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PRESERVING THE AMAZON: A SHARED MORAL IMPERATIVE

HEARING

BEFORE THE

SUBCOMMITTEE ON
THE WESTERN HEMISPHERE, CIVILIAN SECURITY,
AND TRADE

OF THE

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HOUSE OF REPRESENTATIVES

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PRESERVING THE AMAZON: A SHARED MORAL IMPERATIVE

Tuesday, September 10, 2019

House of Representatives

Subcommittee on the Western Hemisphere,

Civilian Security and Trade

Committee on Foreign Affairs

Washington, DC

The committee met, pursuant to notice, at 10 a.m., in room 2172 Rayburn House Office Building, Hon. Albio Sires (chairman of the subcommittee) presiding.

Mr. SIRES. Good morning. This hearing will come to order. This hearing, titled "Preserving the Amazon: A Shared Moral Imperative," will focus on the fires taking place in the Brazilian Amazon to highlight the global importance of the Amazon and the role we in the United States should play in helping to combat climate change and protect the rain forest.

Without objection, all members may have 5 days to submit statements, questions, extraneous materials for the record, subject to the length limitation in the rules.

I would like to submit a statement for the record from my friend and former colleague, Henry Waxman of California.

[The information referred to follows:]

Statement for the Record Submitted by Chairman Albio Sires
From Former Congressman Henry Waxman, chairman of Mighty Earth
WHEM Hearing: Brazilian Amazon Fires
September 10, 2019

After retiring from Congress, I founded an international environmental organization, Mighty Earth. Mighty Earth works in the United States and around the world on big issues like protecting threatened landscapes, climate change, and conservation. We have a particular focus on protecting tropical rainforests, and have been working hard for years to stop the burning of the Amazon and other Latin American ecosystems threatened by irresponsible agricultural practices.

For that reason, I was very encouraged to learn of the hearing you are holding about the destruction of the Amazon. There is a need to focus on the outsized role that companies with a major presence in the United States, notably Cargill, Bunge, and JBS have played in both the current crisis and their longstanding unnecessary destruction of forests.

While the mind-boggling encouragement of deforestation by President Bolsonaro in Brazil and President Morales in Bolivia have played a significant role in the recent surge in deforestation, these companies have for many years irresponsibly financed deforestation on the frontier. They frequently take a no-questions asked approach to purchasing cattle and soy animal feed, buying from some of the worst deforesters behind this crisis and the destruction of other Latin American ecosystems.

What is perhaps most tragic about this destruction is that it is entirely unnecessary. There are approximately 1.6 billion acres of previously deforested land in South America where agriculture could be expanded without threatening native ecosystems or the local communities who rely on them. In addition, these companies themselves have had success in eliminating deforestation where they have tried to do so, most notably in the Amazon Soy Moratorium that has effectively eliminated deforestation linked to soy in the Brazilian Amazon since 2006, but have frustratingly continued to drive deforestation in other parts of Brazil, the Bolivian Amazon, and Argentina and Paraguay.

I hope you are able to investigate the role these companies have played and some of the solutions.

We have worked with academic institutions, remote sensing specialists, field investigators and other experts around the world to map which companies are mostly closely tied to the fires in a just-published report that I hope can inform your hearing https://stories.mightyearth.org/amazonfires/index.html. The report finds that JBS and Cargill are the two companies in the cattle and soy sectors most closely linked to deforestation.

We had conducted a series of previous investigations into the leading companies connected to deforestation for soy, consistently finding Cargill and Bunge most closely linked, even as

competitors like Louis Dreyfus and even the Chinese state-owned food company COFCO have moved ahead with better sustainability measures:

"Cargill, the Worst Company in the World" - https://stories.mightyearth.org/cargill-worst-company-in-the-world/index.html

"The Avoidable Crisis" http://www.mightyearth.org/avoidablecrisis/

"Amazon Deforestation, Once Tamed, Comes Roaring Back" https://www.nytimes.com/2017/02/24/business/energy-environment/deforestation-brazil-bolivia-south-america.html and https://www.mightyearth.org/mysterymeat/d

These companies have the power to take simple steps to stop deforestation, but have not done so. I hope your committee can ask about these failures. In addition, my colleagues and I would be very happy to meet with your staff and bring along experts, who can share additional information about solutions to the Amazon crisis, such as expanding the scope of the Lacey Act, eliminating the use of food-based biofuels, and better integrating environmental concerns into trade.

Thank you again for shedding light on this issue.

Mr. SIRES. I will now make an opening statement and then turn it over to the ranking member for his opening statement.

Good morning, and thank you for being here today as our witnesses on this hearing. I convened this hearing because protecting the Amazon is vital for the health of our planet.

The Amazon rainforest is the most biodiverse region in the world. It contains approximately one-fifth of the world's surface fresh water supply.

The water released by the Amazon's plants and rivers impact climate throughout South America and can affect precipitation and the severity of droughts.

The Amazon also stores billions of tons of carbon dioxide, a portion of which enters the atmosphere when deforestation occurs, potentially accelerating global climate change.

For these reasons and many more, the fires currently burning in the rainforest are an issue that should concern all of us. While the fires have helped draw attention to what is happening in the Amazon, we know that they are just one symptom of the much bigger problem of deforestation.

Scientists generally agree that the Amazon could reach a tipping point if current deforestation trends continue. This scenario would jeopardize the many benefits the Amazon provides to our climate and would threaten millions of plants and animal species the rainforest ecosystem supports.

The goal of this hearing is to understand the causes and scope of the problem and explore solutions to preserve the Amazon.

Today, we will hear experts' analysis of Brazil's environmental protection policies, challenges to their implementation, and recommendations about what more needs to be done.

I deeply value our relationship with Brazil and appreciate the Brazilian government's historical commitment to balance its promotion of economic development with efforts to preserve the environment.

In looking for a path to success we can look to Brazil's recent past. From 2005 to 2014, deforestation in the Brazilian Amazon declined by over 70 percent during the same period the Brazilian economy grew and nearly 30 million people were lifted out of poverty.

In other words, well-regulated economic development efforts have gone hand in hand with successful environmental protection programs in the past.

There is no reason why this cannot be achieved again. I believe the United States has a role to play in supporting Brazil on this issue and I urge my colleagues on both sides of the aisle to work together in fulfilling our global leadership role.

We must also support the indigenous communities that live in the Amazon whose right to live on their ancestral lands for generations to come depends on the health of the rainforest.

Preserving the Amazon is not just the right thing to do. This is an issue that directly affects our own constituents because the health of the Amazon rainforest ultimately impacts the water we drink and the air we breathe.

Unfortunately, the United States cannot be a leader in the environmental if we do not return to policies of acknowledging the scientific reality of global climate change.

I strongly criticized the Trump Administration's decision to withdraw from the Paris Climate Agreement not only because it ignored overwhelming scientific evidence but also because it has undermined our credibility on the world stage and hurt our national security interests.

This should not be a partisan issue. If we do not take the threat of climate change seriously, our children and grandchildren will never forgive us for failing to meet the moral demand of our time.

Today, I look forward to a bipartisan discussion about how the U.S. Congress can advocate for the necessary policies to combat climate change and work with the Brazilian government to protect the Amazon.

Thank you, and I know turn to Ranking Member Rooney for his opening statement.

[The prepared statement of Mr. Sires follows:]

House Committee on Foreign Affairs
Western Hemisphere Subcommittee

Chairman Albio Sires (D-NJ)

Opening Statement –
"Preserving the Amazon: A Shared Moral Imperative"
Tuesday, September 10, 2019

- **Good Morning everyone and thank you to our witnesses for being here today.**
- **I convened this hearing because protecting the Amazon is vital for the health of our planet.**
- **The Amazon Rainforest is the most biodiverse region in the world.**
- **It also contains approximately one-fifth of the world's surface fresh water supply.**
- **The water released by the Amazon's plants and rivers impacts climate trends throughout South America and can affect precipitation and the severity of droughts.**
- **The Amazon also stores billions of tons of carbon dioxide, a portion of which enters the atmosphere when deforestation occurs, potentially accelerating global climate change.**
- **For these reasons and many more, the fires currently burning in the rainforest are an issue that should concern us all.**
- **While the fires have helped draw attention to what is happening in the Amazon, we know that they are just one symptom of the much bigger problem of deforestation.**
- **Scientists generally agree that the Amazon could reach a tipping point if current deforestation trends continue.**
- **This scenario would jeopardize the many benefits the Amazon provides to our climate and would threaten the millions of plant and animal species the rainforest ecosystem supports.**
- **The goal of this hearing is to understand the causes and scope of the problem and explore solutions to preserve the Amazon.**
- **Today, we will hear expert analysis of Brazil's environmental protection policies, challenges to their implementation, and recommendations about what more needs to be done.**
- **I deeply value our relationship with Brazil and appreciate the Brazilian government's historical commitment to balancing its promotion of economic development with efforts to preserve the environment.**

- **In looking for a path to success, we can look to Brazil's recent past.**
- **From 2005 to 2014, deforestation in the Brazilian Amazon declined by over 70%.**
- **During that same period, the Brazilian economy grew, and nearly 30 million people were lifted out of poverty.**
- **In other words, well-regulated economic development efforts have gone hand in hand with successful environmental protection programs in the past.**
- **There is no reason why this cannot be achieved again.**
- **I believe the United States has a role to play in supporting Brazil on this issue and I urge my colleagues on both sides of the aisle to work together in fulfilling our global leadership role.**
- **We must also support the indigenous communities that live in the Amazon whose right to live on their ancestral lands for generations to come depends on the health of the rainforest.**
- **Preserving the Amazon isn't just the right thing to do.**
- **This is an issue that directly affects our own constituents because the health of the Amazon Rainforest ultimately impacts the water we drink and the air we breathe.**
- **Unfortunately, the United States cannot be a leader on the environment if we do not return to a policy of acknowledging the scientific reality of global climate change.**
- **I strongly criticized the Trump administration's decision to withdraw from the Paris Climate Agreement not only because it ignored overwhelming scientific evidence, but also because it has undermined our credibility on the world stage and hurt our national security interests.**
- **This should not be a partisan issue.**
- **If we do not take the threat of climate change seriously, our children and grandchildren will never forgive us for failing to meet the moral demands of our time.**
- **Today, I look forward to a bipartisan discussion about how the United States Congress can advocate the necessary policies to combat climate change and work with the Brazilian government to protect the Amazon.**
- **Thank you and I now turn to Ranking Member Rooney for his opening statement.**

Mr. ROONEY. Thank you, Chairman Sires.

I think this hearing on the shared moral imperative of the Amazon is very important. The media is focused on the Amazon in recent weeks because of the fires there.

The fires have broadened public awareness of the unique ecological importance of the region and its global impact. I personally have spent much time there. I have traversed it from Iquitos, Peru to Manaus, Brazil and have navigated the Napo in Ecuador.

In Brazil, the Amazon biome constitutes 2.1 million square miles of rainforest, 40 percent of the world's, so the world has a vested interest in preserving the Amazon rainforest.

It contains nearly one-half of the world's carbon, which is in many ways an essential defense against global climate change.

Recent concerns over deforestation and fire hot spots in the Amazon are legitimate and credible. However, this year's number of fires registers as the eighth highest in the last 20 years and 2018's was the twelfth highest.

While not the highest number of fires in hectares of deforestation, they are still unacceptable. The governments of the region have the responsibility to enforce the laws and take the necessary measures to preserve the Amazon.

Laws and regulations enacted by Brazil since 2004 have reduced deforestation and placed regulations on legal burning and land-clearing practices.

Within the Amazon biome, private property owners are mandated to conserve at least 80 percent of their lands' native vegetation.

Further, Brazil's commitment to the 2009 Copenhagen Agreement has reduced deforestation by 73 percent since its peak in 2004. that is a 2.28 gigaton reduction in CO2 emissions.

Brazil also invested in monitoring technology and data bases to detail events in the Amazon while also investing in renewable resources to achieve 45 percent usage of renewable energy.

Further, just last week, leaders from Brazil, Bolivia, Colombia, Ecuador, Guyana, Peru, and Surinam held a regional summit in Colombia to discuss regional measures to protect the Amazon.

The United States and the international community must also work with these countries to advance conservation of the Amazon rainforest.

The United States provided over $20 million in foreign aid assistance for natural resource and biodiversity conservation in 2017 and 2018, and created the partnership for conservation of the Amazon Biodiversity Program, which conserves the Amazon through management and monitoring of protected areas.

It also considers the critical role of the private sector in developing public-private partnerships aimed at conservation and sustainability for existing communities within the Amazon.

Through USAID, the Forest Service works with the Brazilian government on sustainable forest management and biodiversity.

In Fiscal Year 2019, Congress appropriated $11 million through USAID to be used for environmental programs. International cooperation is essential to preserving the Amazon rainforests but will only be effective if the host governments are committed to meeting conservation goals.

As a representative from southwest Florida whose district includes the Everglades, I have a thorough understanding of the importance of preserving our watersheds.

Data shows that what happens in the Amazon affects us in Florida and throughout the United States from rain patterns in the Midwest to the sargassum grass washing up on the beaches in the Caribbean, Cancun, and the Gulf of Mexico now, and the algae blooms in the Gulf of Mexico.

These blooms, which severely threaten tourism-based economies in Florida and the other coastal areas, are partly caused by nutrient runoff from the Amazon.

I will continue to work with my colleagues in Congress as well as international partners in the Brazilian government to seek reduced burning, reduced deforestation, and reduced outflow of polluted water through the Amazon watershed.

I look forward to hearing the testimoneys and opinions of our important witnesses today.

And thank you, Mr. Chairman. I yield back the balance of my time.

Mr. SIRES. Thank you very much, Ranking Member Rooney.

I will now introduce Dr. Monica de Bolle. She is the director of the Johns Hopkins School of Advanced International Studies, Latin American Program and holds the Riordan Roett Chair at Johns Hopkins.

She has also a senior fellow at the Peterson Institute of International Economics. She previously worked as the director for the Institute for Economic Policy Research in Brazil and as an economist at the International Monetary Fund. She holds a Ph.D. in economics from the London School of Economics. Welcome.

We will hear from Dr. Dan Nepstad, the president and founder of the Earth Innovation Institute. Dr. Nepstad has worked in the Brazilian Amazon for more than 30 years, publishing over 160 papers and books on regional ecology and public policy.

Before founding the Earth Innovation Institute, he was a senior scientist at Woods Hole Research Center, a lecturer at Yale University, and co-founder of the Amazon Environmental Research Institute.

