

**BOARD FOR INTERNATIONAL FOOD AND AGRICULTURAL DEVELOPMENT  
180TH PUBLIC MEETING**

**Morning Session: Agriculture and Food Security in Fragile and Conflict-Affected Contexts  
Afternoon Session: BIFAD Award for Scientific Excellence in a Feed the Future Innovation Lab  
Announcement and Launch of BIFAD Study, How the United States Benefits from Agricultural  
and Food Security Investments in Developing Countries**

**Meeting Minutes**

**Des Moines Downtown Marriott | Salons A-C  
700 Grand Ave. | Des Moines, Iowa  
Tuesday, October 15, 2019**

**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  
Pamela K. Anderson, Director General Emeritus, International Potato Center  
James M. Ash, Esq., Food and Agribusiness Group Head, Husch Blackwell LLP  
Richard Lackey, Founder and CEO, World Food Bank

**Morning Session Speakers**

- **Matt Nims**, Deputy Director, Food for Peace, U.S. Agency for International Development
- **Greg Collins (Speaker and Panel Moderator)**, Deputy Assistant Administrator and Resilience Coordinator, Bureau for Food Security, U.S. Agency for International Development (USAID)
- **Thomas Duffy**, Director, Office of Agricultural Policy, Bureau of Economic and Business Affairs, U.S. Department of State
- **Julie Howard (Panel Moderator)**, Senior Adviser (Non-resident), Global Food Security Project, Center for Strategic and International Studies
- **Emmy Simmons**, Senior Adviser (Non-resident), Global Food Security Project, Center for Strategic and International Studies
- **Cullen Hendrix**, Professor, Korbel School of International Studies, University of Denver and Non-resident Senior Fellow, Peterson Institute for International Economics
- **Leanne Erdberg Steadman**, Director, Countering Violent Extremism, U.S. Institute of Peace
- **Soji Adelaja**, John A. Hannah Distinguished Professor in Land Policy, Department of Agricultural, Food and Resource Economics, Michigan State University
- **Greg Collins (Panel Moderator)**, Deputy Assistant Administrator, Bureau for Food Security, U.S. Agency for International Development
- **Susanna Campbell**, Assistant Professor, School of International Service, American University
- **Sandrine Chetail**, Senior Director for Agricultural Systems, Markets and Financial Inclusion, Mercy Corps

- **Louise Sperling**, Consultant, International Center for Tropical Agriculture (CIAT)
- **Mohamed Abdinoor**, Chief of Party, USAID Growth, Enterprise, Employment, and Livelihoods (GEEL) Program in Somalia, RTI International

### Participants

151 in-person participants; 62 on-line participants

## Welcome and Opening Remarks

- **Mark Keenum, President, Mississippi State University and Chair of BIFAD**

Dr. Keenum greeted the in-person and on-line audiences and called the meeting to order, introducing himself and giving a brief background on BIFAD. Keenum took a moment to remember Congressman Paul Findley whose vision for Title XII included the creation of BIFAD, an advisory board providing advice and counsel to the administrator for USAID. Congressman Findley passed away in August.

Dr. Keenum called on the members of BIFAD to introduce themselves and then described the meeting's primary purpose: to examine issues around agriculture, food security in fragile and conflict-affected contexts, including issues around displacement and its effects on food systems. He then noted that recommendations from the meeting would be used to inform future USAID's programs and studies. Dr. Keenum introduced the first speaker, Matt Nims, Deputy Director for Food for Peace at USAID.

## Setting the Stage and Context

- **Presenter: Matt Nims**, Deputy Director, Food for Peace, U.S. Agency for International Development

Matthew Nims noted that the focus on food security systems and conflict in fragile states is very timely. He noted that currently, 113 million people are experiencing acute food insecurity and are in desperate need of emergency assistance. In perspective, that's more than the populations of California, Texas and Florida combined. Another 700 million are chronically hungry, lacking enough food to lead active, healthy lives. So, that's 820 million people. One out of every nine in the world—820 million people—is hungry right now.

Unfortunately, hunger is on the rise for the first time in decades, and the increase is primarily attributable to conflict and often compounded by natural disasters like droughts or other events. Violence prevents farmers from planting and harvesting crops, robbing them of their livelihoods and later robbing consumers of food that farmers should have been growing. Conflict prevents people from traveling to and from markets and often drives up the prices of food, if people are able to access the market at all. People survive by selling their possessions, eating less, or adopting other dangerous coping strategies. Over time, conflict prevents people from living full, healthy lives because they are weakened from the lack of food and fall victim to preventable illness.

USAID's Office of Food for Peace is the world's largest provider of international food assistance. Last

year, the office reached 76 million people in almost 60 countries with life-saving food assistance. But more than half of the emergency resources were spent responding to just five crises. The crises in Syria, South Sudan, Venezuela, and Yemen are bigger, are affecting more people, are lasting much longer, and are more complex than past.

Today, addressing food insecurity means operating amidst conflict and fragility. Since the majority of Food for Peace's work takes place in these contexts, Nims shared unique challenges when addressing food security in these types of environments.

Nims highlighted access as one of the greatest challenges facing the food assistance community. Without access, needs cannot be assessed and programs cannot be monitored. For example, in 2016, the food assistance and emergency response communities had limited to no access to Borno State, in northeast Nigeria, where a famine was thought to be taking place. Relief organizations were unable to gather the information needed to demonstrate famine conditions because Boko Haram, ISIS, and other actors were preventing access to those areas. In Yemen, more than 20 million people need food assistance, including five million people who are close to famine. Recent clashes have caused the humanitarian programs operating there to stop, pause or scale down.

