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Before the Senate Committee on Agriculture, Nutrition and Forestry
December 2, 2015

Hearing: Agriculture's Role in Combatting Global Hunger

Chairman Roberts, Ranking Member Stabenow, and members of the Committee, I am pleased to come before you today to discuss the role of the U.S. Department of Agriculture in combatting global hunger.

The Challenge of the Future

Today, the United Nations Food and Agriculture Organization (FAO) estimates that 795 million people around the world do not have access to an adequate supply of safe and nutritious food. The United Nations estimates that worldwide demand for food will increase 60 percent by 2050. During the same time frame, the world's population is expected to grow to between 9 and 10 billion. The growing world population will strain our ability to feed these people. To meet this need, production in developing countries will need to almost double. Some experts have estimated it will take as much innovation in agriculture in the next 40 years as in the preceding 10,000 years to meet the growing demand for food

We must also focus on combatting global hunger in emergencies especially given that in 2015, the World Food Program reports the need to currently address six declared emergencies at the same time and several of them are long term relief efforts. Thanks to the support of this Committee and your congressional colleagues, the U.S. is the world's largest donor country for emergency food assistance, which contributes greatly to these critical humanitarian responses.

Our best hope for achieving global food security requires building agricultural production and productivity via research to achieve scientific and technology development and trade capacity, along with efforts to mitigate global food loss and food waste, areas in which the United States and USDA excel.

Investing in Global Food Security

Let me start with a little history. The G8 nations committed in 2009 to act with the scale and urgency needed to achieve sustainable global food security, noting the challenges on the horizons. President Obama pledged then that the United States would invest \$3.5 billion for

2010-2012. The subsequent effort, launched as the Feed the Future Initiative, led by USAID and State, drew on expertise from across the federal government agencies to address global food security. Feed the Future has now exceeded the President's commitment and in the latest report released by USAID, data shows that our work is making a difference in reducing poverty and increasing global food security. USDA is a key member of the whole of government effort on Feed the Future and supports global food security through in-country capacity building, basic and applied research, and support for improved market information, statistics and analysis. In our work around the world, USDA trains small farmers and foreign officials on plant and animal health systems, risk analysis, and avoiding post-harvest losses; completes assessments on climate change; and helps to increase agricultural productivity.

Expanding Research Globally

By leveraging the strengths of our intramural research, as well as our research partners across the federal government, the scientific community, and the Land-Grant University System, USDA continues to be a leader in global agricultural research.

In regard to global food security, our ability to understand the genetic make-up of livestock and crops allows us to be more efficient in growing crops and raising livestock, particularly in the context of climate variability and change and diminishing water and land resources. Genetic research also helps us assist other countries in dealing with pests and diseases they may confront. As part of our contribution to the U.S. Government's Feed the Future initiative USDA committed to four high priority projects. USDA researchers have sequenced the genome of wheat and the wheat stem rust pathogen and introduced UG-99 resistant wheat varieties; have improved the productivity and quality of the common bean; introduced AflaSafe in Kenya to combat aflatoxin in maize; have applied genomics to goat improvement for African producers; and are helping to develop a safe and economically sustainable vaccine for the pathogen that causes East Coast Fever, a devastating disease of cattle of eastern Africa. USDA's National Institute of Food and Agriculture also cooperated with the Department of Energy and the National Science Foundation to fund a multi-institutional team of researchers that sequenced the genome of the common bean, a crop that provides as much as 30% of the daily dietary protein in some developing countries. These are just a few examples of the significant advances we have made as a result of research that will have an impact on the capacity of the globe to produce enough food and help feed an ever increasing world population.

