1990 to just 22 in 2008. We recommend increasing the number of agricultural specialists on USAID's staff to at least 135; this could include allocating 15 percent of the 2,000 new personnel envisioned in Senator Durbin's 2008 legislation be hired in the agricultural sector.

Third, an adequate interagency coordination mechanism must exist to enhance the opportunities for agricultural development and food security, and avoid duplication or conflict with other agencies. We suggest creating a new Interagency Council on Global Agriculture within the Executive Office of the President to provide active leadership and maintain consistent and effective priorities and actions among the many U.S. Government agencies engaged in this area. Additionally, the position of White House National Security Council deputy for global agriculture should be created, to assure active interagency coordination on agricultural development policy. The new Interagency Council should be cochaired by this NSC Deputy, and the Administrator of USAID.

Fourth, institutions must be developed to ensure and maintain a strong congressional focus on agricultural development assistance policy. To accomplish this, we recommend all relevant committees in both the House of Representative and Senate

establish clear staff liaison responsibilities in the area of agricultural and rural development.

Finally, America must exert stronger leadership in multilateral institutions working on food and agriculture to improve their performance. This means paying strict attention to the setting of strategy and policies, decisions that affect technical capacity, management oversight, and program evaluation.

Recommendation 5—Improve U.S. policies currently seen as harmful to agricultural development abroad

A new U.S. approach to reduce global hunger and poverty will not be seen as credible without addressing some of our country's own policies in the area of food and agriculture. Making some of these changes will provide an international signal that the United States is serious about reducing global food insecurity, and will help build support for reducing poverty abroad.

The U.S. should improve the way it delivers food aid. America is the world's largest donor of food aid to hungry people, a matter of justifiable national pride. Hundreds of thousands of lives have been saved through this assistance, and hundreds of millions of lives improved. However, our food aid programs do not go far enough in dealing with long-term, systemic problems, and America does not get enough pay-off from its very large food aid budget because of several longstanding practices in the way it is delivered. To improve this system, America should increase funding for local purchase of food aid and scale down the practice of monetizing American food aid into commercial markets in recipient countries. These actions would grow and better support local markets and farmers in the developing world.

The United States should also repeal current restrictions on agricultural development assistance that might lead to more agricultural production for export in poor countries in possible competition with U.S. exports. Most notably is a piece of legislation passed in 1986, most commonly known as the Bumpers amendment, that prevents USAID from supporting agricultural development or research in foreign countries of crops that are produced in the United States. The law was passed at a time when U.S. agricultural exports and crop prices were in deep collapse—it is now time to repeal this outdated measure.

Moreover, the U.S. should review its objection to any use of targeted subsidies (such as vouchers) to reduce the cost to poor farmers of key inputs such as improved seeds and fertilizers. We are not saying that such policies should be implemented, but that the provision of targeted vouchers to support technology use by small farmers should be restored as one possible option in the design of USAID agricultural programs in Africa and South Asia, particularly in circumstances where rural credit markets and transport infrastructure remain inadequate.

Fourth, the U.S. should revive international negotiations aimed at reducing trade-distorting policies, including trade-distorting agricultural subsidies. And finally, the U.S. should adopt biofuels policies that place greater emphasis on market forces and on the use of nonfood feedstocks. Research suggests that the recent promotion of corn use for ethanol production were a major factor in the international food price spikes in 2008. The Energy Independence and Security Act of 2007's mandate that 36 billion gallons of renewable fuel be used in the United States by 2022, with up to 15 billion gallons of that to come from corn, is insensitive to market forces and may threaten global food supply. Consideration should now be given to either waiving or reducing these mandates, and increasing the use of nonfood feedstocks in the production of biofuels.

The estimated total cost to the U.S. budget of the recommend actions in the Chicago Initiative is \$340 million in the first year, increasing to \$1.03 billion by year five and continuing at that level through year ten. Projected first-year costs are only 1.5 percent of the current annual U.S. official development assistance budget of \$21.8 billion. By year five, costs would still only be a 4.75-percent of current U.S. official development assistance.

These five recommendations are an opportunity for the United States to reestablish its leadership in the fight against global hunger—providing a small but critical step toward lifting millions out of hunger and putting them on the path to self-reliance. While many of these actions are not entirely new, they have been proven effective in the past—through the remarkable earlier achievements of the Green Revolution—when adequately funded. What is new is the effort to improve, modify, refresh, and append these measures for a new age and a new challenge. When taken together, these recommendations will align America with the forces of positive change, to meet the most basic of human needs and lofty of human aspirations.

The CHAIRMAN. Thank you very much. Thank you very much, Mr. Glickman.

Reverend Beckmann.

**STATEMENT OF DAVID BECKMANN, PRESIDENT,
BREAD FOR THE WORLD, WASHINGTON, DC**

Mr. BECKMANN. Mr. Chairman, Senator Lugar, members of the committee, thank you for this hearing and for inviting me.

I want to start out by telling you about a trip I took to Mozambique and Malawi in December. In Mozambique, we got to go to a really remote area; we were about 100 miles from the nearest road, and our first stop was this little settlement of 40 households, called Mtimbe, on the lakeshore. It's just 40 mud houses, each one with its little cassava field. The importance of agriculture to the poorest people in the world was just obvious in this little place, because if that cassava field flourishes, the family does fine; if that cassava field doesn't do well, they go hungry for a long time.

I was heartened that, even in Mtimbe, I could see the impact of U.S. foreign assistance. So, almost all the kids are in school in Mtimbe; that's from debt relief. And people in Mtimbe are living with HIV and AIDS, so they're taking care of their kids, they're farming, because they have antiretrovirals.

Also in these two countries, I could see that our foreign assistance could be more effective. In both countries, we're not doing enough in agriculture. Our aid programs are heavily earmarked, so we're not very responsive to local needs, more generally. And in Mozambique, AID, the MCA, and PEPFAR are all operating independently, and it was pretty clear to me that staff don't necessarily know what each other's doing.

I'm really thrilled that President Obama and Secretary Clinton are putting the emphasis on global poverty—and specifically, hunger—that they are, and I'm really grateful to Senator Lugar and Senator Casey for introducing the Global Food Security Act. It would revivify U.S. support for agriculture, it would make our food aid more efficient and more effective, and it's right to call for a global food security strategy.

There are two recent reports that are suggestive of what could be an official food security strategy. The Chicago Council report, which I heartily endorse. There's also a report called the "Roadmap to U.S. Leadership in Ending Hunger," which was put together by 30 NGOs, including many of the groups that administer U.S. food aid. I think the two most important conclusions are that U.S. funding for agriculture ought to grow to be equivalent to our funding for food aid, and that, over time, half of our food aid ought to be locally procured rather than shipped from this country.

Bread for the World's main campaign this year is a push for broad reform of foreign assistance. What we'd like is that you pull several agencies together into one strong, accountable agency, focus it on development and poverty reduction, and make it more responsive to local needs. One result of that is that we'd be doing more funding for agriculture, and another result is that there would be better coordination across the government on hunger and other issues, on an ongoing basis.

I really was—I was delighted, this morning, Mr. Chairman, that you talked about what you're doing to initiate work on foreign aid reform, and you mentioned the possibility of authorizing legisla-

tion. I do think it's important that you make it clear to the administration and the House that this committee is ready to work with them on broad reform of foreign assistance.

There's a really broad array of organizations who are working together to encourage broad reform of foreign assistance now. It includes a number of organizations that have national constituencies, so—Bread for the World, Oxfam, the ONE campaign, InterAction. But, right now if somebody outside the Beltway wants to weigh in on this issue, they don't really have a very effective way to get their Senator to show support for the committee's work on foreign assistance reform. So, maybe the authorizing legislation that you're talking about—that could be something that any Senator could co-sponsor so that—so that people around the country can build support for this work.

World hunger—we've made progress over the last several decades, against poverty, hunger, disease—remarkable progress. But, we've suffered a tremendous setback here over the last couple of years because of high grain prices and now the recession. We need to provide additional assistance, as the chairman has said, and at a time like this, we also need to make sure that our foreign aid is just as effective as possible, and that more of the aid is going to people who really need help.

So, I hope you'll pass the Global Food Security Act and that you will also move forward on broad reform of foreign assistance.

[The prepared statement of Mr. Beckmann follows:]

PREPARED STATEMENT OF DAVID BECKMANN, PRESIDENT,
BREAD FOR THE WORLD, WASHINGTON, DC

Mr. Chairman and members of the committee, thank you for this opportunity. I am David Beckmann, president of Bread for the World, a collective Christian voice that urges our Nation's decisionmakers to end hunger at home and abroad.

MOZAMBIQUE AND MALAWI

I was in Mozambique and Malawi in December. I got to visit a remote area of Mozambique, a hundred miles from the nearest road. My first stop was a settlement of about 40 households called Mtimbe. There were no shops or government buildings, just mud homes, each with its cassava field.

The tremendous importance of agriculture to the world's poorest people was obvious in Mtimbe. If a family's cassava field flourishes, they are fine. If it fails, they go hungry for a long time.

The farmers I visited in Malawi benefit from extension services, improved varieties, and rural roads. The farmers across the lake in Mozambique have none of that, and they are much poorer.

I was heartened to see U.S. assistance at work even in far-off Mtimbe. The great majority of the kids are in school, partly because of debt relief. I met people who had been at death's door but are now farming and taking care of their children—because of AIDS medication that our Government funds.

But I also noted that the United States does less than we should to support agriculture in Malawi and Mozambique. More generally, we aren't very responsive to local needs and priorities, because our aid programs are heavily earmarked here in Washington. In Mozambique USAID, PEPFAR, and the MCA is each doing its own thing.

THE GLOBAL FOOD SECURITY ACT

I am grateful to Senator Lugar and Senator Casey for the Global Food Security Act. It would reinvigorate U.S. assistance to agriculture and make our emergency food assistance more efficient and effective. It calls for an integrated global food security strategy.

The Chicago Council report and another recent report, the "Roadmap to U.S. Leadership to Ending Hunger," both suggest what might be included in an official

global food security strategy. Other panelists will discuss the Chicago initiative, so I'll focus on the roadmap. It is endorsed by more than 30 NGOs, including many of the organizations that administer food aid. It says that we should be investing as much in agricultural development as in food aid; that over time half our food aid should be purchased locally; and that nutrition programs should be focused on the most vulnerable groups (small children, their mothers, and people with HIV and AIDS). It also flags the impact of our trade policies on global food security.

FOREIGN AID REFORM

Bread for the World's main campaign this year is calling for broad reform of foreign assistance. We hope Congress will pull several aid agencies together into one accountable agency, focus it clearly on development and poverty reduction, and allow it to be responsive to local needs and priorities.

That would lead to substantially more funding for agricultural development and better ongoing coordination across the government on hunger and other development issues.

The committee is well aware of the need for foreign assistance reform. You have taken steps toward reform in the past. Mr. Chairman, I recommend that you make it clear that the committee is willing to work for foreign assistance reform if key policymakers in the administration and House are willing to work with you. The Obama administration, especially Secretary Clinton, is actively considering what is needed to make our aid programs better coordinated and more effective. Your counterparts in the House under the leadership of Chairman Berman have made foreign assistance reform a priority for this year.

A remarkably diverse array of organizations and experts are calling for foreign assistance reform. Many of them are connected with the Modernizing Foreign Assistance Network, which I cochair with Steve Radelet. Our coalition includes many groups with nationwide reach. But right now, people outside the beltway don't have a very effective way to urge their senators to show their support for the committee's work for foreign assistance reform. We need a bill or resolution they can ask their Senators to cosponsor.

Because of high grain prices and the recession, almost a billion of the world's people are now hungry. Some of the poorest people in the world have been hardest hit by the turmoil in the global economy. We should provide additional assistance. But given our own economic problems, we need to make our foreign assistance just as effective as possible and focus more of the aid on reducing hunger and poverty.

I hope you will pass the Global Food Security Act and move forward on broad reform of foreign assistance.

The CHAIRMAN. Thank you, Reverend.
Mr. Paarlberg.

STATEMENT OF ROBERT PAARLBERG, PROFESSOR OF POLITICAL SCIENCE, WELLESLEY COLLEGE, WELLESLEY, MA

Mr. PAARLBERG. Thank you, Mr. Chairman, and thank you, Senator Lugar, and thank you, to the other members of the committee. As someone who currently lives in Massachusetts and grew up in Indiana, I feel like I'm in good hands here on this committee. [Laughter.]

The issue before the committee is America's leadership in alleviating global hunger. And in my written testimony, I explain that America's performance here has been inconsistent. In responding to short-term crises, we generally do very well. For example, in response to the 2008 international food price spike, the United States committed an additional \$1.4 billion worth of food aid. And, unlike other countries, the United States never placed any restrictions on its own food exports, so the United States played a generous and a stabilizing role in response to that crisis. I'd grade it at least a B-plus.

But, the larger and the longer term challenge is to address persistent malnutrition that afflicts nearly 1 billion people in the developing world. These people are weakened by hunger, even when

international prices are low. And here, the United States has not done well at all. The United States response in this area earns something closer to an F in recent years.

It's sometimes not well understood that the hungriest people in the world actually work as farmers. More than 200 million in Africa, roughly 400 million in South Asia. And these farmers are poor—and hence, hungry—because they don't have access to any of the things that farmers elsewhere have used to become more productive and to escape poverty.

Consider farmers in Africa. They have little formal education, most are women, and two out of three cannot read or write in any language. They don't have access to modern seeds or to fertilizers, so their crop yields per hectare are only one-fifth as high as in the United States. Only 4 percent have access to irrigation, so if the rains fail, their crops fail. They don't have access to any electricity or any powered machinery of any kind, or any veterinary medicine for their weak and sick and stunted animals. And finally, 70 percent of these farmers live more than a 30-minute walk from the nearest paved road, so they're effectively cut off from commercial markets.

And because of these deficits, agricultural production in Africa has lagged behind population growth for most of the last three decades. As Senator Lugar mentioned, per-capita production of maize has actually dropped by 14 percent since 1980. Average income of these farmers is less than \$1 a day, and one-third are chronically malnourished.

But, to make things worse, over the last 25 years the U.S. Government has essentially walked away from this problem. Since the 1980s, the United States Government has cut its official development assistance to agriculture in Africa by roughly 85 percent. The staff at USAID that handle agriculture has been cut by nearly 90 percent. So, as things have been getting steadily worse in Africa, the United States Government has, curiously, been doing steadily less.

These cuts in U.S. effort resulted from an unfortunate combination of three factors:

First, too much complacent optimism after the success of the original Green Revolution on the irrigated lands of Asia.

Second, too much faith that private-sector investments could solve the problem under the Washington consensus doctrine that took over the World Bank and USAID in the 1980s. This doctrine failed badly in rural Africa, because there the fundamental public goods that are needed to support markets and attract investments (things like rural roads, agricultural research, schools, rural power); these things had not yet been provided by government, so the private sector stayed away.

And third—third factor that has cut U.S. support for agriculture development is, frankly, too much hostility to the use of fertilizer and improved seeds by some activist groups who claim to work on behalf of social justice and environmental protection. Surprising number of activist groups today think it would be a mistake to introduce the use of nitrogen fertilizers or improved seeds into agriculture in Africa. They've come to believe it would be better for Africans to reduce their nitrogen fertilizer use to zero and to form—

and to farm organically. Now, the fact is, most small farmers in Africa today are already de facto organic; they don't use any nitrogen fertilizers, they don't use any synthetic pesticides, they don't use any genetically modified seeds. And this has not made them productive and prosperous.

So, it's time to get beyond these rigid ideologies and find a more pragmatic way forward. And, fortunately, agricultural specialists have reached a consensus on what's needed in regions such as Africa, the consensus that's contained both in the 2009 Global Food Security Act and in the report from the Chicago Council on Global Affairs.

I think the danger isn't that Congress will debate this strategy and then reject it as too costly, because it isn't too costly relative to the anticipated humanitarian, economic, and diplomatic gains. The danger, instead, is that a serious debate will never take place amid the many distractions of the day, and action will simply be deferred. And this would be a costly error, because if action is deferred under a business-as-usual scenario, the numbers of chronically malnourished people in Africa, in particular, will increase by another 30 percent over the next 10 years, making the problem that much more difficult to resolve if and when we eventually decide to confront it.

Thank you very much.

[The prepared statement of Mr. Paarlberg follows:]

PREPARED STATEMENT OF ROBERT PAARLBERG, PROFESSOR OF
POLITICAL SCIENCE, WELLESLEY COLLEGE, WELLESLEY, MA

Providing international leadership to alleviate global hunger requires our Government to have strong policies in two separate areas:

- Responding to short-term food emergencies, such as the international food price spike we saw in 2008, which temporarily put up to 100 million more people at risk.
- Attacking the persistent poverty that keeps more than 850 million people hungry even when international food prices are low.

In the first of these areas, the United States Government has done a good job, at least a B+. But in the second area the U.S. has done a poor job over the past 25 years, something close to an F. In 2009 America has a chance to correct this second failing grade by directing more development assistance support to help small farmers in sub-Saharan Africa and South Asia. Until the productivity of these small farmers goes up, poverty and hunger will not go down.

America's Laudable Response to the 2008 World Food Crisis

When the price of food on the world market suddenly surged upward during the first 6 months of 2008, it was clear that some developing countries heavily dependent on imported food needed help. In April 2008 the World Bank produced an estimate that an additional 100 million people in the developing world were being pushed into effective poverty because of the much higher food import prices.¹ The New York Times called these high prices a "World Food Crisis." The Economist called it a "Silent Tsunami."

This was a serious crisis for poor countries heavily dependent on food imports, particularly in West Africa and the Caribbean, but not all developing countries fell into that category. Many governments in the developing world have long made it

¹Maros Ivanic and Will Martin, "Implications of Higher Global Food Prices on Poverty in Low-Income Countries," Policy Research Working Paper 4594, World Bank, April 2008. In my view this estimate was too high. The Bank's calculation was based on what it called a "guesstimate" that 66 percent of all price changes on the world market would be transmitted into the domestic markets of developing countries. The events of 2008 suggest there was far less price transmission than this. Much of the sharp rise in international prices resulted from an intentional blockage of price transmissions into domestic markets. It was an artificial stabilization of so many domestic market prices that worsened the destabilization of international markets.

a point not to depend on imports of basic grains (in the name of national food “self-sufficiency”). For example in South Asia only about 6 percent of total grain consumption is imported, and in India specifically only 1 percent of rice consumption is imported. So when the price of rice for export tripled in 2008 it was a shock in Cameroon and Haiti, but it had little effect on most poor people in India.

International food prices spiked as high as they did precisely because so many developing country governments decided not to let higher international prices cross into their own domestic economy. When export prices starting increasing in 2007, one country after another insulated its domestic market from the increase by placing new restrictions on food exports. China imposed export taxes on grains and grain products. Argentina raised export taxes on wheat, corn and soybeans. Russia raised export taxes on wheat. Malaysia and Indonesia imposed export taxes on palm oil. Egypt, Cambodia, Vietnam, and Indonesia eventually banned exports of rice. India, the world’s third largest rice exporter, banned exports of rice other than basmati. When so many export restrictions were suddenly set in place, the quantity of food available for export dropped sharply, triggering the large price spike seen in international markets.

The response of the United States Government to this price spike was timely and commendable. America provided essential global leadership, in two important ways.

First, the United States never placed any restrictions on its own exports of agricultural commodities. While others were imposing export taxes or export bans, the United States continued to leave its domestic food supply open to foreign customers. This was not an easy discipline to maintain. America’s decision to place no restriction on its own rice exports meant prices inside the U.S. economy spiked upward along with the international price, which led to an interlude of panic buying. In April 2008, Costco Wholesale Corporation and Wal-Mart’s Sam’s Club had to limit sales of rice to four bags per customer per visit. For wheat, the U.S. decision not to restrict exports implied much higher operating costs for America’s baking industry, prompting the American Bakers Association early in 2008 to send delegations to Washington to voice loud complaint. Despite these domestic pressures, our Government never restricted export sales.²

Second, when international prices spiked in 2008 the United States dramatically increased its budget for international food aid. In April 2008, President Bush announced the release of \$200 million worth of commodities from an emergency food aid reserve for Title II, Public Law 480, and then in May 2008 the President requested from Congress an additional \$770 million as a crisis response, with roughly 80 percent of this intended to help poor importing governments or support short-term feeding of vulnerable populations. According to one unofficial calculation, the United States responded to the 2008 crisis by designating an additional \$1.4 billion in food aid above already planned funding levels. Total enacted and estimated international food assistance spending from the United States in FY 2009 will be roughly \$2 billion.