He was also a lead author of the fifth assessment report by the Intergovernmental Panel on Climate Change. He holds a Ph.D. in forest ecology from Yale University. Thank you for being here.

Finally, we will hear from Mr. Bill Millan, chief conservation officer and director of policy at the International Conservation Caucus Foundation.

Previously, Mr. Millan was a career Foreign Service officer for over 20 years.

He served in U.S. embassies in Colombia and Venezuela and worked as a political counselor at the U.S. Mission to the Organization of American States.

He is a U.S. Army veteran and earned two Bronze Stars in Vietnam. He received his Master's degree from the University of Virginia. Thank you for your service and for joining us here today.

I ask the witnesses to please limit your testimony to 5 minutes, and without objection your prepared written statements will be made part of the record.

Dr. de Bolle, it is now your turn.

STATEMENT OF DR. MONICA DE BOLLE, DIRECTOR, LATIN AMERICAN STUDIES PROGRAM, SCHOOL OF ADVANCED INTERNATIONAL STUDIES, JOHNS HOPKINS UNIVERSITY, SENIOR FELLOW, PETERSON INSTITUTE FOR INTERNATIONAL ECONOMICS

Dr. DE BOLLE. Good morning, Mr. Chairman, members of the committee. It is my distinct honor to testify before you today on how Brazil and the United States should work together to preserve the Amazon rainforest.

Mr. Chairman, my remarks this morning will summarize my submitted written testimony.

Global warming is widely and correctly blamed for wildfires around the world. But the Amazon fires in Brazil represent a more specific government policy failure as Brazilian public agencies that are supposed to curb man-made fires have been deliberately weakened.

These fires set by farmers, cattle growers, and others take place every year. But they have risen in number and severity in 2019.

After President Jair Bolsonaro took office, he set about fulfilling his campaign pledge to ease environmental land use and health regulations.

The Amazon fires are not just a tragedy but an opportunity for the governments of Brazil and the United States to stop denying climate change and cooperate on strategies to preserve the rainforest and develop ways to sustainable use its natural resources.

The record of such cooperation has already yielded positive results. For example, there is a history of collaboration between NASA and Brazil's National Institute for Space Research, employing state-of-the-art technologies to monitor deforestation.

It is possible to accommodate competing demands of economic interests, food security and saving or even restoring the Amazon rainforest along with its life-sustaining rainfall for Brazil and the world at large.

Following are the major policy recommendations presented in this testimony. The United States should rejoin the Paris Climate Agreement and immediately establish a joint action plan with Brazil to implement steps to preserve and restore the rainforest.

Under the Paris Agreement, Brazil has committed to restoring 12 million hectares of native vegetation in cleared areas. Brazil should impose greater regulations on land use in the Amazon that would allow farming and cattle grazing in some areas to sustain livelihoods of local and indigenous people while cracking down on illegal uses such as logging and mining and the invasion of public lands.

To combat destructive activities, the government should encourage livestock rearing and cultivation in nonsensitive areas while more systemically demarcating land and property ownership rights in the rainforest itself.

Brazil should lead an international effort to foster the diversity of native vegetation in the Amazon region while preserving the rainforest and also creating jobs and reducing poverty and income inequality which plague the region.

Sustainable production of livestock and soy is already happening in areas outside the Amazon. These activities could be expanded to areas adjacent to the rainforest following an effort to demarcate land and enforce property rights.

The international community should work with Brazil to revive and expand the Amazon Fund, created years ago but now in limbo, to raise international donations for investment in sustainable activities that protect the rainforest.

The Fund would greatly benefit from the financial support of the United States. Technical cooperation agreements to develop new technologies for sustainable development are a must.

Finally, the Brazilian constitution allows the economic exploration of indigenous lands in cooperation with local communities and with a focus on sustainability.

However, use of these lands is yet to be formalized through adequate regulation. The United States with its experience in formulating and applying similar regulations can play a key role in advising the Brazilian government on such roles.

The rise in deforestation precedes President Bolsonaro's electoral victory. But the dismantling of environmental agencies under his watch and his past and present rhetoric on environmental issues have emboldened farmers, loggers, and other players to engage in predatory behavior in the rainforest.

It is time for the international community to cooperate on a strategy to provide the resources to conserve, restore, and develop the planet's largest continuous rainforest.

The close relationship that has developed between the leaders of Brazil and the United States should be used to jumpstart this effort before it is too late.

Thank you.

[The prepared statement of Dr. de Bolle follows:]

Monica de Bolle, PhD

Senior Fellow | Peterson Institute for International Economics

Riordan Roett Chair in Latin American Studies &
Director of Latin American Studies and Emerging Markets, SAIS | Johns Hopkins University

House Committee on Foreign Affairs

Subcommittee on the Western Hemisphere, Civilian Security, and Trade

"Preserving the Amazon: A Shared and Moral Imperative"

Washington, DC, September 10, 2019

Testimony

"Preserving the Amazon: A Shared and Moral Imperative

Global warming is widely and correctly blamed for wild fires around the world. But the Amazon fires in Brazil represent a more specific government policy failure over many years, especially recently, as Brazilian public agencies that are supposed to curb man-made fires have been deliberately weakened. These fires, set by farmers, cattle owners, and others, take place every year, but they have risen in number and severity in 2019—after President Jair Bolsonaro took office and set about fulfilling his campaign pledge to ease environmental, land use, and health regulations.

The fires in Brazil are a classic case of what sociologists call the "tragedy of the commons," a term that describes what happens when shared resources are exploited by users pursuing their own livelihoods at the expense of the common good. Societies know how to deal with this problem: through collective action and government regulation. The Amazon fires are not just a "tragedy" but an opportunity for the governments of Brazil and the United States to stop denying climate change and cooperate on strategies to preserve the rainforest and develop ways to sustainably use its natural resources. The record of such cooperation has already yielded positive results. For example, there is a history of collaboration between NASA and Brazil's National Institute for Space Research (INPE) employing state-of-the-art technologies to monitor deforestation. We can return to the model of Brazil working with the United States to implement the Paris Climate Accord. It is possible to accommodate competing demands of economic interests, food security, and saving or even restoring the Amazon rainforest, along with its life-sustaining rainfall, for Brazil and the world at large.

Following are the major policy recommendations presented in this testimony:

- The United States should rejoin the Paris climate agreement and immediately establish a joint action plan with Brazil to implement steps to preserve and restore the rainforest.
- Brazil should impose greater regulations on land use in the Amazon region that would allow farming and cattle grazing in some areas to sustain livelihoods of local and indigenous people while cracking down on illegal uses, such as logging and mining, and the invasion of public lands. To combat destructive activities, the government should encourage livestock rearing and cultivation in non-sensitive areas while more systematically demarcating land and property ownership rights in the rainforest itself.
- Brazil should lead an international effort to foster the diversity of native vegetation in the Amazon region while preserving the rainforest and also creating jobs and reducing poverty and income inequality. Sustainable production of livestock and soy is already happening in areas outside the Amazon region. These activities could be expanded to areas adjacent to the rainforest following an effort to demarcate land and enforce property rights.
- The international community should work with Brazil to revive and expand the Amazon Fund, created years ago but now in limbo, to raise international donations for investment in sustainable activities that protect the rainforest.

BACKGROUND

The Amazon region covers 60 percent of Brazil's land area, or 3.3 million square miles, and is home to a population of 18 million. The region spanning nine Brazilian states has the largest continuous tropical

forest in the world and harbors 20 percent of the planet's plant and animal species. The trees of the Amazon store 60 to 80 billion tons of carbon in total. The rainforest is often wrongfully portrayed as "the lungs of the world"—it stores carbon, but that is not what fights climate change. Setting fire to the forest for deforestation may release as much as 200 million tons of carbon into the atmosphere a year, which would spur climate change at a much faster clip, not to mention the associated changes in rainfall patterns that may result from tearing down the Amazon.[1]

The region has a rich diversity of native vegetation but also the nation's highest levels of poverty.[2]

The Amazon region has suffered decades of deforestation and land degradation. To promote economic development, Brazilian authorities have increasingly encouraged the building of roads, ports, hydroelectric power plants, and other infrastructure projects, as well as logging, soybean production, mining, and cattle ranching.[3] In 2004, accelerating deforestation prompted the Brazilian government to launch the Action Plan for Prevention and Control of Brazilian Amazon Deforestation (PPCDAm). It was aimed at monitoring deforestation activity, regulating land rights, and promoting sustainable development. The plan helped reduce deforestation rates by 80 percent from the rate ten years earlier.

The United States contributed by helping to strengthen monitoring mechanisms and law enforcement.[4] A modern satellite-based enforcement system, known as the System for Real Time Detection of Deforestation or DETER, was created in collaboration with NASA and is managed by INPE. It uses high-frequency satellite imagery to monitor recent changes in forest cover, sending alerts to the Brazilian Institute for the Environment and Renewable Natural Resources (IBAMA), which is responsible for law enforcement and the application of fines and other penalties. Proper functioning of INPE and IBAMA is crucial for combating deforestation.

In 2009, the Brazilian government set an ambitious target of reducing deforestation by another 80 percent by 2020. But according to INPE, deforestation has been rising again since 2017. In June 2019, the agency estimated an 88 percent increase in total deforestation compared with the same period in 2018.

BOLSONARO'S POLICIES TAKE A STEP BACKWARD

President Bolsonaro's government has been backsliding in these areas, with disastrous results. The president took office in January 2019 after a far-right nationalist campaign promising to ease environmental regulations and possibly repudiate Brazil's participation in the Paris Climate Accord, although the government has recently affirmed its commitment to comply with the agreement.

Bolsonaro's government has weakened the PPCDAm 2004 and the capabilities of the environmental agencies that monitor and penalize perpetrators of illegal activities in the rainforest. His government has undercut their funding, dismissed personnel, and weakened their oversight and enforcement roles. The

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[1] Some studies find that these emissions could represent as much as 3 percent of global net emissions. See C. Azevedo-Ramos, "Sustainable Development and Challenging Deforestation in the Brazilian Amazon: The Good, the Bad, and the Ugly," paper presented at the symposium "Our Common Ground: Innovations in Land Use Decision-Making," May 8–9, 2007, Vancouver, Canada.

[2] Brazilian Institute of Geography and Statistics (IBGE).

[3] According to Brazil's National Institute for Space Research (INPE).

[4] M. Bettwy, 2005, "NASA Satellite Data used by INPE provides Rapid Analysis of Amazon," NASA.

Brazilian leader has called the law enforcement activities of public environmental agencies excessive, referring to the agencies as "factories of fines and other penalties."

Bolsonaro's positions on climate change and the environment were foreshadowed in his campaign against government regulations and public agencies that he claimed were taking "draconian actions" against producers and exporters. He often declared that the Amazon should be explored by Brazilian producers to further the economic interests of Brazil, and he even accused environmentalists and NGOs of setting the recent fires without presenting evidence to prove the claim.

Earlier in 2019, Senator Flavio Bolsonaro, the president's son, proposed legislation to eliminate the so-called legal reserve requirement that rural properties in the Amazon region maintain native vegetation on 80 percent of their land area, allowing the remaining 20 percent to be used for agriculture or cattle grazing. He set aside the measure in the wake of the recent Amazon fires.

Scientists, NGOs, and environmental activists oppose Bolsonaro's policies, warning that they could stoke disaster. One target of his inflammatory rhetoric is the Amazon Fund, created in 2008 by then president Luiz Inácio Lula da Silva to collect donations for non-reimbursable investments in preventing, monitoring, and fighting deforestation in the Amazon basin, which includes all countries in the region. The Amazon Fund was among the first UN REDD+ initiatives to provide international funding to projects that successfully **R**educe **E**missions from **D**eforestation and forest **D**egradation. It is managed by BNDES, Brazil's state-owned development bank. Since its inception, Norway has been its largest contributor, accounting for 94 percent of its resources, followed by Germany (5 percent), and the Brazilian oil company Petrobras (1 percent). Some 60 percent of the fund's $500 million in disbursements to date have gone to the federal government, the nine Brazilian states spanned by the rainforest, and the two major agencies responsible for regulation and oversight of natural resources, IBAMA and INPE. The remaining 40 percent has been given to universities engaged in environmental research and NGOs. An additional $500 million has not been disbursed and could return to donors if the fund is terminated.

But in May 2019 the Bolsonaro administration announced its intention to change the rules of the fund to compensate Brazilian landowners who lost their properties on the ground that they were not in compliance with the country's environmental codes. The Norwegian government responded by suspending $500,000 in transfers to the Amazon Fund. Germany has also suspended donations. Bolsonaro further declared plans to change the composition of the fund's Steering Committee to pack its membership with more members from his own inner circle. In August, as the Amazon fires captured international attention, the G-7 pledged $20 million in financial aid at its meeting in Biarritz. Bolsonaro rejected the funding as coming from vested interests. The *Washington Post*[5] has reported that Bolsonaro helped to persuade President Donald Trump to vote against the funding, which he did on the ground that Brazil needed to be better consulted. It was a strange turn of events, given that recent polls show the Brazilian public overwhelmingly in favor of international aid for the Amazon.[6] The aid was pushed by President Emmanuel Macron of France, who somehow managed to overlook the fact that predatory exploration of the Amazon rainforest is also rising in French Guiana, a department of France. (Another place of concern is Bolivia, where President Juan Evo Morales Ayma has accused environmental NGOs of having "opaque interests" in the region).

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[5] "How Brazil's nationalist leader built a bond with Trump and won his support in the Amazon fires dispute," *Washington Post*, August 31, 2019.

[6] Datafolha, September 1, 2019. Datafolha is one of Brazil's largest pollsters.

A WAY FORWARD FOR THE AMAZON REGION

Brazilian administrations past and present have been unable to create a sustainable strategy for developing the Amazon region while preserving the rainforest. But many experts say that progress could be made through "regularization" of land use—clearly demarcating who owns what land and what the rights of squatters, or "invaders," should be. The answers are not easy. Many of the farming and grazing activities on lands demarcated for public use are illegal or informal, even though they have been carried out by generations of families, some of them engaging in subsistence farming. Illegal activities on these lands also include logging and mining, but cattle grazing seems to be the major problem. Some analysts maintain that the main obstacle to progress is the Brazilian economy's reliance on beef production, but that claim is an oversimplification. Most of Brazil's beef producers graze their cattle in areas outside the rainforest, where they have a record of respect for preserving forests and biodiversity.