Working in conflict zones also puts humanitarian partners at risk. Faced with ambushes, suicide attacks, improvised explosive devices, aid workers put themselves into danger to help others. Last year, 405 aid workers were killed, injured or kidnapped. This trend has been increasing the last three years.

It is difficult to reach people who are on the move. The most vulnerable are those who are displaced. More than 70 million people—the highest in recorded history— are displaced in the world, including 26 million refugees. Most of the displacement is a result of conflict. Although refugee camps are the most visible symbol of this tragedy, the majority of the displaced are diffused in population centers in regions within their own countries or across borders, making them very hard to reach.

Displacement leads to loss of access of livelihoods, greater difficulty in purchasing food, reduced access to health care, greater vulnerability, and greater need for assistance. However, traditional food distribution and assistance programs don't work well for displaced people.

Currently, over five million Venezuelans are living in the neighboring countries of Brazil, Colombia, Ecuador, and Peru. Over three million Syrian people are living in places like Jordan and Lebanon, with the displaced population diffused in large, urban centers. The challenge is to develop better ways to reach the displaced and identify their needs.

Nims concluded that the root causes cannot be solved by the humanitarian community.

The United States Government is very committed to helping people, but, ultimately, political solutions and lasting peace are needed in order to make self-reliance a reality. Unfortunately, political solutions do not happen in a timely manner, and needs are continuing to increase. Resources being expended in these environments are not addressing the root causes of the problems.

Protracted emergencies indicate a need to build resilience into the humanitarian response. Development actors in the food security and agriculture space need to work in more fragile conditions.

Nims noted he will be leading a session the following day with representatives from Catholic Relief

Services, World Vision, and UN World Food Programme.

A well-coordinated field effort is a key determinant of success and can be achieved when humanitarian, development, political, and other actors work together across silos and look at problems in a different way.

- **Presenter: Greg Collins**, Deputy Assistant Administrator, Bureau for Food Security, U.S. Agency for International Development (USAID)

Dr. Keenum introduced Greg Collins, Deputy Assistant Administrator for the Bureau for Food Security at USAID. Collins oversees strategic direction and implementation of Feed the Future programs in the field and agricultural research and policy efforts, as well as the USAID Center for Resilience. He also serves as the agency's Resilience Coordinator.

Collins thanked Chairman Keenum and the BIFAD for holding the event, noting that it is extremely timely, noting that Matt Nims set the stage for the challenge of protracted conflict resulting in unprecedented humanitarian spending year after year. Other affected contexts include Eastern DRC, Somalia, Karamoja, Uganda, Niger, Burkina Faso, Mali, and many others.

Collins said that recurring humanitarian spending is unsustainable from both U.S. Government and global perspectives and that the causes need to be honestly addressed. The causes include conflict but also climate, the complex intersection of these and the fall-out effects, including health shocks and stresses. Droughts and floods are an issue, but longer-term governance issues and fragility are also critical. It is not as simple as a drought, a flood, or a conflict; practitioners must deal with highly complex, challenging risk environments.

In addition to deeply concerning unprecedented humanitarian need, people are backsliding into poverty at alarming rates—rates that suggest that there won't be an end to poverty if the underlying challenges, shocks, and stresses aren't addressed. Collins stressed that hunger has reversed course for the first time in 15 years, and this trend should raise alarm to global change and the need to adapt.

Collins helped lead an effort at USAID to build resilience to recurrent crisis in the context of drought emergencies in the Horn of Africa and the Sahel. The work USAID began in Niger and Burkina Faso in 2012 and 2013 focused on dealing with climate events exacerbated on the margins by conflict. Conflict was always an exacerbating factor in recurrent crisis but is increasingly becoming a driver.

These are incredibly challenging problem sets. USAID's revitalized resilience leadership council includes the heads of not only the Bureau for Food Security and the Office of Food for Peace, but also leaders of the African Bureau, the Global Health Bureau, and the Education, Economic Growth, and Environment Bureau. The Resilience Leadership Council recently expanded the number of resilience focus countries from seven to 13. Nigeria is one of the new countries added to the list. While development tools cannot be deployed in the heart of conflict environments like Borno State, development approaches, including agriculture-led growth, can be used to rebuild in the surrounding states of the northeast and to be ready to re-enter Borno State and rebuild when the opportunity arises. It's important that these problems be seen as development challenges and not simply a perpetual humanitarian risk.

Collins added that USAID's resilience work is built on a deep collaboration between the Bureau for Food Security and the Office of Food for Peace. The expanded collaboration with partners in Global Health,

Education, Conflict, and Governance has continued to adapt the approach to dealing with these problem sets as they have evolved, and that has been powerful. There is greater clarity around what makes households and communities more resilient and able to bounce back in the face of shocks and stresses while others backslide into poverty or don't recover. The answer is, like the problem, somewhat complex.

The sources of resilience—the things that explain why some households and communities fare better than others—actually differ from place to place. There is some core cross-cutting evidence, but it's true that it cuts across sectors. Sources of resilience include sector sources: access to finance, health care, and education. Other sources of resilience transcend sectors: social capital and the ability to lean on other households, women's empowerment, aspiration, and agency. All of these are powerful sources of resilience in the face of shocks and stresses, and one of the foremost among them is agriculture, livelihoods, and markets.

Collins said that resilience work at USAID has been misunderstood by some and has been perceived as a move away from agriculture-led growth. Agriculture-led growth is actually the foundational element of what USAID is trying to achieve with resilience work. The evidence is clear that agriculture-led growth contributes to resilience successfully in places like northern Kenya or the highlands and lowlands of Ethiopia. The evidence is not yet clear in more fragile spaces: Eastern DRC, Somalia, Niger, Burkina Faso, and Mali.