Our policy response to the 2008 food price spike was far from perfect, in part because our food aid programs are unnecessarily expensive. This is because the United States does not allow any significant sourcing of food from outside of the United States and because shipment on more costly U.S.-flag vessels is required for 75 percent of all gross food aid tonnage. As a result an excessive 65 percent of America’s food aid spending goes to administrative and transport costs. Some economists calculate that it costs roughly twice as much to deliver a ton of food to a recipient through this U.S. food aid system as it would cost buying the food from a local market.³ The United States is heavily criticized abroad for operating its food aid programs this way. On the other hand, if America went to a more efficient system based on foreign sourcing, political support for the program here in Congress would suffer, the size of our food aid budget would fall, and food deliveries to some needy recipients abroad might then fall as well.

America was also heavily criticized in 2008 for the alleged impact of its biofuels policies on world food prices. Federal tax credits, import tariffs, and renewable fuel mandates promoted the diversion of American corn into fuel production, driving up international prices for corn used as food or feed. In 2007–08, ethanol production increased to roughly 23 percent of America’s total corn use. On the other hand, much of this diversion would have taken place in 2008 even without any U.S. Government tax credits, tariffs, or mandates, simply due to the unusually high oil prices

²During a much earlier food price spike in 1973, the United States was not as disciplined. Japan and other importers were shocked when the United States placed a brief embargo on soybean exports in 1973.

³Christopher B. Barrett and Daniel G. Maxwell, “Food Aid After Fifty Years,” New York: Routledge, 2005, p. 167.

that prevailed at the time. When bad things happen it is not always the government's fault. It was mostly high oil prices, not government policy, that drove up corn use for ethanol in 2008.

America's Less Helpful Response to Persistent Hunger

America has shown far less leadership in its policy response to the long-term problem of chronic malnutrition in developing countries. This hunger problem, linked especially to rural poverty, is roughly eight times larger than the temporary problem linked to the 2007–08 price spike.

Even before international food prices began to increase in 2007, the United Nations Food and Agriculture Organization (FAO) estimated that there were 850 million chronically malnourished people in the world. Even when food was cheap on the world market in 2005, in sub-Saharan Africa 23 out of 37 countries in that region were consuming less than their nutritional requirements and nearly one-third of all citizens there were malnourished. The problem of hunger in these countries derives primarily from persistent poverty, not from price fluctuations on the world market. In Africa more than 60 percent of all citizens work in the countryside growing crops and herding animals, and it is because the productivity of their labor is so low (incomes average only about \$1 a day) that so many are chronically malnourished.

To understand the source of these low incomes, pay a visit to a typical farming community in rural Africa. The farmers you will meet, mostly women, do not have any of the things that farmers everywhere else have required to become more productive and escape poverty:

- Few have had access to formal education. Two out of three adults are not able to read or write in any language.
- Two-thirds do not have access to seeds improved by scientific plant breeding.
- Most use no nitrogen fertilizer at all, so they fail to replace soil nutrients and their crop yields per hectare are only one-fifth to one-tenth as high as in the United States or in Europe.
- Only 4 percent have irrigation, so when the rains fail their crops also fail, and they must sell off their animals and household possessions to survive until the next season.
- Almost none have access to electricity, and powered machinery is completely absent. These farmers still work the fields with hand hoes or wooden plows pulled by animals.
- Few have access to veterinary medicine, so their animals are sick, stunted, and weak.
- Most of these farmers are significantly cut off from markets due to remoteness and high transport costs. Roughly 70 percent of African farmers live more than a half-hour walk from the nearest all-weather road, so most household transport is still by foot.

Given such deficits, it is not surprising that agricultural production in Africa has lagged behind population growth for most of the past three decades. Per capita production of maize, Africa's most important food staple, has actually declined 14 percent since 1980. Over the same time period population has doubled, so the numbers of people living in deep poverty (less than \$1 a day) has doubled as well, up to 300 million. The number of Africans classified as "food insecure" by the U.S. Department of Agriculture increased to 450 million in 2006, and under a business-as-usual scenario this number will grow by another 30 percent over the next 10 years, to reach 645 million.⁴

One reason the current business-as-usual scenario is so bleak has been weak leadership from the United States. Instead of taking action to help address these persistent farm productivity deficits in Africa over the past several decades, the United States Government essentially walked away from the problem:

- America's official development assistance to agriculture in Africa, in real 2008 dollars, declined from more than \$400 million annually in the 1980s to just \$60 million by 2006, a drop of approximately 85 percent.
- Between 1985 and 2008 the number of Africans supported by USAID for post-graduate agricultural study at American universities declined 83 percent, down to a total of just 42 individuals today.
- From the mid-1980s to 2004, USAID funding to support national agricultural research systems (NARS) in the developing countries as a whole fell by 75 percent, and in sub-Saharan Africa by 77 percent.

⁴United States Department of Agriculture, Economic Research Service, "Food Security Assessment 2007," p. 10. <http://www.ers.usda.gov/Publications/GFA19/>.

- From the mid-1980s to 2008, United States contributions to the core research budget of the Consultative Group on International Agricultural Research (CGIAR), in real 2008 dollars, fell from more than \$90 million annually to just \$18.5 million.
- USAID spending for collaborative agricultural research through American universities was nearly \$45 million in constant 2008 dollars 25 years ago. As of 2007, this funding was down to just \$25 million.
- These cuts were accompanied by severe agricultural destaffing at USAID. As late as 1990 USAID still employed 181 agricultural specialists. Currently it employs only 22.

So, while Africa's rural poverty and hunger crisis was steadily growing worse, the United States Government was steadily doing less.

Why Did the United States Stop Investing in Agricultural Development?

Beginning in the 1980s, three factors combined to push the United States away from providing adequate assistance for agricultural development:

First, the enormous success of the original Green Revolution on the irrigated lands of Asia in the 1960s and 1970s left a false impression that all of the world's food production problems had been solved. In fact, on the nonirrigated farmlands of Africa, these problems were just beginning to intensify.

Second, it became fashionable among most donors beginning in the 1980s to rely less on the public sector and more on the private sector, under a so-called "Washington Consensus" doctrine developed inside the IMF and the World Bank. According to this new aid doctrine, the job of the state was mostly to stabilize the macroeconomy and then get out of the way, so private investors and private markets could create wealth. This approach backfired in rural Africa because the basic public goods needed to support markets and attract private investors—roads, power, and an educated workforce—had not yet been provided.

Third, a new fashion also arose in the 1980s among advocates for social justice and environmental protection. These groups began to depict the improved seeds and fertilizers of the original Green Revolution as a problem, not a solution. They argued that only large farmers would profit and that increased chemical use would harm the environment. This perspective was not appropriate in Africa, where nearly all farmers are smallholders with adequate access to land and where fertilizer use is too low rather than too high. In Africa the social and environmental danger isn't too much Green Revolution farming, but far too little.

I have documented the importance of these NGO objections to Green Revolution farming in a book published last year by Harvard University Press.⁵ I show in this book that an influential coalition of social justice and environmental advocates from both North America and Europe was able to discourage international support for agricultural development, including in Africa, beginning in the 1980s. They not only opposed the use of modern biotechnology, such as genetic engineering; they also campaigned against conventionally developed modern seeds and nitrogen fertilizers, even though these were precisely the technologies their own farmers had earlier used back home to become more productive and escape poverty. To Africans they instead promoted agroecological or organic farming methods, not using synthetic pesticides or fertilizers.

The irony is that most farmers in Africa today are already de facto organic, because they do not use any GMOs or any nitrogen fertilizers or any synthetic pesticides. This has not made them either productive or prosperous. Nor has it provided any protection to Africa's rural environment, where deforestation, soil erosion, and habitat loss caused by the relentless expansion of low-yield farming is a growing crisis.

How to Correct America's Failing Grade in Agricultural Development

Improving America's dismal policy performance in the area of agricultural development does not have to be difficult. We know what to do, we know it can be done at an affordable cost, and the current political climate even provides new space to act.

A consensus now exists among specialists, even at the World Bank, on what to do. An extensive review conducted by the Bank in preparation for its 2008 World Development Report concluded that more public sector action was urgently needed: "the visible hand of the state" was now needed to provide the "core public goods" essential to farm productivity growth. Three kinds of public goods are needed today in the African countryside:

⁵ Robert Paarlberg, "Starved for Science: How Biotechnology is Being Kept Out of Africa." Cambridge: Harvard University Press, 2008.

- Public investments in rural and agricultural education, including for women and girls.
- Public investments in agricultural science and local agricultural research to improve crops, animals, and farming techniques.
- Public investments in rural infrastructure (roads, electricity, crop storage) to connect farmers to markets.

Governments in Africa today endorse this consensus. At an African Union summit meeting in Mozambique in 2003, Africa's heads of government pledged to increase their own public spending on agriculture up to at least 10 percent of total national spending. International donors, including the United States, should seize upon this constructive pledge, redirecting assistance efforts so as to partner aggressively with African governments willing to reinvest in the productivity of small farms.

We know exactly what this redirected assistance effort should look like, thanks to the policy roadmap recently provided by two members of this committee plus the supportive recommendations of a prominent independent study group.

The widely endorsed Global Food Security Act of 2009 (S. 384), known as the Lugar-Casey bill, would authorize significantly larger investments in agricultural education, extension, and research, to take full international advantage of the superior agricultural resources found within, of America's own land grant colleges and universities. The increased investments in institutional strengthening and collaborative research authorized in this bill could be funded at \$750 million in year one, increasing to an annual cost of \$2.5 billion by year five. Fully funding this initiative would require roughly a 10-percent increase in America's annual development assistance budget, a small increase alongside President Obama's own 2008 campaign pledge—which I strongly endorse—to grow that development assistance budget by 100 percent.

A second worthy blueprint strongly parallels the Lugar-Casey bill. This is a menu of 21 separate recommended actions called the Chicago Initiative on Global Agricultural Development, released just 1 month ago by an independent bipartisan study group convened by the Chicago Council on Global Affairs, with financial support from the Bill & Melinda Gates Foundation.⁶ This substantial report, which I played a role in preparing, recommends twin thrusts in agricultural education and agricultural research, just like Lugar-Casey. It also recommends closer coordination with the World Bank to increase investments in rural infrastructure, plus a substantial upgrade of agricultural staff at USAID. The Chicago Council report estimates that implementing all 21 of its recommended actions would cost \$341 million in the first year (an increase over current programs of \$255 million), and only \$1.03 billion annually by year five (an increase of \$950 million over current expenditures). This implies less than a 5-percent increase in our current development assistance budget.

Why is 2009 the Best Time to Take These Actions?

The danger is not that Congress will debate these proposals and then reject them as too costly. Both of these proposals are well researched and substantively well defended, and the implied costs are not at all large alongside the anticipated humanitarian, economic, and diplomatic gains. The danger instead is that a serious debate over these proposals will never take place, amid the many distractions of the day, and a decision will simply be deferred. This would be a costly mistake. If new action is deferred, the business-as-usual scenario will kick in and numbers of food insecure people in sub-Saharan Africa will increase by another 30 percent over the next 10 years, to reach a total of 645 million. If the new administration and Congress decide to put off action until 2013 or 2017, the hunger problem will only become more costly to resolve.

Fortunately, two important windows of political opportunity are open in 2009 to support the embrace of a significant policy initiative in this area. First, both the new administration and Congress are eager to be seen delivering a "real change" in America's policies abroad, not just at home. A decision in 2009 to reverse, at last, the 25-year decline in U.S. support for agricultural development assistance would be a real change, and it would be recognized as such around the world. It would transform America overnight from being the laggard in this area into being the global leader. With its new agricultural development initiative on the table, America could reintroduce itself to governments around the world—especially in Africa—with a convincing message of hope, not fear. The payoff in farmers' fields would not be seen immediately, but the political and diplomatic gain would be immediate.

For those on this committee looking for an affordable way to recast America's approach toward governments in Africa (e.g., in response to China's growing invest-

⁶The full report and also an executive summary are available at <http://www.thechicago-council.org/globalagdevelopment/finalreport.asp>

ment presence and political influence in that region), a new agricultural development initiative is actually one of the most cost-effective ways to proceed. The annual budget cost is low because the best way to support agricultural development is not with a massive front-loaded crash program, but instead with small but steady annual outlays developed and managed in close partnership with recipient governments, maintained for a decade or more.

The second window of opportunity was provided by the 2008 food price crisis itself. Memories of this crisis are still sufficiently fresh in 2009 to motivate action on a significant new agricultural development assistance initiative, to complement the strong leadership we already show in emergency relief and food aid.

Both these windows of political opportunity are currently open. They are not likely to remain open for long.

The CHAIRMAN. Thank you very much, Mr. Paarlberg.

I want to thank all of you for keeping your testimonies tight and to the time. It helps us a lot to be able to get engaged in a good dialogue, and we appreciate it.

Mr. Paarlberg, I want to pick up, a little bit on that, but, before I do, I want to come back to some of these farming practices and assertions you made. Let me ask you, now, each of you perhaps: if you're a farmer out in Kansas, Nebraska, Iowa, or Minnesota, for instance, and you're listening to us talk, here, about helping the farmers in Africa to be able to compete, essentially. And, to some degree, part of the reason Doha has been at a gridlock in these last years is European and other "subsidy-ized" farming entities' resistance to change. It's been a long argument by a lot of people for some period of time that you need to empower less-developed-country farmers to be able to sell their goods so they can develop. How do you make that argument as to why this is so important to us, and why it is worth this fight?

Secretary Glickman.

Mr. GLICKMAN. It's funny, because one of the things that we talk about it in the report—is something that's referred to as the Bumpers amendment, which—unfortunately, a very good man has had his name tied to an amendment which I think is not very productive—it says that, "We cannot provide scientific and technical assistance to countries and to programs in other countries that might result in crops competitive to the United States." That was basically done back in the '80s to prevent narcotics' policy that would try to transfer people from growing cocaine to, let's say, soybeans and other kinds of things.

I would make the following comments.

First, The Chicago Council did some polling data which indicates that people in this country are, in fact, supportive of these efforts, both rural and urban people.

Second, we're all in this together. Problems afflicting agriculture, whether you're in the lush farmlands of Indiana or Kansas or in the dry lands of the Sahel or South Asia, are going to face a lot of the similar problems as it relates to drought, to climate change, and so, we're no longer separate parties to these things.

Third, by improving the lifestyle of people around the world, they're going to buy more things. They may buy them locally, they may buy them from us, but a rising tide lifts all boats in the world, including agriculture generally.

And fourth, I think that the time for this kind of parochial attitude that we've had for so many years is no longer relevant in the

world that we live in today. And I think people understand that, too.

The CHAIRMAN. Well, is it not more practical to make the argument, if these are the people who are malnourished, and they're indigenous in their own country, that it might be premature to be talking about opening up to the marketplace and selling elsewhere? I mean, don't they first have to, you know, grow for themselves?

Mr. GLICKMAN. Well, there is some capability for export even in some of the markets we're talking about today, but the idea is to create indigenous agriculture production and to help people help themselves. And we can do a lot better job of that, and, in the process, we can change their lives internally, and it will help the United States and the democracies of the world deal with the political problems that result from extreme poverty and malnutrition that never seem to get better.

The CHAIRMAN. Yes, Dr. Bertini.

Ms. BERTINI. Mr. Chairman, I would add that if we were talking to farmers in the Midwest, who are very productive and do a lot of exporting themselves, that when they think about what markets might be available when their daughters and sons are taking over their farms, they have to look to opportunities in the developing world to be able to sell their goods in the future. They won't be able to sell more in Europe, Japan, or other mature markets. But, the places where there are more people and more possibilities for economic improvement are in the developing world, and that it's, therefore, in their commercial interests over—

The CHAIRMAN. Is that only for a crop-specific that can't be grown in one of those other countries?

Ms. BERTINI. Not—

The CHAIRMAN. How are you going to compete with our costs of energy and production, transit to that other country, versus an indigenous production of the same crop?

Ms. BERTINI. Well, depending on the climate, depending on the soil—there is a lot of different things that depend on what might work in any given region of the world, so it's not necessarily competing, on one side or the other, it's really about markets. And we're talking about the opportunity for more—especially more indigenous growth, which will improve economic livelihoods so that people can buy more grain or manufactured goods.

The CHAIRMAN. More than they're able to produce, themselves.

Ms. BERTINI. Yes, and more than what they can purchase now.

The CHAIRMAN. Anybody else want to add to that?

Mr. BECKMANN. I do. Bread for the World instituted—commissioned a study by the International Food Policy Research Institute on this issue, and if the low-income countries of Africa and South Asia could achieve gross comparable to, say, the, you know, gross of East Asia, that would be very good for United States agriculture, that the—the negative—any negative effect of competition is outweighed by the expansion of incomes. Because poor people in the world are spending two-thirds of everything they have on food, so when their income goes up, they buy more food, including a little bit more food imports. So, in fact, U.S. agriculture has a clear stake in global development. Where it gets a little stickier is when—on the broader issues of reform of U.S. agriculture and trade policies,

but—in fact, our—as—you know, our foreign policies don’t—are not optimal for farm and rural people in America, so it is very possible, especially in the context of, say, finishing the Doha Round, to have a reform of global agriculture that would be better for virtually all U.S. farmers, certainly for farm and rural people who are really struggling, and also wildly better for farmers in poor countries.

The CHAIRMAN. Mr. Paarlberg, let me take you up on this issue. Obviously, there’s been a very heated debate for a number of years about GMO and agricultural practices. I learned a lot about this in ’04, when I was running around the country. I learned a lot about farming I didn’t know, even though we have a lot of farms in Massachusetts, actually. We have a big contingent of farms, still. We used to have a lot more dairy than we have today. But, one of the things I learned was the degree to which Iowa soil is tilled, and you go down below whatever that 6-foot, 5-foot level is, and you run tile. The current nitrate runoff into the Des Moines River and the Iowa River, and ultimately in Missouri and into the Mississippi and down into the Gulf of Mexico, creates an enormous 5,000-square-mile dead zone every year, not to mention what it does in terms of quality of drinking and so forth. This is true all over our country. Our non-source-point—point-source runoff is a huge problem.

Increasingly, there is an appetite in America for organic food, for non-processed, for good, healthy, basic food. And it seems to me that that’s not something that we ought to dismiss casually. Many, many people are learning a lot more about health through good nutrition, through eating more effectively, better; and there’s a big movement in this country, a lot of stores growing up now, a lot of supermarkets, that are making it a practice only to sell organic; and more and more people, as they learn more and more, are turning towards that.

You seem to sort of push that aside, and I wonder if that’s wise for us, in this battle, not to sort of honor and respect that movement more effectively and perhaps, you know, fashion policies accordingly.

Mr. PAARLBERG. In order to be certified as an organic grower, you have to reduce your use of nitrogen fertilizer to zero. In Africa today, average applications of nitrogen fertilizer are about 9 kilograms per hectare. The African agricultural development effort under NEPAD has set, as a target for Africa, increasing from 9 kilograms up to about 50 kilograms per hectare, which I think is a suitable goal. In the United States, where we apply more than 100 kilograms per hectare, we do get nitrogen runoff and a dead zone in the Gulf of Mexico. I think, though, you have to be sophisticated enough to set a target at 50 and stay below 100 rather than reacting to the dead zone in the Gulf of Mexico by telling farmers in Africa they have to go to zero. Too many farmers in Africa are at zero today, and their crop yields are only one-fifth or one-tenth as high as in the United States.

The CHAIRMAN. So, it’s really the balance that you’re——

Mr. PAARLBERG. Absolutely.

The CHAIRMAN. [continuing]. Talking about——

Mr. PAARLBERG. Absolutely.

The CHAIRMAN. [continuing]. More than anything else, a fair balance, in a sense.

Senator LUGAR.

Senator LUGAR. Thank you, Mr. Chairman.

Let me just reiterate some of the points that I think are important about food security and our legislative response, on which many of you have commented.