As Secretary Vilsack has said “research is not helpful if you keep it to yourself.” USDA has undertaken an ambitious open data initiative to unlock USDA research for others around the world. In 2013, the United States, along with the United Kingdom, launched the Global Open Data for Agriculture and Nutrition (GODAN) initiative, which seeks to support global efforts to make agricultural and nutritionally relevant data available, accessible, and usable for unrestricted use worldwide. The initiative, which USDA and USAID are supporting, focuses on building high-level policy and public and private institutional support for open data and encourages collaboration and cooperation among existing agriculture and open data activities, without duplication, to solve long-standing global problems. GODAN is open to public and private entities including donors, international organizations and businesses. To date, over 169 partners have signed on to the GODAN statement of purpose. Open access to research, and open publication of data, are vital resources for farmers, farmer organizations, researchers, extension experts, policy makers, and governments seeking to improve food security.

USDA has also led the charge to better coordinate global agricultural research efforts. In 2012, USDA advocated for and was instrumental in forming the establishment of the G20 Meeting of Agricultural Chief Scientists (MACS). Thus far, they have met three times. MACS seeks to promote collaboration among the major public funders of agricultural research and this forum has proven instrumental in identifying key global challenges, like the development of animal disease vaccines, development of crops and crop varieties, or technologies that reduce the needs for inputs such as water, nutrients, or pesticides that have a significant impact on global food security and would be mutually beneficial from a collective effort to solve. These can be particularly helpful to the developing world as key research is pursued among the G 20. USDA coordinates these efforts with other Administration agencies.

And because USDA has one of the premier collections of seed and genetic materials, USDA has partnered with the Global Crop Diversity Trust and Bioversity International to create GRIN-Global (Germplasm Resource Information Network/System.) GRIN-Global provides the world’s genebanks with a powerful, flexible, easy to use plant genetic resources (PGR) information system to safeguard plant genetic resources and information vital to global security. Our partners provided translation of GRIN into several languages including those used in the developing world.

The Challenge of Climate Change

I know— as do the farmers, ranchers and forest land owners at work across this country—that climate change is a threat. It is real. Climate change threatens the bottom lines and the livelihoods of producers, and weakens rural economies. That has implications not only for agricultural producers and forest landowners, but for every American.

Climate change represents a significant threat to the ability of America's farms, ranches and forests to meet global needs for food, fiber and fuel. In order to meet that demand, our producers have to prepare for, mitigate, and adapt to the impacts of climate change and the severe weather that comes with it. From producing biofuels and installing renewable energy systems on their operations, to discovering and implementing the latest conservation techniques, they have driven the development of many of the most critical components in the fight against climate change.

Earlier this year, at Michigan State University, Secretary Vilsack announced a series of ten Building Blocks for Climate Smart Agriculture and Forestry. This was an ambitious, voluntary strategy that builds on the good work of farmers, ranchers and foresters to reduce climate impacts and secure the future food security of our Nation. Through this comprehensive set of voluntary programs and initiatives spanning its programs, USDA expects to reduce net emissions and enhance carbon sequestration by over 120 million metric tons of CO₂ equivalent (MMTCO₂e) per year – about 2% of economy-wide net greenhouse emissions – by 2025. That's the equivalent of taking 25 million cars off the road, or offsetting the emissions produced by powering nearly 11 million homes last year. This strategy positions the United States and our producers as global leaders in climate-smart agriculture and forestry. It demonstrates to the world that these sectors can implement solutions to reduce greenhouse gas emissions, while simultaneously boosting productivity to meet growing demands for food and fiber, stimulating the rural economy, and offering compatible environmental and economic benefits.

Today, Secretary Vilsack, attending the Climate Convention in Paris, is announcing the release of a major scientific assessment entitled, "Climate Change, Global Food Security, and the U.S. Food System." USDA led the production of the report on behalf of the thirteen Federal Agencies of the U.S. Global Change Research Program. The report identifies the risks that climate change poses to global food security and the challenges facing farmers and consumers in adapting to changing climate conditions. While the report itself is global in scope, its findings

address the pressing issue of how climate change will affect the U.S. food system. This analysis will help us better understand specific risks and vulnerabilities due to climate change.

