

**BOARD FOR INTERNATIONAL FOOD AND AGRICULTURAL DEVELOPMENT (BIFAD)
176th PUBLIC MEETING: U.S. BENEFITS AND CAPABILITIES LEVERAGED FROM STRATEGIC U.S.
AGENCY FOR INTERNATIONAL DEVELOPMENT (USAID) INVESTMENTS IN DEVELOPING
COUNTRY AGRICULTURE AND FOOD SECURITY**

Meeting Minutes

**Marriott Wardman Park | Washington, DC 20005
Madison A & B, Mezzanine Level
Wednesday, August 8, 2018**

BIFAD MEMBERS PRESENT:

Mark Keenum, Board Chairman, President, Mississippi State University
Brady Deaton, Chancellor Emeritus, University of Missouri
Gebisa Ejeta, Professor, Department of Agronomy, Purdue University
Richard Lackey Founder and Chairman, World Food Bank

Speakers

Sean Jones
Joe Glauber
Keith Fuglie
Stephanie Mercier

George Norton
Carl Pray
John Newton
Melinda Smale

Welcome and Opening Remarks

Mark Keenum, BIFAD Chair and President, Mississippi State University

Dr. Keenum called the meeting to order and thanked the panelists and audience members for attending. He then gave the panelists and BIFAD members time to briefly introduce themselves.

In his opening remarks, Dr. Keenum noted the longstanding, effective partnership between the land grant universities and USAID that has brought positive changes to many lives. He noted USAID's long history of promoting social and economic development, since its inception with the Foreign Assistance Act of 1961, to present day efforts to improve economic stability around the world. The Agency's work has been so important that Dr. Keenum asked, "Where would we be today without an agency like USAID?" He noted, however, that the ongoing challenge for both USAID and BIFAD is to use scarce resources judiciously to address global, as well as domestic, issues around agriculture challenges and food insecurity. At the same time, we must have measurable results that demonstrate to Congress and U.S. taxpayers their development funds are having an impact.

Dr. Keenum concluded his remarks by proposing that international aid is pivotal, not only because there are social and economic benefits for the United States if it assists other countries, but because it is the right thing to do. We need to better demonstrate to the American public the results of USAID programs and the benefits they bring to the United States. The BIFAD commissioned study of the impact of USAID programs

on the United States is important because the public needs to better understand global issues and their effects on the United States. Dr. Keenum encouraged the audience to treat the meeting as a dialogue session and to provide feedback on the presentations. This feedback will help guide the content of this U.S. benefits study.

Overview of the BIFAD commissioned Study: Analysis of U.S. Benefits and Capabilities Leveraged from Strategic Investments in International Agriculture and Food Security

Brady Deaton and Mark Keenum, BIFAD

Sean Jones, Senior Deputy Assistant Administrator, Bureau for Food Security, USAID

After Dr. Keenum introduced the panel, Sean Jones spoke. Mr. Jones recognized Dr. Joseph Glauber, who moderated later panels in the meeting, for leading the study team, and will, over coming months, assess the benefits of USAID programs to the United States. Mr. Jones also encouraged the audience to join this effort and to provide feedback on the presentations.

Mr. Jones provided some historic details relevant to the study, such as the 2007–2008 food shortages, food-price spikes, and exacerbated hunger and malnutrition issues around the world. He noted that USAID led the global movement to prioritize food security by creating the Feed the Future initiative. He noted that there will always be challenges with this beyond our control—conflict, climate change, and poor economic governance—but that USAID has made progress. Mr. Jones stated that the purpose of foreign assistance is to end the need for its existence, which the USAID Administrator has described as the “Journey to Self-Reliance.” Feed the Future is elevating resilience, the ability to cope with shocks and stresses, and also is elevating and more greatly integrating nutrition, particularly in the first 1,000 days of life. Feed the Future is continuing to promote trade and to elevate the role and leadership of the private sector.