First of all, a White House food coordinator, or somebody literally with the authority to speak for the President of the United States and to bring together USAID, the Department of Agriculture, anybody else involved in food security—we've gone this route, in large part, because reorganizing each of these departments, reforming each one of these, is really an arduous task. And, from your personal experience, you appreciate that. But, without having that kind of reorganization, somebody who is in charge really is required if we're to make this kind of difference. The authority to purchase some food aid locally and regionally rather than shipping it from the United States will pose challenges, but is necessary to increase our responsiveness and flexibility to crises. So, this is quite a charge. This coordinator will not have an easy life.

But, I would say that, without this, we're simply whistling in the dark, in a way; we're sort of hoping for good things and good vibes to happen to people.

And following that, as you've mentioned, this idea that the food might be purchased in-country is a tremendously important thought, quite apart from the transportation dilemma. I think it has to occur along with reforms that may come with a Doha Round or its successor. Again and again, as we've discussed today, the plight of the American farmer is not so much that someone in Africa might begin to grow corn more efficiently, but it's the fact that we are blocked from exporting the corn that we have, by all kinds of trade restrictions, embargoes, blockages, tariff. The bollixed-up world trade system with regard to agriculture makes a prodigious problem out of this, even if we have the food czar and we manage to realize greater efficiencies in our policies and programs.

And finally, I appreciate your response, Dr. Paarlberg, to the Chairman's question about genetically modified technologies. I think the idea of a balanced, thoughtful, scientific approach to this is important. But, I would just say that this is virtually impossible, to get to the yields we're talking about, without taking seriously seed, fertilizer, the type of thing that might come from extension services, from education, and what have you. And I've argued this, during this past August over in Brussels, with a good number of people. The U.N. Ambassador has come to my office now a couple of times to indicate that various fertilizers, seeds, might be possible in Europe.

But, I've also found parliamentarians in Europe who are rock solid against any change. The Africans can starve, as far as they're concerned, the purity of the situation so paramount in their focus. And furthermore, they don't plan to export very much, and they're feeding their people, as it is, and not that worried about it.

Now, given all of that, first of all, Secretary Glickman, how do we get to the food czar? What is likely to be the prospects of that occurring?

Mr. GLICKMAN. Well, you do need an overall leader in the White House. It's got to be somebody with close ties to the President who has access to the Oval Office. If you don't have that, you could have czars spelled a thousand different ways and it wouldn't make any difference.

Senator LUGAR. Everybody's very remote right now from the White House, I'm afraid, in who's involved in the food business.

Mr. GLICKMAN. Yes. What we recommended is that the National Security Council be the place where this person be housed, largely because this is a national security issue, and—finding one person in there that could take this responsibility—there may be other ways to skin this cat, but it's got to be somebody close to the President, who has the President's confidence, and can take the leadership role in government-wide coordination of these issues.

Second, you have to have an implementing agency that has teeth and muscle, and that's AID; and right now it has no teeth and no muscle, and not much else, I will have to tell you. It's been denuded. I don't say get rid of it, I say strengthen it and give it the kind of authority that it needs to carry out its tasks to do the kinds of things that we're talking about here.

And this needs to be within the ambit, however, of a White House, I believe, that is exerting proper management and coordination over the whole thing.

And if I just can make a point to both and Senator Kerry on the organic issue, I was in the USDA when we implemented the Organic Standards Act. It's a very positive thing for American agriculture. But, it is not inconsistent with good science, to increase yields and deal with crop protection and drought resistance while using some of these new technologies. And it also can be done, not only compatibly, but extremely successfully, while protecting the environment at the same time. So, I agree with the point, that there is a balance here, but it's not inconsistent.

Senator LUGAR. Ms. Bertini, do you have a comment?

Ms. BERTINI. Yes, Senator. To highlight what Dan said about USAID, it's critical that we have a strong tool—in this case, agency—for carrying out whatever are our policies. And it certainly was the agreement of our group that we believe that should be AID and we do not believe that it's in that place right now. And we think that a lot of attention needs to be drawn there.

But, I want take further your thought, Senator, about the coordination. Yes, there has to be coordination led from the White House, and direction from the White House, but the coordination has to go beyond—and I know you mean it—to go beyond what we do in Washington, but into what we do in each country where we operate. And Reverend Beckmann mentioned something about this before, but think about it from the perspective of the farmer or the NGO or the government in Africa who has to say, “Now, do I go to talk to the AID administrator or is it the PEPFAR person, or do I go to MCC, or maybe I should find the Ag attache?” I mean, what do they do? And we do not have a coordinated effort, which we really must have, in each country in which we operate. That's critically important.

On your point about food purchase, we also had a strong consensus that there should be significantly more ability for the U.S.

Government to allow food purchasing in developing countries to support local agriculture and also to cut down on a lot of the cost, allow food to arrive faster, and have food that people are used to in the region. Local transport costs are also dramatically cheaper than in-kind transportation costs.

For a long time, this has been proposed, but never approved by Congress. So, we believe that that's very important.

However, we have to underline the fact that, although most countries have gone almost exclusively to food purchase, we don't think we should eliminate food aid in kind all together, because there's an important role for that, especially in emergencies, when there are no other options.

Senator LUGAR. Thank you.

The CHAIRMAN. Thanks, Senator Lugar. Appreciate it.

Senator Casey.

Senator CASEY. Mr. Chairman, thank you for calling the hearing, and I appreciate the leadership you've provided, and Senator Lugar's, working with us on this bill.

I wanted to explore some immediate issues, some of which each of you have addressed in your testimony. I guess there's some sense now that, as bad as last year was, as bad as the crisis has been, that it could be even worse in the immediate future. And the numbers are just—I can't even begin to comprehend the numbers; I don't think anyone can—looking at the data, some 75 million more people could be affected, and we may be at a point where it could get a lot worse than that. So, the urgency of this is profound, almost indescribable. And when people come to a hearing like this, or when they follow this issue, they arrive at a conclusion as to what they should do, probably based upon a couple of different pathways to get there.

One is, I think, the people at this hearing—our witnesses as well as others in the audience—are here for a lot of reasons. Most of us here are summoned by our conscience. That's one reason we're here. Others, who may not be as troubled by the issue, may arrive at a conclusion about this issue just based upon national security, because it does have national or international security implications. When someone is hungry, they're more likely to be influenced by people who say, "I can help you if you join my cause," and that cause may be violent and destructive, against all of our interests and our safety.

Obviously, we believe this bill should pass very quickly. That's an immediate step. But, I guess I wanted to have each of you briefly—and I know we have limited time—to address the immediate challenge we have, in terms of the urgency of it? And what are the immediate steps we have to take to meet that challenge? Because I believe it's that urgent. And there'll be some who will say, "You know, we're in a recession here in the United States, why do we need to be doing more around the world?" And I think it's a very compelling case. But, maybe just outline for us quickly your thoughts we can just go from right to left.

Mr. GLICKMAN. I think you raise excellent points. Again, this booklet is kind of a roadmap—

Senator CASEY. Right.

Mr. GLICKMAN. [continuing]. Or, a strategic plan to get from here to there, so it has a variety of short- and long-term steps. And if you look at it, it'll say what to do the first year, second year, third year, fourth year. And your bill is fully consistent with everything that we're talking about here. In fact, it can't be implemented unless we pass legislation like the kind that you're talking about.

There are a multitude of things that have to be done, from the national government being committed to doing what it needs to do, the amount to spend here in the first year is about \$340 million or so; last year, \$1.03 billion a year. I mean, in the big scheme of what we're talking about, in terms of internal institutions in this country, it is a drop in the bucket, and this one might actually save some lives in the process, as well.

So, you know, I can't give you a priority-setting, other than to say that it's got to be on the top of our list of priorities.

I would say one other thing, too. You know, when I was a USDA, I often found that, in our national government, in the scheme of things, agriculture often took a backseat to policymakers. I don't know if—Senator Lugar can nod at that. There are other sexier issues that often come up. But, you know, you go back to the point that a person's nutrition capability is at the heart of our very existence. And I think what your bill does is to reiterate to the world that food and agricultural production, as a part of our global assistance, is a priority; it is not a secondary factor. And I think, too often in today's world, farmers and agriculture just do not get the attention that they deserve, in terms of leading the world.

Senator CASEY. Dan, I want to—just wonder if we can follow up briefly—I want to thank you for what you said and also for your testimony. And I missed it; I was running back and forth between meetings. But, the point that you made about someone in the White House who can get in to the Oval Office is essential. Anyone who understands anything about government, even at much lower levels, knows that that kind of personal, immediate access is going to be, I believe, critically important.

Thank you.

Ms. Bertini.

Ms. BERTINI. Thank you, Senator.

Two things. One, in terms of the American public, one of the expertise of The Chicago Council on Global Affairs is to actually conduct surveys about what Americans think about foreign relations and foreign affairs. And in our book we've got a lot of the data from the recent survey that you might find useful. But, one of the things that I've found particularly important was that 42 percent of the American people believe it's very important to combat global hunger, and believe it should be a foreign policy priority. And that's a pretty significant percentage.

So, I think, even given what we are living through in this country, there may be some reasonably strong support for a renewed interest in agricultural development. And people understand, basically, the concept of helping people be able to help themselves—

Senator CASEY. Right.

Ms. BERTINI. [continuing]. In a way that sometimes resonates in a stronger manner.

Second is that, during my tenure as executive director of the World Food Program—to your point about, Why now?—I found that when the U.S. took a position, especially a new position or a different position, or a considerably stronger position than they had in the past, about aid-related issues, that there was a snowball effect of many other donors then doing something similar. Now, in some areas, like this issue about purchasing food locally instead of in-kind, the U.S. has been behind the other donors, but I absolutely believe that if the U.S. showed strong leadership in agricultural development, that there would be a new and fast list of countries who would also change their priorities. Because it hasn't been just the U.S., it's been virtually all the donor countries who have let this fall almost off the map. I think the sooner the U.S. starts, the more others will join, and the stronger the international effort will be.

Senator CASEY. So, it's about leadership. Yeah. Thank you.

Mr. BECKMANN. I think there's a context of hope here over the last 15 years. Roughly 400 million people have escaped from extreme poverty, and over the last 2 years about 100 million have been driven back into extreme poverty. So, first, that pattern, that's what makes for a security issue, because you have this tremendous—you know, people going—promise, and then disappointment. It also is a hopeful situation, because if we can help the developing countries recover and get through the recession, in fact, they can contribute to our own economic dynamism.

One immediate thing that can be done, even more quickly than legislation, as important as that is, is, in the National—in the White House right now, it's my sense that, even development—broadly, development is not very strongly represented within the National Security Council. When the President set up the National Security Council, there is no voice within the Council—for example, the administrator of USAID is not in the National Security Council, so—and within the staffing of the National Security Council, development—any concern about development or food security is down a couple of rungs. So, even before you get to the legislation getting the global food security coordinator, which is important, just in talking with the White House you might suggest that they raise the issue of hunger and poverty within the National Security Council right now. I think it's just an oversight. I think General Jones is really committed to these things, but somehow it—it does seem to be me to be an oversight.

Senator CASEY. Mr. Paarlberg, I know I'm a minute and a half over my time. [Laughter.]

Mr. PAARLBERG. OK.

Senator CASEY. Putting a little pressure on you.

Mr. PAARLBERG. You asked a good question, "Why now?" And I would say, because there are two windows of opportunity open, at the moment, that won't be open forever. First, memories of the 2008 international price spike are still fresh. And second, we have a new administration and a new Congress in Washington and at the same time, a President with a personal interest in Africa. Either the Lugar-Casey bill or the Chicago initiative would give U.S. foreign policymakers opportunity to reintroduce themselves to Africans, talking about something other than democratization, health, and education. Those are important. America's been the leader

there. But, the Chinese have 8,400 companies in Africa right now making investments in infrastructure and in development. Africans are interested in that, too. This initiative would give the United States a way to avoid being finessed by those huge Chinese investments. You know, we're losing influence now because we're not doing enough on development; this is a response to that.

Senator CASEY. Thanks so much.

Thanks, to each of you.

The CHAIRMAN. Senator Risch.

Senator RISCH. Thank you, Mr. Chairman.

First of all, let me say that I want to thank the chairman and ranking member for holding this important hearing. And I have a question for the panel.

Before I do that, though, with all due respect—and I mean that sincerely, Mr. Chairman—I—this business of nitrate/nitrite runoff, phosphate runoff, certainly is a problem in some areas, but I grow small grains and hay and beef, and I can tell you that, without fertilizer, you're not going to be in business very long.

Having said that, the other side of the coin is just as important. If you overfertilize, you're also not going to be in business very long, because—over the last 5 years, the price of fertilizer has just spiked because of the—number one, because of world demand; and second, of course, because of the oil prices. So, I think that a person in Africa, or, for that matter, America or anywhere else, realizes that the difference between a 120-bushel crop versus a 30- or 40-bushel crop is the money you spend on fertilizer; and the money you spend on fertilizer returns, four to one, or something like that. So, it's important.

The difficulty I have with the use of fertilizer over there is the fact that it is so expensive, that the transportation—the manufacture of it and the transportation of it is a challenge, to me, to say the least.

This is the question I have for the panel. And I'd ask each of you to comment on in briefly. One of the things we have not spent much time in this hearing talking about is the effect of political instability and war and failed states on feeding people. We all know that the army eats first—the warriors eat first. And that goes back thousands of years. That's always the way it's been. And we have a lot of troubled spots in the world, and I'd like to get your comments on the state of affairs right now with the political instability in the world and how it affects feeding people in the world. If each of you could give me a brief shot at that, I would sincerely appreciate it.

Ms. BERTINI. Yes, Senator.

When I was with the World Food Program, most of our work, in fact, was working with people who were cut off from food, and often by war or civil strife, and sometimes by natural disasters. And we saw many, many millions of people go through this strife, of not only living amidst violence, but not being able to have enough food in that process. But, what we did see was persistent efforts on the part of the international community, not only to bring peace in these areas, but to get food through even in the most difficult situations; negotiating with warring factions to stop so that food can move through, for instance; negotiating with clans to allow food de-

livery, whether it as in Somalia or Afghanistan or the Congo. So, there is a strong effort to do it.

But, yes, we also had to try to strategize to ensure that the kind of food we were sending actually would get to the people and not get diverted. Sometimes, for instance, we chose food that wouldn't be very acceptable to soldiers to eat, like bulghur wheat, for instance, instead of rice, because it was more likely to actually get in the stomachs of the women preparing it and the children eating it.

What we also found, though, was, over time, so many of these countries were able to survive and begin to rebuild—for instance, Liberia, Sierra Leone, Mozambique, Angola. These were areas where for years, there was a lot of attention, and now there's been a fair amount of success. And this is one point that shows why food aid is important, because there's not much else we could do except to try to get food aid to these people during this time, but also be able to help, as soon as the country is stable enough, with agricultural development.

Senator RISCH. Thank you.

Mr. GLICKMAN. Just a couple of things onto what Catherine said.

One is, we recommend significantly augmenting the Peace Corps' agriculture assistance personnel. I've forgotten what the numbers are, but the whole idea is, you need a holistic effort to go in and help the countries rebuild. The Peace Corps has been very, very successful. It's also been funded at rather lower levels. It used to have a great agriculture component to it, and we advocate increasing it.

And the second thing is, the land grant institutions in America, coordinating with similar institutions overseas, can have a great influence in both the economic and political structures of those countries, particularly if you develop longer-term agricultural initiatives on the research and scientific basis.

Mr. BECKMANN. The—one point is just that more than 90 percent of the hungry people in the world are in places that are at peace, so there are places like Mtimbe, Mozambique—I don't know if you heard what I told about visiting this little place. They did have war, for 16 years, and terrible atrocities in this little place I visited in December. But, since 1992, Mozambique has managed to be at peace. But, still, people are really hungry and the kids are dying. So, it's—we have—in those—it tends to be the violent places, the humanitarian crises that get in the newspaper, but there's much more suffering in faraway, distant places that are remote from the cameras. And in a lot of those places, it's really relatively easy to make interventions that can help people get out of hunger.

If I may just follow up on Secretary Glickman's point about the Peace Corps and universities. In my—what I would like to see, in terms of this new development agency, would be an agency that includes the Peace Corps, includes the universities, that's participatory, that has a great Web site, that's sort of Obamaesque, if you will, so that it involves all Americans in the effort to reduce poverty, and also, in developing countries, that it works in a participatory way with the governments and communities.

Mr. PAARLBERG. I'd just add, quickly, that if the goal is to reduce political instability and unrest, sometimes it's best to focus more of

your diplomacy on nonmilitary affairs. Certainly, giving such heavy assistance to the Pakistani military, as we've done over the years, hasn't completely stabilized that country.

In Africa, things are actually improving. There are 47 countries in sub-Saharan Africa, and Freedom House now ranks more than 20 of them as democracies. Ghana just had a very successful presidential election, complete with a runoff, peace and quiet, and a change of authorities. Tanzania has never had a civil war. Uganda has come back from its civil war. The problem in Uganda isn't political unrest or instability, it's the fact that the government doesn't invest enough in farmers and in agriculture. So, certainly you wouldn't want to place your bets on a new program in Zimbabwe or in Sudan or in the Democratic Republic of the Congo right now, but, as David says, there are many places in Africa where the kind of work that is proposed, both in the Lugar-Casey bill and in the Chicago initiative, can go forward with every chance of success.

Senator RISCH. Thank you.

Thank you, Mr.——

Senator LUGAR [presiding]. Thank you, Senator Risch.

Senator Shaheen.

Senator SHAHEEN. Thank you, Senator Lugar.

Secretary Glickman, so if you're going to run for the Senate, does that mean I get to go to the Motion Picture Association? [Laughter.]

Mr. GLICKMAN. That is a true revolving door. [Laughter.]

Senator SHAHEEN. Well, it's very nice to be able to welcome you here today. And thank you for your kind words.

You talked about, if we were going to have a food czar or someone in charge, that that person would need to have access to the President and be involved in decisionmaking. But, we heard, I think, both from Reverend Beckmann and Dr. Bertini, that one of the issues is not just the central coordination, but it's also the coordination on the ground in-country. And as someone who has dealt with those kinds of challenges in the past as Secretary of Agriculture, what could be done to better address that in-country coordination? Recognizing that as much as we all might like to have one central agency that's doing this, that's not going to happen right away. And so, how do we address that coordination function?

Mr. GLICKMAN. Well, it's interesting. You know, the U.S. has developed, ironically, the most decentralized research and education extension network probably in the history of the world. And I'm not saying we necessarily could replicate that anywhere else, but part of our great strength in agriculture productivity is that it is not top-down, it is bottom-up, in how we continue to train a generation of people involved in agricultural issues.

But, I would make a couple of points. One is, is that I think you do need somebody close to the President who is keeping his or her finger on it and can work the process in an aggressive way, because governmental the agencies don't respond very well, I can tell you, unless the White House is involved and engaged. And the same thing is true with Congress—it has to be involved and engaged.

But, I think the implementing is done, not at the czar level, whatever——

Senator SHAHEEN. Right.

Mr. GLICKMAN. [continuing]. You call it. Has to be done through a coordinated relationship between what I consider as AID and all of the partnerships and nonprofits and universities and NGOs and other agencies out there. You have a lot of agencies in government, for example, who do a tremendous amount of work in research. Much of this is applicable to growing crops and raising animals, not only at USDA, but you have the whole research establishment at the National Institutes of Health, the Department of Veterans Affairs, and the Defense Department, among other places. That's where your coordinator needs to kind of be pulling the people along to talk to each other. And unless somebody is yielding the hammer, they don't talk to each other. I've experienced that over and over again.

Senator SHAHEEN. Thank you.

Ms.—yes, Reverend Beckmann, did you want to respond?

Mr. BECKMANN. One thing that could be done in the short term is to—if the administration appoints a really strong personality as head of USAID, to—with—and signals an intent to find a way to pull USAID, MCA, PEPFAR, and maybe the Peace Corps together—but, if that person is a well-known political figure, that—just the force of that person can help to get these agencies to work together until the legislation can get accomplished.