USAID hasn't proven a model in more fragile, conflict-affected areas but is adapting Feed the Future, a model with a solid premise that has delivered incredible results in reducing hunger and poverty and malnutrition in select countries around the world. It was adapted in 2011 and 2012 to areas of recurrent crisis, like Northern Kenya and the highlands and lowlands Ethiopia. Now, it is being adapted again, importantly, and critically, to conflict-affected places like Northeastern Nigeria, Somalia, Northern Burkina Faso, Niger, and the Mopti region of Mali.

Adaptation to a changing problem set is at the forefront of how USAID itself is transforming and the ongoing reorganization at USAID. Collins asserted that, critically, USAID hasn't been "flatfooted" but has informally adapted and started having conversations between Feed the Future and Office of Transition Initiatives about how to address complex problem sets in Niger and Burkina Faso by bringing stabilization programs together with education, health, agriculture-led growth, and agricultural development. The structure of the agency is changing. Through the transformation, the Bureau for Food Security is becoming the Bureau for Resilience and Food Security, which is a recognition that USAID needs to lean into fragile, conflict-affected places characterized by recurrent humanitarian spending and the broader phenomenon of people back sliding into poverty. The restructuring is an adaptation to a changing world.

Through USAID's transformation, a family of bureaus called R3, for Relief, Recovery, and Resilience, is being established. These bureaus are the future Bureau for Humanitarian Assistance, the future Bureau for Resilience and Food Security, and the Bureau for Conflict Prevention and Stabilization.

Collins explained that USAID's initial resilience work was cutting against the grain, and the transformation is actually changing that grain and making it easier for to bring development tools together with conflict prevention and humanitarian assistance in order to begin to address some of these problems.

Collins reiterated that while USAID's resilience efforts may not be in the heart of Borno State or in the hottest parts of Syria, there is a lot of work to be done in areas that are conflict affected or emerging from conflict. He noted that if USAID does not engage, the Office of Food for Peace will have to be in these places with humanitarian assistance for the next 20 years.

Collins expressed the need for a whole-of-government approach to this problem set and encouraging partner governments to also take a whole-of-government approach. Listing the examples of Northeastern Nigeria, Niger, and Burkina Faso, he noted that addressing complex problems requires an integrated, whole-of government approach, by both the U.S. government and its partners. The approach goes beyond food security and is actually a national security issue for the United States and for national security of partner governments with which we work.

- **Presenter: Thomas Duffy**, Director, Office of Agricultural Policy, Bureau of Economic and Business Affairs, U.S. Department of State

Dr. Keenum thanked Greg Collins and introduced the third speaker: Mr. Thomas Duffy, Director of the Office of Agricultural Policy (AGP), Bureau of Economic and Business Affairs, U.S. Department of State. Duffy came to AGP after three years leading the U.S. mission to the U.N. Agencies in Rome. His other Department of State assignments include service as the U.S. Consul General in Jeddah, Saudi Arabia, Deputy Consul General at the U.S. Consulate General in Jerusalem, political advisor to the U.S. Fifth Fleet in Manama, Bahrain, and Deputy Political Military Affairs Counselor at the U.S. Embassy in Baghdad, Iraq.

Thomas Duffy thanked Dr. Keenum for the introduction and expressed his agreement with the points that Collins and Nims made.

After a decade of steady improvement, the number of hungry people in the world increased over the last four years, rising to over 820 million in 2019. It's clear that conflict, along with climate shocks and economic instability, drives increased hunger. The number of food insecure people is on the rise. At the same time, the number of people displaced by violence and conflict is at the highest level since World War II.

Duffy explained that the approach must be two-fold: first, working toward ending the conflicts that are driving food insecurity; and second, simultaneously pursuing long-term efforts that strengthen local economies and governance of the countries at risk of food insecurity. The United States is the largest provider of food assistance in the world. In 2018, U.S. emergency food assistance reached more than 68 million people in 58 countries and the U.S. continues to call for all countries to step up their contributions, both financial and political. A key finding is that investments in medium to long term development can strengthen local economies, support agricultural development, improve nutrition, reduce migration, and enhance early-childhood education. If successful, these programs will achieve development outcomes that reduce the need for future humanitarian assistance, promote stability, and reduce the potential for conflict.

Duffy brought up the additional challenge of effective collaboration and communication between the humanitarian and development communities on one side and the international peace and security communities on the other. For too long, food security discussions have occurred in separate spaces. There has been a lot of discussion and work done on the humanitarian and development divide, but the gap between the humanitarian development side and the international peace and security side is

equally important.

Humanitarian assistance cannot solve these problems alone. Assistance cannot overcome situations in which parties to the conflict block or manipulate humanitarian assistance. Therefore, the international community has to work together to promote unimpeded humanitarian access to address the risk of food insecurity and the risk of famine conditions.

In recognition of the links between conflict and food security, the United States is proud to have been a co-sponsor of U.N. Security Council Resolution 2417, which for the first time in a Security Council resolution, recognizes the link between hunger and conflict. 2417 also creates a reporting mechanism—a reporting requirement if one reads the words of the resolution carefully—for the U.N. Secretary General to report to the Security Council on pending food security crises linked to conflict. The Security Council Resolution 2417 allows the Council to consider its full range of tools to achieve priorities related to humanitarian access, adherence to international law, and conflict resolution.