Conserving rainforests can yield economic benefits, but these have rarely been measured. In 2018 Brazilian and American scientists, economists, and agricultural engineers published a study[7] showing that a standing rainforest as opposed to a depleted one can generate more than $8 billion annually from activities like rubber extraction and nut harvesting. The figure also includes gains from the prevention of carbon emissions, which would contribute to combating climate change and preserving the rainforest, thus maintaining the Amazon's rainfall cycle (the rainforest is responsible for generating at least 50 percent of the rain it needs. The Amazon's rain cycle also influences hydrological patterns in much of Brazil and the Southern Cone). Regulating rainfall patterns is vital for farming and livestock, not to mention hydroelectric power generation. Thus, the economic benefit of conservation far outweighs the short-term gains from cutting down the forest and setting it ablaze.

Deforestation and forest degradation were shown to potentially cost agribusiness and the beef sectors $400 million annually, outweighing the short-term gains of destroying land for cattle and soybean cultivation. Beef production does exist in areas adjacent to the rainforest, where some land is degraded to make way for large but low-yielding pasture areas. But outside the Amazon, many cattle producers enjoy adequate property rights and employ sophisticated production techniques and genetic laboratories, which have made Brazil one of the world's largest beef producers and exporters, combining high productivity with environmental sustainability. These more sophisticated livestock producers are increasingly aware that they can follow environmentally sustainable production practices and also boost business and revenues while gaining access to financing. They are also keenly aware of how changes in rainfall cycles in the Amazon region associated with deforestation can damage their livelihoods. They are consequently among the staunch supporters of conservation of the Amazon and harsh opponents of deforestation. Several studies show that since 2010, an estimated two-thirds of the Amazon's deforested area lies within public lands (30 percent) and undesignated areas (25 percent).[8] Fighting deforestation should, therefore, be a part of promoting land regularization to combat irregular occupation, squatting, land conflicts, and uncertainty regarding property rights.[9]

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[7] J. Strand et al., "Spatially Explicit Valuation of the Brazilian Amazon Forest's Ecosystem Services," *Nature Sustainability* 1 (2018): 657–64.
[8] Ibid.
[9] T. Fetzer and S. Marden, "Take What You Can: Property Rights, Contestability, and Conflict," *Economic Journal* 127 (2017): 757–83.

Brazil has ample opportunity to mobilize the government and major stakeholders to tap into the latest research on cattle ranching[10] and expand this sector of the economy. But the Amazon region poses difficult challenges related to land rights. Squatters and invaders are the main culprits in cutting down the rainforest for illegal logging, mining, and cattle grazing. Also, family units have been using previously cleared land for subsistence farming for generations—they are, for the most part, not responsible for deforestation. Distinguishing invaders from informal land users is no easy task. Therefore, one solution would be to grant amnesty to all, providing them with land titles and property rights. However, many environmentalists and other civil society groups are strongly against amnesty as it would compensate invaders for past and present criminal activities—squatters and invaders tend to have close ties with organized crime (drugs and arms trafficking) in the region. The alternative would be to strip those with no legal title of their land and possessions, but this would likely hurt very poor families who ultimately do no harm to the forest. Successive Brazilian administrations have been unable to overcome these obstacles.

Possible Initiatives and Areas for Cooperation

Combating illegal deforestation is crucial for Brazil's international reputation, as well as for promoting its vibrant agribusiness sector and protecting its share of global markets. The fires of the summer of 2019 demonstrate, however, that protecting the Amazon rainforest is a global cause.[11] The international community should, therefore, revive cooperation with the Amazon Fund to invest in ways to reduce deforestation through the possible use of payments for environmental services. Such payments are envisioned under Brazil's 2012 Forest Code but have yet to be regulated. There is great potential in growing the fund by diversifying its donor base to include more countries, such as the United States. These resources could also be used to improve existing monitoring and oversight capabilities, create well-functioning carbon markets in Brazil, and boost reforestation efforts. Reforestation activities that encourage the regrowth of forests in sensitive areas provide jobs to some 4 million workers in the impoverished Amazon region.[12]

One recent study shows that reforestation of the Amazon has high job creation potential[13]: As many as 200 jobs may be created directly or indirectly for each 1,000 hectares of land in recovery. Under the Paris Climate Accord, Brazil has committed to restoring 12 million hectares of native vegetation. This process could create millions of additional jobs. This effort requires an expansion of monitoring efforts. Today Brazilian satellite monitoring systems detect loss of primary vegetation only[14] while ignoring areas that could be coming back to forested status. Tracking forest regeneration is central to compliance with the 2012 Forest Code and the goals established in the Paris Accord.

Finally, the Brazilian Constitution allows the economic exploration of indigenous lands in cooperation with local communities and with a focus on sustainability. However, use of these lands is yet to be

[10] D. Sathler, S. Adamo, and E. Lima, "Deforestation and local sustainable development in the Brazilian Legal Amazonia: An Exploratory Analysis," *Ecology and Society* 23, no. 2 (2018): 30.
[11] J. Strand et al. 2018.
[12] According to IBGE.
[13] C. A. Scaramuzza et al., "Elaboração da Proposta do Plano Nacional de Recuperação da Vegetação Nativa" ["Elaboration of the Proposal of the National Plan for Native Vegetation Recovery"], 2017, PLANAVEG, Ministry for the Environment, Brazil.
[14] J. Assunção and C. Gandour, "Combating Illegal Deforestation," 2019, White Paper, Climate Policy Initiative.

formalized through adequate regulation—98 percent of designated indigenous lands are located in the Amazon. Lack of regulation has also led to an increase in predatory mining in areas equivalent to 20 percent of the Amazon, or 14 percent of Brazilian territory. The United States, with its experience in formulating and applying similar regulations, can play a key role in advising the Brazilian government on such rules.

CONCLUSION

The rise in deforestation precedes President Bolsonaro's electoral victory. But the dismantling of environmental agencies INPE and IBAMA under his watch and his past and present rhetoric on environmental issues have emboldened farmers, loggers, and other players to engage in predatory behavior in the rainforest. On the other hand, the international attention to the Amazon fires provides an opportunity to return to and enhance policies to promote sustainable development strategies in the region.

Mechanisms to foster cooperation and provide financial incentives for sustainable use of the Amazon's resources already exist in the form of the Amazon Fund. Although the Amazon fires should be condemned, it is time for the international community to leave aside its justified grievances with the Bolsonaro administration and cooperate on a strategy to provide the resources to conserve and develop the planet's largest continuous rainforest. The close relationship that has developed between the leaders of Brazil and the United States should be used to jumpstart this effort before it is too late.

Mr. SIRES. Thank you very much.

We will now hear from Dr. Nepstad.

STATEMENT OF DR. DANIEL NEPSTAD, PRESIDENT AND EXECUTIVE DIRECTOR, EARTH INNOVATION INSTITUTE

Dr. NEPSTAD. Good morning. Thank you, Chairman Sires, and it is a real honor to be here to give this testimony. I will give a brief summary of my written submitted testimony.

I moved to the Amazon in 1984 to begin my doctoral research. It was a Wild West town of Paragominas. One thing I learned there is that we tend to think of frontier towns as full of bandits and land grabbers.

That place was full of families from across Brazil trying to improve their lot in life. I think that observation is still relevant today—the need to not demonize the people of the Amazon.

The Amazon is important, as Ranking Member Rooney already mentioned, largely because of its role in the global climate system.

There are seven or 8 years' worth of global emissions of carbons stored in the trees of the Amazon and if those come out—that carbon comes out rapidly it really diminishes the likelihood that humanity will avoid catastrophic climate change.

But there is also an effect on global circulation patterns through the amount of water that is evaporated from Amazon trees. That is enough water, enough conversion of solar energy into water vapor to influence global circulation patterns much the way an El Nino event—a warming of the east Pacific surface waters—shapes rainfall patterns around the world.

The current situation is dire but not unprecedented. Deforestation is up, currently estimated about 6,000 square kilometers against a historical average of 20,000 square kilometers per year—that average through 2005.

But it is higher than last year, perhaps 40 or 50 percent, and it is certainly a cause for concern. There are a lot of fires but as has already been mentioned, this is not an unprecedented high year for fires-highest since 2010. And these two phenomena are related.

Many of the fires today are persistent fires in the same position. That means burning little patches or large patches of felled forests where the trees have been dried for months and can now be set fire.

That means that there is a lot of smoke coming out of the Amazon and that is creating tens of thousands of internments and respiratory ailments and deaths because of smoke inhalation.

Intact forests—all of the available evidence suggests that they are not burning at scale, so forests that have neither been logged nor previously burned, and this is very good news.

It is not a severely dry year, and this is a cause for concern. We need to be watching for those forests and make sure that if they start to catch fire there are teams on the ground ready to spot them and put them out because they are actually quite easy to put out—forest fires in intact forests.

That is part of the Amazon die back scenario referred to by the chairman. A big part of that is wildfires basically—well, man-made fires escaping into intact forests.

In 1998, 40,000 square kilometres of forest—standing forest caught fire, and once it burns a forest is more likely to burn again.

And that, together with the fact that the Amazon forest generates much of its own rainfall come together in this Amazon forest die back scenario, and we may be close to the tipping point—the minimum—well, the area of deforestation beyond which that downward spiral begins.

Finally, to the U.S. response, I want to call attention to what I feel in my many decades—years working in Brazil is a frustration—a frustration in the Brazilian government, in Brasilia nationally, in State governments, and among farm sectors that Brazil has done its part in climate change.

There was a promise coming out of Copenhagen that there would be a robust international mechanism for compensating that contribution and that has not come through.

Of the approximately 7 billion tons of emissions reductions achieved through reduced deforestation in the Amazon, about 3 percent of that has been compensated through Norwegian and German contributions to the Amazon fund and direct contracts—pay for performance contracts with the States of Mato Grosso and Acre in the Amazon region.

There is, as referred to by Ranking Member Rooney, a very high bar for farmers. That has not been always the case. It jumped from 50 to 80, back to 50.

There is a concern among farmers that the legal compliance that they are striving to achieve is not recognized. I think we are in the middle of a very strong backlash from the farm sector because of that failure to recognize how difficult it is to comply with the law there.

I think, moving forward, this is not a time to back out of trade agreements. it is a time to stay in trade agreements, processes, and send a signal that if Brazil continues its historical march toward reducing deforestation there will be real benefits.

We need to monetize those benefits as was done about 11 years ago nearly by this House.

I think I am out of time so thank you very much.

[The prepared statement of Dr. Nepstad follows:]

Testimony of Daniel Nepstad, PhD
President and Executive Director, Earth Innovation Institute

US House of Representatives
Committee on Foreign Affairs
Subcommittee on the Western Hemisphere, Civilian Security, and Trade

Hearing on
"Preserving the Amazon: A Shared Moral Imperative"

September 10, 2019

1. Introduction:

It is an honor to have this opportunity to provide testimony to the House Subcommittee on the Western Hemisphere, Civilian Security, and Trade, of the Foreign Affairs Committee, on the important topic of the Amazon forest. The Amazon region has been the focus of my career, conducting research on forest fire and recovery, publishing scientific and policy papers, training graduate students, contributing to public policy processes, co-founding new institutions, and providing technical support to local governments, farm organizations and forest communities that are seeking sustainable pathways to social and economic development.

My testimony is divided into three sections: (a) the state of our scientific understanding of the Amazon ecosystem and its linkages to the United States, (b) the state of the Amazon right now as global attention is focused on the region's fires and (c) some opportunities available to the US to contribute to both short- and long-term solutions to the threats faced by the Amazon.

2. Linkages to the United States:

- The health of the Amazon forest is important for the United States largely because of the roles of the Amazon in maintaining the climate as we know it—as a large stock of carbon and through its cooling effect (see Appendix A), the ca. 200 indigenous peoples who reside there, and because of its extraordinary wealth of plant and animal species.
- The Earth's oxygen supply does not depend upon the Amazon forest.[1]

[1]The Conversation (Aug. 26, 2019) Amazon fires are destructive, but they aren't depleting the Earth's oxygen supply. Accessed Sept. 10, 2019.

3. State of the Amazon forest in 2019:

- Concern about the Amazon forest became the focus of international attention in recent months because of rising rates of deforestation and fire.
- Deforestation is rising in the Amazon relative to 2018, and is currently estimated at roughly 6,000 km^2.[2] Despite the increase, deforestation in 2019 is on track to be well below the historical average of 20,000 square kilometers per year, from 1996 through 2005 (Figure 1).

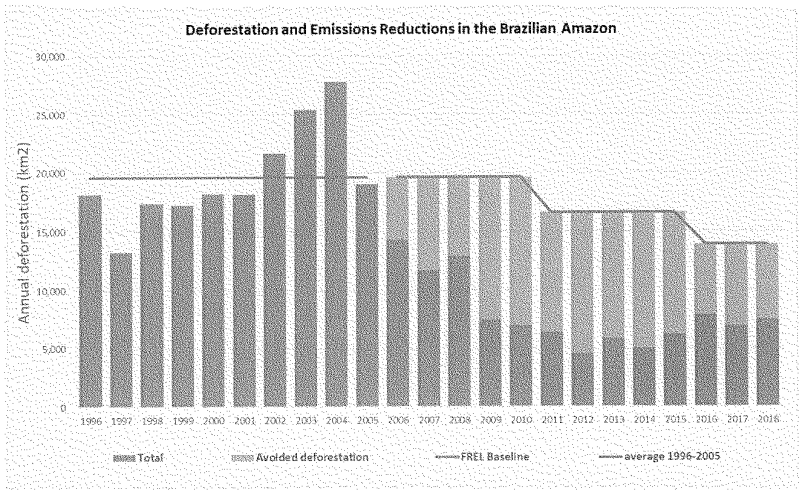

Figure 1. Annual deforestation in the Brazilian Amazon. The gray and orange lines across the top is the Forest Reference Level used to estimate emissions reductions. The reduction in deforestation beginning in 2005 has kept ~7 billion tons of CO2 out of the atmosphere. (Source: INPE/PRODES, http://terrabrasilis.dpi.inpe.br/app/dashboard/deforestation/biomes/legal_amazon/rates)

- This uptick in deforestation is one of the causes of the increase in the number of fires detected in the Brazilian Amazon from January through August of 2019,[3] which is greater than the number of fires detected during the same period in any year since 2010.[4]

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[2] http://www.obt.inpe.br/OBT/assuntos/programas/amazonia/deter
[3] NASA Earth Observatory (Aug. 19, 2019) Uptick in Amazon Fire Activity in 2019. Accessed Sept. 10, 2019.
[4] Global Fire Emissions Database, accessed Sept. 10, 2019.