But, in the end, it's got to be legislation. In Mozambique, MCA, PEPFAR, USAID are all in the same building. I talk to staff of the three agencies. It's clear to me that they don't know much about what each other's doing. Well, maybe at the top, they do. And then, in Mozambique, there's a Group of 19, which is all—almost all—the almost all the governments that are assisting Mozambique, and they meet to coordinate in support of Mozambique's development objectives. The two countries that are not part of the Group of 19 are China and the USA. And the USA can't be part of it because our aid programs are so earmarked that the local people—our local people can't be responsive to what the local priorities are. They—when they get there, they know they've got to do so much—in which sector they've got to work. So, it does—it's going to require legislation to fix it.

Senator SHAHEEN. Thank you.

Ms. Bertini, you pointed out that it's women who, in much of the world, particularly the developing world, produce half the world's food crops, and between 60 and 80 percent of food crops in the developing world. Can you talk a little bit about how we can encourage women in those countries to continue to become more involved in agricultural productivity and how we address—or how we can help address some of the cultural barriers to giving women more opportunity in those countries?

Ms. BERTINI. Yes, Senator, I'd be happy to.

Women do the vast majority of the work in agriculture. And, first of all, from our perspective, before I get to theirs—from our perspective, we have to acknowledge that and build our systems around it. We have to listen to them. When we decide we're going to do something in a particular country, and we've decided, in Washington, and we're going to go off and do it, and we haven't really listened to the people that may be the beneficiaries, we're never going to be as effective as we could if we listened to what

their priorities are, what their needs are. And since women aren't in any power structure anywhere, except maybe here on this committee—

[Laughter.]

Ms. BERTINI. [continuing]. They—

Senator SHAHEEN. I think I have the least seniority here—

[Laughter.]

Senator SHAHEEN. [continuing]. On the committee. So.

Ms. BERTINI. [continuing]. Their job isn't to come to the meetings, they're not the mayor, they're not the people that we're going to get, even if we go and make a kind of pro forma discussion with the local community. So, we have to, as development experts, find ways to listen to, and reach, those women. And we did this at WFP, so I could share with you, separately, some of the ways that that could be done. And the Gates Foundation is trying to work on this, as well. But, we have to do it, as policymakers.

Then, from the woman's perspective—first of all, we have to be sure she's educated. She has to at least go to school. Because educated farmers, according to International Food Policy Research Institute (IFPRI), are much more productive than farmers that are not educated. And there are more women who are uneducated than there are men. But yet, women are mostly farmers. So, we have to do better on ensuring that girls have education.

Then, we have to think about the kind of advice they get along the way. For instance, there's a lot of work that needs to be done to support and improve extension in Africa and South Asia, but IFPRI finds that women farmers are most likely to listen to other women farmers, but currently most of the extension workers are men. Something like 5 percent of the extension workers are women, and 80 of the farmers are women. What's wrong with this picture? We've got to do more to ensure that the methods of communicating with women in the fields is actually an effective method of operation.

Senator SHAHEEN. Thank you.

Yes, Dr.—

Mr. PAARLBERG. Some of the things you can do to help women are not immediately obviously gender-specific, but if you built more wells and roads, women wouldn't have to spend hours every day carrying punishing loads over long distances, walking to fetch wood and water. That would free them up to be more productive in the fields and to take better care of their families.

Senator SHAHEEN. Thank you all. My time is up.

Senator LUGAR. Thank you very much, Senator Shaheen.

Let me just conclude, if I may, with a couple of questions to the panel, and then we'll proceed with our next panel.

Right now, a great deal of discussion of our coming plans in Afghanistan and Pakistan surround agriculture. Frequently, people point out that whether it's from trying to win the support of people in the hustings of those countries or, in fact, trying to provide some degree of sustainable agriculture that there will have to be some substitution for the poppy crops. And what, indeed, could be substituted? And who, indeed, would bring the expertise, the instruction, the seeds, and what have you, to farmers that might, in fact, make a living there? In Pakistan, it's a more general situation in

which, because of the cosponsorship with my former chairman, Senator Biden, and now with my current chairman, Senator Kerry, the so-called Kerry-Lugar bill, providing for money for food, education, and health in Pakistan, receives far more headlines daily in Pakistan than anything we are doing with regard to our military situation, largely because the people of Pakistan are interested in food and development. Many are among the dying groups that we're talking about today.

It's sort of an interesting divide in which vital national interests in Pakistan and Afghanistan with its focus on counterinsurgency and the stability of fragile governments are juxtaposed with a population that could be a force for stabilization, but that is interested in development and economic growth.

Now, I mention this because we've discussed, today, why would anyone pay attention to the food coordinator quite apart from the agencies that manage food security programs. Knowing that resources have declined at USAID and I'd just simply ask for your thoughts, I think Reverend Beckmann has addressed this, in a way, in terms of popular support in the country for these programs. Your organization, Bread for the World, brings a great deal of popular support for feeding people, for the humanitarian cause that we've talked about, basically. But, you've also talked today a little bit about how Members of Congress might be influenced, why Senators and Members of the House might pay more attention to this. Could you address this a little bit more, just from your organizational outlook, as one who tries to change public opinion?

Mr. BECKMANN. Well, I think, in fact, public support for agricultural development, for development generally, is really strong. Anytime we do focus groups on how Americans think about hunger and poverty, somebody in the focus group says, "You know, you can teach a man to"—and they say that, "teach a man to fish" as if it had never been said before, and everybody in the focus group said, "Yeah, we've got to teach the man to fish." So, Americans get that it's not—you know, that, as important as giving people—hungry people food is, that that is—that's not the optimal way to help people get on their own feet so they can feed their own families.

All the polls show that there is increased strong support for efforts to reduce hunger and poverty, especially if they are effective, if they—you know, people are concerned about wasting foreign aid, so we've got to show them that, in fact, we're working to make it more effective. It is effective, it can be more effective. And also, Americans love programs that help people get on their own feet, so education for girls, helping farmers be more productive. The public support is actually quite strong. And outside the Beltway, the public support is strongest for reducing hunger, poverty, and disease, compared to, say, the national security motives.

It's also true that reducing hunger and poverty in the world is good for our national security. It's also good for our economy, because people around—the developing countries, especially poor people in developing countries, there's a lot of dynamism there. And with just a little help for them to get through this crisis, the recession in particular, they can contribute to global economic recovery.

Senator LUGAR. Let me just ask, Secretary Glickman or Ms. Bertini, with the Chicago report, which is a remarkable report, how

are you proceeding to gain more recognition of this report? Is anybody in the administration interested in the report, or other Members of Congress, outside our committee?

Mr. GLICKMAN. Well, I would say that we started with you. And—

[Laughter.]

Mr. GLICKMAN. And because you and others have been leaders in the effort—but, we've been making the rounds on Capitol Hill, and the White House and executive branch, as well, and we're going over to the State Department today, and we're using whatever media connections we have.

Our work is not so much to draw attention to the report—although we think the report is, as I said, a good roadmap and strategic plan over the next 5 years to get things done, but to highlight the interest and enhance the popular support for these issues so that you all can do what you need to do to get the authorization and appropriations' legislative processes moving. So, our goal is to be helpful to you all, frankly.

Senator LUGAR. Well, we appreciate that.

Finally, Dr. Paarlberg, let me just ask about your remarkable book, "Starved for Science," that brings to the fore this question we've discussed a little bit with genetically modified seed and fertilizer today. It seems to me that this is such an important issue because of the emotions that many people attaché to the issue. As I mentioned, these folks I visited with in Brussels, for them, it's almost a theological view. You know, we can talk about starving people, but—

Mr. BECKMANN. Senator, I take offense—

[Laughter.]

Senator LUGAR. I apologize. But, a certain type of theology, perhaps. [Laughter.]

You were talking about starving people, but this is secondary to their thought that somehow or other something is being poisoned by these technologies. And I keep running up against that, in visiting with European delegations, even foreign ministers, who really haven't quite caught the gleam yet. This is a huge foreign policy dilemma, in addition to being a scientific one. But, how have you gone about your research on this subject, the ideas that you've presented so well in your book?

Mr. PAARLBERG. Well, I've always been surprised at how few critics of this technology are actually aware farmers that plant genetically modified varieties of corn or soybeans or cotton in the United States, as a consequence, can control weeds and insects with fewer chemical sprays. And I'm always surprised to learn that the critics of this technology in Europe aren't aware that their own scientific academies have repeatedly stated, in writing, that there's no evidence of any new risk to human health or the environment from any of these genetically engineered seeds that are currently on the market.

But, they want to see evidence of benefits for poor farmers in developing countries. And I think you're going to see that more clearly when the next generation of genetically engineered crops becomes commercially available. In the next several years, farmers in the United States and Brazil and Argentina and Canada will be

able to start planting varieties of corn that's better able to tolerate drought. Now, that'll be good, but the farmers that really need that drought-tolerance trait are the farmers in Africa, who are repeatedly driven back into poverty when their crops fail because the rains have failed.

So, my hope is that the availability of this new generation of technologies, with more compelling benefits to offer directly to poor farmers in Africa, will break through some of the fog that's gotten in the way of political acceptance in Europe, so far.

Senator LUGAR. Well, I've been especially moved by your book and the things that you've had to say, just from my own experience, that I've touched upon briefly. We have 604 acres inside the city of limits of Indianapolis. And this is a situation, because of that location, in which all the wildlife of Decatur Township has congregated on our farm. [Laughter.]

Now, we've been using genetically modified seed and fertilizer from the time that my dad sort of taught me what this is all about, and his yields then were 40 bushels to the acre; we're now getting, routinely, 160. This is during my lifetime. I've seen it, and this is why I feel so strongly about it as we talk about the need for productive agriculture. And it didn't happen by chance. The Purdue University people, who were very, very helpful, in terms of all the extension work and that's important, likewise.

So, if I take on—I hate to use another religious thought—an evangelistic view of this—

[Laughter.]

Senator LUGAR. [continuing]. Why, so be it, because I've seen it, lived it, and this is why I've invited people from other countries to come to our farm, as sometimes they do, to celebrate Earth Day or other significant events of that sort.

But, I thank all four of you for really remarkable testimony. You've been tremendously helpful to our own understanding and, I hope, for all who have listened to this hearing. So, we thank you.

And we welcome, now, a second panel for our discussion today, which will be Mr. Edwin Price, associate vice chancellor and director of the Norman Borlaug Institute for International Agriculture, at College Station, Texas, and Mr. Gebisa Ejeta, professor of agronomy at Purdue University, West Lafayette, Indiana.

[Pause.]

Senator LUGAR. Gentlemen, we welcome you to the hearing and appreciate, very much, your participation. I'll ask you to testify in the order you were introduced; first of all, Mr. Price, and then Dr. Ejeta.

And I would ask, as Chairman Kerry suggested at the beginning, that, if possible, you summarize your remarks in 5 minutes, more or less, and your full statements will be made a part of the record. You need not ask for permission; it will occur.

I call upon you now, Mr. Price, for your testimony.

**STATEMENT OF EDWIN PRICE, ASSOCIATE VICE CHANCELLOR
AND DIRECTOR, THE NORMAN BORLAUG INSTITUTE FOR
INTERNATIONAL AGRICULTURE, COLLEGE STATION, TX**

Mr. PRICE. Thank you, Mr. Chairman.

It's a wonderful opportunity to meet with you to talk about revitalizing U.S. effort to improve food and agriculture production worldwide. You're a colleague of Dr. Borlaug; tomorrow, he turns 95 years old—

Senator LUGAR. Right

Mr. PRICE. [continuing]. On March 25. By his standards, I am at mid-career now, and I look forward to sharing with you what I've learned so far.

Dr. Borlaug, incidentally, has prepared a statement for this hearing, and I hope that that might be used, as well; if necessary, appended to mine but—

Senator LUGAR. It will be—

Mr. PRICE. [continuing]. In your judgment.

Senator LUGAR. [continuing]. Made a part of the record. And let us just say, the committee wishes Dr. Borlaug a very happy birthday. We have asked for his testimony many times in the past, and he has given us remarkable testimony. And his whole life is remarkable. But, thank you so much for mentioning the birthday, and for the testimony.

Mr. PRICE. Great, thank you.

In my written testimony, I will cover—I cover the chronology and structure of U.S. universities' assistance in Iraq, in agriculture, and I will—and I have some observations from that. Then I also cover some common lessons from Iraq and Afghanistan. And then we talk about, more broadly, agricultural development, worldwide, and remark on one of the topics that's been raised today, the relationship between conflict and development, with some observations from that, as well. I won't be able to cover all of that in this time, but I refer that testimony to you.

Since December 2003, university colleagues and I have been involved with the U.S. Agency for International Development, the U.S. Department of Agriculture, and the U.S. Department of Defense to rebuild Iraqi agriculture. There was very early advancement, beginning in 2004. We were able to work with over 250 farms across 11 provinces in Iraq and put out cropping pattern trials and new technologies. Unfortunately, by 2005 insecurity made it no longer possible for us to visit those farms, and, in many cases, the scientists with which we—which whom we were working at the University of Mosul and the University of Baghdad had to leave the country or were not able to visit the fields.

Nevertheless, over that period of time, in 3 years, working with USAID, we were able to identify a large number of improved practices, including improved wheat varieties, improved potato varieties, mixtures of crops, vetch and wheat, vetch and barley for feed production, and other aspects of agriculture. But, we were limited by the lack of irrigation. There was no energy for the pumps, there was no water in the canals, but, even worse, there was no capacity to get technology to farmers because of the lack of extension services active and well informed and trained in Iraq.

Working with USDA, then, five U.S. universities, working with six Iraqi universities, began to train Iraqi extension workers outside the country. We trained them in Lebanon, in Syria, and in Egypt and Jordan. And those extension workers went back into Iraq with funding for developing projects, and were quite successful

in many areas, especially in Kurdistan. But still, the U.S. commanders, military commanders, were not seeing progress on the ground; it was still problematic, very problematic, in much of Iraq.

So, in February 2007, a team of seven university people joined with the task force—the Department of Defense Task Force for Business Stabilization Operations, to assess the—from the vantage point of the forward operating bases around Iraq, what was the situation in agriculture. I happened to arrive at Warhorse—FOB Warhorse in Diyala, along with the surge of the troops, the first surged troops, in 2007, and, unfortunately, departed on the same helicopters that took away the first heroes of that action.

We were able to see, from the ground, though, that there were several—our teams spread out to many forward operating bases all over Iraq, and the kinds of things that we observed were the following:

We worked closely with the Provincial Reconstruction Teams and with the civil affairs units of the military. We found that—they themselves stated there were three things that limited their effectiveness. One was that they didn't have the breadth and depth of science that is required to really find the solutions to the problems that they were facing with farmers. They could often see what the problem was, they could, maybe, half solve it or two-thirds solve it, but always there was evidence of not being able to quite get to the result.

The third—the second problem was that the—they didn't have much contact with the farmers. They were very lucky, even today in the PRTs, to be able to spend 2 or 3 hours a week in contact with farmers, because of—at least until recently, the security situation, the ability to have protection as one visits the fields.

Then, the third thing that was a problem was that there were no Iraqi plans for agricultural development, from the—from the Baghdad level to the provincial level to the community level. There were simply no plans.

The generals in Iraq, the military generals, asked for agricultural specialists to serve directly under the commands so that they could have direct access to information technology. So, June 2008, working with the Task Force for Business Stabilization Operations, we fielded 14 broad agriculturalists working directly under the commands in the southern part—or central to southern part of Iraq. We spent about 65 percent of our days in the field. We formed 4H Clubs, introduced drip irrigation, introduced curriculum at universities, and livestock management. This was a very unique relationship, and it was a very successful relationship.

I wish to quickly just indicate some of the things that we learned.

We need to—much more study on the relationship between development and conflict. We need to understand, How can communities prevent conflict, or how can communities survive conflict, and what are the best paths for emerging from conflict? We found that technological information was severely limiting, that there were poor genetics in animals and plants. The—also, because of the years of governmental control, that there was very little knowledge on farms of how to manage their inputs. Also, our—we found that there were—one of the most debilitating aspects was the failure of

our own agencies to work together to solve problems. Earlier, it was alluded to the fact that there was lack of cooperation. Particularly in Iraq and Afghanistan, it emerges even to the point of, sometimes, hostility and competition between the agencies.

I wish to mention two key problems, then, that I find common between Iraq and Afghanistan, and conclude there. One of them is that—I've not heard it mentioned today, but the frustration of youth in the rural agricultural sector is one of the driving features of terror and conflict in these countries. We find it in Africa, in Latin America, in Afghanistan and Iraq. We need more. The international development agencies, the CJIR, even university extension programs fail to focus on youth. We've worked with youth in Iraq and Afghanistan, and we know that much, much more can be done there.

The second major issue that we face is lack of secure access to land rights. Farmers in Afghanistan and Iraq are—farm their land under a succession of laws, rules, and regulations under which they don't know, from one year to the next, if they have access to land. Under these conditions, it's not possible for farmers to invest in irrigation or invest, more importantly, in drainage, such that salinity has become a very severe problem.

There's a wide range of other issues I would enjoy talking with you about, but we really—strongly urge that, in the future effort, that we have programs that look at youth, programs that are good in developing technology extension to the farms in the region, and that we find ways to work effectively together among our agencies.

Thank you.

[The prepared statement of Mr. Price follows:]

PREPARED STATEMENT OF EDWIN C. PRICE, ASSOCIATE VICE CHANCELLOR AND DIRECTOR, NORMAN BORLAUG INSTITUTE FOR INTERNATIONAL AGRICULTURE, COLLEGE STATION, TX

Mr. Chairman, it is an honor to appear before your committee. Thank you for the opportunity to comment on the need to revitalize the U.S. effort to improve agriculture and food production worldwide. Dr. Borlaug celebrates his 95th birthday tomorrow, March 25. By his standard I am at mid-career, and look forward to sharing what I have learned so far. Dr. Borlaug incidentally has submitted a statement to this committee and I hope that it can be incorporated into the record of this hearing.

I will first describe the chronology and structure of U.S. universities engagement in Iraq, then present some key findings about agricultural development in Iraq. Then I will discuss some common problems in Afghanistan, then last I turn to a broader discussion of development in conflict and post-conflict regimes. I close with a few general observations.

Since December 2003, university colleagues and I have been engaged with the U.S. Agency for International Development, the U.S. Department of Agriculture, and the U.S. Department of Defense, in helping Iraqis to rebuild their agricultural sector. There was early advancement in 2004 with new crop varieties and management practices demonstrated in 11 provinces across Iraq, involving over 250 farmers. Then in 2005 security deteriorated sharply and we lost ground. Mosul and Baghdad University scientists with whom we cooperated could not go to their farms, and many of our test plots on farmer's fields were abandoned. Key Iraqi scientists were threatened and left the country. Nevertheless we eked out data from rainfed and irrigated farmers for 3 years.

In controlled trials in secure areas we were able to show excellent results for improved practices with salt tolerant wheat, improved potato varieties, tomatoes under plastic, improved wheat varieties, barley/vetch mixtures for animal feed, and rice-wheat crop rotations. But we had little impact on farmers because of lack of water in the irrigation systems, and lack of energy for pumps, and most of all—our inability to get improved technology to farmers because of the security situation and lack of trained extension agents.

Working with USDA, six Iraqi universities, five U.S. universities, and the Iraqi Ministry of Agriculture we began training Iraqi extension workers outside Iraq. We trained them in Lebanon, Syria, Egypt, and Jordan, and they have gone back into Iraq with small amounts of project funds. These have been particularly successful in Kurdistan. But to our U.S. military commanders on the ground, little progress was visible. In February 2007, seven colleagues and I accompanied the members of the DOD Task Force for Business and Stability Operations (TFBSO) to Iraq to see the situation from the vantage point of the forward operating bases. I arrived in Forward Operating Base Warhorse in Diyala with the first troops of the surge, and I departed on the helicopters with three of the early heroes of that action. I honor them today.

That February we visited FOBs and Provincial Reconstruction Teams all over Iraq. We were deeply impressed by the effort, dedication, and skills of the PRT civilians and the military civil affairs units operating at the FOBs. They were having an impact but they also told of several problems that limited their effectiveness. (1) There was never a sufficient breadth and depth of agricultural science capacity to fully respond to the agricultural problems and opportunities in any locality. (2) Contact was so limited by development workers with Iraqi farmers, leaders and agribusinesses that little could be accomplished in the short and rare visits. (3) Finally, there were no Iraqi plans for agricultural development, at any level—from Baghdad, to the province, to the communities. Assistance projects though valiant, did not build on one another, lacked technical precision and were often incomplete.