Finally, Mr. Jones noted that the United States has a lot to offer and gain from these efforts. The goals of the U.S. benefits study are to capture available data and quantify these efforts to show their impact. He stressed the importance of having metrics to show stakeholders in the United States and abroad. He agreed with Dr. Keenum that enhancing the American public’s awareness and understanding of what USAID does and why it matters to them is pivotal and noted that it may also help bring in potential partners for this effort. With evidence-based examples of the value that USAID investments have, the study should help identify the most important pathways to achieve development goals. Mr. Jones encouraged the audience to get involved and share ideas, suggestions, and any comments that may be helpful to the study.

Dr. Keenum then introduced the next speaker, Dr. Brady Deaton, who is a member of the BIFAD board, and the previous BIFAD Chairman.

Dr. Deaton outlined his long history in agricultural work, stating that, even before his time in the Peace Corps, he understood that foreign policy efforts were critical. Through his work with BIFAD, he began to see that the public has little understanding of what’s going on globally and what USAID does. He noted that USAID Administrator Mark Green endorsed the BIFAD-commissioned U.S. benefits study. Dr. Deaton

proposed that agriculture students should be an important part of this effort.

Dr. Deaton raised two important questions: what kind of deliverables can come out of this study, and what material can be produced from the study to help communicate with Congress, faculty, associations, and others about the positive impact of USAID's programs and investments? He concluded that the public needs a straightforward reference or deliverable from this study that helps them to understand the positive impact of foreign aid and its value and importance. Technology, Dr. Deaton added, is vital to this effort, to not only share information, but also to more effectively shape U.S. research and development policies.

Description of Study Approach and Timeline, Draft Conceptual Framework

Joe Glauber, Senior Research Fellow, International Food Policy Research Institute (IFPRI)

Dr. Keenum introduced Dr. Joseph Glauber, who served for 30 years in the U.S. Department of Agriculture (USDA) Economic Research Service, including time as Chief Economist. He has also held many positions in agriculture and foreign economic policy, looking at price volatility, local grain reserves, crop insurance, and international trade. Dr. Glauber mentioned that, when asked to lead the study, he was interested. This is a time of tight resources and he encouraged the audience to help him make the case for why dollars spent on USAID programs are so important.

Dr. Glauber introduced the panel who would speak after his overview of the study. He noted that the idea was to crowdsource this study to get input about potential research and data sets his team could evaluate. Dr. Glauber outlined the primary purpose of the study, which is to assess the benefits and capabilities leveraged from USAID investments in developing country agriculture and food security. The overall benefits would be considered, as well as how those investments have benefited U.S. producers and consumers. The study would examine the direct and indirect benefits of increasing output and incomes in USAID partner countries. The study would not address humanitarian food aid or nutritional food assistance programs.

Dr. Glauber highlighted the potential benefits: 1) improving agricultural productivity in partner countries by increasing income and expanding markets and trade, 2) promoting bio-security, 3) promoting research and development with spillover effects that benefit U.S. consumers and producers, and 4) geopolitical benefits like food riots and the political issues that underlie them. Dr. Glauber added that increased productivity drives improved incomes, which not only helps reduce poverty and hunger, but also improves household purchasing power. As income rises, household diets improve by including better quality foods, and these dietary shifts lead to increased trade and further potential benefits to U.S. producers.

Dr. Glauber indicated that the study would consider the economic benefits to preventing the spread of agriculture and food security threats, such as emerging crop and livestock pests and diseases, which would benefit both USAID target countries as well as U.S. producers mitigating and eradicating the spread of

these pests and diseases. This international research and development (R&D) leads to increased productivity and spillover effects for U.S. producers. Benefits accrue through multiple avenues, such as institutional research collaboration, development of publicly funded databases, and protecting biodiversity through gene banks. Dr. Glauber detailed how these R&D investments build capacity and resilience of USAID partner countries. These efforts, he concluded, help producers mitigate the impacts of disaster as well. Dr. Glauber asserted that the study's data must be illustrative and demonstrate the impact to U.S. consumers and producers, to build greater awareness and understanding the rationale for development assistance.