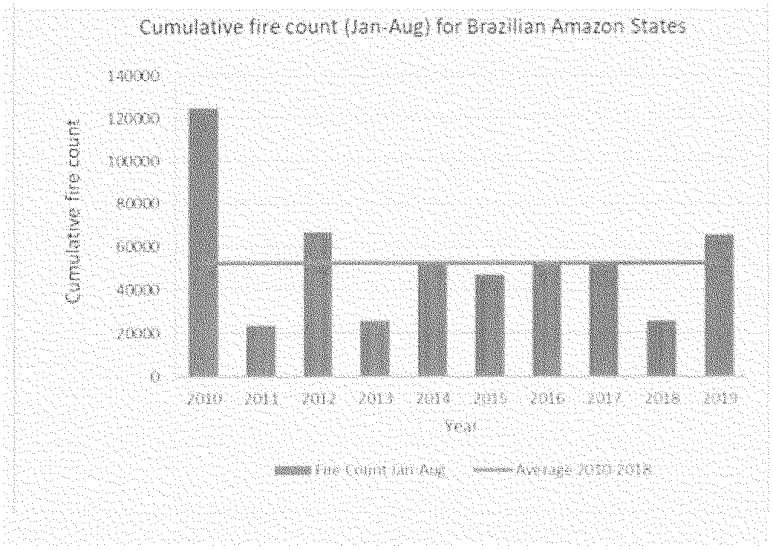

Figure 2. Fire count January through August for the Brazilian States of the Amazon. Source data: Global Fire Emissions Database (www.globalfiredata.org; accessed Sept. 05, 2019). Analysis by Earth Innovation Institute.

- Deforestation fires—those fires ignited to burn patches of forest that have been cut down and allowed to dry--burn for many days and release large amounts of smoke,[3] making 2019 particularly dangerous for respiratory ailments among exposed people. These fires occur every year; some of them are ignited for subsistence and semi-subsistence farming systems that sustain low-income farmers and communities.[5]
- There is no evidence, however, of widespread fire in intact Amazon forests today, as many reports have implied or stated. These "cryptic" fires burn below the forest canopy, beyond the detection limits of most conventional satellites, and are the most dangerous type of fire in the Amazon.[6] Logged and previously burned forests can catch fire more readily than intact forests,[7] [8] although we

[5] Nepstad, D., Carvalho, G., Barros, A.C., Alencar, A., et al. 2001. Road paving, fire regime feedbacks, and the future of Amazon forests. Forest ecology and management, 154(3), pp.395-407.
[6] Nepstad, Daniel C.; Moreira, Adriana G.; Alencar, Ane A.. 1999. *Flames in the rain forest: origins, impacts and alternatives to Amazonian fires* (English). Conservation and development of Brazil's tropical forest regions. Washington, DC: World Bank.
[7] Uhl, C. and Kauffman, J.B., 1990. Deforestation, fire susceptibility, and potential tree responses to fire in the eastern Amazon. Ecology, 71(2), pp.437-449.
[8] Balch, J.K., Brando, P.M., Nepstad, D.C., et al. 2015. The susceptibility of southeastern Amazon forests to fire: insights from a large-scale burn experiment. Bioscience, 65(9), pp.893-905.

don't know the areal extent of these fires.[9] After recurrent burning, highly flammable grasses can invade the damaged forest, completing the shift to fire-prone scrub vegetation.[10]

- Once a forest burns, it becomes more susceptible to future fire.[5] This positive feedback, reinforced by inhibition of regional rainfall associated with forest loss,[11] is the basis of a large-scale Amazon forest dieback scenario.[11,12] The Amazon forest may be close to a tipping point--the area of forest loss beyond which this forest dieback begins and is self-reinforcing--especially if severe droughts become more common in the region in a warming world.[11]

4. Possible responses of the United States Government to Amazon deforestation and fires:

- The current focus on the deforestation and fires of the Brazilian Amazon, provoked by the inflammatory statements and actions of the Bolsonaro Administration, is an opportunity to establish durable, systemic solutions to these chronic challenges
- Responses to the 2019 increase in deforestation and fires should take into consideration the region's historical context, or run the risk of making the situation worse.
- That context is as follows. Brazil has made enormous strides in conserving the Amazon forest. Through a massive, inter-ministerial strategy launched in 2004, Brazil succeeded in reducing deforestation 77% below the 10-year average--in 2012 (Figure 1).[13]
- This reduction in deforestation was achieved by expanding the network of protected forests, demarcating new indigenous territories, increasing law enforcement, and suspending agricultural credit programs in high-deforestation counties.[13]
- Annual deforestation has been rising slowly ever since 2012, however. One reason it is rising is that the "carrots" to reward this progress have been small. In

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[9] Nepstad, D.C., Verssimo, A., Alencar, A., Nobre, C., Lima, E., Lefebvre, P., Schlesinger, P., Potter, C., Moutinho, P., Mendoza, E. and Cochrane, M., 1999. Large-scale impoverishment of Amazonian forests by logging and fire. Nature, 398(6727), p.505.

[10] Brando, P.M., Silvério, D., Maracahipes-Santos, L., Oliveira-Santos, C., Levick, S.R., Coe, M.T., Migliavacca, M., Balch, J.K., Macedo, M.N., Nepstad, D.C. and Maracahipes, L., 2019. Prolonged tropical forest degradation due to compounding disturbances: Implications for CO2 and H2O fluxes. Global Change Biology, 25(9), pp.2855-2868.

[11] Lovejoy, T.E. and Nobre, C., 2018. Amazon tipping point. Science Advances Vol. 4, no. 2 eaat2340

[12] Nepstad, D.C., Stickler, C.M., Filho, B.S. and Merry, F., 2008. Interactions among Amazon land use, forests and climate: prospects for a near-term forest tipping point. Philosophical Transactions of the Royal Society B: Biological Sciences, 363(1498), pp.1737-1746.

[13] Nepstad, D., McGrath, D., Stickler, C., Alencar et al. 2014. Slowing Amazon deforestation through public policy and interventions in beef and soy supply chains. science, 344(6188), pp.1118-1123.

terms of finance, only 3% of the ~7 billion tons of carbon dioxide emissions that were avoided through this herculean effort have been compensated through performance-based payments from Norway and Germany to the Amazon Fund.[14] Little if any of this climate finance reached medium- and large-scale producers.

- An effective mechanism for recognizing and, eventually, rewarding farmers who comply with the nation's extraordinary Forest Code, which requires farmers to maintain 80% of their property under forest cover, is not in place. The Brazilian Soy Moratorium appears to have exacerbated this issue with farmers, since it closed the market to soybeans grown on land cleared after a cut-off date, with no exception provided to farmers who still retain the legal right to clear more forest on their land.[15] There is widespread concern among farmers that this type of moratorium will be extended to the Cerrado, the biome that neighbors the Amazon and where far more soybean production takes place (personal communication).
- Given the current lack of market recognition or valuation of legal compliance with the Forest Code, momentum is building to dismantle it, potentially leading to far greater deforestation rates.[16]
- Carrots have also been in short supply for state governments, who have made important strides in implementing programs and laws in the Amazon that promote forest conservation that contributed to the massive decline in deforestation rates.[14]
- In light of this historical context, it is urgent to create mechanisms for recognizing and rewarding farmers who are striving to comply with the law and state governments that are building the policies and programs for low-emission rural development.
- Dialogues on a possible US-Brazil trade agreement should continue, incorporating measures to recognize and eventually reward legally-compliant farmers; recognizing state governments that are making progress in addressing deforestation through new partnerships. Increasing access to markets is an important carrot for these farmers. New public-private partnerships fostered through USAID's Global Development Alliance program could send a very positive signal to Amazon states.
- Approval of the California Tropical Forest Standard, which has been developed over the last 11 years with input from Brazilian state governments, would also send the signal to these state governments that their efforts in slowing

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[14] Stickler, CM, AE Duchelle, JP Ardila, DC Nepstad, OR David, et al. 2018. The State of Jurisdictional Sustainability. San Francisco, USA: Earth Innovation Institute/Bogor, Indonesia: Center for International Forestry Research/Boulder, USA: Governors' Climate & Forests Task Force Secretariat.
[15] Nepstad, DC and J Shimada. 2018. Soybeans in the Brazilian Amazon and the Case of the Brazilian Soy Moratorium. The World Bank, Washington DC, USA
[16] Amazônia Notícia e informação. September 5, 2019. Governo Bolsonaro e ruralistas tentam implodir Código Florestal, enquanto Amazônia pega fogo. Accessed Sept. 10, 2019.

deforestation are recognized internationally and could eventually be rewarded. The California Air Resources Board will vote on the TFS on September 19th, 2019.

- In the long term, new mechanisms will be needed to reward the large contributions Brazil is making to climate change solutions. A mechanism for monetizing these emissions reductions passed the US House a decade ago, but did not pass the Senate; such a provision for international offsets for emissions reductions from tropical forests would revolutionize Amazon conservation if it were to become US policy.
- More immediately, there is a rich history of collaboration between the US Forest Service and Brazil on fire prevention and control that provides a strong foundation to work from to establish an early warning system and response strategy should the dry season grow severe enough for fires to enter intact forests.

Appendix A. Dependence of the US on the health of the Amazon forest.

The Amazon is globally significant for its cultural and biological diversity. It is home to more than 200 indigenous groups, each with its own language and culture and it is the most biodiverse ecosystem in the world.

The climate of the United States is also dependent upon the Amazon forest for two main reasons. First, the Amazon forest is a giant global cooling system, capturing roughly half of the solar energy that bathes the region in the evaporation of water--evapotranspiration. The amount of water vapor created and energy converted by the Amazon forest is large enough to influence global circulation patterns and climate in far off places. Impacts of a large-scale loss of Amazon forest upon rainfall patterns in the US are likely, albeit uncertain.[17] When Amazon forest is replaced by cattle pasture—the most common use of cleared land in the region—evapotranspiration declines, albedo rises, and the surface temperature of the land increases.

A large-scale displacement of the Amazon forest by cattle pasture and fire-prone scrub vegetation could influence climate patterns around the world just as heating of the surface waters of the eastern tropical Pacific that takes places during El Niño events changes rainfall patterns and air temperatures around the world.

A second dependency of the United States on the Amazon forest is through carbon. The trees of the Amazon contain about 90 billion tons of carbon (GtC)[18], equivalent to seven years worth of total human-driven carbon dioxide emissions at current level. If large areas of that carbon are released to the atmosphere, it becomes correspondingly more difficult to prevent catastrophic climate, which will affect the US and global economies.[19]

One of the frequently reported roles of the Amazon is as a source of oxygen. This is not supported by science. It is true that the Amazon forest releases a very large amount of oxygen to the atmosphere through photosynthesis. The respiration of living tree tissues—leave, bark and roots—and of the animals and microbes that decompose organic matter consumes an amount of oxygen that is roughly equivalent to the amount produced.[20]

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[17] Lawrence, D. and Vandecar, K., 2015. Effects of tropical deforestation on climate and agriculture. Nature climate change, 5(1), p.27.
[18] Baccini, A., W. Walker, et al. 2017. Tropical forests are a net carbon source. . .Science, 10.1126/science.aam5962 (2017).
[19] Climate Change and Land: an IPCC special report on climate change, desertification, land degradation, sustainable land management, food security, and greenhouse gas fluxes in terrestrial ecosystems
[20] Does the amazon provide 20% of our oxygen? http://www.yadvindermalhi.org/blog/does-the-amazon-provide-20-of-our-oxygen; accessed Sept. 10, 2019.

Mr. SIRES. Thank you.
Mr. Millan.

STATEMENT OF BILL MILLAN, CHIEF CONSERVATION OFFICER AND DIRECTOR OF POLICY, INTERNATIONAL CONSERVATION CAUCUS FOUNDATION

Mr. MILLAN. Thank you, Mr. Chairman.

Like the others, I will submit my statement for the record and talk briefly extemporaneously on top of that statement.

Thank you, Mr. Chairman. Thank you, Ranking Member Rooney, and other members of the committee.

When I left diplomatic service I began working in conservation, something I have now done for 20 years. I have worked for many years in the international programs of the Nature Conservancy, which, of course, is very active in Brazil and the other countries of that region, and for the last 4 years at the International Conservation Caucus Foundation, which acts as the secretariat for a caucus of members of this Congress, about 170 members of the House and Senate who are interested in and supportive of U.S. support and activism for conservation in the poor countries of the world—the developing countries of the world.

Internationally, ICCF has created similar caucuses in about 12 foreign countries and we are hoping to grow further in the near future.

We are in Mexico, Colombia, and Peru. We are in nine countries of Africa, and we are hoping to expand into Indonesia and the Caribbean Island States starting next month.

With regard to the Amazon, as the other speakers have noted, this is by far the world's largest tropical forest. About 90 percent of it is rainforest. About 20 percent of the original forest is already gone.

Deforestation often occurs in stages. Where the lumber is valuable the loggers will clear cut. Would-be ranchers then come in and burn the slash that is left behind in order to clear the land for grazing, and later if the soil is suitable with modern fertilizers and methods, it may be converted to field crops such as soybeans.

Deforestation is, of course, not unique to Brazil. It has also been high in neighboring Paraguay and Bolivia and in regions of Peru and Columbia.

During the period of 1960 to 2010, the population of the Amazon Basin rose from 6 million to 25 million persons, many of them engaged in agriculture. This has, inevitably, had an effect.

Deforestation of the Amazon in Brazil peaked at around 2005, as you noted, Mr. Chairman. It subsequently dropped by about 70 percent.

While market forces may have played some role in this decline, it was not mirrored in other countries of the Basin, which suggests that better enforcement of Brazilian laws which, for example, mandated that private landowners had to keep a percentage of their Amazon land in forest and which forbade intrusions into protected areas—better enforcement of those laws was the major cause and better enforcement ultimately depends upon political will. It depends upon the top leadership of the country taking conservation and good management of natural resources seriously.

People, of course, have a right to develop their natural resources and that right is probably clearest when the people are poor. Brazil is a modern high-productivity country with a population equal to that of France—60 some odd million.

But the actual total population is 211 million. So Brazil has a highly unequal distribution of income and it has a large population of poorly educated small farmers and ranchers who are eager to take advantage of what they are told is free land and better jobs and many large ranchers and farmers eager to employ them in defiance of national laws.