As the 2018 global report of food crises notes, "no significant improvement in food security can be expected globally until peace is achieved and livelihoods restored." The 2019 version of the report finds that conflict and insecurity are likely to remain the primary drivers of food security crises during 2019. United and coordinated efforts can reverse the devastating trend of increased food insecurity, particularly crises that are exacerbated by the politics that drive conflict.

Duffy ended by expressing that he looked forward to the discussions and raising awareness to Security Council Resolution 2417 and its potential.

Dr. Keenum thanked the three speakers for their presentations.

## Panel 1: State of Knowledge: Fragility, Conflict, and Food Systems

- **Julie Howard (Panel Moderator)**, Senior Adviser (Non-resident), Global Food Security Project, Center for Strategic and International Studies
- **Emmy Simmons**, Senior Adviser (Non-resident), Global Food Security Project, Center for Strategic and International Studies
- **Cullen Hendrix**, Professor, Korbel School of International Studies, University of Denver and Non-resident Senior Fellow, Peterson Institute for International Economics
- **Leanne Erdberg Steadman**, Director, Countering Violent Extremism, U.S. Institute of Peace
- **Soji Adelaja**, John A. Hannah Distinguished Professor in Land Policy, Department of Agricultural, Food and Resource Economics, Michigan State University

Dr. Keenum introduced the moderator for the first panel, Dr. Julie Howard, and provided her background. Dr. Howard is the Senior Adviser, Global Food Security Project, at the Center for Strategic and International Studies. She is an independent consultant on international development issues with a focus on agricultural development, youth employment, sub-Saharan Africa, and she also served from 2011 to 2014 as the first Chief Scientist in the Bureau for Food Security at USAID.

- **Panel Moderator: Julie Howard**, Senior Adviser (Non-resident), Global Food Security Project, Center for Strategic and International Studies

Dr. Howard noted the importance of the relationship between peace and hunger, a connection observed by Nobel laureates Norman Borlaug and Lord John Boyd Orr, the first Director General of FAO.

After many years of decline, hunger is on the increase again, with much of this rise in hunger linked to the increasing prevalence of conflict, often exacerbated by climate change.

Following the 2007-2008 global food price crisis, the U.S. provided critical bipartisan leadership across two presidencies that led to a significant reinvestment of county and global resources in the agricultural sectors of low- and middle-income countries. The U.S. flagship program, Feed the Future, has compiled a very impressive track record of results since its inception in 2010: 23.4 million now living above the poverty line, 3.4 children free from stunting, 5.2 million families living free from hunger.

But in its first phase, Feed the Future purposefully selected focus countries that were stable, had good governance, and were committed to increasing their own investments in agriculture. In its second phase, Feed the Future has revised its list of focus countries to better reflect changes in the pattern of global hunger and is including more fragile, conflict- and climate-affected countries such as Nigeria, Niger, together with ongoing countries; Ethiopia, Mali, Senegal, Uganda, and others. Focus regions within these countries are increasingly including fragile zones, and USAID is attempting to better integrate its food security and humanitarian programming.

USAID's restructuring of the Bureau of Food Security to the Bureau for Resilience and Food Security is intended to strengthen the links among resilience, food, water, sanitation, and between, USAID's food security and humanitarian and stabilization efforts.

Following the 2007-2008 global food price crisis, agricultural development was placed at the very center of U.S. efforts to support country led economic development priorities, given that the majority of poor people in the world are rural and have agriculture-based incomes and livelihoods.

A wealth of studies, over decades, has demonstrated that agriculture is an effective ladder out of poverty. Agricultural development is two to three times as effective in reducing poverty as investments in other sectors.

Howard then asked how the approach to supporting agricultural development need to change in fragile environments, what should be the role of agriculture food systems and food and agriculture-based livelihoods in these fragile, conflict- and climate-affected countries and regions, and what we need to do differently, or the same, as in more stable countries and regions.

Next, she laid out the focus for the panel discussion to follow: first, to review what is known about the relationship between conflict, fragility, food systems and food-based livelihoods; second, to discuss the implications of this relationship for food security; and finally, to identify the evidence gaps in understanding of these relationships.

Howard introduced the panelists and their topics. First was Emmy Simmons to focus on key statistics and trends over time across major kinds of conflict. Second was Cullen Hendrix to focus on the political economy of conflict and food security. Third was Leanne Erdberg Steadman to speak on the challenges of countering violent extremism, especially among youth. Fourth was Soji Adelaja to focus on future research needs and the example of Boko Haram.

She then invited Simmons to the podium.

- **Panelist: Emmy Simmons**, Senior Adviser (Non-resident), Global Food Security Project, Center for Strategic and International Studies

Emmy Simmons reflected on her experience in Nigeria during the Biafran War of 1969, a conflict between ethnic groups in the southeast and groups in the rest of country over access to and control of oil and oil revenues. Religious conflicts and uncertainty from recent national independence also characterized Nigeria in that era. (

Simmons cited striking statistics on people affected by the Biafran War: there were 100,000 military deaths over three to four years but as many as two million deaths from starvation. People in northern Nigeria were able to lead mostly normal lives, with the conflict in southeast Nigeria was “contained” on the front lines 800 to 1,000 miles away. P

Upon her recent to Nigeria, she observed same “containment” of conflict in northeast Nigeria, with people not in the conflict zone living normal lives and failing to grasp the enormity of suffering. Sporadic violence is evident across Nigeria today, with many Nigerians flowing across the border to Niger. The scale and reality of the conflict are deep-rooted: even 50 years following the Biafran War, the Biafran flag is still flown, people want to secede from Nigeria, and want to claim more control over oil revenues.