Dr. Glauber discussed the geopolitical benefits of USAID programs, mentioning that food riots often happen where there are geopolitical issues and unrest, which food shortages ignite. He then asked the question: What are the geopolitical benefits of food security? Venturing an answer, he said: food security increases productivity, incomes, and resilience, and agriculture assistance may increase food security in target countries. He asserted that food security is vitally important for stability in these countries, though famine is often more of a political issue than one caused by climate or other issues.

Dr. Glauber mentioned that the short timeline for completing the study, in next few months, will limit how much information can really be quantified. The large body of literature on R&D impacts is a resource that can be drawn upon. Other benefits, however, are more difficult to quantify. Therefore, he said the study team's approach would be to model the benefits where data is available and to depend on case studies and other illustrative approaches where data are scarce and relationships more tenuous. He plans to use MIRAGRODEP, a global computable general equilibrium model, to analyze the impact of development aid, the impact of R&D funding on total factor productivity, and the impact on R&D stocks, assuming lags between R&D investments and outcomes, and to estimate the impact on producers and consumers. Dr. Glauber noted that his team would also assess the impact of productivity gains on household income and expenditures in target partners utilizing the dataset developed by Martin and Ivanic (2014), helping to analyze trade impacts and impacts on producers and consumers.

Dr. Glauber said that case studies would be used to highlight the less direct benefits, such as the Sorghum and Millet Innovation Lab at Kansas State University, where research is being done in Africa and elsewhere to improve millet and sorghum production and make target countries more resilient. Dr. Glauber told the audience that the study team needs their input to identify relevant studies and databases, potential case studies, and avenues of benefits not considered at the meeting, including any comments on their proposed methodology and approach.

Panel Discussion: Diverse Perspectives and Reactions to Proposed Framework

Stephanie Mercier, Senior Policy and Advocacy Adviser, Farm Journal Foundation

Dr. Stephanie Mercier explained her affiliation with the American Farm Journal Foundation, which advocates for food security issues. She helps farmers communicate with their members of Congress on

Capitol Hill about the benefits of agricultural research and development.

Dr. Mercier discussed three arguments that can be advanced for why these kinds of investments are important to the United States. First, she noted that there's a moral imperative to international development—it's the right thing to do. Second, international development affects national security. When a country is economically secure, that country is more politically stable. Third, international development helps to create markets for U.S. products overseas. She provided some statistics that showed the importance of continuing to provide agricultural assistance abroad, stating that nearly 50% of U.S. exports go to developing countries; six out of ten of the world's fastest growing economies are in sub-Saharan Africa, where USAID has provided much assistance; and countries that received U.S. aid in the past are now significant commercial markets for U.S. food and agricultural exports. Although these effects don't happen overnight, they are beneficial to the U.S. economy, so the United States must continue to aid these countries.

Dr. Mercier introduced a case study in which USAID worked with CIMMYT, the International Maize and Wheat Improvement Center, in Guatemala since the 1970s, helping to develop new wheat and maize varieties that are appropriate for farmers and that enable farmers to cultivate home gardens and improve nutritional knowledge. USAID also established new agricultural practices, helped diversify crops, and improved market information through the Feed the Future program. As a result of the efforts, agriculture exports to Guatemala have increased 11-fold. Although some of that increase is attributable to CAFTA and lower tariff rates, some can be attributed to development assistance. For the farmers she sends to Capitol Hill, Dr. Mercier said this argument has been very helpful and convincing; however, she warned that this information is good only if Congress doesn't have to spend new money, as they would need more rigorous data if they were to justify additional funds from Congress.