It is especially painful to note that 15 percent of the Amazon is reserved by law for Indian tribes and if those laws are weakened or not enforced their fate, which is already difficult, is likely to get worse.

The situation of the Brazilian Amazon and neighboring countries of the Basin is a complex one that involves balancing many competing interests, many of them legitimate.

It is unlikely to be resolved purely by outside pressures. A growth of political will to properly manage their own natural resources will be vital.

Progress over the coming years and decades are most likely to be uneven and will sometimes be reversed. But we have to try. We have to keep trying.

U.S. foreign assistance can play an important role in that struggle. I recall a study done by my colleagues at the Nature Conservancy when I worked there when they said that we needed to increase world agricultural production by 100 percent by shortly after 2050.

But to do that by expanding the land under cultivation would mean essentially the destruction of the entire natural world around the globe.

But we could do it by raising productivity on existing lands. The meaning of this for the Amazon boils down to this. Cutting down the Amazon forest is not needed for the future agricultural production of the world.

The existing forest is needed for a host of other benefits and we urge the Congress to continue as it has in the past to support that goal.

Thank you, Mr. Chairman.

[The prepared statement of Mr. Millan follows:]

Testimony of William Millan

Global Policy Director

International Conservation Caucus Foundation (ICCF)

House Foreign Affairs Committee, Western Hemisphere Subcommittee

"Preserving the Amazon: a Shared Moral Imperative"

Raeburn HOB 2172

Tuesday, September 10, 2019, 10 am

Mr. Chairman, Ranking Member, Members of the Committee, it is a pleasure and an honor to be asked to testify today about the situation in the Amazon Basin.

By way of introduction, I am a former US diplomat, with many years experience in Central America, Panama, Colombia, Venezuela and the Organization of American States. Since retiring from government service, I have worked in conservation: first for many years at the Nature Conservancy and now for four years at the International Conservation Caucus Foundation (ICCF). We act as the secretariat for the ICC, a caucus of about 170 Members in the House and Senate. We also work in parks in many countries, through our Conservation Corps. I am not a conservation scientist, but I have broad experience of the political, social and economic issues that arise as our neighbor countries attempt to manage their natural resources, so important to their own prosperity and to the world.

The Amazon Basin is over 2 million square miles, the world's largest tropical forest by far, three times the size of the Congo which comes second. About 90 percent is rain forest. 60 percent lies within Brazil, with most of the remainder in Peru and Colombia. About 20 percent of the original forest cover of the Amazon Basin has been destroyed since 1970, when rapid deforestation began. About 80 percent of that deforestation has been for cattle ranching. Deforestation often occurs in stages. Where the lumber is valuable and accessible to markets, loggers clear cut the trees. Then would-be cattle ranchers burn what is left to clear pastures. Much of this is done in defiance of national laws and encroaches on legally proclaimed parks or government reserves for indigenous tribes. In the process, tribes are often killed or driven off. Where the soil can be made suitable with modern methods and fertilizers, the land may later be converted to field crops, mainly soy. Brazil is the world's largest beef exporter and has recently passed the Unites States as the world's largest soybean producer and exporter.

Deforestation is not unique to Brazil. It has also been high in neighboring Paraguay and Bolivia, and in regions of Peru and Colombia. During the period 1960 to 2010, the population of the Brazilian Amazon rose from six million to twenty-five million persons, many of them employed in agriculture. Deforestation of the Amazon peaked in Brazil in 2005, when an area of forest the size of Haiti disappeared each year. It dropped by about 70 percent in the following decade. While market forces

may have played a role in this decline, it was not mirrored in other countries of the basin, which suggests that better enforcement of Brazilian laws (which mandated that private landowners keep a percentage of their land in forest, and forbade intrusions on protected areas) was the major cause. Forty-four percent of the Brazilian Amazon is supposed to be legally protected as parks or indigenous reserves. The decline in deforestation rates came to an end about 2016, when totals reported rose sharply. From mid-2018 to mid-2019, deforestation totals in the Brazilian Amazon rose even faster, by between 40 and 80 percent. The rate of change is disputed, but the direction is clear.

People have a right to development their natural resources. That right is probably clearest when the people are poor. Brazil has been described as a modern, high-productivity population the size of France's (67 million) but which has an actual total population of 211 million. Brazil has a highly unequal distribution of income, a gini coefficient of 53 (higher than nearly all its neighbors), versus 41 in the United States, 33 in the UK and 29 in Sweden. Brazil still has a large population of poorly educated small farmers, eager to respond to the possibility of "free" land and better jobs, and many large ranchers and farmers ready to employ them in defiance of national laws. It is especially painful to note that fifteen percent of the Amazon is reserved by law for Indian tribes. If the laws are weakened or not enforced, their fate (already difficult) is likely to get worse.

The situation in the Brazilian Amazon, and in neighboring countries of the Basin, is a complex one that involves balancing many competing interests, many of them legitimate. It is unlikely to be resolved purely by outside pressures. A mixture of political, economic, and moral suasion will be needed for many years to come. Progress will be uneven and sometimes reversed. But we have to try and keep trying. US foreign assistance can play an important role.

I will close by recalling a study done at the Nature Conservancy while I worked there. I hope my former colleagues will not resent my citing their work. TNC experts looked at the future of world population growth, the switch to eating more meat as populations become prosperous, and hence the need to increase total agricultural production worldwide by 100 percent at some date soon after 2050. They concluded that if this need was met by increasing the land in cultivation, the entire natural world would be destroyed. Only by raising the production of existing lands, by methods that marry high production with sustainability, can future needs be met without destruction. The meaning of this is -- the Amazon is not needed for the future of agriculture. The existing forest is needed for a host of other benefits. We urge the congress to support that goal.

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Mr. SIRES. Thank you. We will now go to questions. I will start by asking: I made a statement before that, from 2004 to 2012, cattle and soy production in Brazil rose.

The economy grew. Nearly 30 million Brazilians were lifted out of poverty and deforestation rates declined. Can you tell me what policies were implemented during that time that were so successful?

Anybody.

Dr. DE BOLLE. If I may.

Mr. SIRES. Yes.

Dr. DE BOLLE. So the Brazilian government in 2004 implemented an action plan to reduce deforestation, given that it had been on the rise in previous decades.

This plan was a broad umbrella of many different initiatives to fight off deforestation, including through monitoring and law enforcement.

So there was a lot of coordination between two major environmental agencies in Brazil: the National Space Agency that I have already mentioned and also IBAMA, which is the agency responsible for monitoring and for law enforcement.

These two agencies were working in close cooperation. Satellite imagery systems developed with NASA were incorporated into these efforts and alongside the monitoring and the law enforcement capabilities that were put in place there were also other policies.

So, for example, in 2008, the Brazilian Central Bank actually passed a resolution whereby it restricted credit greatly to areas where deforestation had been on the rise.

Rural credit in Brazil is subsidized so a lot of those farmers did depend heavily on those credits, and those credits were then conditioned on meeting several different environmental regulations.

If these farmers were not in compliance with these regulations, they did not get access to the credit.

There are several academic and empirical studies showing that that policy in itself was hugely successful in bringing down deforestation in 36 municipalities in the Amazon where that had been previously a problem.

So, the tools, the capabilities, the initiatives—there are a number of things that have been tested and tried, some of them with great success, some of them perhaps with lesser success.

But, broadly, I would say that Brazil knows what to do. There is an issue of political will at the moment.

Mr. SIRES. Yes.

Dr. NEPSTAD. Just to add very briefly to that, in our summary of those policies that we published in science a few years ago, our conclusion is that it was largely a set of command and control interventions that were lacking carrots.

So part of the reason deforestation has been coming up beginning in 2012 is that a lot of those measures that were referred to my Monica have lost their teeth and there is a lack of that positive set of incentives for farmers and State governments too that are doing the right thing.

Mr. MILLAN. Thank you. I would endorse the comments by Monica that it is possible to grow the economy rapidly without

doing grave damage to the conservation of nature and natural resources.

What it requires is taking a long-term perspective and it takes good governance, and a well-managed public authority.

Mr. SIRES. One concern that I have is I see that China is now getting involved in buying a lot of the soybean that they are not purchasing from us.

Do you think that is going to make the situation worse since now 80 percent of the soybeans made in Brazil basically are going to China. Do you think that is going to drive deforestation?

Anybody?

Dr. NEPSTAD. I think in the short term, the large-scale slaughter of swine in China, because of African fever, is really reducing the demand for animal ration but it is increasing demand for pork.

So I think in a few years as that crisis passes there is a very high risk that rising demand for soybeans could accelerate deforestation.

A lot of it depends upon whether or not those incentives to soy farmers are in place, whether or not the current momentum to dismantle the Forest Code that requires 80 percent forest cover on soy farms in the Amazon moves forward, and I think that will depend upon whether markets give a positive signal that they recognize legal compliance with the Forest Code as a very high bar of performance on the ground.

And so I think a lot is in play right now. Brazilian farmers have lots of options for markets. But we have to remember that a positive market signal including from the U.S.; for example, Brazilian beef is seen as a carrot. it is one of the carrots that can be mobilized without invoking large flows of new finance.

Mr. MILLAN. Mr. Chairman, my colleagues on the China desk in the old days would not appreciate my bluntness. But I think that the massive entry of China into these markets is not a good thing.

We have talked about the importance of good governance. I think that as a government the Chinese government simply does not take these environmental issues very seriously, particularly not when it is outside China.

So, for example, 10 or 15 years ago they enforced a nationwide ban on cutting down any further forest inside China and decided to instead cut down in Indonesia.

Dr. DE BOLLE. Let me add on, if I may, to my colleagues' remarks just to say that the environmental seal for the agribusiness sector in Brazil and, in particular, beef but not just beef—soybeans as well—has been until recently hugely important for exports.

There is a very large chunk of the sector which is geared toward exports and one of the very important roles that the international community at large and the United States in particular can play is in ensuring that that seal remains as an incentive for this sector, or this portion of the sector, to continue with its sustainable production practices and thus sort of staving off any kind of pressure coming potentially from the Chinese.

Mr. SIRES. Thank you.

Congressman Rooney.

Mr. ROONEY. I would like to thank all three witnesses for their testimony. Very thorough.

I would like to ask Mr. Millan first, and then Dr. Nepstad, about the absence of land titles in the Amazon and the economic interest of the landowners, being kind of a free enterprise kind of guy.

You know, Mr. Millan mentions that the 70 percent decline in deforestation since 2005 may have something to do with economic factors and that there is an asymmetry between what has happened there, with the decline and enforcement of laws, versus what has happened in neighboring countries. I assume you mean Paraguay and Bolivia.

So how does the increase in titling and enforcement of laws relate to these statistics and what can that tell us about going forward?

Mr. MILLAN. Congressman Rooney, I will defer to Monica about some of the technical economic aspects here. I think the decline of deforestation inside Brazil clearly was driven mainly by better enforcement of their laws rather than by market factors.

Across Latin America the lack of clear title to land is a terribly grave issue. When I worked at the Nature Conservancy we had a program in Bosawas in Nicaragua where we worked for five or 6 years and we finally were able to help an Indian community there to get what seemed to be a firm title to their land.

I was told laughingly in Guatemala that in the entire history of the country only 10 absolute titles to land had ever been issued. We are talking about legal systems that function very poorly and they are particularly bad at recognizing legal title.

And so the result is that for many people by far the easiest way to acquire a large ranch is to steal it, and this is a bad thing.

Some of these countries need to reform their land title laws, but then having reformed them they will then need the political will to actually carry out the new provision.

Mr. ROONEY. Dr. Nepstad?

Dr. NEPSTAD. There has been huge steps forward with law enforcement in Brazil under the PPCDAm strategy that Dr. de Bolle referred to.

One of the risks, though, is that in getting to law enforcement and one of the fundamental tools of that approach is the Rural Environmental Cadastro or Registry—the CAR. Every landholder under the new Forest Code of 2012 is required to submit their own map of their property. Unfortunately, they have come in and there is a lot of overlap. Surprise, surprise.

But the risk is that in focusing on law enforcement the CAR is not a land title. You neglect the very fundamental role of land as a guarantee against loans.

Farmers today in Brazil and the Brazilian Amazon have a hard time getting loans with their property as collateral if they are mostly forested. Land values increase as forests go down.

So we have this fundamental economic disconnect where if you take the EPA social cost of carbon, a hectare of forest, that carbon out of the atmosphere is saving the world economy $50,000.

But if I am a landholder and I have that same hectare of forest that is worth to me $200, if I clear it, its value multiplies by 10, and I cannot use the forest land as collateral.

So I think you have identified a fundamental gap that, as we move to—as Brazil moves to a strategy that continues the sticks

but adds some carrots, getting to land title is a crucial piece of that.

Dr. DE BOLLE. So I fully agree with Dr. Nepstad's assessment and overview of what he has just said about the sort of market incentives—economic incentives at play.

I will just add one thing from the past experience under the PPCDAm, the national action plan of 2004. Alongside these actions that I mentioned that the Central Bank put in place to restrict credit and thereby, you know, just put in place a mechanism whereby credit was conditioned to meeting the environmental standards that had to be met, there was a clear effort to put together a land registry of these areas within the Amazon biome.

So, again, these efforts have been now sort of fallen by the wayside. They are things that could, again, be implemented and they are things that could, again, be implemented on a much larger scale.

So there is the potential to do these things again and there is the potential to achieve the sort of successes that were achieved back in the mid–2000's through these policies by greatly enlarging what has previously been done.

Mr. ROONEY. Referring to the past policies, it is a pretty bad deal when the property value goes up with more deforestation. That is kind of working against what we want to happen.

The requirement of 80 percent property staying in preservation, first of all, will that be—do you have any confidence that will be enforced and will have an impact, and if it were impacted how, would that improve that asymmetry between value and deforestation?

Dr. DE BOLLE. Well, on the 80 percent, the 80 percent has over the last few years—correct me if I am wrong—but I think over the last few years has already been somewhat softened.

So, in a way, it is not being enforced as such, including because the 80 percent requirement that you do not touch that area of your own property to produce and retain its native vegetation, is very, very hard to comply with.

So there has to be something else being done with the legislation in agreement overall as to what is best for the region in terms of meeting these requirements or even lowering these requirements in certain cases.

As for the current situation, which is that, you know, cleared land is worth more than forested land, which basically leads to all sorts of speculation as we have been seeing, it is a matter of designing the proper regulations and the proper incentive structure that makes that equation shift the other way.

So this is what we are looking at. This is what Brazil needs. Brazil needs to get the regulations rights so that it shifts that balance.