USDA is also leading efforts to establish a Global Alliance on Climate Smart Agriculture, which aims to integrate climate change planning into agricultural systems worldwide. USDA coordinates closely with Administration agencies in this effort.

Domestically, USDA is working closely with farmers, ranchers, and foresters to promote their capacity to conserve ecosystems, survive droughts, maintain soil, and prepare for climate change and extreme weather events. We have enrolled a record number of acres in conservation programs over the past six years, working with as many as 500,000 farmers and ranchers each year to implement conservation practices. Between 2010–2014, USDA invested nearly \$170 million to help producers apply on-farm conservation measures on over 700 thousand acres to address air quality resource concerns for designated high priority geographic locations. Since 2012, USDA has invested \$638 million to increase irrigation efficiency, and approximately \$481 million in soil health practices that help retain soil moisture--healthy soil is more resilient to erosion and better able to store water through extended drought periods. We've also invested more than \$610 million in research by USDA scientists and partners at land-grant universities to develop innovative climate solutions and tools that can be applied on the farm and in the forest.

Our network of regional Climate Hubs established last year can tailor and disseminate these tools and transfer information to meet regional conditions and help producers implement climate-informed management practices. On a recent trip to Puerto Rico, I had the pleasure of visiting the USDA Caribbean Climate Sub Hub in Rio Piedras. I was truly impressed by the collaboration taking place at every level – federal, state, and local. Producers in the Caribbean understand that climate change can have very real impacts on their operations and way of life – they see it every day from more extreme hurricane seasons, an uptick in drought and fires, and loss of coral reefs. The folks at the hub said their goal is to turn this into action – instead of turning producers away from the land, they want to teach them how to adapt to these changes so they can stay on the land.

Reducing Food Waste

Just this past September 2015, the United States announced its first-ever national food loss and waste reduction goal, a commitment to cut food waste in half in 15 years. Our newly-announced national goal is aligned with the United Nations' Sustainable Development Goals,

which include a target to reduce global food loss and waste by 50 percent by 2030. Food loss and waste, which the United Nations Food and Agriculture Organization (FAO) estimates accounts for 30 percent of the global food supply, strain our ability to sustainably nourish our growing population while also safeguarding our natural resources. According to the USDA's Economic Research Service, food loss and waste in the United States is also estimated to account for around 30 percent of the food supply, which USDA's Economic Research Service estimates is approximately 131 billion pounds per year.

At USDA our philosophy, at its core, is simple: Let's feed people, not landfills. Meeting our national and international goals to reduce food waste will require leadership from all sides to reduce, recover and recycle from individual families, business, communities, charitable organizations, faith-based organizations, NGOs, the entire food systems supply chain, including on farm, storage and transportation systems, restaurants and retail systems. USDA will continue to encourage the private sector—food service companies, institutions, restaurants, grocery stores, and more—to set their own aggressive goals for reducing food loss and waste. We will also continue to encourage businesses to donate wholesome food to qualified nonprofit organizations. USDA recently streamlined regulations for donating wholesome misbranded meat and poultry products. Finally, we are very focused on public education to raise awareness in the United States about impacts of high levels of food loss and waste and about ways to reduce it. In this effort, USDA and EPA launched the U.S. Food Waste Challenge – and have already been joined by over 4,000 businesses and organizations in the effort to reduce, recover, and recycle food loss and waste.

Building Global Food Security through Trade

Achieving global food security is important not only to hundreds of millions of hungry people, but also to the sustainable economic growth of developing nations and the long-term economic prosperity of the United States. International trade contributes to global food security by enhancing supplies and variety of foodstuffs in food insecure countries. As we help countries become more food secure and raise incomes, we also enhance export opportunities for American producers.

For example, between fiscal years 2009 and 2015, U.S. agricultural exports to developing countries grew 51.7 percent, significantly outpacing the 33.8 percent to developed countries over that same time period. With a strong economic outlook, a growing middle class, and surging

demand for consumer-oriented foods, sub-Saharan Africa is one of the fastest-growing regions for U.S. agricultural exports. Over the past decade, U.S. agricultural exports to the region have grown by more than 50 percent, totaling \$1.9 billion in 2015.