George Norton, Professor, Department of Agricultural and Applied Economics, Virginia Polytechnic Institute and State University

Dr. Norton discussed the “chain of impact” from USAID's investments in agricultural productivity through research and how those productivity gains affect demand for food. He highlighted two important drivers of change in demand for quality and quantity of food: population growth rate and income growth rate, factoring in income elasticity of demand, a measure of how much extra income is spent on food. Essentially, growth in productivity drives growth in income. Countries in Africa, for example, exhibit increasing income growth rates, which translate into increased demand for food. He spoke about FAO and OECD data sources the team might rely on for assistance provided to the specific countries. However, Dr. Norton cautioned that such data create a tricky econometric problem because foreign aid is a small part of what's going on with U.S. development support, and there are time lags between when aid is given and benefits observed.

He also mentioned that food aid is both a U.S. trade and humanitarian effort. Dr. Norton mentioned an example from 20 years ago in Guatemala. Farmers were exporting snow peas during the U.S. off-season. When leaf miner infestation stopped all snow peas from coming into the United States, USAID helped

identify the leaf miner and set up procedures so the snow peas could be imported again.

Dr. Norton also highlighted other benefits, including demand for non-agricultural goods and services, technology spillovers, capacity building of scientists abroad, and global externalities like invasive pests and climate change. He then presented data over the period 1990–2010 from six middle-income countries—Chile, China, Indonesia, Korea, Nigeria, and South Africa—showing a consistent positive relationship between increased income growth, large increases in import indices, and increased demand for commodity imports. He concluded with a slide listing the various literature sources that could be used in the study.

Carl Pray, Professor, Agricultural, Food and Resource Economics Department, Rutgers University

Dr. Carl Pray discussed the benefits of foreign aid to U.S. farmers from the spillover of technology and genetics innovations from USAID-funded research in U.S. and developing country universities. He noted that another pathway for benefits to U.S. farmers is USAID-funded research programs that supported the development of new varieties by seed companies operating in the United States. A dramatic example is hybrid rice, which originally was developed in China through the support of Consultative Group on International Agricultural Research, or CGIAR, hybrid rice programs and improved with assistance from the International Rice Research Institute, or IRRI.

Another example was the development of commercial drought-tolerant maize varieties—Pioneer’s Aquamax, Monsanto’s Drought Gard, and Syngenta’s Artesian—that drew informally upon CIMMYT knowledge and germplasm. Dr. Pray stated that by 2014, there were about 13–14 million acres of drought-tolerant hybrid maize under cultivation. Pioneer, which accounted for the largest share of this acreage, developed hybrids using conventional plant breeding, crossing their high-yielding lines with CIMMYT lines bearing such traits as improved root systems and improved silk emergence.

Another example was a formal collaboration on Water-Efficient Maize for Africa (WEMA) between CIMMYT, national agricultural research systems from five countries, and Monsanto, with funding from USAID and the Bill and Melinda Gates Foundation. Monsanto donated germplasm, and the company benefited from important information about the field performance of the genetics. This fed back into the development of Drought Gard. Dr. Pray suggested that there are potential down sides of these types of innovation because some countries might accuse U.S. companies of bio-piracy. This has been an important pathway of benefit and has also created jobs for people at U.S. companies like Pioneer and Monsanto.

John Newton, Executive Director, American Farm Bureau Federation

Dr. John Newton introduced the American Farm Bureau Federation as the largest general farm organization in the United States, representing farmers and ranchers in Washington, D.C. and on Capitol Hill on issues that affect this constituency. The Federation spends a lot of time on such issues as the Farm Bill, trade agreements, and immigration reform, but they’ve had a recent dialogue about pivoting their focus to also help growers around the world. They are now strategizing about how to best assist.

Dr. Newton indicated that the Federation believes it can make a contribution to the development agenda and that it wants to be a part of the conversation. The Federation's primary goal is to help growers gain access to biotechnology, as the Federation wants to see investment in agriculture research and development strengthen rural economies around the world. Dr. Newton stated that the Federation is also interested in improving biosecurity and engaging around this issue. The Federation wants to understand agricultural insurance programs, help buffer the impact of crop loss, and help ensure geopolitical and food security. He asserted that the Federation is starting to take a more active look at these global issues to see how they can best partner and assist in this type of effort.