Mr. ROONEY. Thank you.

Dr. NEPSTAD. If I could just add to that. Yes, so the 80 percent is fairly new. Until 1996, 50 percent of the property in the Amazon had to remain as forest cover.

I think one of the most significant actions that could take place today would be a public recognition of the importance of those private land reserves and recognition of the need to compensate farm-

ers who are being asked to forego their legal right to clear forests in excess of that 80 percent.

That is the farmers' current complaint, for example, about the Brazilian soy moratorium where 90 percent of the soy buyers for the Amazon said that after 2008, if you cleared after that date, you cannot—we will not buy your soy grown on that land.

And the farmers' response is, but wait a minute—I am in legal compliance and I have the legal right—what about me. And that concern has gotten particularly grave as that same approach is under discussion for the Cerrado savanna biome next to the Amazon.

So it is a very big issue.

Mr. SIRES. Thank you.

Congressman Levin.

Mr. LEVIN. Thank you so much, Chairman Sires, for calling this really important hearing on short order and getting these tremendous witnesses. This is really great and I appreciate all of your testimony.

I want to try to focus on what we can do with U.S. policy to be helpful to this very difficult situation.

Dr. de Bolle, you mention in your testimony that the economic benefit of conservation far outweighs the short-term gains from cutting down the forest and then setting it ablaze after it is been dried out.

Is there a role for the United States to play in encouraging conservation in Brazil and making clear that it is more sound economic policy than deforestation? How can we really get at that?

Dr. DE BOLLE. Well, I think—thank you for that question—I think there are a couple of ways. One is through the current mechanism that exists, so the Amazon Fund.

The Amazon Fund is already there. We need to just properly redesign—perhaps rethink what its role should be and therefore, you know, what kind of financial resources it needs. So that kind of financial assistance from the U.S. I think would be crucial.

There are other things in the area of regulation, sustainable cattle grazing, land demarcation for indigenous lands, and not only that but how do you actually exploit indigenous land—some of the things that I have mentioned in my oral remarks but are also in my written testimony where the U.S. has had ample experience and where that experience can certainly be transferred to Brazil.

So there is a lot of room for technical cooperation on a number of these issues.

Mr. LEVIN. OK. Great. Let's talk about one area of our relations, so just trade. Both President Trump and President Bolsonaro seem interested in growing the trade relationship between the U.S. and Brazil.

So how should the U.S. insist on strong environmental commitments from Brazil before expanding trade between our countries?

For example, last month BBC reported that Brazil had seriously relaxed its enforcement of environmental laws that are already on the books.

And I am quoting here from the BBC account: "Official data from Brazil's environmental agency shows that fines from January to the 23d of August dropped almost a third compared with the same

period of last year, and at the same time the number of fires burning in Brazil have increased by 84 percent," and as you all testified, the highest since 2010.

And I have heard direct testimony from people there saying, hey, it is the Wild West now—the president, obviously, is giving us the green light to go ahead here.

So how can the U.S. demand that Brazil commit to stricter enforcement of the environmental laws already there and any other ideas you all have to how we should use our trading relationship with Brazil to preserve the Amazon?

Dr. DE BOLLE. Well, I think the U.S. should use its leverage on that front. The Brazilian government is greatly interested in pursuing some of bigger trade agreement with the U.S.

Whether that becomes an actual, you know, free trade agreement or not, that is years in the making. But, certainly, closer trade relations, and those closer trade relations, that conversation in itself can be used for the U.S. to leverage and try to enforce some of these that are not being met.

So that can certainly be achieved through negotiations, which the Brazilian government is very much open to at this point.

Dr. NEPSTAD. I would just add that I think we are in a very volatile time in Brazil where unilateral actions that threaten market retaliations, restrictions to trade—I believe they will backfire.

I think it is time for sitting down at the table and saying—you know, recognizing that managing a continental-size force like the Amazon is a phenomenal task.

it is very expensive. Brazil did what no one thought was possible and now it is time to recognize that and say how we can help.

Part of this is that Brazil is 109th on the ease of doing business ranking of the World Bank and the Amazon is much worse than that. it is really hard to do investments, to do enterprise in the Amazon.

I think the U.S. has a lot to offer in that sort of collaboration through the GDA and other mechanisms of the USAID.

But I think this collaborative approach that says listen, we will open to whatever—Amazon beef—if these conditions are in place and we see some progress.

What Norway did in the Amazon Fund is say, you build the system—if deforestation comes down the payments will flow, and a billion dollars later—a little more than a billion dollars later—you know, I think that was a very positive thing to do.

The way it was structured was probably not right. That money did not make it to middle and large-scale farmers; for example, and they are wondering why they have been left out. So, in short, collaboration, keep the negotiations going and weave the conditions into that.

Mr. LEVIN. Thank you. My time has expired. But I would just observe, Mr. Chairman, that the investment we need to make to tackle the grave, grave crisis of climate change for the United States, and the world, is so immense it seems that this would be penny wise and pound foolish not to work with Brazil very intensively on the efforts that our panellists are suggesting.

Thank you very much.

Mr. SIRES. Thank you, Congressman.

Congressman Ted Yoho.

Mr. YOHO. Thank you, Mr. Chairman. And I look forward to finding a way forward with what Brazil wants to do with their natural resources to find what they want to do with their natural resources that is compatible with, I guess, world standards.

How successful are the bans on crops on deforested land by other countries have you seen?

Dr. Nepstad, you were talking about that. what is your experience? You have been down in the Amazon a long time.

Dr. NEPSTAD. You know, when threats come from the EU, the first response is, oh, this is protectionism and they are protecting their own markets and that point was made abundantly about President Macron's threat to pull out of the EU Mercosur trade agreement.

We have to remember that 60 percent of agricultural exports from Brazil go to Asia, and China, as already mentioned, is the biggest supporter, and currently Asian markets are not demanding sustainability or deforestation-free sourcing.

And so I think that Asia will move in that direction. Xi Jinping is keenly interested in solving climate change and keenly interested in investing in the Amazon.

So something like the Ferrograo railroad is something that could buy good will in Brazil, give soy farmers a big break in transport if it is structured right, and everyone comes up winning.

Mr. YOHO. I wish I had your confidence on Xi Jinping. I am more in line with Mr. Millan.

In Brazil, we know they are the largest cattle exporter in the world. But yet, between 1990 and 2018 Brazil beef production increased 139 percent while the areas of cattle grazing decreased 15 percent.

And if you look at it in America, we are producing a third more beef with a third less of the land that we use. And knowing that, best management practices on our farmlands—we know that grasslands, according to a study in UC Davis that is titled "Grasslands More Reliable Carbon Sinks Than Trees."

And I am not implying they are more efficient, but they store their carbon underground along with other things like nitrogens and sulphur and things like that, that when a forest burns that is not released into the atmosphere. So, therefore, it is sequestered more securely.

With the best practice management, those are things that I think there is a tradeoff. So if you cut down 100 acres of rainforest, which is a shame because We have all been there and seen that and we know what that biodiversity gives to the world and the National Geographic specials, we can offset that by a certain amount of rangeland. Would that be true?

Dr. NEPSTAD. I think there is tremendous scope for improvements in the productivity of cattle, especially in the Amazon. You know, 50 kilos of beef per hectare per year is not an efficient system.

And as you say, beef production in—outside of the Amazon in Brazil is growing on a shrinking area of pasture. I think the net balance on greenhouse gases because of enteric fermentation is this

very serious issue that can be partially compensated by good grazing, partly——

Mr. YOHO. Let me go back to something that the EPA said. The U.S. EPA estimates that direct emissions from the U.S. beef industry are only 1.9 percent of the total U.S. greenhouse gas emissions.

So I know there is a lot of emphasis on beef cattle as far as greenhouse gas emissions. But I think it is maybe not accurate as it could be, and I think we need to look at that because for sustainability of protein and food sources we have to have that kind of juggling of which is the best way to go.

And with the world population growing stronger or, you know, going to, you know, 9 billion to 10 billion, we have to have sustainable agricultural practices, and it goes back to best managed practices or practices that we do.

Going back to the deforestation, there has to be a market for those trees—you know, where that lumber is going. What country is the biggest importer of illegal deforested areas? Does anybody——

Mr. MILLAN. Well, the largest market for illegally harvested wood is China. Has been for 20 years.

Mr. YOHO. I was going to say I think it is a five-letter name with a C and an A in it.

Mr. MILLAN. Oh, yes. Yes. But I do not know if any of it to speak of comes from Brazil. Perhaps one of my colleagues has better information than I do. A lot of it comes from——

Mr. YOHO. Dr. de Bolle?

Mr. MILLAN [continuing]. Comes from Malaysia. It comes from Indonesia. It comes from Burma. It comes from Madagascar or Mozambique. But I had not heard about Brazil.

Dr. DE BOLLE. Well, I have not either so I have no direct answer to that. But one thing that I will say about what happens to the trees that are cut down, in order to be able to clear the land for pastures—this is a rainforest that we are talking about so you need to dry out the rainforest first.

Mr. YOHO. Right.

Dr. DE BOLLE. So the way that that is done is that the trees are cut. So the trunks go dry and then after you do that you set it ablaze.

So to a large extent, we are talking about logging activities that, yes, take place. Probably some of that goes, you know, to the region itself.

Brazil is a big country so a lot of it probably goes into the construction sector in Brazil. it is all very opaque so we do not have the data on that to say something, you know.

Mr. YOHO. Right.

Dr. DE BOLLE. But I would say that most of it probably is internal and goes to the internal construction sector, and the rest of it is just wasted and it is just meant to clear land.

Mr. YOHO. Right. Thank you. I yield back, Mr. Chairman. Thank you.

Mr. SIRES. Congressman Phillips.

Mr. PHILLIPS. Thank you, Mr. Chairman and Ranking Member Rooney and to each of you, our witnesses. Grateful for your time today.

I am hoping to connect some dots, just starting with some yes and no questions. The primary drivers of deforestation in the Amazon are cattle ranching, logging, and large-scale agriculture.

Is that correct? Each of you. Yes or no answers, if you could.

Mr. MILLAN. Yes, absolutely.

Dr. DE BOLLE. Yes.

Mr. MILLAN. President Bolsonaro, before he was elected, made statements concerning his intent to pursue development in the region. Is that correct?

Dr. DE BOLLE. Yes.

Mr. MILLAN. Yes.

Mr. PHILLIPS. Before his election, President Bolsonaro also repeatedly pledged to relax environmental regulations and the environment, and open up indigenous territories and protected areas to mining, agriculture, and large-scale energy projects. Is that correct?

Dr. DE BOLLE. Yes.

Dr. NEPSTAD. Yes.

Mr. MILLAN. Yes.

Mr. PHILLIPS. So do you believe it is a coincidence that President Bolsonaro was elected last year with the support of Brazil's powerful agriculture lobby? Coincidence or no?

Mr. MILLAN. I have not seen any polling data one way or the other. I really cannot say that definitively.

Mr. PHILLIPS. Doctor?

Dr. NEPSTAD. He was supported by the farm sector. Yes, certainly.

Dr. DE BOLLE. He was supported by the farm sector. I, however, think that the farm sector now, at least a portion of the farm sector, and we have seen that happen, is quite aware—keenly aware—that they will lose their international standing and they will lose their green seal, so to speak, if they continue to support the kind of measures that Bolsonaro has been putting in place.

So they are a potential political force in Brazil that can be exploited to produce the results that we would like to see in terms of, you know, the environmental scale back that we have seen under Bolsonaro.

Mr. PHILLIPS. And, Doctor, can you talk about any efforts to that end that might exist right now?

Dr. DE BOLLE. So there have been a few. it is not a lot of voices as of the moment but there have been a few important agribusiness people, in particular one who was a former agricultural minister and is one of the largest soybean growers in Brazil, Mr. Blairo Maggi, who has made some very important remarks regarding how hurtful the scaling back of environmental regulations has been so far for Brazil and the potential that that could be even more hurtful down the road.

So there have been voices like that, which are important not just from the productive sector side but from the political side as well because there are voices that have been in government that are starting to see that this can be hugely detrimental to their own interests.

Mr. PHILLIPS. Thank you, Doctor.

Mr. Millan, we know there are indigenous and local communities in Brazil that are living and working sustainable in the forest.

You spoke of laws in place in these communities. Can you expand on the current enforcement of these very laws?

Mr. MILLAN. My direct experience of the programs there is now some years in the past and so I would not want to try to comment on the details of recent changes.

Brazil has hundreds of separate Indian tribes, most of which speak a unique language and many of which do not have a single member of the tribe who has graduated from the equivalent of high school. So these are intensely vulnerable communities that desperately need outside help to organize and defend their rights.

Theoretically, under the law they have a lot of rights. But actually making them effective against the pressure of illegal miners and other invaders of their territory for agriculture or otherwise is and has been terribly difficult.

Mr. PHILLIPS. And the organizations at the forefront of assisting them in that effort?

Mr. MILLAN. My colleagues?

Dr. NEPSTAD. You know, groups like Instituto Socioambiental I think are very concerned with the wave of impunity I think that is present in the Amazon right now, an impunity growing out of frustration for the lack of positive incentives and recognition for past efforts and successes.

So it is a very volatile moment and there are signs that deforestation patches are increasing within protected areas and indigenous territories.

Mr. PHILLIPS. OK. President Trump has characterized President Bolsonaro as, quote, "a like-minded leader," end quote.

he has announced several agreements to bolster economic and security ties with Brazil and also opposed the aid package course for the fires during the G–7 and instead publicly praised Bolsonaro for, quote, "working very hard on the Amazon fires and in all respects doing a great job for the people of Brazil," end quote.

Do you believe, each of you, considering these statements that President Trump is helping or hurting the crisis unfolding in the Amazon? Helping or hurting?

Dr. DE BOLLE. At the moment, not helping.

Mr. PHILLIPS. Doctor?

Dr. NEPSTAD. I think that is—I sense that you want really fast questions and I think there is a lot of nuance to this question.

As I said before, I think unilateral sort of threats of retaliation against Brazil right now could backfire and I do not support a lot of what is going on in Brazil right now.

But I do know the roots of it and I think a positive signal on trade from the United States, for example, could go a long way.

Mr. PHILLIPS. Thank you, Doctor. And Mr. Millan?

Mr. MILLAN. And I would suggest that as we go forward on these issues, which, as I commented in my remarks, are difficult and complex, and they involve not just legitimate interests against illegitimate ones but direct competitions between interests that are inherently legitimate in and of themselves.