In another example, she cited the 1994 explosion of ethnic violence in Rwanda, and the ensuing migration of people from Rwanda to the eastern Congo. While people knew there were these tensions between the Hutu and Tutsi groups, the sudden outbreak of violence caught everyone, including USAID, by surprise.

The disastrous effects of hunger and population displacement spilled over into neighboring countries, creating uncertainty and disruption all over eastern Congo. 25 years after the genocide, Rwanda is on its way to recovery and healing under the strong leadership of President Kagame, with agriculture-led growth being an important part of the story. However, in the Democratic Republic of Congo (DRC), thousands of people who fled Rwanda in 1994 are still displaced and struggling.

Where there are internally displaced people, there are humanitarian crises. West Africa has had a series of outbreaks of violence and conflict with growing numbers of displaced people across the region. There are more than two million IDPs (internally displaced persons) associated with northeastern Nigeria.

Another poorly understood aspect of the statistics and trends is that women and children bear the greatest impact from the challenge of conflict; the negative consequences of conflict go far beyond battle deaths.

The human impacts of conflict are almost unimaginable. The intergenerational experienced effects of conflict include malnutrition, lost years of education, and “the tearing of social fabric.” In conflict, communities fall apart—as was literally true in Rwanda’s genocide. Neighbors killed neighbors. It is important to come to grips with the human impact that such conflict causes.

Loss of assets in food and agriculture, and corruption emerging as people seek to profiteer are other major negative consequences of conflict. The bottom line is the destruction and disruption of food systems.

Although international conflicts have absolutely decreased, civil war, in which both state and non-state actors engage in violence, is emerging. Extremist religious violence and communal violence, as exemplified by the herder-farmer conflicts taking place in West Africa, are increasing. There is also increasing political conflict associated with electoral systems or competition to gain access to the spoils of the political system.

Simmons noted a new emphasis on analysis of data and information to understand the drivers and impacts and application to mitigating interventions at the local context.

Questions asked in analyses relevant to many types of conflict include the following: How are natural resources distributed? Do people have access to what is needed for food and agricultural livelihood? Are youth finding adequate job opportunities? Is purchasing power based on earnings, especially in rural areas, enough to meet food needs? How are people managing climate change? Are health care services available, and are they actually meeting needs for managing reproductive health? How is urbanization being managed? Are property rates clear and secure? Do national and local institutions provide adequate justice, or do people feel discriminated against? Are military and police forces ensuring physical security?

All of these factors often drive conflicts, creating a complex and dynamic picture. Each is locally specific, but the way that the various factors interact brings into play a range of issues that are associated with food insecurity generated by conflict. Analyses often indicate that quick injections of food assistance are inadequate to solve the problems causing the conflict and that deeper and more complex solutions need to be developed.

Simmons sees the international connections through trade, especially in food and agriculture commodities, as an important part of the response to food insecurity. International trade has helped to solve the larger problem of food insecurity over the last 30 years, making more food available to greater populations.

However, trade in food and agriculture is not a panacea that solves all issues of food security. There are negative impacts associated with global food trade. In 2007–2008, for example, commodity market and food price volatility had a strongly negative impact on the purchasing power of low-income consumers in low income countries and contributed to protests and violence in many countries. Today, the imposition of tariff and non-tariff barriers is disrupting food and agricultural trade and, to some extent, exacerbating conflict between neighbors.

Terms of trade have been declared “unfair” and have generated what Simmons considers to be a perverse reactive policy of protectionism. Trade dependence is seen in some cases as a moral failing that encourages leaders to pursue food self-sufficiency even at a cost.

Finally, even when humanitarian aid is available, food can be—as it has been in every World War in the 20<sup>th</sup> century—very easily weaponized.

There is a need for new response paradigms and to understand different sectors simultaneously, as opposed to responding sequentially. Waiting until a peace accord is signed before providing development assistance, for example, is no longer a viable approach.

Simmons emphasized the importance of food and agriculture in conflict-affected areas, but said that some people question whether food and agricultural systems investments can be used as a way of averting conflict and really reducing the social unrest and potential for violent conflict.

A final point was the need for deeper analysis, using much richer datasets, to better understand the conditions for peace, and reduction of extremist ideas and for mobilization of that analysis to shape, to target, and to intervene in more effective ways.

- **Panelist: Cullen Hendrix**, Professor, Korbel School of International Studies, University of Denver and Non-resident Senior Fellow, Peterson Institute for International Economics

Dr. Cullen Hendrix spoke of his focus on the political economy of food insecurity and conflict, with particular emphasis, first, on how food insecurity is a driver of both violent conflict and less violent—but potentially no less politically consequential—protest movements, and second, on how conflict itself can be a driver of food insecurity.

Hendrix noted that tension between two alternate definitional notions of food security—as either human security or national security—is an under discussed issue in the way we think about food systems and agricultural development. Food security is a component of human security—the most conventional definition and the definition drives most agricultural development and humanitarian response policies—but food security is also a component of national security, national economic interest, and domestic political power. The definitional tension indicates the need to think about the domestic politics of agriculture-led development programs, particularly as many countries with high food insecurity are undergoing rapid urbanization.

Although water and food security discussions have traditionally focused on rural development, poverty, and food security concerns of male and female smallholder farmers and herders, their lands, and a specific set challenges related to agricultural production, livelihoods, and agricultural marketing, these challenges in developing regions of the world are changing through increased urbanization.