Melinda Smale, Professor, Department of Agricultural, Food, and Resource Economics, Michigan State University

Dr. Melinda Smale used examples to demonstrate how U.S. farmers and consumers have benefited from scientific enhancement and international agricultural research and genetic resources. Giving a brief historical overview, Dr. Smale noted that the greatest transformation in world agriculture from the past century was the Green Revolution, because it raised productivity levels and incomes, lowered prices, and generated demand for goods and services. She stated that the technologic impetus for the transformation was the demand for short-stature rice and wheat varieties that were responsive to fertilizer but didn't fall over when the plant's energy was diverted from stalks and leaves into heavier grain. The origin of the gene that was the source of this trait was a farmer's variety from Korea, which was transferred to Japan and brought to the United States after World War II, where it was bred into important wheat varieties.

Dr. Smale credited many U.S. institutions for this achievement, including the USDA, USAID, and others. The United States also played an important role in supporting the Consultative Group on International Agricultural Research. A study by Phil Pardey in the early 1990s showed that the United States gained up to \$13.7 billion over the period 1970–1993 from the use of rice and wheat varieties from CIMMYT. Taxpayer contributions, therefore, were returned many times over. Another study she mentioned documented the exchange of germplasm materials over a 25 year period in gene banks. While the United States was the fourth-largest provider of samples, it was also the second-largest recipient of unique accessions exchanged. The United States received six times what it gave for this effort.

Dr. Smale reiterated that plant breeding work is never done, as field conditions and consumer demand evolve, and other challenges like nutrient-use efficiency and environmental stresses like heat, cold, salinity, etc., may arise. Wild relatives play a critical role as a source of traits for many crops. She provided other examples of how foreign agricultural work helps the United States. She cited estimates of commercial value reported in various studies ranging from \$16 million per year to \$1.7 billion per year in 2012 U.S. dollars. A trait from a wild tomato species collected in Peru eventually contributed to increasing the soluble solids content in the commercial tomato industry, valued at \$16 million/year. She mentioned the 2016 Hessian fly infestation of wheat in the Midwest United States as another example of the value of international R&D. At the time, the Midwest experienced a temperature increase of 1–2 degrees Fahrenheit, and the period between rainfalls lengthened. Goat grass from the International Center for Agricultural Research in the Dry Areas (ICARDA) in Syria was transferred to Kansas to address the issue. A final example was research

being conducted by CIMMYT on “synthetic hexaploid” wheat, a cross between goat grass and durum wheat, resulting in modern bread wheat, re-creating what happened naturally through evolution. The synthetic hexaploid serves as a bridge for moving resistance genes into modern wheat lines and is a perfect example for how the global food system is dependent on global agricultural research. Dr. Smale emphasized that it’s important for the United States to continue this international R&D to help other countries build resilience to disaster and agricultural constraints.

Keith Fuglie, Economist, Structure, Technology, and Productivity Branch, Resource and Rural Economics Division, Economic Research Service, U.S. Department of Agriculture

Dr. Keith Fuglie said that the stories told thus far in the meeting needed to be updated for the 21st century. He said the study leaders need to ask: Do these relationships still hold? He mentioned a number of studies that he’s conducted to look at why some countries in the developing world have been able to accelerate agricultural growth and others have not. He noted that two key factors stand out about countries that have a successful agricultural economy: First, the successful countries have invested in increased capacity in agricultural research and extension to develop and disseminate a sustainable stream of best practices and technologies to farmers. Second, successful countries have a commitment to market liberalization, attracting private sector partners to invest in agribusiness and helping smallholders to transition from subsistence to a commercial orientation, access domestic and international markets, and specialize in a comparative advantage. These pre-conditions are important sources of productivity growth. Aid that supports these activities, he asserts, works.