These are terribly difficult issues that are going to be—are not going to be resolved this year or next year or in 5 years.

I think that to the extent that private groups can be involved not only as investors but also as consumers and as associations of con-

sumers, you see this a lot in Europe and you see it to a certain extent here already in the United States.

That brings another interesting player to the table because now it is not just a big country appearing to bully a developing world country; it is groups of hundreds of thousands or potentially millions of consumers saying, we will not buy your stuff if you do bad things in order to create it.

And striking that balance, of course, is always going to be complicated. But I think that sort of action has a lot of potential.

Mr. PHILLIPS. Thank you, all. I yield back.

Mr. SIRES. Thank you.

Congressman Castro.

Mr. CASTRO. Thank you, Chairman. And I apologize that I came in late and missed some of the conversation. I was at another meeting. But I think everybody would agree that the Amazon forest is important to the health of the region and the health of the world.

And I guess my question is in your own assessment how strong are the efforts of Bolsonaro's government to protect the Amazon? Do you believe that he and his administration are doing everything they can to protect the Amazon?

Dr. DE BOLLE. As I submitted in my written testimony and as I mentioned in my oral remarks, the answer to that is no. He has scaled back the capabilities of the environmental agencies in Brazil.

He has scaled back monitoring efforts. He has scaled back law enforcement. He has spoken specifically about, you know, using the Amazon's resources and not necessarily in a sustainable way. He has not underscored sustainability in any of his remarks.

So that really has emboldened a lot of predatory behavior in the rainforest more recently. Does he have the tools to do what he needs to do?

Does he have the capabilities within these agencies and within ministries in Brazil and also going from past experience in Brazil in terms of what has been done? The answer to that is yes. But the ultimate question here is a question of political will.

Mr. CASTRO. Sure. Do either of you significantly disagree with that answer? Or let me ask it this way. Do you believe that he has doing and his administration are doing what they should to protect the Amazon?

Dr. NEPSTAD. I think more can be done, certainly. I think there are threats. I would agree with Dr. de Bolle on that, and there is been some scaling back.

I think Minister Tereza Cristina is in a pivotal position right now. Under her ministry there will be the climate change agenda.

Brazil is sitting on these billions of tons of emissions reductions that have never been monetized. I think just sending the signal that some of those emissions reductions are going to be worth something would be hugely, hugely influential right now.

And so I feel like Brazil is poised for some positive signals from the United States that what they have done historically is recognized and we are moving into a new phase that is more about incentives than about punishment.

Mr. CASTRO. Sir?

Mr. MILLAN. I would not take issue with the comments of my colleagues and I would particularly recognize the value of Dr. Nepstad's comment just now about the potential value of the stored carbon and the avoided emissions.

One of the difficulties of trying to value these intact forest is that the benefits to the extent that they are real, and they are real, are global. But the costs of not developing are often perceived as local.

Mr. CASTRO. Sure.

Mr. MILLAN. And so the world needs to find better ways to monetize that global value so that some of the benefits flow through to local people and local institutions. If that can be done, you would then create a powerful local incentive not to cut down the forest.

Mr. CASTRO. OK. Part of the reason that I asked that question is because I do not believe that the government there is doing everything they can to protect the Amazon.

I also do not have confidence in President Bolsonaro's administration right now because he has demonstrated very erratic behavior: turning down that money from France, getting into a fight with the French president about comments that were made about the French president's wife.

So what leverage do concerned nations have to make sure that the Amazon is protected? Those could be carrots or those could be sticks.

So I ask you in the array of carrots and sticks, what do you recommend? I know you just spoke on the emissions issue. Is there something else?

Dr. NEPSTAD. California Air Resources Board on the 19th of September will vote upon the tropical forest standard.

Under construction for 10 years, it would be a way of recognizing the role of State governments in the Brazilian Amazon and their role in reducing deforestation.

That sort of thing will send a very positive signal to those States. They were part of the construction of that standard and that will make it easier for them to attract investors including climate finance.

So I think there are a lot of things that could happen that provide those signals to Brazil that we are moving into an era of collaboration. Agribusiness—you know, Bolsonaro threatened to pull out of the Paris Agreement.

He did not do it because he heard from his own constituents that that was a bad idea. He was going to eliminate the Ministry of Environment. He did not do it because his own——

Mr. CASTRO. Well, he has not done it in year one, right? Or year two. You know, he has got more years——

Dr. NEPSTAD. Well, I think he has been very loud and clear as referred to by Dr. de Bolle that his own constituents are saying, wait a minute—we want the forest agenda intact because otherwise we are going to lose a lot of markets. We are going to lose a lot of investors.

So I think that is really the way forward. You know, what could the U.S. Government do to create a robust mechanism for compensating emissions reductions? You know, it does not seem very viable in the current political environment.

But that, in the end, I think is what is going to happen. You know, that is going to grow. There are 30 companies in California right now that want to become climate neutral and they want tropical forest offsets.

Those will be voluntary in the first step. Eventually we will need regulated markets to give that whole endeavor greater volume and greater scale.

Mr. CASTRO. My time is up. I know that she had wanted to make one comment.

Dr. DE BOLLE. Just wanted to add one thing. On environmental compensation, which is a key incentive, this is contemplated under Brazil's 2012 Forest Code. It just is lacking in regulation.

So it has not properly been regulated. So that is one thing that should advance, and collaboration with some moral suasion could go a long way toward getting that done.

And second, once you do have that mechanism working, a lot of the financial resources could come from a much enlarged Amazon Fund. So just to get that point in.

Mr. CASTRO. Thank you.

Mr. SIRES. Thank you.

Congressman Vargas.

Mr. VARGAS. Thank you very much, Mr. Chairman, and I thank the ranking member for the opportunity.

When I was in law school I had a great professor named Abram Chayes, and Abram Chayes was one of the best and brightest. He was one of Kennedy's guys in the State Department, and I took a class with him called International Environmental Law, and this is back when we were really worried about the ozone layers at the Poles, as we should have been and continue to be worried about.

And anyway, he was just a master professor, and at one point he told this story and he said there is a person that lives in the Amazon and this gentleman has a gigantic tree in his front yard and it is a thousand years old and it is hundreds of feet tall and is absolutely magnificent.

It does everything a tree ought to do for oxygen. So what should that gentleman do as an environmentalist? And, you know, of course, having had him for a couple other classes and knowing that he was a very progressive thinker we thought, well, you know, preserve the trees.

He goes, no, he ought to cut it down and make it into lumber, because being an environmentalist first means feeding his family. He goes, but, of course, that is the wrong result.

He goes, that is the absolutely wrong result. We ought to pay him for his tree so he does not cut down the tree because we are the ones in the developed world—that We have already done so much damage to the environment we ought to pay him for his tree.

And, you know, there is a lot to that, I think. I mean, we should participate in a much stronger way in making sure that this forest does not get destroyed because it does benefit all of us.

We do not want to see that magnificent tree cut down. In fact, we do not want to see any of them. I have had the opportunity to go to the Amazon before and one of the things that is the most amazing to me, and I wish young people would understand this,

when you have clear cutting, when you have burning, all that is terrible.

But the worst terror out there is when they burn the forest to plant cocaine, because when they do that often times you get this moss, and this moss does not allow the trees to pop through it.

We went over and actually stopped in some places where they had grown cocaine 20 years ago and the forest had not popped through yet because of the thickness of the awful moss. It was unbelievable.

But anyway, I think what is going on there right now is reprehensible and we have to have more of a hand in working this out as a global community.

Doctor, I would like to ask you about that. I mean, you know, what about this thought? I mean, you know, Dr. Nepstad said that, you know, there are these other companies that are involved and California wants to be, you know, neutral in the sense of its climate impact.

I mean, shouldn't we be more aggressive doing this?

Dr. DE BOLLE. Well, certainly. But I think the way that—and I will echo something that Dr. Nepstad made here on a number of occasions, which I think is crucial—the way I think to work this issue out, even though what is being done right now by the Bolsonaro administration is reprehensible——

Mr. VARGAS. It is reprehensible.

Ms. DE BOLLE [continuing]. The way to work it out is through collaboration.

Mr. VARGAS. Yes.

Dr. DE BOLLE. So it cannot be through sort of hand wringing. It cannot be through an approach where, you know, another government—any government—I mean, we saw that backfire greatly with France—it cannot be through another government trying to impose its views on a sovereign nation, which is the case of Brazil.

So there is great scope right now for collaboration between Brazil and the U.S. And so what I think our role should be is putting pressure so that collaboration actually materializes. that is how I see it.

Mr. VARGAS. And I agree, and how do we do that then? How do we do that?

Mr. MILLAN. Well, we need to find better ways of bringing together the long-term interests of the globe, including our own country, and the short-term interest of the developing world countries and the mainly poor people who live in their rural areas.

Your story about the tree reminds me of something that happened here in the United States about 10 or 15 years ago. There was a forest researcher who was working in the bristlecone pines up in the Sierra Nevada Mountains of California.

And he drilled a hole in an ancient tree in order to count the tree rings and his drill bit got stuck, and he asked permission of the forest rangers, which they rather stupidly gave him, and then he cut down the bristlecone pine tree in order to retrieve his drill bit.

So he cut down a 4,000-year-old tree in order to retrieve a $20 drill bit. I guess the essence of this is that it is not just Brazilian farmers who——

[Laughter.]

Mr. VARGAS. Yes. I agree that was absolutely a terrible thing to do. But, again, I appreciate—we do have to be more firm, I believe, in what is happening in the Amazon is reprehensible.

And I hope the people that do use drugs also understand the damage they do to the forest because I know we just blame farmers, we blame—it is also people that use cocaine.

I mean, I was absolutely shocked when I saw the damage that cocaine has done to the Amazon and our young people and maybe not so young people that use cocaine also are damaging the Amazon, damaging the air that we breathe.

Mr. Chairman, I know my time has expired. I yield back.

Mr. SIRES. Thank you.

We just have a couple more questions. I am curious about something. How large is the U.S. business investment in the Amazon—American business people? Is it a large portion? Are they very involved?

Do we have—I am trying to get at the fact that maybe through the U.S. business people we can encourage these people to do some good things.

Dr. NEPSTAD. Yes, I will take a shot at that.

You know, currently, the Amazon is seen as one of the most risky investments around in the Americas, at least, and it is—I mentioned the ease of doing business index but it is more than that.

If you do business in the Amazon there is a good chance that you're going to get attacked, and there is a lot of efforts right now by advocacy campaigns' campaigners to do that—to create reputational risk for your association with deforestation.

And I think that those campaigns have been very important. they have brought companies and investors to the table, to accountability.

So we have all of these companies and investors ready to do something and the question is how to create those safe pathways to invest, to partner with those local farm sectors and governments.

And so I think the concept of these really safe zones—if you have got a Mato Grosso that is offered to reduce emissions by 4 billion tons by 2030, which is true—announced in Paris—let's rally around that government and those farm sectors and make sure that we have a development model in place for that gigantic State, which is Brazil's biggest soy producer, biggest cattle producer, so that they can win.

And that is what is missing right now. We have an environment where the responsible investors in companies back away and there are plenty of U.S.—plenty of U.S. money and companies working in the Amazon.

But right now it is a sense of how do we do it without getting blasted or without, you know, becoming a headline? And so I think we need to make those safe pathways.

Dr. DE BOLLE. Let me just add to that by saying that without the Federal Government's involvement and without a clear strategy by the Federal Government that completely goes back on our or backtracks on what they have been doing so far, it is very hard to see a scenario like that actually materializing.

So the potential is there. But, again, I come back to my basic point. You need the political will of the Federal Government to be able to get these initiatives going.

Mr. MILLAN. I would agree with that.

Mr. SIRES. Thank you.

My colleague now has a question.

Mr. ROONEY. I will ask one more. I mean, there is been a lot of facets or matrices put on the idea of solving the asymmetries of what is positive but what is not positive, and Congressman Castro's carrots and sticks was one analogy you just talked about—Mato Grosso, and we talked about some of the asymmetry of a guy that makes more money by tearing up the land and deforesting it than he ever wood keeping it.

So I guess I got to thinking, when Ted Yoho mentioned about ag, is there any—let me go back to Mr. Millan's comment here in his testimony that you cannot—basically you cannot meet the needs of the world's food by continuing to plow up more land. We have to have higher productivity. Is that right?

Mr. MILLAN. Sir, I do not think I said that. If I did, I erred.

Mr. ROONEY. Raising the production of existing lands.

Mr. MILLAN. Yes. In other words, we need to raise the production of existing lands a lot.

Mr. ROONEY. Right.

Mr. MILLAN. And if we do that, we do not need to cut down the forests.

Mr. ROONEY. that is what I meant. that is exactly right.

Mr. MILLAN. that is the keeper. Yes.

Mr. ROONEY. And that gets you to—leads you to things like maybe different crops. You know, when Yoho's talking about how many hectares it takes to make a certain quantity of beef, well, that is a lot less in Mato Grosso.

it is a lot less in Oklahoma or Texas than it is in the Amazon. The Amazon's a terrible place to grow beef and there is other crops like that. I cannot imagine growing soybeans in the Amazon.

But what—are there other things that can be done in the spirit of positive replacement of opportunity that would be better that we do not know about?

Dr. NEPSTAD. there is tremendous interest in the Amazon today and in the national government for fish—increasing fish production. That is managed wild fisheries of the Amazon flood plain.

These are community-based management systems and fish farming. And so you have a place like Rondonia State is exploding with fish production and it needs technical support.

It needs markets. It needs international markets. But that for me is getting back to the traditional cuisine of the Amazon. The Amazonians traditionally eat fish protein——

Mr. ROONEY. Pirarucu.

Dr. NEPSTAD. I'm sorry?

Mr. ROONEY. Pirarucu looks like tarpon.

Dr. NEPSTAD. Pirarucu, you can buy in Whole Foods around here.

Mr. ROONEY. Looks like a tarpon, tastes like a snapper.

Dr. NEPSTAD. And so there is all of these amazing recipes, culinary—but just high volumes of high quality fish, and the great

thing is farmers want it large scale. Soy farmers want it. Small-scale farmers want it.

Some indigenous communities are doing fish farming and it is the sort of thing where you got 20 percent—20 times more production per hectare than beef and it is not excluding anyone. it is giving them supplemental income.

I think that is an example of the sort of thing that could move forward very rapidly and be a win-win as a development agenda.

Mr. ROONEY. Great.