Generals in the Central, North and Western Iraq regions requested agricultural specialists to serve directly under their commands. In June 2008 a multidisciplinary team of 14 university agriculturalists were deployed by the TFBSO to the command of General Oates in MND-C, and in November 2008 teams were deployed to MNF-West and MND-North. Our Central team, called Team Borlaug, worked in 8 provinces over 6 months, operating out of about a dozen bases. We spent about 65 percent of our days in the field, and logged over 7,000 hours of contact time with Iraqis. We formed 4-H clubs. We prepared agricultural development plans and recommendations at the local and provincial levels that Iraqis claim as their own. We put in drip irrigation demonstrations, improved curriculum at universities, helped develop the Central Euphrates Central Market, and trained hundreds of Iraqis in poultry production, livestock management, crop disease management, tillage, machinery and other areas.

This effort of agriculturalists working with soldiers in the field on a daily basis has been unique in Iraq and highly rewarding to the participants. It is also complementary with the work of the USAID Inma project, and the USDA agricultural extension projects. Our same universities have staff on all these projects, and we stay in communication. However what is more important are our growing Iraqi partnerships. The most important product of our work is the empowerment that it has given to Iraqis, who, in their own words, were hiding out before we came and showed interest in their farms, their animals, and their homes and families. The PRTs also gained from the broader scientific expertise brought by the teams, helping to validate and improve their plans.

Here are some of our observations from the field:

(1) We need to study and better understand the role of development before, during, and after conflict. Development workers can and should be engaged with communities throughout these times, and their efforts will be fruitful. But the process of development in these circumstances are not well understood and requires the effort of a range of agriculturalists, engineers, psychologists, political scientists, economists, and others.

(2) Technological information and infrastructure, especially plant and animal genetics, and disease diagnostics are severely lacking. Plant and animal genetics are very badly degraded and almost nothing yields to its reasonable potential with the resources available.

(3) Years of government control of on-farm agricultural affairs have left farmers with little knowledge of the management alternatives that would improve their production.

(4) For the past 6 years, our efforts have had short-time horizons. We could have done much more to help reestablish the animal feed industry, producing vegetable oil for human consumption and protein meals for animals, if we had adopted longer planning horizons. The agricultural value chains are broken and we are not taking the time to help repair all the critical links, and therefore isolated efforts fail.

(5) Our soldiers including civil affairs units are the first responders to conflict and they are playing highly useful roles in moving communities out of conflict. They need better training and support for the early roles that they play in assisting communities to survive and recover from conflict.

(6) One of the most debilitating features of U.S. development assistance in situations of conflict is the inability of our agencies to work cooperatively. In 2006 the then-Minister of Agriculture of Iraq stated with great concern that her greatest challenge was that U.S. agencies seeking to assist her ministry spoke with many conflicting voices.

Many of these problems that I mention are also common in other fragile nations, but I particularly want to draw attention to two common problems, or areas of opportunity in the agriculture of both Iraq and Afghanistan: Land tenure and youth programs.

Secure access to land is the underlying problem that hinders all progress in agriculture in Iraq and Afghanistan. In Iraq land access is governed by an overlay of rights from the Ottoman Empire, the subsequent kingdom, the revolutionary government of Karim Kasem, and the many interventions by Saddam Hussein. Iraqi farmland is becoming saline because farmers will not make long-term investments to combat salinity without securing long-term rights to land use. It doesn't pay them to build the land, when they cannot be sure of farming it themselves later.

In Afghanistan our university team is working with nomadic Kuchi herders, who provide about two-thirds of the lamb and goat meat in Afghan markets. Traditionally they grazed their animals under long-term agreements with farmers, but over the past 30 years these patterns of grazing rights were disrupted by warfare, land abandonment, and assertions of land rights by new parties. Using advanced systems of monitoring range quality we are able to help the Kuchi herders improve production while protecting the range.

But the underlying problem is weak institutions for land administration in Afghanistan and Iraq. Massive effort needs to be undertaken to adjudicate, document, and administer land use in these nations. Agricultural progress will be continually hampered until this problem is solved.

The second common issue is education, training, and nurturing of leadership and enterprise among Iraqi and Afghan youth. Burned indelibly in my mind is the image of a few young Afghan men trying to get an education at an agricultural high school in Jalabad in December 2002, with no books, no paper, no desks, no pencils, little food and warmth, but with a few bedraggled but smart and dedicated teachers. Also the images of village youth in Wasit, Iraq, and the Bedouin Camps in Najaf, their looks of desperation while their families struggled for food, tells me clearly where terrorists come from. It so happens that in both locations we met with their handiwork.

Youth development thorough programs such as 4-H and FFA receive little or no attention by international development programs, national plans and programs, even U.S. university extension programs in developing countries or by the system of international agricultural research centers, the CGIAR. It is urgent that we work constructively with youth in developing countries to bring them greater hope for their future.

Our programs to help restore field crop production in Iraq have been inconsistent. We started out well with USAID programs in wheat and barley, but did not stay with the task of field crop improvement. In Afghanistan the situation is worse. Much of the land for field crop production has been taken over by opium poppy production. Our approach has been to replace opium with high-valued crops, which seems to make common sense. However in recent years, northern Burma opium farmers switched to corn production when they found high-yielding varieties and improved production practices. Opium farmers are often little more than laborers on their own farms. Their families cannot eat opium and they cannot feed it to their animals. They cannot store it and sell it when and as they wish to a choice of buyers. Northern Burma farmers have switched from opium when they found steady sufficient incomes from field crop production. In Afghanistan as well, a more robust program of farming alternatives need to be supported including not only high-valued crops, but also need crops of cereal grains and oilseeds.

Finally I wish to turn more broadly to the issue of development and conflict. In his book "The Bottom Billion: Why the Poorest Countries are Failing and What Can Be Done About It," Paul Collier observes that "73 percent of people in societies of the bottom billion have recently been through a civil war or are still in one." Poverty, hunger, and conflict are so closely interwoven that development effort among the food insecure must inevitably be undertaken among the politically insecure. Regrettably it is clear that civilian aid workers must increasingly face the dangers of conflict in developing countries.

Development efforts in fragile nations in the Middle East, Asia, Latin America, and Africa are challenged by many questions. What is the economic cost of insecurity? What science, governance, and economic policies are needed to bring about development in the presence of insecurity? When does conflict cause poverty; and

when does poverty cause conflict? How have fragile nations avoided conflict? What systems of governance or resources and technologies sustain communities during conflict? Can the process of recovery begin before or during destruction? Must agricultural workers join soldiers in the battlespace? Can development be achieved under conditions of kinetic conflict?

With the support of USAID, colleagues at Texas A&M and Michigan State Universities have spent 8 years in the post-conflict environment of Rwanda and made enormous progress working with the widows and orphans of genocide. Women's cooperatives now market premium coffee brands from trees that they had started uprooting to throw away when we arrived. The National University of Rwanda at Butare has been our partner throughout the process. We trained their faculty, improved curriculum, and facilitated their research and extension to African coffee farmers. One of the students trained for the Ph.D. in the U.S., is now the president of the Rwanda coffee cooperatives. The transformation of the coffee-growing communities is astounding, and it came through the cooperation of U.S. and Rwandan Universities.

But also during this period I worked with the West Africa Rice Development Association at its three recent homes in Ivory Coast, Mali, and Benin. In the Ivory Coast a USAID worker and I had the experience of becoming isolated in remote areas during an attempted coup. Then, and during the following 2 years I had several opportunities to meet the Force Nouvelle leaders and their men. The leaders were charismatic, and their men were the youth of West Africa where they had lost hope in their future. I feel deeply sympathetic for those forces and their communities, and wish that we had in place Ivory Coast, Mali, Benin, Senegal, Nigeria, and the other nations of Africa the kinds of university program that were possible in Rwanda.

In closing, I summarize:

(1) We need to study and better understand the role of development before, during, and after conflict. Development workers can and should be engaged with communities throughout these times, and their efforts will be fruitful.

(2) Technological information and infrastructure, especially plant and animal genetics and diagnostics are severely lacking, but in many regions secure access to land is the underlying problem that hinders progress in agriculture.

(3) Finally, in Africa as in poor communities of South and Central Asia, Middle East, Latin America, and other world regions, it is the youth without a future who are among our most regrettable losses and the greatest threat to peace.

Colleagues and I at the land grant universities of the U.S. are ready and eager to engage with the Federal Government in new ways to combat hunger, poverty, and conflict throughout the world. Thanks for inviting me to speak with your committee today.

Thank you Mr. Chairman.

ATTACHMENT

Notes of some Iraq accomplishments, recognized at the end of the deployment of Team Borlaug of the DOD/TFBFO in MND-C, are appended below.

All accomplishments by Team Borlaug were built upon the progress and good will that has been established by our military men and women who have been on the ground in Iraq for the last 5 years. While we were here, we could have done nothing without their daily support, guidance, and protection.

Here are some of the things they helped us to accomplish:

Iraqi voices. We conducted eight provincial agricultural assessments reflecting the collective voice of agriculture in the provinces—with participation from sheikhs, Bedouin shepherds, governors, and subsistence farmers. Many Iraqis considered our views and recommendations as their own, and they felt newly empowered to assert leadership for their own affairs.

Strengthened partners. We learned from and contributed to the ongoing missions of civil affairs units of the military, PRTs, and the Iraqi Government for recovery and development of the agriculture sector. Our cooperation helped to strengthen and confirm the missions of our valued partners to assisting Iraqi communities.

Problem solutions. We gave farmers immediate advice on problems with animal diseases, insect pests, feed rations, tillage practices, crop varieties, irrigation and drainage practices, and many other problems and improvements. We also gave ideas to agribusinesses and policymakers on current problems and opportunities for innovation in the Iraqi agricultural sector.

Command response. We prepared special analyses for the command on poultry production, seed storage, agricultural input subsidies, improved wheat planting, rebuilding the oilseed value chain, tourism development, and other special reports.

Project implementation. We helped or led implementation of projects on drip irrigation, management of the Central Euphrates Farmers Market, improvement of fish brood stock, formation of agricultural youth clubs, and improvement of university teaching materials.

Strategic plans. We provided plans for implementation within the MND-C command for use by regional and provincial leaders. Each assessment is a communication tool and framework for discussion that includes detailed observations, promising strategies, recommendations and priorities for Iraq agricultural development among complementary U.S. agencies.

Communication and cooperation. We fostered communication and cooperation among Iraqi agencies, including the governors, provincial councils, provincial DGs, farmers' associations and local farmers and the PRTs and CA teams. This helped improve relationships between Iraqis and Americans at provincial, community, family and personal levels.

Vision, trust, and hope. We helped the Government of Iraq, provincial councils, community leaders, PRTs and ePRTs, and U.S. agencies articulate their vision for the future of Iraq. We encouraged rural Iraqis to place trust and hope in their leaders, in a new agricultural economy, and in a new way of life through education, training, and entrepreneurship.

While saying all this, we see how very far rural Iraqi communities have yet to go before they can fully realize the benefits of freedom. The job has just begun.

Senator LUGAR. Well, thank you very much, Mr. Price, for your testimony; likewise, for your own participation in Iraq. This is really the most graphic testimony I've heard about developments going on in Iraq. And we've touched upon that a little bit, earlier today, talking about Afghanistan and Pakistan. But, Iraq and that experience is certainly a very important part of our thinking.

Dr. Ejeta, would you please proceed.

**STATEMENT OF GEBISA EJETA, PROFESSOR OF AGRONOMY,
PURDUE UNIVERSITY, WEST LAFAYETTE, IN**

Dr. EJETA. Senator Lugar, members of the committee, I'm very grateful for the opportunity to appear before you today and submit this testimony.

I'm professor of plant genetics and breeding at Purdue University; however, my true credentials to speak on the topic of global hunger arise from the life I lived as a child in Ethiopia and the work that I have done in international agricultural development.

Like most Africans, I was born of illiterate parents with little means, and raised in a small village with no schools in west-central Ethiopia. Nothing in my childhood would have suggested that I would be here today; and yet, by the grace of God, I am invited to sit here today before this distinguished committee in this hallowed institution of this great nation to provide this testimony as a notable scientist with some repute. This is a very long journey from that village in central Ethiopia that I'm sorry to report also has not changed much since my childhood.

In the written record, I speak about how other visionary leaders who once sat in similar seats as members of this committee, some 60 years ago, envisioned the building of institutions of higher learning in developing countries as a key foundation for global development and extended President Truman's Marshall Plan to developing countries, and gave poor kids, like myself, a fighting chance.

In Ethiopia, I attended first an agricultural vocational school and then a college of agriculture, both of which were established by Oklahoma State University under the old Point Four Program. And, as luck will have it, I attended graduate school at Purdue

University, again with support from the U.S. Agency for International Development.

My professional career started 30 years ago exactly, this month, when, with a fresh Ph.D. from Purdue University, I joined one of the international research centers headquartered in India. I was stationed in the Sudan, a country many consider one of the more difficult places in the world to live and work. My time there was very productive and memorable, however. In my 5 years there, I developed the first commercial sorghum hybrid in Africa; that high-yielding, drought-tolerant sorghum hybrid is today grown on 1 million acres in Sudan annually.

For the last 30 years, 5 years in Sudan and 25 years at Purdue University, I have been conducting international development work in crop improvement, and, through this process, again, with support mainly from the Federal Government of the United States, I have trained a large number of graduate students, both U.S. citizens and Africans, and I have also conducted more crop improvement research that have benefited the poor in Africa.

As a beneficiary of the technical assistance program, in turn, I am devoting my life to improving the well-being of poor people, especially those that I know best, rural Africans.

Mr. Chairman, as you gather from the presentation of the distinguished panel that just testified and the excellent document prepared by the Chicago Council, hunger and poverty have been relentless. However, I believe eradicating hunger, as you had indicated, yourself, is within our reach.

In my opinion, to improve the lot of the rural poor, it is essential that the following three nuggets are addressed:

One, it's very essential that science is given a chance, science-based improvement in technology is affirmed.

Second, for appropriate science-based changes to be generated and delivered, institutional and human capacities must be strengthened. I'm concerned that, of all the problems that I see, the decline in resource commitment to capacity-building may derail all the gains that we have had in the past. Investment in public institutions that build scientific capacity in research, education, and technology transfer require greater reinforcement today, more than ever. Private entrepreneurship and institutions that create incentives for commercialization, support markets, finances, risk management, and infrastructure that facilitate commerce need to be greatly encouraged.

Third, supportive public policies are a must. Empowerment of local institutions and local cadres is an indispensable ingredient to making sustainable change. Without the needed incentive, national policies as a catalyst, and the sustained resource commitment that should follow, the likelihood of permanent positive change is very small. I'm convinced that a more effective partnership can be designed between the U.S. Government, on one hand, and our institutions of higher learning and research, on the other, in dispensing these interventions.

Let me hasten to add, Mr. Chairman, that I'm encouraged by the confluence of ideas and vision in several of the initiatives that are currently under discussion at the national level.

First, the excellent document prepared by the Chicago Council for Global Affairs articulates the overall need so clearly and identifies key institutions worthy of support.

Second, the back-to-the-basics approach articulated by the Global Food Security Act that you and Senator Casey have sponsored is very refreshing to me, and is complemented well by the Chicago document.

Third, the Partnership to Cut Hunger and Poverty continues to promote research-based advocacy for agricultural development as described in a recent Roadmap draft document prepared by an alliance of NGOs.

Fourth, the CGIAR Science Council's new Mobilizing Science and Linkage Initiative that I'm helping lead is an effort to better link scientists, international agricultural research centers with scientists in the developed and developing countries to create better synergy and complementation.

I am further encouraged by the emergence of new organizations. I recently spent a year in Nairobi, Kenya, assisting the Rockefeller and Gates Foundation design a new joint initiative called the Alliance for Green Revolution in Africa. It is my perception, and that of many Africans, that the Bill & Melinda Gates Foundation is viewed as the game-changer or the difference-maker, primarily because their involvement is coming at a time when external investments from public governments of the developed world in agricultural education, research, and development have fallen. Even with the great generosity of the Rockefeller, Gates, and Buffett families, however, the need around the world is so large that it will only be solved by marshaling internal and external public resources, as well.

This is also an opportune time, from the point of view of developing countries. For the first time in my life and my career, I'm beginning to see a more focused sense of purpose and commitment among African leaders, particularly with respect to visionary investments in higher education, agriculture, development institutions and infrastructure. However, the current propitious momentum will be lost without effective global leadership for international development. That's why, Senator Lugar, that I applaud the vision and leadership of the Senate Committee on Foreign Relations considering your act in today's discussion around the Chicago Initiative on the Global Agricultural Development. Your work is crucially important to reinvigorating the position of the U.S. Government in support of science-based development in developing countries.

Let me conclude my comments with these light words about the need and power of policy intervention. I liken agricultural development programs with diet and weight-loss programs. Some weight-loss programs are gimmicks, some are real. Most have something in them that works. Some produce results right away, while others need time to be effective. Regardless of which weight-loss program is chosen, however, the only way sustainable life-transforming change can be achieved is if the person commits to them and uses the newly learned discipline to stay the course and continue to eat right, exercise, and clear the mind.

The same principle is true of introducing new agricultural technologies to developing countries. We can produce some positive re-

sults with most R&D programs, where infusion of money and effort demonstrate the value of our interventions. But, only if local people, local institutions, and local governments are encouraged, engaged, and empowered, and remain vigilant until the change is ingrained can that to which we all aspire be achieved.

Thank you for the opportunity to share these thoughts.
[The prepared statement of Mr. Ejeta follows:]

PREPARED STATEMENT OF GEBISA EJETA, DISTINGUISHED PROFESSOR
OF AGRONOMY, PURDUE UNIVERSITY, WEST LAFAYETTE, IN

Mr. Chairman and members of the committee, I would like to extend my appreciation for the opportunity to appear before you today to submit this testimony on this U.S. Senate hearing of "Alleviating Global Hunger: Challenges and Opportunities for U.S. Leadership."

With your permission, Mr. Chairman, let me begin with a personal introduction of myself. I am Professor of Plant Genetics and Breeding at Purdue University, but my true credentials to speak on the topic of global hunger arise from the life I lived as a child and the work I have done in the world of international development.

I was born of illiterate parents with little means and raised in a small village with no schools in west-central Ethiopia. An only child, I was nurtured with lots of love, but on a diet less than adequate even for body maintenance, let alone for growth and intellectual development. All nutritional and developmental indicators might have suggested that I was destined not for my current physical stature or the modest professional success I've attained, but for failure and perhaps for disaster. And yet by the Grace of God, in what feels like a destiny nothing less than providential, I am invited to sit here today before this distinguished committee, in this hallowed institution of this great Nation, to provide this testimony as a notable scientist with some distinction and repute. This is a very long journey from that village in west-central Ethiopia that I am sorry to report has not changed much since the days of my childhood.

I was rescued by a godsend from the United States of America—the work of other visionary leaders who once sat in similar seats, as members of this committee and envisioned the building of institutions of higher learning in developing countries as a key foundation for global development. Upon completing my elementary education in a township 20 kilometers away from my village, I was selected to attend Jimma Agricultural & Technical School which was established by Oklahoma State University under the old Point Four Program. I then entered Alemaya College of Agriculture, another Oklahoma State University and Point Four establishment in Ethiopia. I graduated in 1973 with a degree in Plant Science, with Great Distinction and at the top of my class. After graduation, I was retained by Alemaya College to serve as a junior faculty member and was recommended to seek graduate education overseas. A chance meeting in Ethiopia with my mentor, the late Prof. John Axtell, led to my recruitment to Purdue University in 1974, where I joined yet another U.S. Government funded project on nutritional quality improvement of sorghum, and completed a Ph.D. program in 1978.

My professional career began exactly 30 years ago this month, when with a newly minted Ph.D. from Purdue University, I joined the International Crop Research Institute for the Semi Arid Tropics (ICRISAT) in India. I was stationed in the Sudan, a country many consider one of the more difficult places in the world to live and work. It was an enjoyable and meaningful experience for me, however. In my 5 years there, I developed the first commercial sorghum hybrid in Africa and catalyzed the establishment of a private seed industry to support this breakthrough. Drought tolerant and high yielding, the sorghum, hybrid Hageen-Dura 1, is now cultivated in Sudan on over 1 million acres annually. In 1986, Secretary of State George Schultz, in addressing a special meeting of the United Nations in 1986, identified this work as a significant development and cited it as a good illustration of the promise of science-based development in Africa.