Africa is urbanizing at rates not seen since Latin America in the 1950s and 1960s, and this rapid urbanization is fueling economic growth and dynamism, especially in the service sector. But it's also presenting new challenges for food and water systems in the region. Having left the farm, new urbanites are becoming more dependent on local, regional, and global markets for satisfying their food needs and are increasingly vocal when those needs are not met. For example, food prices and the government's inability to control them were central to the mass mobilizations and protests in Sudan resulting in the ouster of the president. When considering how to effectively merge the goals of humanitarian response in agricultural development, it is important to be increasingly cognizant of the strong linkages between food insecurity and conflict both in rural areas and increasingly in urban spaces.

Hendrix made three overarching observations regarding the relationships between food insecurity and conflict.

First, while increases in food security can be a source of grievances that motivate participation in

rebellion or other types of armed movements, acute and severe food insecurity actually have a dampening effect on armed participation and conflict behavior.

Second, communal conflicts tend to occur against the backdrop of chronic food insecurity, but the effects of rapid changes in food access are less clear in these kinds of environments.

Third, higher consumer prices and food shortages, particularly for staple goods, are associated with an increase in urban protest and rioting, which can have adverse effects for institutions and can influence policies and decisions that affect the whole country. However, it's usually not the most food insecure in urban spaces who are protesting or rioting but those with comparatively better access. This is partly because of the interaction between these dynamics and other variables, such as political regimes, which affect the likelihood that demonstrations or riots will be repressed, and incentives for governments to shield consumers from high prices in either global or regional markets. Equally important is the role of weak institutions, whose presence implies that there are few mechanisms through which conflicts can be managed.

A cyclical conflict dynamic develops as instability from protests can cause further price increases and reduced access, which may lead to more conflict.

Examples of linkages between food insecurity and rebellion, food insecurity and communal conflict, and food insecurity and urban protest can all be observed in Nigeria, Africa's most populous country. In northeast Nigeria, the rise of Boko Haram was fueled in part by food insecurity, and the conflict itself has had disastrous effects for local food systems. Unemployment, idleness, the lack of consistent access to food, and the promise of food and shelter are some of the most common motivations for young, in particular men, to join rebel movements, gangs, and militias, including religious extremist groups.

Boko Haram's attacks on farming and fishing communities in northeastern Nigeria have had disastrous consequences for local food production systems in areas already buffeted by the effects of lake recession and climate change.

In Nigeria's middle belt, communal conflict between herders and farmers has actually surpassed the Boko Haram insurgency as the most lethal and population-displacing conflict in the country over the past two years. The middle belt is Nigeria's breadbasket and the primary source of domestic grain, cattle, and milk production. Domestic production of all three of these has been cut significantly as farmers abandon plots and herders lose livestock. Communal conflicts can escalate to larger civil wars, as was the case in Darfur, when the government is perceived to be supporting, tacitly or otherwise, one communal group at the expense of another. Finally, these conflict dynamics are affecting policies in Nigeria's urban metropolises, which are feeling the effects of both rising prices, due to conflict-related production cuts, but also well-intentioned policies, such as import taxes and import bans, designed to help stimulate these lagging sectors of the economy. Last month was the first in over a year not characterized by high food price inflation. Both the Buhari and previous administrations have seen recurrent urban protests over food prices and threats to subsidy programs.

These three types of instability are interlinked. And while there has been a lot of thought on the first two types of conflict, there has been less thought on how they're affected by conflict dynamics in urban settings, and the policy responses that unrest in urban settings often invites.

Finally, it's important to note that conflict can dramatically reshape local agricultural economies and

have large spillover effects for food and livelihood systems far from where the fighting takes place. This can occur in regions where policy interventions were designed to make adjacent systems more resilient to enable moving into conflict-effective spaces once conflict dynamics recede.

One can look at these dynamics most closely in Uganda, where the conflict in the north between the Ugandan government and the Lord's Resistance Army resulted in mass displacement, both to settlements and also to Uganda's southern regions, far from the fighting, and towards the lake shore. Lake Victoria provided an open access fishing opportunity to young men and women who were displaced from the urban environment by this influx of population. A rapid increase in fishing pressure correlates very highly with the increase in internal displacement. Ten year post conflict, Uganda's Lake Victoria fisheries, and the over 1 million livelihoods associated therewith, are severely stressed. The food system that became a coping mechanism for the displaced has tipped over into instability due to pressure that emanated from the conflict in the north—a conflict that had absolutely nothing to do with fish in the first place. This example is emblematic of the need to account for the complex ways conflict reshapes local economies and agricultural/food systems.

Hendrix concluded that there are significant negative feedbacks between food insecurity and conflict whereby food insecurity exacerbates conflict, which further exacerbates food insecurity and affects linked economies and food systems. Second, the effects vary across conflict types, and policy responses to one type of conflict may exacerbate other types of conflict. In cases like Nigeria, but also more broadly, well-intentioned policy responses to promote rural agricultural development are associated with an increase in protest and rioting in urban spaces due to concerns about relative balance of the benefits of economic development for rural dwellers versus urban dwellers.

Hendrix stated that there are significant knowledge gaps in how agricultural transformation leads to knowledge-intensive development. In the Asian (and in particular East Asian) model for agriculture-led development and economic transformation, agriculture-led development provided a basis for industrialization and the development of an urban, industrialized, manufacturing-based export economy. Africa, in contrast, is urbanizing in ways that are unprecedented and in ways in which the primary form of urban employment has been in the service sector and does not necessarily translate to the same type of exportable goods and export-oriented economies that might make for a more sustainable basis moving forward. This is challenge to be considered and better understood. Agricultural development policies must be conflict sensitive, but they also need to be politically sensitive. In critical situations, many partners in countries where USAID is operating will choose their own political stability and their own ability to stay in office over the best-intentioned policies that might spur rural development.