He referenced Feed the Future as an example, where 12 countries in sub-Saharan Africa, from 2010–2015, experienced real agriculture output growth at about twice the rate as other low-income countries in that region, which is primarily attributable to those countries’ policy commitments to emphasizing growth with support from Feed the Future. This showed the importance of government policy to develop new technology and stimulate growth. One other area in which benefits come back to the United States is the globalization of agricultural science and university programs. In agriculture, higher education is a trade and services industry, as foreign students come to the United States for their education. They then become an export industry as many of those foreign students go back to their own countries to help agricultural growth. The United States, Dr. Fuglie concluded, is the first choice for foreign countries to send their students for training because the quality of agricultural science is the highest in the United States. This is a very advantageous position to be in.

Dr. Keenum then called a break. He also reminded the audience that there are comment cards to note any comments or questions for the upcoming panel; they reconvened at 11:00 a.m.

Panel Discussions with Audience Participation, Continued
Open Discussion and Public Comment
Joe Glauber, Moderator

Dr. Keenum invited audience participation and turned it back to Dr. Glauber to moderate. Audience questions and comments were taken as follows:

- Russ Webster from Grow to Market, citing a Farm Bureau statistic showing US. Farmers' declining share of the food dollar, suggested that the post-farm-gate value add is significant. He asked if the study would look at economic job creation, income generation, and growth opportunities that come from the value chain development from farm to consumer. He mentioned that wealth creation also contributes to creating good trading partners overseas. He acknowledged that production is important, but he asked if the study would look adequately at post-harvest opportunities. Dr. Glauber requested that Mr. Webster submit potential case studies for consideration. He agreed economic activity is important not just for country development but also for income generation. Dr. Mercier added that Feed the Future is no longer focusing so intensively on agriculture productivity, but also supply chain development, like access to credit and inputs, etc. She mentioned that the study should look at these additional investments and how we evaluate benefits both to those countries and to the United States.
- Rosemary Segero from Segero International Group mentioned student exchange programs. She said that working with local and international students is important, as discussed, but she had not heard anything about financing these activities. She therefore raised the question, how do we make this happen? How do we do this and collaborate? She suggested factoring this collaboration financing into the study team's plan.
- Dr. David Kraybill from the Ohio State University mentioning his work as Chief of Party of the USAID-funded human and institutional capacity development iAGRI (The Innovative Agricultural Research Initiative) activity in Tanzania. He stated that the study team was looking at many important pathways of impact, but one that wasn't mentioned has to do with the market demand for agriculture equipment: tractors, farm implements, and supplies. He mentioned that farm implement manufacturers globally are aware of a path dependence in agricultural equipment. Farm implement manufacturers are already in the African market. In Tanzania, Dr. Kraybill convinced John Deere to donate a tractor to Sokoine University of Agriculture because John Deere said that the biggest constraint on sales in Tanzania was the small number of trained farm equipment operators. There was a willingness to invest but a lack of trained personnel. Dr. Kraybill mentioned farm machinery could be a very significant source of demand for U.S. products. He also mentioned Costa Rica's EARTH University, an agricultural university focused on undergraduate education for entrepreneurial leadership that produces phenomenal graduates in this field. He mentioned several other countries where that model is spreading, and that the model also has relevance to institutional innovation in U.S. universities and community colleges. He also mentioned that the large number of scientists trained by iAGRI were now back in their home countries doing research on emerging pathogens that is also highly relevant to the United States.
- Willie Meyers of the University of Missouri, asked if the study team was also charged with disseminating the information from the study. He stressed the importance of disseminating information about the effort. He said that many states have organizations that can be an avenue for

disseminating information about the study information to agricultural leaders.