That is why two years ago, I launched USDA's Sub-Saharan Africa Trade Initiative, with a trade mission to South Africa and Mozambique, with the aim of expanding U.S. commercial ties to the region. Last month, I returned to Africa to continue that effort with a mission to Accra, Ghana. The mission included 26 U.S. companies and agricultural commodity trade associations representing agricultural products including grains and feeds, peanuts, soybeans, meat and poultry products, agricultural machinery, and more. Participants met potential customers from more than a dozen countries across Sub-Saharan Africa, forged relationships, and learned about the market conditions and business environment in the region. This first-hand intelligence will help them develop strategies to start and expand sales to these key markets.

Trade agreements like the Trans-Pacific Partnership (TPP) are also critical. The TPP is about opportunity. The agreement will advance U.S. economic interests in a region that accounts for nearly 40 percent of global GDP. This high-standard agreement will expand U.S. agricultural exports, generate more rural economic activity, and support higher-paying American jobs. In Southeast Asia in particular, it will break down barriers to U.S. exports and smooth regulatory processes, increasing our ability to work with each other for mutual benefit, including increasing food security in our partner's nations.

Utilizing New Technology

Part of the solution to increasing global food security is utilizing new products that are more productive and are able to resist pests and disease. Biotechnology has already delivered significant benefits to farmers and consumers and it holds even more promise for agriculture here in the United States and around the world. Over the past 20 years, due to improved plant breeding practices and biotechnology, agriculture yields have increased. Since the first authorized biotech crops in 1985, we have witnessed an amazing development of new varieties that resist pests and drought, and reduce the amount of water and fertilizer needed to grow staple crops. Recognizing the benefits of these products, today, farmers are planting these new varieties. We believe that biotechnology stands to play a significant role in our effort to support our drive toward energy independence, conserve our natural resources, and meet the world's growing demand for food, feed, fiber, and fuel.

Farm Bill Authorized Programs at Work

Through our Foreign Agricultural Service (FAS), USDA programs established by Congress support global food security through in-country capacity building and trade facilitation. These programs include the Food for Progress program (FFPr), the McGovern-Dole International Food for Education and Child Nutrition Program (McGovern-Dole), the Cochran Fellowship Program (Cochran), and the Norman E. Borlaug International Agricultural Science and Technology Fellowship Program (Borlaug). Should Congress provide appropriations, USDA will take steps towards implementing the Local and Regional procurement (LRP) program. We appreciate the meaningful reforms in the 2014 Farm Bill, which included authorization of the LRP program and flexibilities within the Food for Peace (P.L. 480) Title II program that enable USAID to achieve more sustainable results and reach about 600,000 more people annually. We also support the additional reform proposed in the President's Budget.

Food for Progress Program: Building Sustainable Agriculture

Since Congress established the Food for Progress program in 1985, it has been a cornerstone of USDA's efforts to support sustainable agricultural production in developing nations that are committed to free enterprise in the agriculture sector. USDA enters into agreements with developing country governments, private voluntary organizations (PVOs), nonprofit agricultural organizations, cooperatives, and intergovernmental organizations.

In FY 2015, FFPr provided 341.1 thousand MT of U.S. commodities valued at \$121.6 million. FFPr projects funded in previous years continue to operate throughout the world. Currently, FAS oversees \$814.6 million in programming in 57 countries that were funded in 2011-2015. FAS is reviewing 31 FFPr proposals received for FY 2016.