Hendrix circled back to the notion of a dual concept of food security—one an element of human development and the other an element of national power and political survival.

- **Panelist: Leanne Erdberg Steadman**, Director, Countering Violent Extremism, U.S. Institute of Peace

Moderator Julie Howard thanked Hendrix and stressed the need to think about the political dynamics. She commented that urbanization and economic development are occurring in a job-free way, which has implications for youth. She then introduced Ms. Leanne Erdberg Steadman.

Leanne Erdberg Steadman noted that too often terrorism and food insecurity are happening at the same time in the same place. She showed a map from the global terrorism index which uses an algorithm to

look at the impact of terrorism through a variety of perspectives, not just in the number of deaths and the number of attacks, but also in the economic costs that a society incurs because of violent extremism.

In the 2017 index, not only did 67 countries suffer at least one terrorist attack that resulted in death, there were also \$52 billion of estimated economic impact from the cost of terrorism. These are just the direct costs; what is not calculated—and is highlighted in the report—is the opportunity cost for economic growth, for livelihoods, for tourism, and for youth to have an economic potential. These are far larger costs that are much more difficult to calculate.

It is a useful map for looking at emergency food needs in a world marked by violent extremism. The sheer number of people that are in need of emergency food is enormous in the areas that are also co-located with violent extremists and terrorist groups. Eighty percent of the world's humanitarian needs, assessed at over \$25 billion in 2018, are driven by conflict.

However, the picture is incomplete because opportunity costs are not being taken into account. Insecure supply routes mean that new growth that is failing to take place.

The cost in both the financial and human terms is simply not sustainable. To break the costly cycle of perpetual crisis response, we need to and think how to prevent conflict and extremism at their roots. That leads to questions about how existing conditions can be transformed in order to restart sustainable development, including indigenous food production and trade.

Steadman unpacked the concept of social contracts—how communities and governments interact with each other and the political processes by which they interact in a given context. Social contracts are important in the field of terrorism because terrorists operate by making a very compelling case that the status quo is illegitimate, and everyone who is responsible for that status quo is also illegitimate. The terrorist group narrative is that there is only one way to a more sustainable and just future, and that way is a violent overthrow of the status quo. Because that narrative is present in almost all of today's major terrorists groups, the social contract is implicated in the way in which they radicalize and recruit and also in the way in which they govern when they are able to hold land and territory.

When the social contract is broken, people are willing to join armed violent and groups to supplant the existing status quo. Social contracts and terrorists' exploitation of broken social contracts are useful concepts for thinking about the two-way conversations between government and citizens.

A practical indicator for the social contract is people's perceptions about the police. Steadman outlined a set of questions that might arise when something bad happens: Do people call the police or are they afraid of the police? Do the police shake people down for money? Do people pay an exorbitant amount of money for their day in court? Are people's family members jailed indefinitely in pre-trial detention? Are people identified by the government as disrupters? There are very tangible ways in which the social contract is considered in many of the most fragile places. In many places, the police are too far away to be able to mediate conflict.

Steadman added that the U.S. Institute of Peace co-hosted a Fragility Study Group that defined fragility as an absence or breakdown of the social contract. This group laid the foundation for a task force established in 2017, led by the co-chairs of the 9-11 Commission, Governor Kane and Congressman Hamilton. The group came together to talk about extremism and fragile states, noting that a breakdown

of the social contract in fragile states has resulted in societal fragmentation and grievances that have been exploited by such violent extremist groups as ISIS, Boko Haram, Al-Shabaab, Al-Qaeda, and their affiliates.

The question is: why does extremism differ in fragile states? Extremist groups not only supplant the existing political order in fragile states, but they are also authoritarian and absolutist.

Steadman said the implications of social contracts for youth should be considered. There are 1.8 billion youth worldwide living in areas affected by conflict. The predominant narrative in many of these places depicts young men as perpetrators of violence and young women as victims. When it comes to terrorism prevention, many see youth as an at-risk community instead of as huge opportunities for the future.

Regarding the manifestation of violent extremists, there are many paths to radicalization, and radicalization defies a single profile, but terrorists are opportunistic. Steadman showed Maslow's Hierarchy of Needs to explain how terrorist groups provide answers to physiological needs and deficiencies in safety, love, belonging, esteem, or self-actualization.

The Task Force on Extremism and Fragile States showed that certain conditions make violent extremism easier for terrorists to exploit, including a sense of injustice and a sense of political exclusion. The combination of opportunistic terrorist groups and conditions for extremism make building resilience, especially for youth, very difficult. The Task Force advocated for an inclusive approach to build partnerships among leaders in government, civil society, the private sector, women, and youth who are committed to building peace and governing accountably. Building resilience is not straightforward, but it can be achieved, especially if it's looked at across many sectors, across many stakeholders.

Precautionary investments in social cohesion, governance, and trust building between people and their government are not easy to initiate; however, different sectoral approaches can have governance dividends. Youth can be agents of positive change in building cohesion; in developing new types of governance processes and consultations; and in increasing trust between the citizen and the state. Youth can be equipped with the knowledge and skills to enable a more secure and prosperous future.

Violent extremism, at its core, is a deeply human problem as it only exists as long as new people are able to join. When we think about prevention as a policy against extremism, one must ask: what do food security and agriculture have to do with this type of prevention of violent extremism? There are many ways in which global changes can be seen across the development spectrum, but the roads to stronger social contracts are numerous and varied. Steadman offered several potential areas for this conversation.