For the last 30 years, including 25 years since I joined the faculty of Purdue University, I have conducted an international graduate education and research program in crop improvement at Purdue University funded primarily by the U.S. Agency for International Development. I am, therefore, a product of the international development and technical assistance program. That experience has given me great motivation and inspiration for devoting my life to serving international agriculture. As an educator and scientist, I am now in turn advancing the well-being of poor people through science, especially those I know best, rural Africans.

THE RELENTLESS PROBLEMS OF THE POOR IN AFRICA

Mr. Chairman, hunger continues to prevail across Africa and in many developing nations. Hundreds of millions of people are struggling to survive and build a better future for their families—a challenge that seems to get steeper and more difficult each decade. As you gathered from the presentations of the distinguished panel that just testified and the excellent documents prepared by the Chicago Council on Global Affairs, hunger and poverty have been relentless. Rural dwellers, who are the food producers, have been hurt more, but those who fled the rural hardships and became the urban poor have not fared any better.

Several constraints limit agricultural productivity and the use of better management of natural resources in much of the tropics. Growing pressure from increasing population and associated energy and water demands continue to worsen problems of resource limitations. As more recent food-price crises have shown, these problems have global ramifications. The inherent biophysical limitations brought about by degraded natural resources are further aggravated by changing weather patterns. The variety of pests and diseases prevalent in the tropics are likely to be even more severe and troublesome with advancing climatic change.

THE STATE OF AGRICULTURAL EDUCATION AND RESEARCH IN AFRICA

Contrary to a widely held view, advances have been made in agricultural education and research in Africa.¹ There have been a number of small success stories, though not well publicized. The United States Government led early efforts in the development of many of the newly emerging poor nations in the 1950s where it extended a version of the European Marshall Plan program to the new independent nations. At the time of the flurry of independence of the African nations in the early 1960s, not many Africans had graduate degrees in agriculture and little functional agricultural education and research infrastructure existed. The United States Government led early efforts in human capacity-building with its Point Four program that set out a vision to lay the institutional foundation for agricultural development efforts in these nations. Our land-grant colleges and universities educated a large number of agricultural scientists from these developing countries. A cadre of U.S. citizens with interest in international engagement were also trained and dispatched for service through a variety of organizational arrangements. U.S. universities were mobilized in long-term institutional strengthening programs of the newly emerging developing-country centers of learning in many of these emerging nations. These efforts generated benefits for both the U.S. and the developing nations including those in Africa. The United States saw a growing number of scientists and professionals with knowledge and experience in international agricultural development. The agricultural research “culture at many national research institutions improved as a result of the efforts of these U.S. scientists and their institutions. Continued assistance from the U.S. and other developed nations helped strengthen the research infrastructure in Africa through the 1980s until support for such long-term human and institutional capacity-building declined significantly in the last 20 years.

Within Africa, increased communication and networking among African agricultural research services led to more collaboration and exchange of knowledge and germplasm—key ingredients in technology development and deployment.

Further funding from the U.S. and European governments, other international organizations, and private foundations led to the establishment of the Consultative Group for International Agricultural Research (CGIAR). Increased linkages were developed between these centers and the National Agricultural Research Services (NARS) in Africa, as well as U.S. and European universities. Perhaps most importantly, there emerged a growing recognition of agricultural research as a vehicle of change for national development as a result of these engagements and the resultant interactions among these organizations.

Unfortunately, the level of support for these long-term multigenerational changes has declined over the last two decades, stalling the progress of our early efforts.² A drop in external funding and political neglect of agriculture by national policymakers in developing countries have resulted in an increasing decline in the human capital base. Reduced funding for agriculture and agricultural research has eroded the capability of U.S. institutions to educate and conduct research in vital areas,

¹Holmes, H. 2005. “Spurts in Production—Africa’s Limping Green Revolution.” In Djurfeldt, G., Holmen, H., Jirstrom, M., and Larson, R. (eds). *The African Food Crisis. Lessons from the Asian Green Revolution*. CA BI, UK and USA.

²Masters, W.A. 2008. “Beyond the Food Crisis: Trade, Aid and Innovation in African Agriculture.” *African Technology Development Forum* 5(1): 3–15.

particularly in the applied sciences including plant and animal breeding, genetics, crop physiology, and plant pathology.

In my view, this general decline in the human capital base and the shrinking opportunities to replenish it through higher education is the most serious threat to the gains we have made in developing countries. Equally concerning is the erosion of U.S. talent in international development, particularly among the university faculty that are well-versed in the sciences, and the lack of opportunities to attract the new generation to careers in science-based development work internationally.

Other challenges to continued growth in agricultural education and research in Africa include:

- Inadequate internal (local) funding for agricultural research and education. In this “Catch 22” situation, research does not receive enough support to produce impact; and because it has not produced impact, national leaders are not persuaded to commit greater support.
- Because of lack of extensive research knowledge and experience, research at some institutions is not carefully targeted to technology development. It is often not easy for professionals who have not been able to benefit from mentoring with experienced researchers to develop a “big-picture” perspective that is essential to catalyze efforts that may sustain change.
- Often, education, research, and extension efforts reside in different administrative agencies. Government and nongovernment organizations do not readily cooperate with each other—and in fact appear to be in competition with each other. In several situations, the desired synergy between internationally funded agricultural research centers and locally funded national research centers has not developed as hoped for, often resulting in unnecessary and undue competition.
- The lack of a firm national strategic framework and agenda. The over-reliance on external funding tends to create research goals and program missions that are reactionary rather than strategic.
- Increased funding for support of rural social services, such as emergency food aid, has also diverted attention from long-term institutional development efforts. Rural social services save lives and are important, but they do not increase crop yields, lead to productivity gains, or raise earning capacity to reduce poverty. In 2003, for example, U.S. food aid to Ethiopia totaled \$475M, while \$354M was spent in total agriculture development worldwide.³

AFRICA’S DISMAL RECORD IN TECHNOLOGY TRANSFER

While Africa has made some progress in agricultural education and research, its record in technology transfer has been dismal. African higher education and research infrastructures and institutions have begun to generate a fair degree of progress and momentum, but the technology transfer programs have not fared as well. As a result, products of research, including some that could generate significant impact; fail to reach the farmer and do not produce badly needed change in farm practices and family livelihoods. Reasons for this failure include:

- Institutional immaturity. African institutions today are generally not as strong as Asian institutions were at the advent of the Asian Green Revolution in the 1960s. While progress has been made in some countries, we have a long way to go in the vast number of countries in Africa. Approaches to technology delivery processes have changed too rapidly over the years, although they have varied with funding agencies. Because of these frequent shifts in approach over the last several decades, many interventions have not generated noticeable impact. For example, the U.S. Land Grant approach to agricultural extension, has been an effective approach to public-supported technology transfer when given a chance. Extension was part of the early institutional development programs in many countries. At the time, efforts to build closer linkages between agricultural research and extension was not as effective due to the weak human capacity and institutional, development programs of African nations in those early days. The land grant approach of technology transfer via public extension services was replaced by others including the World Bank’s Train & Visit, the Food and Agricultural Organization’s (FAO) Farmer Field Schools; as well as a mix of approaches by nongovernmental organizations (NGOs), with the latest approaches advocating private-sector-based agrodealerships or other approaches

³Eicher, C. 2003. “Flashback: Fifty Years of Donor Aid to African Agriculture.” Paper presented at the InWEnt, IFPRI, NEPAD, CTA Conference “Success in African Agriculture.” 3 December 2003. Pretoria, SA.

that may have a public-private partnership slant to them. None has been sustained long enough to produce a culture of change in rural farm practices.

- Ill-equipped agents of change. There are not many African national programs that have been able to build a well-trained cadre of sufficient critical mass with the knowledge of the sciences and understanding of the agriculture of its communities. When well-trained experts from abroad are received, they often do not stay long enough to develop an understanding of both the local agricultural practices as well as the biophysical environments to be effective.
- Infrastructure limitations. Almost everywhere in Africa, the infrastructure, facilities, and programs of technology transfer institutions are usually underfunded and underdeveloped compared to the institutions of higher education or research in the same countries. There is no reason to believe that this happens by design, but it is true almost everywhere.
- Unique biophysical problems. That Africa is a large and diverse continent is often not well understood or acknowledged. With nearly 800 million people, more than 1,000 ethnic groups, seven colonial histories, six geographic regions, and a mix of governance styles, a variety of research results and educational formats are needed to reach out to a variety of communities. In poor nations where resources are limited, this presents a formidable challenge.
- Lack of proper incentives and benefits, often immediate to their needs. In Africa, where private entrepreneurial plans are not well developed, productivity gains are limited to meeting household needs; they are unable to broadly translate to profitability and to generate a needed demand for new technologies from research.
- The rate of new technology adoption in a country is often directly related to local knowledge, experience, and social realities in the community. We can learn a great lesson from the experience of early adoption of hybrid crops in the United States. Despite the better education and awareness that existed in this country, compared to many of the developing nations of the world, it took over 25 years to move the acceptance of hybrid maize from 0 percent to 95 percent. But once the farm communities got used to the new technology, and the experience of hybrid maize was shared and the network of dealerships and private seed sector were well developed, it took only 5 years to reach a similar level of adoption of hybrid sorghum when that technology first appeared in 1956.⁴

MAJOR PARADIGM SHIFTS IN AFRICAN AGRICULTURAL R&D AND THEIR IMPACT

African agricultural research and community development programs have suffered frequent and disrupting changes in approaches and emphasis. There are several reasons for shifts in paradigms to take place in a development practice. Paradigms shift to make what are perceived to be needed adjustments in program approach, or they may be shifted to better position a program for continued research support. Regardless of the reason, paradigm shifts often bring with them loss of momentum, some disillusionment, and result in the never-ending blame game and one-upmanship that is so prevalent in the international development world. These shifts can also result in a perceived lack of local commitment to a project or program. There have been a number of such changes both in the agricultural research arena and in the community development efforts in the developing countries, particularly in Africa.⁵

Paradigm shifts in research and development have not been the only disruptions in African development. Added to this are changes brought about by structural adjustments that force contraction of government agencies (external influence), and the wave of socialist influence of nationalizing plantations and regional research centers, and replacing research and development enterprises with state farms and communal systems. In many of these cases, generally shifts in research approaches tend to be more jolting than those in community development programs because of the long-term nature of agricultural research and the time needed to generate research results. The shifts over the years in paradigms and emphasis have contributed to growth in the “industry of science providers”—a long list of providers with a variety of skills and approaches. There is often no proper division of labor among groups and organizations, which results in unnecessary duplication of effort and competition. All of this, of course, has added to the growing cost of doing business.

⁴Maunder, A.B. 1998. “Why Hybrids?” In: Axtell et. al. (eds) Proc. West African Hybrid Sorghum and Pearl Millet Workshop. 28 September–2 October, 1998. Niamey, Niger.

⁵Ejeta, G. 2009. “African Green Revolution Needn’t be a Mirage.” Seminar presented at the Bill & Melinda Gates Foundation. 10 March 2009, Seattle, WA.

THE EMERGENCE AND PROMISE OF THE BILL & MELINDA GATES FOUNDATION

The Bill & Melinda Gates Foundation has recently emerged as a leader in helping fight hunger and poverty in sub-Saharan Africa and Southeast Asia. The foundation is rapidly building its alliances to work with a variety of other institutions including national programs, international centers, and universities. Together with the Rockefeller Foundation, it is a major force behind the creation of the Alliance for a Green Revolution in Africa (AGRA)—a growing partnership working across the African Continent to help millions of small-scale farmers and their families lift themselves out of poverty and hunger. BMGF has infused badly needed resources to some sectors, particularly to the International Agricultural Research Centers (IARCs).

It is my perception and that of many Africans that the Bill & Melinda Gates Foundation is viewed as the “Game Changer” or the “Difference Maker” primarily because their involvement comes at a time when total external investments in agricultural education, research, and development from governments of the developed world have fallen. Support of programs such as these has given an elevated sense of hope and vision of leadership to these efforts. However, it is already made clear that even with the great generosity of the Rockefeller, Gates, and Buffet families, more internal public resources need to be mobilized to generate the needed impact, for the need around the world is so large and the loss of momentum from early efforts needs greater investment to jump start and reenergize.

The new agricultural development programs of BMGF are designed to promote capacity-building, generate scientific results that offer solutions, disseminate research results aggressively, and catalyze the development and adoption of new agricultural technologies for greater impact in an integrated value-chain approach. Both the vision and the resources from the array of comprehensible BMGF programs have been received with great anticipation and promise.

ESSENTIALS FOR SCIENCE-BASED AGRICULTURAL DEVELOPMENT IN AFRICA

There is a need to regroup, take lessons from past efforts, and focus on those programs and approaches that generate the needed impact to offer immediate relief and build new momentum in catalyzing science-based development in an accelerated and renewed sense of purpose and energy. Based on my 30 years of development experience and my knowledge of rural life in Africa, I have come to believe that there are three key essentials needed to bring about sustainable change that could generate needed results for generating sustained impact in the agricultural development of developing nations. These three sets of essentials that must be well orchestrated and addressed in concert are (1) Technology; (2) Institutional and human capacity; and (3) Public policy.

1. Science and Technology: It is essential that science be affirmed as the primary vehicle of change for economic development. The successes of U.S. agriculture, the Asian Green Revolution, and the few nuggets of change in Africa are evidence that science-based development offers not only a way out of hunger and poverty, but also leads to prosperity. Life altering changes will continue to require scientific innovations that raise productivity and income. Recent advances made in the biological sciences offer exciting opportunities for addressing some of the most intractable agricultural problems prevalent in the tropics.

2. Institutional and Human Capacity-Building: For appropriate, science-based changes to be generated and delivered, institutional and human capacities must be strengthened. I am seriously concerned that the decline in global resource commitments for capacity-building threatens to derail all the gains made to date. The acute need for strengthening institutions and building human capacity in developing countries cannot be overemphasized. Investments in public institutions that build scientific capacity in research, education, and technology transfer need greater reinforcement today more than ever. I may add that the weakest institutions in most developing countries are in the private sector. We must encourage private entrepreneurship and institutions that create incentives for commercialization, support markets, finances, risk management, and infrastructure that facilitates commerce. In building both public and private institutional capacity in developing countries, we must support and advance openness in sharing of experiences with the outside world so that newly trained individuals and their institutions receive the necessary mentoring and seasoning as well as develop a “can-do” spirit.

3. Policy Interventions: Supportive policies are critical. Empowerment of local institutions and local groups is an indispensable ingredient to making sustainable change. Needed are bold local policies that encourage generation and adoption of new agricultural technologies and support new public and private incentives. Without the needed policy catalyst and sustained resource commitment that should follow, the likelihood of permanent positive change is very small.

The dream of attaining an African Green Revolution can be achieved.⁶ The use of new and improved crop cultivars, new management practices, the education of farm communities to adopt new technologies that generate impact through increased productivity and profitability of incomes is within reach for developing nations. However, these things do not happen without great dedication and incentives, and enabling policy environments that are badly needed.

Dr. Norman Borlaug, universally acknowledged as the “father of Green Revolution” is a hero to me and very many others. I personally admire his single-minded devotion to science and agricultural development and his unending empathy and service for the poor. He has been a great example for scientific leadership and a life so well lived. As I reflect on his accomplishments and leadership, however, in my view the genius of Norm Borlaug was not in his creation of high yield potential and input responsive dwarf wheat varieties, not even in his early grasp of the catalytic effect of technology, but to a great extent in his relentless push to mobilize policy support to encourage the development of the agro-industry complex, to sustain the synergistic effects of technology, education, and markets.

SCIENCE-BASED DEVELOPMENT CAN BE ACHIEVED AND SUSTAINED IN AFRICA

I have described above the three factors that I consider crucial for sustainable agricultural development in Africa. Science and technology need to be given a chance in Africa. We need to develop a culture of change where, based on learned experience, African farmers form a mind-set of looking to agricultural innovation centers as sources of solutions to their agricultural problems. As farmers and farm communities and key stakeholders begin to assert themselves and earn some economic power, they may lean on government agencies to develop and pursue supportive national policies and policy incentives. With strengthened stakeholders; the rapidly changing paradigm shifts may be slowed and proactive strategies and development agendas may emerge generating badly needed momentum in science-based development.

An effective partnership can be designed between the U.S. Government and our institutions of higher learning and research to achieve these interventions. The U.S. Land-Grant Colleges of Agriculture and their partners have a proud legacy of building human capacity and strengthening institutions of education, research, and technology transfer. A good foundation was developed in several developing nations by the early vision and resource commitments of the U.S. Government beginning in the 1950s to make it happen. It is an experience that is worth reassessing and replicating at this time.

The U.S. Government has supported the International Agricultural Research Centers of the Consultative Group on International Agricultural Research (CGIAR) and the Title XII Collaborative Research Support Programs (CRSPs), both of which work closely with developing country institutions in agricultural research and development, helping build human and institutional capacity.

U.S. investments in building human capacity and strengthening institutions in developing countries have been some of the best investments that our government has made toward alleviating hunger, reducing poverty, and safeguarding our natural resources.

It is my assessment that the dividends would be even greater if these educational, research, and development investments were orchestrated with parallel governmental efforts to encourage proper public policies in collaborating nations. Policies that encourage internal investments in agricultural development and further strengthening of local institutions and in local people to raise the level and depth of their national aspirations are badly needed. However, this is the realm of influence for governments and donor agencies; we in the academic and science community are ill-equipped to have much influence beyond ideas to have lasting impact in the field of policy.

THE OUTLOOK

Let me state, Mr. Chairman, that I am encouraged by several initiatives that are currently under discussion at the national level:

⁶Hesser, 2006. “The Man Who Fed the World.” Nobel Prize Laureate Norman Borlaug and his battle to end world hunger. Durban House Publishing Company, Texas.

- The excellent document prepared by the Chicago Council for Global Affairs⁷ articulates the overall need clearly and identifies key institutions worthy of support.
- The back to the basics approach articulated by the Global Food Security Act of 2009⁸ introduced by Senator Casey and Senator Lugar is refreshing and is complemented well by the Chicago Council document.
- The Partnership to Cut Hunger and Poverty continues to promote research-based advocacy for African Agricultural Development as described in its recent “Roadmap” draft document.
- The CGIAR Science Council’s new Mobilizing Science and Linkages initiative, of which I am privileged to be among the leaders, is an effort to better link scientists in international agricultural research centers with scientists in the developed world to create better synergy and complementarities.

I am further encouraged by new organizations that have come into international agricultural development with great interest and resource commitment. I recently spent a year in Nairobi, Kenya, assisting the Rockefeller and Gates Foundations to design a new joint initiative called the Alliance for Green Revolution in Africa (AGRA).

This is also an opportune time from the point of view of developing countries. For the first time in my life and my career, I am beginning to see a more focused sense of purpose and commitment among African leaders, particularly in more deliberate, visionary investments in higher education, agriculture, development institutions, and infrastructure.

However, the current propitious momentum will be lost without effective global leadership for international development.

I, therefore, applaud the vision and leadership of the Senate Committee on Foreign Relations in considering the Global Food Security Act of 2009 and today’s discussion around the Chicago Initiative on the Global Agricultural Development. Your work is essential to reinvigorating the position of the U.S. Government in support of science-based development in developing countries.

With your permission, Mr. Chairman, let me end my comments with these light words about the need and power of policy intervention:

I liken agricultural development programs with diet and weight loss programs. Some weight loss programs are gimmicks, some are real. Most have something in them that works. Some produce results right away while others need time to be effective.

Regardless of which weight loss program is chosen, however, the only way sustainable, life-transforming change can be achieved is if the person commits to them and uses the newly learned discipline to stay the course and continue to eat right, exercise, and clear the mind.

The same principle is true of introducing new agricultural technologies to developing countries. We can produce some positive results with most R&D programs, where infusions of money and effort demonstrate the value of our interventions. But only if we encourage, engage, and empower local people, local institutions, and local governments—and remain vigilant until the change is ingrained—can we bring about that truly transformative change that we all aspire to achieve.