- Noubia Gribi, who works in the Middle East and North Africa and specializes in helping farmers access markets, asked about the U.S. benefits of farmer training in the use of pesticides. She encouraged the study team to consider these issues. Dr. Glauber acknowledged that it was an important point for sustainability of this study and asked for further conversation on that topic after the meeting.
- Tamara Duggleby, who participated in the evaluation of the Assets and Market Access Feed the Future Innovation Lab, leading teams in Ghana and Tanzania, made a comment about the study team's research methodology. She advised that importance should be placed on qualitative research with focus groups and that the results of qualitative research should be connected to quantitative research. She said focus group research should be done before any quantitative research, as the qualitative designs are important for focusing the quantitative research. She spoke of the intersection between qualitative and quantitative research, and she urged the study team to understand how they interact to more effectively conduct their research.
- Dr. Pray suggested looking at USAID's food processing activities by highlighting vegetable varieties that are grown in New Jersey to serve the state's various ethnic communities. Some of the varieties may come from programs like the Feed the Future Horticulture Innovation Lab and others. He asserted that the production and trading of ethnic foods domestically was a possible example of the U.S. impact of USAID's support for fresh vegetable production in developing countries.
- Dr. Smale asked if the study team was planning to look at the U.S. benefits of USAID developing country work on nutrient balance and healthful diets. Dr. Glauber said there were plans to look at these aspects. Dr. Smale noted that this area of study is relevant and important, as the world is undergoing a diet transformation. Dr. Glauber agreed but noted that the study has a short timeline, which may limit the research scope.
- Clay Hamer, a local animal feed processor, asked about the impact of tariffs on U.S. small businesses. Dr. Glauber noted that it was a good point, as overall markets are important, and tariffs can have large impacts on domestic consumers, exporters, and producers all through the value chain. However, he said, this area was beyond the scope of the study.
- Dan Silverstein, a private sector and capital markets adviser, noted that the study team must be certain to focus on the value proposition when presenting this information to those who fund research. He emphasized the importance of sharing the study's results on Capitol Hill and with state districts to demonstrate the value of these investments—present and future—to constituents. He cautioned that the study team should not overlook the sales pitch. His second point was that there is nothing unseemly about engaging commercial interests in the production of public goods. Those who are in business don't have to care about beneficiaries but only have to be interested in how to expand their markets and how international development may increase consumers for their goods. He suggested looking to Ted McKinney at USDA as an advocate for the study. For case studies, he encouraged the study team to consult Bob Rabatsky at Fintrac, who leads Partnering for Innovation, a business-oriented development program that builds markets. Dr. Glauber agreed

and stated that he doesn't want an academic paper from this research. A tangible mechanism to communicate effectively to Congress and others is desired.

- Serena Stepanovic from World Vision offered a suggested benefit to U.S. producers and consumers: contributing to strengthening local and regional food systems. USAID's work on creating an enabling environment for production, not just for its own sake, but for its contribution to dietary diversity and health. Using a food systems lens allows us to see the value add of the health system and the market system as contributors to the whole. She recommended that the study team use a systems lens to refine the framework and questions.
- Dr. Pernilla Fajersson from AgroEcoPec in Puebla Mexico commented on the increasing entrepreneurship focus of U.S. investments in foreign students. In her experience working in Mexico, she has observed a push to encourage students and professors working in developing country contexts to work at the value chain level. She wondered if this broad approach had had impact on U.S. universities, leading to a greater emphasis in work on the business and markets side.
- Dr. Jerry Nelson, Professor Emeritus of the University of Illinois, said he hoped that the study team would think about not only *ex post* evaluations but also *ex ante* evaluations of U.S. benefit, that is, what USAID investments could do for Americans tomorrow. In some sense, he observed, dietary patterns in the U.S. are becoming the future dietary patterns of the world, so problems that we all face are going to be increasingly similar. He highlighted the narrowing of plant-based sources of nutrition and encouraged the study team to think about *ex ante* interventions to help Americans in the future, including identifying new forms of plant- and animal-based sources of nutrition.
- Dr. Norton followed up on the thread of human capital development that many speakers had mentioned, noting that foreign and U.S. students trained through USAID programs, as well as the strengthening of foreign universities and research centers, have an important benefit to the United States. U.S. students trained through USAID programs help to bring important knowledge of developing country conditions to the United States. He also mentioned pesticide use and misuse as an important issue to be considered by the study. Several USAID projects work on integrated pest management, and there are good studies available. Randomized-control studies of USAID-funded genetically modified *Bacillus thuringiensis* (Bt) eggplant developed and released in Bangladesh have demonstrated that the frequent (50–75 sprays per season) pesticide sprays commonly seen in eggplant drop to zero with the engineered eggplant—a significant sustainability impact. He encouraged the study team to consider the large, USAID mission-supported value chain development projects, including not just productivity but also post farm-gate investments.
- Dr. Mercier stated that the value students gain from participating in USAID-funded capacity building activities is underappreciated and should be acknowledge in the study and perhaps quantified. She agreed that USAID Mission-supported programs do need to be included.
- Dr. Mark Varner of the Association for Public and Land-grant Universities communicated the questions posed online and over email.
 - One online participant asked about the benefits to U.S. consumers of U.S. investments in developing countries. The safety of imported food—more than 15% of food in the US