I have had the privilege of seeing firsthand how this program is a sound investment in sustainable capacity building in developing countries. Last April, I had the opportunity to meet female rose farmers in Guatemala's Chimaltenango area. The Ixoqui (pronounced ee-SHOW-key) Women's Training and Food Processing Center works only with indigenous women from one of the poorest rural areas in Guatemala. This rose production facility was developed through the FFPr program and implemented by Texas A&M University from 2008-2012. The project started with an irrigation system for the greenhouses and then support was later provided to build a processing and packing room. I met with widows and mothers, grandmothers and daughters

who now possess the skills and knowledge to produce and market roses, thereby generating income for themselves and their families. They are engaging in regional trade, exporting roses to El Salvador. While the project started with USDA funds, it is now a sustainable enterprise.

Last year, I was able to spend time in Ethiopia witnessing how USDA's work is helping the country's agricultural sector to grow and thrive. I visited a small-scale, woman-owned dairy farm to see how the Feed Enhancement for Ethiopian Development (FEED) Project, an activity supported by USDA's Food for Progress Program, has boosted milk production through better feeding practices and farm management. I met farm owner, Ms. Yetemwork Tilahun, at her operation near the town of Mojo, about 50 miles south of Addis Ababa. This project helped her expand her operation from a single dairy cow to her current herd of 10 crossbred Holsteins, each valued at about \$3,000. As a result of this expansion, Ms. Yetemwork is generating extra income by selling fresh milk to restaurants and hotels, as well as the nearby cooperative. Ms. Yetemwork now employs seven outside hands to help with the increased workload, bringing further benefits to the neighboring community. Ms. Yetemwork has even developed a biogas unit where she composts the livestock waste from her farm to power her home. With USDA assistance, Ms. Yetemwork's farm is the model that other local dairy owners are seeking to emulate.

We also have the ability to respond to requests by governments. At the request of the Government of Jordan, one of our most steadfast partners in the Middle East, Food for Progress is providing 100,000 MT of U.S. wheat, valued at approximately \$25 million. Proceeds from the sale of the commodities will improve the country's agricultural productivity and security; specifically through water conservation (over 20 percent of Jordanians are water insecure). The effort will relieve some of the country's economic burden associated with over 600,000 refugees from Syria living in Jordan.

McGovern-Dole Program: Supporting International Child Nutrition

The McGovern-Dole Program provides U.S. agricultural commodities and technical assistance for school feeding and maternal and child nutrition projects in low-income, food-deficit countries committed to universal education. If funding is maintained at the 2016 President's Budget requested level, the program is projected to assist three million women and children worldwide in 2016.

I had a chance to visit a McGovern-Dole program first hand during a trip to Central America last spring. I saw sixth grade girls in an elementary school in rural Honduras who are enthusiastic about learning and actively engaged in their school gardens. These girls are being, and have been fed daily meals through a McGovern-Dole program in Intibuca (pronounced in-tee-BOO-ka), Honduras through a project with Catholic Relief Services (CRS). Not only are these girls being fed but they are getting educated about nutrition, food safety and sanitation, knowledge they take back to their families. Nearby this elementary school was a kindergarten school where the young girls have only been in a school feeding program for a few months. Their energy level is markedly different from their older classmates. Their hair was not shiny. Their eyes were lifeless and dull. They have probably been undernourished much of their 5 years, and their lack of energy was palpable. But due to the McGovern-Dole program, which provides transportation to distant schools for the most vulnerable students, these girls finally will have the chance to experience school that their elder classmates enjoy.

Congress identified a priority of awarding McGovern-Dole grants that foster local self-sufficiency and ensure the longevity of programs in recipient countries. In Bangladesh, FAS is witnessing success in obtaining local support and sustainability. The Government of Bangladesh pledged that from 2015 onward it will spend \$49 million annually for school feeding programs in poor areas. By 2017, the Government of Bangladesh will manage school feeding in 50 percent of the schools currently receiving food under McGovern-Dole.