Mr. MILLAN. A U.S. foreign assistance program, which married titling of land for rural farmers, raising productivity of that land through the use of hybrid crops and modern fertilizers and insecticides, could have tremendous relevance to 20 or 30 countries around the world, not just to Brazil.

It had enormous potential, and one way or another something similar is going to be done or else they are going to cut down all the forests.

Dr. DE BOLLE. Just coming back to my point on political will, this is exactly where we can get political will because these sorts of sustainable fish farming activities and things of that—and other sustainable farming activities that may happen in the Amazon or that are currently happening in the Amazon would serve toward reducing poverty rates and inequality rates.

I mean, we are talking about a region of the country where inequality and poverty are at their highest. These are the most naturally rich in resources States of Brazil.

But they are also the most impoverished. So there should be great political will just from that fact alone.

Mr. ROONEY. Thank you.

Mr. SIRES. Well, thank you all for being here today for this important hearing. I urge my colleagues to remain focused on what is happening in the Amazon.

I hope this hearing will be the beginning of an ongoing conversation about how the U.S. Congress can help preserve the Amazon rainforest for generations to come. I thank the witnesses and all the members who have been here today.

With that, the committee is adjourned.

[Whereupon, at 11:20 a.m., the committee was adjourned.]

APPENDIX

SUBCOMMITTEE HEARING NOTICE
COMMITTEE ON FOREIGN AFFAIRS
U.S. HOUSE OF REPRESENTATIVES
WASHINGTON, DC 20515-6128

Subcommittee on the Western Hemisphere, Civilian Security, and Trade

Albio Sires (D-NJ), Chairman

September 10, 2019

TO: MEMBERS OF THE COMMITTEE ON FOREIGN AFFAIRS

You are respectfully requested to attend an OPEN hearing of the Committee on Foreign Affairs, to be held by the Subcommittee on the Western Hemisphere, Civilian Security, and Trade in Room 2172 of the Rayburn House Office Building (and available live on the Committee website at https://foreignaffairs.house.gov/):

DATE: Tuesday, September 10, 2019

TIME: 10:00 am

SUBJECT: Preserving the Amazon: A Shared Moral Imperative

WITNESS:

Monica de Bolle, PhD
Director
Latin American Studies Program
School of Advanced International Studies
Johns Hopkins University
Senior Fellow
Peterson Institute for International Economics

Daniel Nepstad, PhD
President and Executive Director
Earth Innovation Institute

Mr. Bill Millan
Chief Conservation Officer and Director of Policy
International Conservation Caucus Foundation

By Direction of the Chairman

The Committee on Foreign Affairs seeks to make its facilities accessible to persons with disabilities. If you are in need of special accommodations, please call 202/225-5021 at least four business days in advance of the event, whenever practicable. Questions with regard to special accommodations in general (including availability of Committee materials in alternative formats and assistive listening devices) may be directed to the Committee.

COMMITTEE ON FOREIGN AFFAIRS

MINUTES OF SUBCOMMITTEE ON *Western Hemisphere, Civilian Security, and Trade* HEARING

Day *Tuesday* **Date** *September 10, 2019* **Room** *2172*

Starting Time *9:59 am* **Ending Time** *11:20 am*

Recesses [*0*] (____to____) (____to____) (____to____) (____to____) (____to____) (____to____)

Presiding Member(s)

Chairman Albio Sires

Check all of the following that apply:

Open Session [✓]
Executive (closed) Session [ ]
Televised [✓]
Electronically Recorded (taped) [✓]
Stenographic Record [✓]

TITLE OF HEARING:

Preserving the Amazon: A Shared Moral Imperative

SUBCOMMITTEE MEMBERS PRESENT:

See attendance sheet.

NON-SUBCOMMITTEE MEMBERS PRESENT: *(Mark with an * if they are not members of full committee.)*

HEARING WITNESSES: Same as meeting notice attached? Yes [✓] **No** [ ]
(If "no", please list below and include title, agency, department, or organization.)

STATEMENTS FOR THE RECORD: *(List any statements submitted for the record.)*

SFR - Henry Waxman, submitted by Albio Sires
SFR - Amnesty International, submitted by Dean Phillips

TIME SCHEDULED TO RECONVENE _____
or
TIME ADJOURNED *11:20 am*

Subcommittee Staff Associate

HOUSE COMMITTEE ON FOREIGN AFFAIRS

WHEM SUBCOMMITTEE HEARING

PRESENT	*MEMBER*
X	Albio Sires, NJ
	Gregory W. Meeks, NY
X	Joaquin Castro, TX
X	Adriano Espaillat, NY
X	Dean Phillips, MN
X	Andy Levin, MI
	Vicente González, TX
X	Juan Vargas, CA

PRESENT	*MEMBER*
X	Francis Rooney, FL
	Christopher Smith, NJ
X	Ted Yoho, FL
X	John Curtis, UT
X	Ken Buck, CO
	Michael Guest, MS

ADDITIONAL MATERIALS SUBMITTED FOR THE RECORD

AMNESTY INTERNATIONAL

September 10, 2019

Rep. Albio Sires
Chair

Rep. Francis Rooney
Ranking Member

House Foreign Affairs Committee
Subcommittee on Western Hemisphere, Civilian Security, and Trade

Re: Amnesty International Statement for Hearing on "Preserving the Amazon: A Shared Moral Imperative"

On behalf of Amnesty International USA and our members and supporters throughout the United States, we hereby submit this statement for the record. Amnesty International is an international human rights organization with offices in more than 70 countries, including national offices in the United States and Brazil and a South America regional office based in Lima, Peru.

Amnesty International believes that the protection of biodiversity and the environment in the Amazon is a human rights issue because it is necessary for the full enjoyment of a panoply of human rights, including the right to life, health, food, water, and culture. Furthermore, the failure to adequately protect the Amazon particularly harms Indigenous communities residing there, as well as the territorial and environmental land rights defenders working to preserve their land from extraction, deforestation, and degradation.

In this statement, we wish to share our grave concerns with the Subcommittee regarding human rights violations stemming from the erosion of vital protections for the Amazon, its Indigenous communities, and the risks faced by land rights defenders working to protect the Amazon.

- **The Brazilian Amazon**

The world is watching in horror as the Brazilian Amazon has become engulfed in fire. Yet rights groups, including Amnesty International, had sounded the alarm long before the fires wreaked this level of destruction, expressing our concern that the Brazilian government's erosion of critical protections for Indigenous people and their environment would cause significant dangers during the dry season. Many of the illegal land seizures and logging practices we documented took place in the same areas of the Amazon where many of these fires now rage.

Since April 2019, Amnesty International has visited four different Indigenous territories in Brazil's Amazon (Karipuna and Uru-Eu-Wau-Wau in Rondônia state, Arara in Pará state, and Manoki in Mato Grosso state) to document how changes wrought by the administration of President Jair Bolsonaro have impacted the Amazon and its Indigenous communities. Experts and Indigenous people interviewed by Amnesty International in these areas expressed intense frustration at the lack of enforcement of Brazil's laws to protect Indigenous territories and environmentally protected areas. They also told Amnesty International that government surveillance operations to monitor and prevent illegal land seizures and deforestation (including land-clearing by burning) have been reduced because of budget constraints over recent months.

In some sites, Indigenous community leaders have also reported receiving death threats for defending their traditional territories. In three different Indigenous territories in northern Brazil, Amnesty International

spoke to communities affected by the actions of intruders who had begun or expanded efforts to seize land and/or cut down trees. Because these intruders – often local individuals encouraged and supported by local farmers and politicians to occupy plots of land or sell timber – are routinely armed, there is a high risk of violent clashes between Indigenous people and intruders.

In all three sites, Indigenous leaders stated that they repeatedly denounced recent illegal land seizures and logging to government authorities. However, government responses were tepid: one invasion of 40 intruders culminated in a surveillance operation after which one person was arrested and released, while another, much larger invasion – estimated to have involved many hundreds of intruders – concluded in a surveillance operation and the arrest of two individuals.

The government's response to these illegal land seizures and logging remains inadequate. The protection of Indigenous territories from intrusion depends in large part on monitoring and surveillance operations conducted in coordination among different governmental bodies. Brazil's National Indian Foundation (FUNAI) lacks police powers and relies on the support from other institutions, such as the Brazilian Institute of Environment and Renewable Natural Resources (IBAMA) and the Federal Police (Polícia Federal). Experts told Amnesty International that surveillance operations have been reduced because of substantial budget cuts this month. According to government data, FUNAI's expenses for the protection of Indigenous territories incurred this year until August 28th have fallen 10% over the same period in 2018. International media has reported that IBAMA's overall budget has shrunk by 25%. An official working for Brazil's national environmental agency in Rondônia state, who spoke to Amnesty International on the condition of anonymity, noted that if "[they] had had had people to conduct inspections, the situation [of the Amazon fires] would have not reached this level."

As a result of these lack of protections, in the four Indigenous territories Amnesty International visited, the rate of deforestation is almost 80 per cent higher than what it was over the same period in 2018. This deforestation is directly connected to the estimated 75,000 fires in the Amazon, which have increased at a rate of 76% compared to 2018. In addition, few intruders are ever held accountable, and Indigenous communities remain at risk.

The linkage between protecting the human rights of Indigenous people and protecting the Amazon is clear: studies demonstrate that when traditional lands of Indigenous people are primary forests, demarcation of these territories can help protect against deforestation. Conserving primary forests is also key in the fight against climate change, because the clearing and burning of forests results in the release of stored carbon as carbon dioxide.

While the Bolsonaro administration has responded to the recent devastation by sending in the military and signing a decree banning the use of fires for land clearance for a period of 60 days, these measures seem unlikely to work: in the words of an official from Brazil's national environmental agency, the decree will likely have limited effect because most of the recent fires were already prohibited by existing laws.

Furthermore, these measures are only temporary fixes to a much larger problem. Beyond fighting the fires, Brazil must enforce its own laws, step up monitoring and patrols of land seizures in protected areas and Indigenous areas, and investigate and hold those responsible for human rights abuses. Strengthening the civilian authorities responsible for combatting deforestation and illegal land seizures is the only way forward.

- **Bolivia's Chiquitano Forest**

Brazil is not the only country impacted by Amazon forest fires: Bolivia's Chiquitano forest, located close to the Amazon and the Brazilian border, is also undergoing a series of devastating fires.

In July 2019, President Evo Morales authorized via decree "controlled burns" for agricultural activities in the provinces of Santa Cruz and Beni, both of which have been affected by the Chiquitano forest fires since August of this year. In August, after the fires broke out, the Morales administration made a series of baseless, contradictory public declarations: President Morales alleged the fires had been started "intentionally for political reasons," while the Minister of the Presidency asserted that the fire is "almost a natural child of agriculture" and is attributable to global warming.

Amnesty International has called on the government of President Evo Morales to suspend the July decree authorizing controlled burns until it is certain that the decree has not contributed to the forest fires and the concomitant environmental and human rights crisis. Our organization has also called on the government to provide urgent assistance to people and communities affected, while consulting them and respecting their human rights.

- **Land Rights Defenders in the Ecuadorian Amazon**

In Ecuador, meanwhile, women defending the Amazon and Indigenous rights are under attack.

In a recent report titled "'They Will Not Stop Us': Justice and Protection for Amazon Women, Defenders of the Land, Territory, and Environment," Amnesty International has documented the cases of four environmental human rights defenders – Patricia Gualinga, Nema Grefa, Salome Aranda, and Margoth Escobar – who are members of Amazonian Women, a collective comprising dozens of Ecuadorian women defending the Amazonian environment and Indigenous Peoples' rights. The four women faced a series of attacks and death threats in 2018.

Yet the Ecuadorian authorities' lack of capacity and will to adequately and effectively provide protection and conduct criminal investigations into the attacks places the lives of these four women at risk. It also sets a grim precedent for the countless others protecting the Amazon from political and economic interests linked to large-scale extractive projects on Indigenous territories. The lines of investigation and protection measures that the Ecuadorian authorities have offered the victims appear to ignore possible motives for the attacks related to the challenges they pose to large-scale economic interests and traditional gender roles, through their role as Indigenous women leaders and human rights defenders.

Amazonian Women notes that the authorities responsible for investigating these actions are neither promptly collecting nor analyzing critical evidence that could help identify those responsible. Faced with these failings, in practice the women defenders end up taking on the burden of the investigation themselves. The organization has also criticized the protection measures offered to its members as inadequate and insufficient for the particular needs and exceptional risks they face every day.

Regardless of the possible causes of these failings, they hold clear and concrete consequences for the lives of defenders in Ecuador. In a country in which attacks against them go unpunished and where the authorities are not fulfilling their responsibility to guarantee their safety, many people are faced with the permanent dilemma of risking their own and their families' lives to defend human rights and the environment.

III. Recommendations

With the Amazon, its communities, and those seeking to defend it at grave risk, Congress must take immediate action. Amnesty International welcomes this hearing as a preliminary measure. Additionally, we urge Congress to:

- Call on Brazilian authorities to investigate and prosecute those responsible for starting illegal fires in the Amazon to prevent further destruction of the rainforest.

- Exert influence on Brazilian authorities to enforce and fund protections for Indigenous communities and environmentally protected areas, including by restoring funding for the National Indian Foundation (FUNAI) and the Brazilian Institute of Environment and Renewable Natural Resources (IBAMA), to ensure they can do the work of combatting illegal land seizures and combatting deforestation.
- Encourage the government of Bolivia to rescind its decree allowing for "controlled burns" in the Chiquitano forest until it has ascertained that the decree is not related to the recent devastating outbreak of fires there.
- Monitor the situation of and express support for Indigenous communities in the Amazon.

Additionally, regarding human rights defenders working to defend the land, territory, and environment, Congress should exert pressure on the governments of Brazil, Ecuador, and Bolivia to:

- Publicly recognize, at the highest levels of local and national government, the legitimate and important work of human rights defenders, especially those working to defend the land, territory, and environment.
- Promptly, exhaustively, independently and impartially investigate attacks and threats against human rights defenders, and ensure that those responsible, both the material and intellectual authors, are brought to justice in fair trials.
- Design and implement comprehensive action to protect human rights defenders through legislation, plans, programs, and policies, in coordination and consultation with the affected human rights defenders themselves.

For more information, please contact Charanya Krishnaswami, Americas Advocacy Director at Amnesty International USA, at (202) 675-8766 or ckrishna@aiusa.org.

To learn more about Amnesty International's work on human rights issues in the Amazon, please visit https://amazon-violence.amnesty.org/en/.

Sincerely,

Charanya Krishnaswami
Americas Advocacy Director
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