comes from other countries—is a key benefit to U.S. consumers of USAID investments in developing countries.

- Merrill Jordan from IBTC said that the study team talked about invasive species and how they have affected agriculture globally but did not address USAID efforts to address the Fall Armyworm crisis in African countries and how that could benefit the United States.
 - Dr. Glauber acknowledged that Fall Armyworm is a great case study, and he welcomes other examples like it.
 - An online participant was appalled that the speakers were uplifting Monsanto when that company has been shown to negatively affect small farmers of America and other countries abroad.
 - USAID Administrator Mark Green “liked” a Twitter post about the BIFAD meeting.
 - Wellington Osawe, a visiting scientist at Michigan State University, commented online that the USAID Nigeria-funded NAPP is an impactful case study of the benefits of USAID investments in Africa.
 - Another Twitter comment asked if any case studies had looked at the benefits of evidence-based policies that have influenced other policies, such as political security in the recipient country and the United States.
- Dr. Norton said that USAID has been out in front of the Fall Armyworm problem with workshops and a multi-pronged approach. It will be important to solve the problem in multiple crops, not just in maize. The pathogen is present here in the United States.
 - Dr. Smale clarified that the word “genetics” does not mean genetically modified organisms, and that resistance to pests and diseases can be naturally occurring. She also wondered if the study team should examine the U.S. benefits of bio-fortified crops in the context of improving dietary diversity. Dr. Glauber agreed that they should.
 - Remi Cole, an agribusiness specialist working on the fertilizer blending industry in Africa, encouraged the study team to consider the U.S. benefits of USAID investments with governments and local institutions to ensure frameworks for compliance to assure quality and efficiency. She contrasted USAID investments with Chinese investments that do not strengthen compliance systems.
 - Dr. Glauber closed the session, encouraging the audience, again, to get in touch with him or Dr. Varner with questions and comments.

Closing Remarks

Mark Keenum, Chair of BIFAD

Dr. Keenum closed the meeting, stating that BIFAD accomplished what they set out to do in this public meeting: having a robust dialogue and providing a flavor of what the study team hopes to accomplish. He noted that government leadership has to make investments with scarce tax dollars and reiterated the importance of telling our story to those making decisions to ensure that the decisions are made wisely.

He stated that the work of the Agency is important and commented on what the world might look like today if the Agency had not been established. He noted the role of the Agency in saving lives and livelihoods and the intellectual benefits the United States has accrued from those coming to the country and through the partnerships that have evolved. He acknowledged the work to be done by Dr. Glauber and the study team to glean from the literature the key points to tell the story. BIFAD hopes to publicize it with a broad array of agricultural actors in the United States so they can understand why we are doing this meaningful work. Dr. Keenum noted that the study should be released to the public in the spring or summer of 2019. After thanking USAID Administrator Mark Green, former BIFAD chair Brady Deaton, the Agricultural and Applied Economics Association, USAID and APLU, Dr. Keenum adjourned the meeting.