Borlaug Fellowship Program: Promoting Agricultural Science

Congress established the Borlaug Fellowship program to promote food security and economic growth by educating a new generation of agricultural scientists from developing countries. The program provides collaborative research opportunities with experts from U.S. land-grant colleges and similar universities and organization working in agricultural research. An illustrative example is the partnerships we have developed with the World Cocoa Foundation through the Borlaug Fellowship program. We have trained over 50 Cocoa Borlaug Fellows to research topics such as pest management, breeding, soil management and disease control and prevention.

Cacao is the perfect commodity to demonstrate how our helping other farmers contributes to food security and, through trade, benefits our own economy. The United States is not a

significant producer of cacao, but for every dollar of imported cacao generates two to four dollars of sales of U.S. peanuts, sugar and dairy.

Just last month, I visited Ghana and met with Sona Ebai the Chief of Party of the World Cocoa Foundation, African Cocoa Initiative, which links public sector with private chocolate buying companies to promote sustainable cocoa production. I saw firsthand the security and opportunity that successful cocoa production can bring to rural communities. Something that meant so much to me was the fact that in these cacao farms, women constituted the majority of the workforce harvesting, sorting, and fermenting the cocoa beans. These women farmers spoke with pride and passion about the importance of land ownership.

USDA is also working to strengthen international production. For example, a \$13.8 million FFPr project is helping Liberian producers expand cocoa production and markets. Following Liberia's civil war, farms lay abandoned and cocoa trees were infected with black pod disease. USDA's project established commercial nurseries for farmers to access high-yielding hybrid seedlings and high-quality plants. In 2008, before the project started, farmers produced a total of 107 tons of cocoa, with sales valued at \$64,000. After the implementation of the project, participating farmers were producing over 1,000 tons, valued at \$2 million. By 2015, farmers were producing a higher-quality cocoa, resulting in a 400 percent increase in prices that the Liberian farmers received.

Cochran Fellowship Program: Operating in Concert with Other Programs

The Cochran Fellowship program was established by Congress to assist countries develop agricultural systems to meet food and fiber needs and improve trade opportunities with the United States. One country example that shows how the Cochran program meshes with other programs in a unified approach to food security is Honduras.

In 2011, the Cochran Fellowship Program helped coffee producers develop a coffee waste biomass digester in Honduras to produce biogas to fuel coffee dryers. That success was a catalyst for a 2012 Food for Progress program that assisted coffee producers in improving their production.

In 2013, Cochran funded a program on capacity building in school nutrition to enhance Honduran officials' understanding of how both U.S. international food aid programs and domestic school feeding programs function. This program will enhance sustainability of

McGovern-Dole school feeding program by helping Honduran government officials determine which type of school feeding program best fits their circumstances.

In 2014, the Cochran program trained Honduran participants on methods of identifying foodborne diseases. This work dovetails with activities under the 2015 Food for Progress agreement that will strengthen the capacity of Honduran officials in sanitary and phytosanitary training. Combined, the training will help Hondurans apply appropriate sanitary and phytosanitary measures to imports, including those from the United States.

At USDA we coordinated with USAID, which helped identify opportunities and provided funding for training to meet a Cochran Fellowship goal of enhancing trade opportunities. Nearly 1,400 Honduran government and private sector officials received training in certification and inspection. Due to the training, Honduras is now home to the only international supplier of Terra Chips, a snack food featuring a wide-variety of Central American vegetables.

From farm to port, from nutrition to food safety, from helping farmers to feeding children, USDA uses the full force of all of its resources to improve food security in Honduras.

Conclusion

Attaining global food security is important not only to hundreds of millions of people, but to the sustainable economic growth of developing nations and the long-term economic prosperity of the United States. USDA appreciates the support of the Committee for our research programs in agricultural science and technology, and for our food assistance and capacity building programs that are so important in combatting global food insecurity.

If you have not done so already, I encourage Members to visit Administration food aid projects as well as project sites around the world that build capacity to see the impact of our food assistance and research, as well as our efforts improving nutrition, increasing school attendance, building agricultural and trade capacity, and building food security.

Thank you. I look forward to your questions.