Thank you for the opportunity to share these thoughts with you.

Senator LUGAR. Well, thank you for that testimony, Doctor.

Let me just comment, with the overall testimony of the two of you. You have demonstrated why it would be important for a coordinator on agriculture and food to be either a part of the National Security Council or a voice in the White House as our President considers the points of national security, someone around the table who can speak to Iraq, as you have, from your own life, Dr. Ejeta, about Sudan. These are areas in which we have considerable foreign policy and security interests, presently. And yet, on the ground, I would guess that many persons who may be taking part in those White House discussions are clearly not aware of the testi-

⁷“Renewing American Leadership in the Fight Against Global Hunger and Poverty.” The Chicago Initiative on Global Agricultural Development. Report issued by an independent leader group (Catherine Bertini and Dan Glickman, cochairs).

⁸Introduced to the U.S. Senate as the Global Food Security Act of 2009 by Robert Casey (Pennsylvania) and Senator Richard Lugar (Indiana), this bill seeks to assign greater priority to alleviating hunger and poverty.

mony you've presented today, of facts on the ground of what's occurred.

For instance, Dr. Ejeta, explain how, from the sorghum hybrid proposition that you were responsible for bringing about, you could go from where you started to a million acres of cultivation in Sudan. That is a lot of territory. How many farmers, roughly, would be involved in farming a million acres, in Sudan, of this sorghum hybrid?

Dr. EJETA. Thank you, Senator.

Senator Lugar, I know that you'd clearly understand this as a farmer. One of the things that we have not done very well in Africa is giving farmers an opportunity to look to science as solving their problems. And that culture of looking to research institutions and technology centers for problem solution is what we haven't been able to get done in Africa at large. To effectively address this problem in Sudan, very early in our program we began to work with farmers and farm communities and engaging them every step of the way in the technology development process as scientific interventions were coming along. Among other things, this provided an opportunity for farmers to recognize that we were working on hybrids, not open pollinated cultivars, and that because of that they need to recognize that new seeds need to be purchased annually. And so, we instilled from the beginning the need to catalyze the creation of a private sector establishment to mobilize the seed production and delivery activities. To answer your question, more specifically, in Sudan, where we thought originally that we might reach larger farmers, our hybrids actually received greater adoption to small farmers that normally would cultivate maybe, 5 acres, at the most, of sorghum. So, with that calculation, you're talking about thousands of farmers and farm families.

Senator LUGAR. Yes, hundreds of thousands.

Dr. EJETA. Yes, Senator.

Senator LUGAR. And this is a remarkable phenomenon on the ground in Sudan now, as we take a look at Sudan, either from the security standpoint, a humanitarian standpoint, as testimony comes before our committee, frequently talking about hundreds of thousands of people huddled in refugee camps. This is why the juxtaposition of this farming going on, the 5-acre farms, with something that came literally from your help, is truly astonishing.

You know, likewise, in Iraq, as you pointed out, Dr. Price, why, you've tried to work within the bounds of security that either was there or wasn't there, sort of returned with the surge group and so forth, saw at least some effects on the ground, tried to help push some more along. You know, very frequently, discussions occur in Iraq about development. All sorts of contractor teams have gone out, hopefully to help with the water problem or with the power and light problem and so forth, which are instrumental in agricultural, likewise. But, I've heard very little testimony with regard to feeding the people of Iraq, or people in Iraq producing food, as opposed to humanitarian shipments. And it's interesting—and this is a problem our committee deals with, as well as the administration—frequently, these affairs have followed our military, because they were able, literally, to organize the agricultural situation. Hypothetically, we could have had the State Department working on

this, other civilian authorities and USDA. But, the problem of coordination at the top has—this is a good illustration—been achieved by the Secretary of Defense, frequently, who has called together the people who were required, whether they were teachers or lawyers or people involved in the water problem, or yourself. But, it just gets back to the need for coordination at the White House level in what is now an Iraq and national security endeavor, as well as a humanitarian one, because we're thinking about plans for withdrawal, about life after the American troops in Iraq. And the importance of agricultural development now is really critical.

Now, let me just say one further thing before I ask for your comment. Mention has been made of the Bill and Melinda Gates Foundation, and we've had visits with Bill and Melinda Gates, and I'm excited about their vision with regard to this. They understand productive agriculture, the need for farmers markets. A part of their beneficence has been to create, as I understand, in some areas, 3 years of markets that were guaranteed to farmers, that started from scratch, wanted to make sure that, at the end of the trail, there was someplace that there could be income for their families if they increased their yields beyond something needed just to feed the family. And they've obviously worked on the science-based areas. And, as you both pointed out, they cannot do it all by themselves, but this has been a very large contribution in the areas in which they have worked.

Let me just ask, is the work of the Gates Foundation, or, for that matter, the work you've done in Iraq or the work you've done in Sudan and elsewhere, Doctor, widely recognized? How have you been able to make known the kinds of facts that you've given us today, which are extremely important for people who are arguing either national security, coordination of affairs at the White House, including civilian as well as military people, as well as the humanitarian situation? Do you have any overall thoughts about that, Dr. Price?

Mr. PRICE. One of the questions or statements often made to me is, Why haven't we heard about this work?

Senator LUGAR. Yes.

Mr. PRICE. Every time I give a presentation—

Senator LUGAR. That's the one I'm asking.

Mr. PRICE. [continuing]. That's exactly the response. And I've puzzled over that, myself.

But, let me say, in the first place, that in Iraq and Afghanistan, there was anxiety, in the beginning, to protect the people were in the field.

Senator LUGAR. I see.

Mr. PRICE. And—so that we were actually constrained from saying very much. I remember one day, one Friday night, a reporter called and said, "Couldn't you tell me a little bit about what's going on in Iraq?" And so, I gave him a statement. It came out in the local newspaper the next morning, on Saturday morning. Within 2 hours, I had a phone call, saying, you know, "You really shouldn't be talking to the press about what's going on. It could result in danger for our people in the field." Of course, they were—it was my—they were my people—

Senator LUGAR. Yes.

Mr. PRICE. [continuing]. In the field. So, that was one of the—that's one of the reasons.

But, yeah, the word is beginning to get out, but I can almost count on one hand the stories that have been released about the work of the agriculturalists in Iraq and Afghanistan.

I can't give a good answer to that. I think that part of it came out of the security constraints. And then, after that, I'm not sure that people wanted to hear what's really going on, that it was really the stories of the dangers, the stories of the distress. The drama of the distress actually was what the public was more interested in hearing, perhaps, and it was harder to tell the story of agriculture. It's beginning to be told, and I think that, through your effort and many others', we should make an enormous effort, because most people do not even realize that Iraqis are farmers. Two-thirds of the country—

Senator LUGAR. Yes.

Mr. PRICE. [continuing]. Are agriculturalists, and they've been farming for centuries. So, it's a very important agricultural country. They say, in fact, that it's an agricultural country that happens to have oil.

Senator LUGAR. Without underlining the obvious, with two-thirds of the population, in agriculture, Americans who are involved in agriculture in Iraq are appreciated by the people that are involved in agriculture. You know, that's sort of a strange fact, which isn't obvious, but frequently we are—cited polls that indicate, "Do you want the Americans to stay?" or, "Do you like Americans around?" or something of this variety, and very large percentages say, "No, we don't. They're intrusive and they have caused trouble for us," and all the rest of this. And we were very resentful; after all, we feel we displaced the dictator, we are trying to bring about democracy, trying to do a number of good things; and to be so resented by the population seems to us to be totally wrong.

On the other hand, what you're pointing out is, there is clearly an avenue, not just simply to win the hearts and minds of the Iraqis, but, as a matter of fact, to work on fundamental situations against poverty, for food that might be helpful in elevating the standard of living. In other words, people might say, "It was really a nice thing to have some of the Americans around," that, "We've got better crops, better life because they were here in that fashion."

And I mention that because frequently we have tried, in a foreign policy way, to say that, after all, Iraq might be, if not a shining star, in the firmament, that area, someplace that conspicuously was better. And this has always become a dubious point of debate. But, not so with the two-thirds you're talking about, and this is why I'm hopeful the story might have greater currency. As you say, security reasons may have impelled that you not tell the story, but now you can. And we are doing so today, for anybody's who's listening, and it's an important story.

Likewise, Dr. Ejeta, in the work that you have been doing throughout your life, as somebody who came from a country that had great needs, and, as you pointed out, still has great needs, may not have moved that far along the metrics of development, the fact is that, from that experience, and informed by your own childhood

and then what you found in the rest of the world, you've accomplished great things.

But, get to Sudan again, now, the sight of a million acres being farmed, maybe 5 acres at a time by, if you do the math, 200,000 farmers—this is a lot of people in Sudan. Now, Sudan's a big place with issues in Darfur, development challenges, and conflicting tribes and all. But, even in the midst of this, there's something going on, here, that offers, it seems to me, a platform for, not only aid and assistance, but for real progress, for people to understand how their lives could be informed and changed.

In addition to that, what other countries do you believe are there real possibilities, given your research, to bring about change and further agricultural knowledge?

Dr. EJETA. Thank you, Senator.

As you clearly indicated, in the bill that you sponsored and also—as you have articulated very clearly many times in the past, the power of public institutions in supporting agricultural development is immense. That's the kind of lasting testimonial that is going on around the world in many developing countries today. As a result of the earlier investments of the U.S. Government in building vital institutions of learning and the training and educating of young people, even in places where that support has eroded over the years, the vestiges of what was left behind, in terms of institution-building, capacity-building, are paying dividends even today.

As you indicated about the work in Sudan, this sorghum hybrid was developed over 20 years ago, and yet even with all the isolation that the country of Sudan has received from the rest of the world, the people of Sudan continued to benefit from that intervention of our early work that was generated then.

So, when you advance the cause of agriculture through science, change minds of farmers to adopt new technologies, as you train and educate young people and build capacity, as you leave behind institutions of research and extension in these countries, those are the kinds of sustained changes that we all want to see. And in my opinion, that is the refreshing part of the bill that you and Senator Casey are sponsoring. I hope this bill gets to see the light of the day, because it has the making of one that would generate significant ramifications in solving the problems of developing countries down the road.

Senator LUGAR. Let me just ask both of you, because you were constrained by our guideline to try to have a 5-minute opening summary, more or less, and you've mentioned, of course, the more complete testimony that's in the written testimony you've submitted, but if you had a few more minutes, Dr. Price, what would you like to add that you were not able to articulate to this broader audience?

Mr. PRICE. Thank you.

First of all, let me just say that, in response to your previous comment about our presence seemingly being resented sometimes, I didn't find that in Iraq. In fact, our relationships at the community level were extremely warm. There were tears in the eyes of the leaders when we came. They said, "You're the first people who have shown interest in our farms, our families and how we live."

Senator LUGAR. That's an important statement, all by itself. Yes, indeed.

Mr. PRICE. Thank you very much.

The areas that I would like to talk about, in addition to—when we talk about food security, it's very important that we also think of nonfood agricultural production, as well as ecosystem services. In order to have food available to consumers, it's in a marketplace, and that food competes for land with other crops. And now we're very concerned about how the—the possibility that biofuel production has competed with food production.

I believe science has an answer to that. We know, from many different types of technologies, that it's possible for technology to produce both oils—vegetable oil for human consumption and animal feed. Technology can solve some of these conflicts that we see immediately of some of this competition.

I believe it's important, while going for improving food production, that we also look at the technologies for the nonfood production to make sure—and also the ecosystem services—to make sure that we are doing all of those together and not simply competitively.

Another area that I would talk about would have been—more extensively—about our work in Africa. Working, again, with other U.S. universities, we responded, in the post-conflict situation Rwanda, to develop women's cooperatives that have raised the Rwandan coffee production from a minus-15-percent C-grade all the way up to a premium coffee in Rwanda. It's transforming communities all over the country.

Senator LUGAR. Impressive.

Mr. PRICE. And this kind of model, we feel, is one that's going to be fruitful elsewhere. But, at the same time, while we were doing that, a colleague and I from USAID got caught in the wrong place at the wrong time in the Ivory Coast, and we saw the eyes of the rebels, and, for the next 2 years, I went back again and again to negotiate with the rebels, to make a place that we could begin again to do agricultural research.

And here again, I return to the problem of youth. When we work with these leaders on the Force Nouvelle of West Africa, it was the young people who had no future who would join these forces and were being led to rebel in their countries. So, again, I come back to the notion that we really need to look at the problem of youth, and despairing youth in the many populations where we work, not only in Central Asia and in the Middle East, but also Africa and Latin America.

Thank you.

Senator LUGAR. Thank you, sir.

Dr. Ejeta.

Dr. EJETA. I'd like to go back to what I had said earlier, and maybe—and clearly articulate that. And that is, the back-to-basics approach that I sense in your bill, that education is important, research is important, technology transfer is important. The power of changing minds in farm communities, I—in my paper, I indicate clearly, even in this country, with all the resourcefulness or all—with all the desire to advance, when hybrid corn, which, in my opinion, was really the true first grain revolution in the world—

when that came about, it took nearly 25 years to go from zero to 95 percent of the acreage of this country, because farmers are very deliberate; they need to see whether or not there is return to their investment.

Once farmers opened up to new technologies and then there was a private sector and industry in place, and, 20 years later, when there was hybrid sorghum, it was introduced in this country, in 5 years we were able to get from zero to 95 percent.

And so, this process is a very long-term process. It requires education, changing minds, one mind at a time in development countries, particularly when you have a variety of biophysical and cultural diversity. That education is a long-term process.

But, to be able to do that, just like you would need seasoning and mentoring with individuals, institutionally also it requires that kind of mentoring and seasoning, and therefore, the old system that this country had invested, through strengthening of institutions in South America, in Asia, in Africa, I would like to see that opportunity come back again, where sister universities in this country will have relationship with developing country and institutions to share that knowledge, to share that gained wisdom through time, so that what happens in Africa today doesn't happen. What happens is, people who are not well trained are turning around and training the next generation, because the need is so great and it's a very desperate situation.

I think this is a very win-win situation for the U.S. to share what it is good at, because—I am a product of this system, and therefore, I'm biased, but education in the United States, particularly higher education in this country, is par excellence compared to anything that you see in other countries. The fact—the land grant university concept is a beautiful concept of tying education, research, and technology transfer together, to be able to share that and begin to implement and ingrain it in the minds of people and the leadership.

And then, as I said, you understand policy a lot better than I, but that policy element, to make sure that the policy—the leaders of the country have faith and respect in education, in science, and make sure that they support that activity because it's in the long-term interests of their nations, is very important.

And one last point is something that has been clearly deliberated earlier in the first panel about coordination of all program providers. And we talk about it mainly from coordination here. And, as Dr. Bertini indicated, even coordination on the ground over there is very important, not only in rural development, particularly in science-based activities, because if you go to any one of these poor countries, the institutions there are not well staffed; and yet, in any one country, there is, on the average, about 30 different agencies involved in agricultural development. And when you look at it from the point of view of developing countries, their few staff would be entertaining these science providers, and so—and therefore, it really is taxing their time and their effort. And some coordination of agencies, not only from this country, from all around the world, that requires significant care and coordination of those activities, that whatever can be done in that regard would be very, very useful to—to be more deliberate about channeling our efforts

together so that it's more concerted, more synergized for greater benefit.

Senator LUGAR. Well, I like the thought that our universities might get together with comparable institutions, or people in education anywhere, in Africa or Asia or Middle East. And this gets to the point that Dr. Price was mentioning about the youth. Not that everybody that attends these universities is a young person, but most are. And this really is a direct way of diplomacy with the most promising group of people who have the most years still to live and to contribute to this.

Likewise, I like your point about coordination on the ground. We haven't touched upon this today, but it could be that our ambassadors to each of the countries in the world, as they go through their training here or through their hearings even with this committee, need to have some background in agricultural development, in food, the humanitarian interests, as well as the diplomatic ones we've talked about today. And some obviously do. These are seasoned persons, those who have been in the Foreign Service for a long time, as well as those Americans who will come into the ambassadorships without that background. But, something has to happen in our embassies, often, to bring about coordination. We talk a lot about this with people dealing with statecraft, as opposed to the military or intelligence, whether all of these folks are together. But, these basic services on the ground you've been describing are really a very important part of their success as diplomats.

Why, we thank both of you. The Chairman asked me to thank both of you. He was detained in returning, but appreciates, as I do, what we have heard today. And we thank you for your patience and your diligence and your testimony.

And the hearing is adjourned.

[Whereupon, at 12 p.m., the hearing was adjourned.]

ADDITIONAL MATERIAL SUBMITTED FOR THE RECORD

PREPARED STATEMENT OF DR. NORMAN E. BORLAUG, NOBEL PEACE PRIZE LAUREATE

Mr. Chairman, it is a great honor for me to address the Senate Foreign Relations Committee on the topic of U.S. foreign assistance and the role of agricultural science. I have read Senate bill 384 with great interest, and with your permission I will organize my comments around various sections of the bill, and how they relate to my experience and views on the need to revitalize the U.S. effort to improve food and agriculture production worldwide.

Last year's spike in agricultural prices abated in part because of weakness in national economies but the underlying problems have not gone away. Land has been taken out of agriculture for other needs of the growing world population. Within agriculture, the shift of land and crops into energy production has played a role in food supply and prices. Also, rising incomes in developing countries increase the demand for meat which in turn requires more vegetable protein and carbohydrates for animal feeds. Weather and conflict also played a role in the food crisis.

But the most important factor that caused the crisis, which we address today through the Global Food Security Act of 2009, is the 25-year decline in investment in international agricultural research, education and extension. Lower investment in agricultural science and infrastructure undermined the capacity of farmers worldwide to keep pace with human needs. Expenditures by the U.S. Agency for International Development in long-term programs for agricultural science and education peaked in 1984 at over \$800 million and have declined to well less than \$100 million today.

Here I am referring to programs authorized by Title XII of the Foreign Assistance Act of 1961, as amended in 1975 and 2000. These programs are administered by

the U.S. Agency for International Development in partnership with U.S. universities and the Consultative Group for International Agricultural Research (CGIAR). These programs are the lifeblood of worldwide collaborative agricultural research, education and extension in agriculture.

This sad story of the failure to invest in long-term global food security continues. My colleague, Dean Allen Levine, at the University of Minnesota states it well: "In the blizzard of new research funding created by the federal stimulus bill, an important science was omitted: Agriculture. While \$10 billion was included for the National Institutes of Health, \$3 million for the National Science Foundation, and \$2 billion for the Energy Department, not a penny was dedicated for competitive research in the U.S. Department of Agriculture."

The distinguished 30-year member of this body, Senator Mark Hatfield, was a champion of international agricultural research and education, including one of my favorite efforts—international collaborative research on wheat. Senator Hatfield stated that federal expenditures for Title XII programs of USAID were the most effective dollars in all of U.S. foreign assistance. Mr. Chairman, for these programs, Senate bill 384 authorizes up to \$45 million for university international collaborative research programs, and up to \$50 million for the CGIAR.

These are welcome moneys for the programs in which I have served much of my life. But when I compare the numbers: 1 billion people suffering from food insecurity; \$15 billion stimulus research funds excluding agriculture; and \$95 million designated for international agricultural research, I respectfully suggest that we are underinvesting in the last—the most effective programs in all of U.S. foreign assistance. As you know, such research does not only assist the suffering and malnourished populations around the world, it also benefits U.S. interests in terms of enhanced food quality, nutrition, trade promotion, and food safety (including defense from imported food-borne disease).

The broader provisions of the Global Food Security Act of 2009 are an appropriate response for the longer term. Title I of the act that we consider today provides the needed focus on the problem of hunger. It takes a comprehensive whole-of-government approach to planning that is widely collaborative with international agencies; and it provides for careful monitoring, evaluation, and reporting.

I note that there will be consultation with the "academic and research community." This is not enough. Please be aware that the part of the academic and research community which will be most valuable in combating hunger are the "doers." You need the engagement, not only the consultation, of that engine which drove U.S. agriculture to become the best in the world—the combined, integrated effort of teachers, researchers, and extension agents of the U.S. land grant system. Their work is on the farms, throughout villages, and in the laboratories of the world. You must engage them in robust collaborative programs with foreign counterparts at every level, especially in fields, forests, farms and livestock enterprises. These are the soldiers in the use of soft power to build effective bridges with other countries and advance U.S. foreign policy.

Now I turn to the provisions of Title II related to Bilateral Programs. These are aimed toward eliminating starvation, hunger, and malnutrition; providing basic services to the rural poor; and improving incomes and employment of the rural poor through agriculture and other rural enterprise. New provisions added by Senate bill 384 highlight conservation farming to respond to changing climatic conditions, health and nutrition programs for those in extreme poverty and the landless, nutrition for children and lactating mothers, and advanced genetics technology. I especially welcome confirmation of the need to use the best technology available, including biotechnology to meet world food needs.

The point needs to be made, however, that the major U.S. university contributions to improving agricultural and food production in the past—until the decline began in the late 1980s—were embodied in bilateral programs. Past programs for training the scientists and leaders from developing countries, reaching 15,000 participant trainees at one time, were contained in bilateral programs. Major programs in agricultural research, teaching and extension (including agricultural enterprise development and agribusiness) were bilateral programs in cooperation with U.S. universities and advised by the Board for International Food and Agricultural Development.

Since 1984, bilateral programs have gradually become the province of consulting firms, and in the process, agricultural development has lost its science base. U.S. foreign assistance in agriculture largely stopped supporting long-term investment in human, technological, and institutional capital in agriculture. Such investment is critical for global agriculture to thrive. That is why there is a global food crisis, and that is why, as stated in the Findings in the preface this act, another 133 million were added to the world's hungry between 2006 and 2007.

Bilateral programs need to be rebuilt on a scientific base, and driven by vigorous programs for the development of human and institutional capital in developing countries. Title II of this act should explicitly identify University Partnerships for Agriculture as an instrument of choice for bilateral programs. I know that the schools that have been most closely associated with my work, the University of Minnesota, Iowa State University, Cornell University and Texas A&M University, and all the other land grant universities that played such important roles in the earliest Point Four and later ICA programs would be highly pleased to reengage with USAID in programs of bilateral technical assistance.

Incidentally I hope that such engagement of universities in USAID's programs of bilateral assistance will have a secondary effect of a resurgence in scholarship on agricultural development that flourished under the leadership of such colleagues as the late Theodore Schultz, Vernon Ruttan, the Edward Schuh. We are in great need today for new study and understanding of the processes of agricultural development and how best to direct and evaluate our effort.

Title III of this act very usefully revises and simplifies Title XII of the Foreign Assistance Act of 1961 as revised by the Freedom From Hunger and Famine Prevention Improvement Act of 2000. I concur with the provisions of this title in its two previous versions, and especially as rendered in this act. Probably we could have accomplished what is needed under previous versions of the title had the provisions been followed by action. What are needed most under these authorizations are leadership, funding, and persistence. Nevertheless the language of this revised title sets our direction and methods more clearly than ever before.

Section 298 of Title III identifies types of support that includes "continued efforts by international agricultural research centers . . ." Elsewhere funding is authorized at levels of up to \$50 million for the CGIAR. To promote expanded, long-term fruitful collaboration between the CGIAR and U.S. universities I suggest that funding for the CGIAR be doubled and that half of these increased funds be designated for cooperation with U.S. universities, through student internship and study programs, cooperative research projects, and extension effort carried out in developing countries by U.S. university extension personnel. In my experience, U.S. university cooperation with the CGIAR returns great benefits to the U.S. agricultural science community, to private firms that employ the agricultural graduates of U.S. universities, and to beneficiaries in developing countries.

I now turn to Section 299, the Higher Education Collaboration for Technology, Agriculture, Research and Extension. As stated earlier with respect to bilateral programs, I believe that U.S. universities should be reengaged in a wide range of agricultural development efforts in developing countries. The proposed HECTARE program is an important initiative in this regard, with the very useful feature of putting host country institutions in leadership roles. The confidence and respect that this kind of program demonstrates toward developing country institutions is the most important new advancement incorporated in this title.

It has been my experience that building human capital and institutions for extension and research is most successful when the programs are built around solving specific problems facing agricultural production and food security. I suggest that the elements of the assistance plans under this section of Title III be required to include strong statements of problems to be solved or specific bodies of technical work to be accomplished. Agricultural development must be focused on meeting current needs of agricultural communities. Such focus on specific problems coalesces leadership and increases commitment to produce meaningful results.

This gives me a chance now, in conclusion, to suggest the areas of research, teaching, and extension that I believe to be paramount in the coming years to move us well ahead of the world food crisis.

First, nothing encourages me more about the future than to see the young high school students who come to participate in the World Food Prize Youth Institute every year in Des Moines. Youth agricultural programs are generally neglected in U.S. foreign assistance, the international agricultural research centers, and in the national agricultural programs of developing countries. Please find ways in the bilateral programs and the university partnership provisions of this act to give early support and hope to youth in agriculture. This is critical to rural communities in poor countries, and to the safety and security nations faced with poverty and disillusionment. Throughout the developing world, the youth bulge continues to put strains on economic and social systems. Large-scale support of youth agricultural programs will promote entrepreneurship, civic responsibility, technical training, community health, and food production.

Second, find ways to address head-on the competition for land, water, and other inputs between food and nonfood enterprises. Science can find answers that will reduce the pressure on food prices that is caused by the other agricultural enterprises.

Seek complementarities or independence in modes of production of food and energy crop production through research and extension.

Finally, never underestimate the ability of the natural world to continually evolve to create new diseases, pests, and other problems for agriculture. Agriculture is a combination of biological sciences, social sciences, human health, and business. As such, it is never static. We should never have let our investment in agricultural research, extension, and education to fall so far behind the steady growth in demand for agricultural products. Improvement in crop and animal genetics requires bold, responsive, and persistent scientific effort, everywhere in the world. I have been combating the devastating wheat stem rust disease that has spread across Africa and Southwest Asia. It is development challenges like this that need continual attention by policymakers and researchers alike to provide farmers the technology necessary for achieving food security.

Thank you for inviting me to make these comments. It has been an enormous honor for me to have a small role in establishing the Global Food Security Act of 2009.

ALLIANCE FOR GLOBAL FOOD SECURITY,
Washington, DC, March 23, 2009.

Hon. JOHN F. KERRY, *Chairman,*

Hon. RICHARD G. LUGAR, *Ranking Minority Member,*

Senate Committee on Foreign Relations, U.S. Senate, Washington, DC.

DEAR CHAIRMAN KERRY AND SENATOR LUGAR: On behalf of the Alliance for Global Food Security, I respectfully submit this letter as testimony for the March 24, 2009, Committee on Foreign Relations hearing on "Alleviating Global Hunger: Challenges and Opportunities for U.S. Leadership."

The members of the Alliance are private voluntary organizations and cooperatives (jointly called "PVOs" in this letter) that are committed to addressing hunger, malnutrition and food insecurity. They operate in approximately 100 developing countries, implementing emergency and development programs that directly engage, support and build the capacity of local communities, enterprises and institutions. Our members seek adequate resources for food security programs and the adoption of government policies that support multifaceted programs that address the underlying causes of hunger. Thus we are most grateful that the committee is holding a hearing on opportunities for U.S. leadership in alleviating global hunger.

THE HUNGER QUANDARY

An important element of American's foreign policy is "soft power," which entails focusing more resources on addressing problems before they become crises, building local capacity and institutions, and conveying America's compassion to the world. There is perhaps no greater example of a "problem" that can lead to a crisis than hunger and its underlying causes, and perhaps no greater way to show compassion than to decrease the chances that an individual, community and nation will suffer from hunger.

Yet, tackling hunger seems a daunting task. Just the sheer number of people affected by hunger is overwhelming. While the first Millennium Development Goal (MDG) is to cut hunger in half by 2015, the number of people suffering from chronic hunger actually increased from 800 million in 1996 to 842 million in 2004. With escalating food and fuel prices in 2007 and 2008, the number increased even more to 963 million. In addition to these chronic needs, as we can read in the paper nearly every day, millions more are facing starvation due to emergencies arising from adverse weather, natural disasters, conflicts, economic downturns, and detrimental government policies.

"Food security" covers an array of factors that assure a person, community and country will not suffer from hunger. It is defined in the U.S. Food for Peace Act as "access by all people at all times to sufficient food and nutrition for healthy and productive lives." Food security can be broken down into three major components: (1) Availability of food, usually in the market or from production; (2) ability to access food through procurement, production and safety net programs, and the distribution of food among household and community members; and (3) utilization of food, which includes the affect of preparation and ability to digest and absorb nutrients.

Food security is negatively affected by a wide range of issues, including poor agricultural productivity; high unemployment; low and unpredictable incomes; remoteness of farm communities; susceptibility to natural disasters, civil unrest and instability; wide discrepancies between the well-off and the poor; chronic disease; and

lack of basic health, education, water and sanitation services. Well-planned and well-executed agriculture, rural development, health, nutrition, and food aid programs address these underlying causes of hunger. The integration of all of these types of programs in the field can provide an even more powerful and lasting impact. Countries with failing governments, lack of protection for their citizens, and conflicts are those where we see protracted and severe hunger, indicating the importance of incorporating food security issues into U.S. diplomatic and security efforts.

Thus, to eradicate hunger the multiple aspects of food security must be addressed, which requires a comprehensive approach. The Global Food Security Act of 2009 (S. 384), introduced by Senators Richard Lugar and Robert Casey, is intended to set in motion a U.S. Government strategy to address the food security needs of the developing world. This legislation provides an opportunity to establish food security as a theme of U.S. foreign aid, to expand agriculture, rural development and nutrition programs, and to focus more resources on improving the living conditions, productivity and livelihoods of small farmers, pastoralists and the rural poor.

The Alliance for Global Food Security is most grateful for the leadership of Senators Lugar and Casey in developing this bill. We urge congressional action, but believe several improvements are needed to cover current gaps in food security programming and to ensure the engagement of the poor communities where the need is greatest.

COORDINATED POLICIES AND PROGRAMS

One hurdle for establishing a unified U.S. policy on global food security is that our Nation's food security programs are administered by multiple agencies and are not well coordinated. Most global food security programs are administered by the U.S. Agency for International Development (USAID), but there are significant programs at the U.S. Department of Agriculture and Department of State. Several other agencies also are involved in various ways, including the Department of Defense, the Millennium Challenge Corporation, the Department of the Treasury, the Office of the U.S. Trade Representative and the Department of Health and Human Resources. However, there is no comprehensive framework that identifies objectives, the contributions of each agency or program, and the expected outcomes. A food security framework would allow the identification of best practices, commonality of indicators to track progress and results across multiple interventions, and increased effectiveness by scaling up programs that work.

To develop and to track progress of such a strategy, a coordinator with sufficient authority and resources is needed. The 1988 Aid to Trade Missions Act established a White House position that is now called the "Special Assistant to the President for Food and Agriculture," who could be given the food security portfolio and the responsibility to bring together stakeholders and government officials that manage these programs and develop a government-wide strategy. This is essentially the role envisioned for the "White House Coordinator on Food Security" that would be established in S. 384.

While responsibility for each program ultimately must lie with the appropriate administrative agency, a White House Coordinator and the establishment of a global food security strategy would allow the U.S. Government to bring together the expertise and capacities of multiple agencies, the private sector, and nongovernmental organizations to address the problem. Currently, there are interagency working groups on specific issues, such as food aid and last year's food crisis, but a method for ongoing consultations among relevant government and nongovernmental officials does not exist.

Thus, the Coordinator should be required to establish a process for ongoing consultations with government agencies as well as nongovernmental organizations that conduct international antihunger programs.

Even within USAID, where most food security programs are administered, different programs addressing food security could be better coordinated or linked to others and would be benefited from ongoing consultations with stakeholders.

There is an opportunity as part of S. 384 to leverage and to improve program effectiveness by ensuring that USAID's bureaus, offices, overseas missions and programs related to food security are coordinated and that synergies among different programs are embraced.

As one example, the Food for Peace Office is under the USAID Bureau for Democracy, Conflict and Humanitarian Assistance (DCHA) and the Agriculture Office is under the Bureau for Economic Growth, Agriculture and Trade (EGAT). Food for Peace's primary objective is to promote food security through the use of Public Law 480, Title II food aid. Most of the funds are provided for emergency aid. However, there are also developmental programs that are implemented by PVOs primarily in

poor, rural areas where the majority of people are landless laborers, smallholder farmers and pastoralists. Those PVO food aid programs have resulted in increased incomes and agriculture productivity, decreased malnutrition among young children, the development of viable agricultural and other enterprises, and stronger safety nets and community groups to support social services.

Hunger alleviation and the rural poor are also the focus of section 103 of the Foreign Assistance Act (Agriculture, Rural Development and Nutrition), which has the following objectives—“(A) to alleviate starvation, hunger, and malnutrition; (B) to expand significantly the provision of basic services to rural poor people to enhance their capacity for self-help; and (C) to create productive farm and off-farm employment in rural areas to provide a more viable economic base and enhance opportunities for improved income, living standards, and contributions by rural poor people. . . .” Since opportunities for using the Food for Peace program for agriculture-related programs are limited and additional funding is needed to scale up and to expand those community-based programs, it would seem logical that development assistance funds provided through EGAT or USAID missions should be available.

However, there are few opportunities where a PVO or cooperative can access development assistance funds for directly working with and mobilizing chronically poor, rural households.

Agriculture assistance funds are rarely available to support the PVO approach of working directly with rural communities on the adoption of appropriate technologies; improving agricultural productivity; strengthening farmer organizations, agricultural enterprises and cooperatives; linking smallholder farmers to markets, inputs and financial services; improving rural infrastructure and natural resource management; and strengthening institutions to support the needy and to improve nutrition of vulnerable groups. Clearly, this is one issue that we urge the committee to remedy if it marks up food security legislation.

THE FOOD CRISIS AND ITS IMPACT ON THE RURAL POOR

The lack of food security planning and resources became very apparent last year as food and fuel prices soared, resulting in protests in over 30 poor countries and adding 100 million people to the 850 million already suffering from hunger. The United Nations, The World Bank and other international institutions that reviewed the history of the food crisis found that for two decades demand for food had been growing due to population growth, higher incomes, and the diversification of diets. During that period, public and private investment in agriculture in developing countries had been declining and external assistance to agriculture dropped from 20 percent of Official Development Assistance in the early 1980s to 3 percent by 2007. Production in most developing countries was stagnant or dropped as the international markets offered low prices for staples.

Prices for basic foodstuffs began rising again in 2004 and peaked in 2007/2008, when world grain stocks fell to their lowest levels in 30 years. By that point, net food-importing developing countries were hit the hardest as they lacked sufficient reserves.

Last year, when prices peaked, there was great concern about urban populations, as they rely on markets and not their own agriculture production. Indeed, the impact was most obvious in urban areas, as people who were not previously considered food insecure could not buy sufficient amounts of food and the visibility of protests and threat of political instability drew attention to their needs.

However, three out of five poor people in developing countries reside in rural areas, where the majority of households are net food consumers and the majority of farms are small, have low productivity and are not linked to markets, inputs or financial services. For smallholder farmers and pastoralists, rising costs of and poor access to inputs and services made it more difficult to maintain production levels at previous rates, and even if they had excess to sell, lack of access to markets made it difficult to get a high price. Thus, they could not respond to or benefit from the opportunity that increased demand and higher prices for food should have provided. On balance, they were actually set back by the price increases.

THE COMPREHENSIVE FRAMEWORK FOR ACTION

In June 2008, government leaders held a High Level Conference on Food Security to discuss the food crisis. They produced the “Comprehensive Framework for Action (CFA)” that identifies objectives and outcomes needed to realize the global commitments laid out in the MDGs and to address the global hunger crisis.

The CFA has two main objectives: “(1) To improve access to food and nutrition support and increase food availability, by meeting the immediate needs of vulnerable populations;” and “(2) to address the underlying factors driving the food crisis,

by building longer term resilience and contributing to global food and nutrition security.” To meet these short- and long-term objectives, the CFA calls for the following actions—

1. Provide access to emergency food assistance, nutrition interventions and safety nets;
2. Expand social protection systems through both food and cash inputs;
3. Boost smallholder farmer food production (short term) and sustain improvements in smallholder food production (longer term) through such things as supplying critical inputs and services, rehabilitating rural and agricultural infrastructure, linking small-scale farmers to markets, investing in crop, animal and fisheries research, supporting the development of producer organizations and private enterprises, and implementing supportive policies;
4. Adjust tax and trade policies;
5. Manage macro-economic implications, such as inflation and financing food imports;
6. Improve international food markets by reducing agricultural trade distortions and providing aid-for-trade to developing countries; and
7. Develop an international consensus on biofuels.

All of these items, plus others, are appropriate to consider when developing a U.S. global food security strategy. The first three items are also relevant to the provisions of S. 384 that would amend section 103 and other agriculture-related provisions of the Foreign Assistance Act (FAA) and create a new fund for food emergencies.

AGRICULTURE, RURAL DEVELOPMENT AND NUTRITION

S. 384 amends section 103 of the FAA, Agriculture, Rural Development and Nutrition, by adding 3 new objectives: Expand economic participation of and safety nets for people living in extreme poverty, support conservation farming and sustainable agricultural techniques in response to climate change, and improve nutrition of vulnerable populations, such as children under the age of two. It authorizes appropriations for fiscal years 2010 through 2014 for section 103 programs, starting at \$750,000,000 in FY 2010 and increasing to \$2,500,000,000 by 2014. The legislation also requires funding for U.S. universities and colleges to promote research and support institutions of higher learning in developing countries through a new program called “Higher Education Collaboration for Technology, Agriculture, Research, and Extension,” or “HECTARE,” starting at \$100 million in FY 2010 and increasing to \$500 million in FY 2014.

Expanding the objectives of section 103, authorizing increased funding and calling for increased investments in locally appropriate research and technologies are steps toward greater U.S. engagement in food security, but an important piece must be added. S. 384, current law and the CFA point to the importance of improving the productivity, incomes and nutrition of poor, rural populations, which is an area where PVOs and cooperatives have expertise and a track record. Yet, as noted earlier, development assistance funds are rarely made available by USAID to PVOs and cooperatives for these purposes and the bill does not address this problem.

To remedy this gap we seek an amendment to assure that USAID establishes a program, or programs, to provide assistance through PVOs and cooperatives that can effectively mobilize and build capacity in rural and poor communities in order to achieve the objectives of section 103. The size and details of such a program would be left to the discretion of the Administrator.

PVOs establish local relationships in order to work directly with affected communities and households to solve their food security problems. As part of their programs, local institutions, associations and businesses are developed and strengthened in order to create more durable benefits. PVOs have demonstrated their ability to increase agricultural productivity and incomes for the poor, to improve natural resource management and to improve nutrition and care for the most vulnerable. Their potential is currently underutilized in agriculture and rural development programs and this amendment will take a step to assure they are incorporated into these critical development efforts.

RESOURCES TO RESPOND TO FOOD CRISES

A more holistic and preventative approach to food crises is needed. A significant portion of Public Law 480, Title II funds is already available for emergency food needs and the Bill Emerson Humanitarian Trust is a back up reserve of funds in case Title II funding is insufficient for these purposes. International Disaster Assistance provides cash funding for emergency needs, including local and regional purchase, and some disaster funds are used for monitoring and preparedness. However,

too little funding is available for risk reduction and responses that lead to a more rapid and complete recovery.

S. 384 establishes and authorizes \$500,000,000 in appropriations for the "Emergency Food Assistance Fund," which can be used for urgent food assistance needs, including local and regional purchase and distribution of food and nonfood assistance. To distinguish this new Fund from other authorized programs, to be sure it covers the potential range of emergency needs, and to be more preventative than just response oriented, we suggest adding several additional uses.

In addition to local purchase, cash transfers, food vouchers and nonfood resources for urgent needs, resources and assistance from this Fund should be available for risk management and prevention, early intervention and mitigation of the potential impact of a food crisis, and actions that support more rapid and complete recovery.

Mr. Chairman and Senator Lugar, the Alliance is most grateful for your concern and desire to address global hunger. We would be pleased to respond to questions or to provide additional information that may be helpful in your efforts.

Sincerely,

ELLEN LEVINSON,
Executive Director.

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