One is building trust between governments and citizens around shared collective challenges like food and agriculture. For instance, corruption is one of the most prominent ways in which terrorists recruit across the globe. Anti-corruption efforts in the food and trade space could show how anti-corruption is possible as a vector of social contracts to repair one aspect of the interaction between governments and citizens.

On climate change, the terrorist hinges on changing the entire status quo to recruiting people to their cause. Group identity, shared cause, and constructive engagement are part of the terrorist narrative. There are ways in which youth looking to make an impact on climate change could join collective action

movements in a positive way. The governance gains are incremental, but there is opportunity for these ways to show results.

Steadman observed a recent increase in a more integrated, multi-sectoral understanding of conflict in fragile places by the humanitarian, development, and peace building communities. In complex ecosystems, the more we see a prevention mindset and cooperation across the humanitarian, development, and peace building spaces, the more likely we will see increases in peace and prosperity.

- **Panelist: Soji Adelaja**, John A. Hannah Distinguished Professor in Land Policy, Department of Agricultural, Food and Resource Economics, Michigan State University

Moderator Julie Howard thanked Steadman for her comments and introduced Dr. Soji Adelaja, noting that given time constraints she would not be posing questions to the panel herself.

Soji Adelaja noted that in his career he mostly worked on domestic U.S. land use, land policy and development issues and knew nothing about food security and international development work until he went to Nigeria, his birth country, on a sabbatical in 2011 to help as an economist. He ended up in the administration of the President as special advisor on economic intelligence, helping with economic security and regional development issues. What started as a one-year sabbatical turned out to be a five-year ordeal. He quickly found out that conflict was the greatest deterrent to the development of Nigeria. In fact, the one thing that could unravel the country was indeed the conflict around the country.

Adelaja also discovered that there was no evidence base on the role of conflict, with a focus by decision makers on conflict management and not prevention. There was little research in this area, so he had to do quick, “seat of the pants”, research to help convince decision makers that conflict is a big challenge and food security is an important root cause of conflict. He also noted that his presentation is based partly on his experience in Nigeria but also on his research since returning.

He showed a diagram depicting the etiology of conflict from a researcher’s perspective. Certain factors, including conflict and climate change, can bring instability to a country. A country can move far along the conflict spectrum depending on the intensity of root causes, into riots, demonstrations, and domestic and international terrorism, which can cost lives. Riots and demonstrations are weaker conflicts, and terrorism and pastoral violence are more complex forms of conflict. If the system is pushed far enough into an intractable “crisis zone”, few institutional solutions exist. A nation can then face mass displacements, humanitarian challenges, resettlement challenges, post-conflict resettlement issues, and severe impacts on agriculture and land.

Research adds value to inform not only preventative strategies but also conflict management strategies and strategies to address the humanitarian and economic challenges that result from conflict.

Adelaja said that food insecurity causes conflict, but the evidence is scant. Although there are many technical details about the relationship between elements of food insecurity and conflict—like food availability, access, utilization and stability—almost all the evidence suggests a causal relationship between food insecurity and conflict.

Other factors are known to contribute to conflict, including unemployment, youth unemployment, ineffective governance, corruption, and climate-related challenges. Studies that provide clear evidence at the country level are highly contextual and are insufficient to make broader generalizations. More ex

ante evidence is needed for places that are likely to be in crisis, as opposed to ex post studies of places already in crisis.

Terrorists tend to target agricultural areas and food markets because they have a particular interest in those areas. The literature suggests that territorial terrorists wish to create disruptions that generate IDPs (internally displaced persons) and the need for humanitarian assistance. Terrorists also need fertilizer for manufacturing bombs and improvised explosive devices.

Studies have suggested that conflict adversely impact agriculture, and those impacts are across the board. Conflict changes farmer behavior; affects production; reduces labor productivity, hired labor, and daily wages; destroys agricultural markets; disables agricultural extension services; disrupts agricultural input markets; and discourages farm investments. Other country-level evidence suggests that agriculture is adversely affected by conflict.

A number of studies have shown that conflict contributes to food insecurity and compromises the nutritional status of children. Conflict adversely affects most food insecurity measures studied in Nigeria. Adelaja's Nigerian study, published in the American Journal of Economics, looked at such measures as (1) the number of days that the household relied on less-preferred foods, (2) the reduction in the variety of foods consumed; and (3) the reduction in the portion size of meals consumed.

Information is needed to design conflict prevention and crisis management programs. Data and research are also needed to design post-crisis intervention programs and humanitarian assistance programs. The literature has also identified some of the gender and youth implications of conflict.

Adelaja identified knowledge gaps. In the area of food security and resilience, more research is needed on sources of food security resilience and the implications for humanitarian assistance, foreign aid, and overall resilience. The available data in conflict zones are not always reliable and often may not exist. Improved measurement and predictive capability of the implications of crisis are needed, and exploration of the potential for satellite data to contribute given the difficulty in gathering on-the-ground data in a conflict zone.

Areas where greater understanding is needed include: the differential impacts of conflict on women and children; the differences between climate and conflict shocks; and the implications of conflict for agricultural inputs, agricultural markets, value chains, sales networks, support programs, and extension services. Other areas of research need include implications of conflict on internal and international trade, global food prices, and human rights.

Early warning systems are critical for conflict prevention. Early warning tools for emerging crises will help to better advise those who are monitoring the national security environment and managing society against the potential for crisis. One notable emerging area of conflict is the farmer/herder crisis.

Resettlement, rehabilitation and redevelopment are other ripe areas for research. It is often believed that most people who flee a conflict zone eventually return home, but the evidence from Nigeria suggests that the majority do not. Protracted displacement may create problems for host communities. Most IDPs do not live in IDP camps, but rather in host communities. Those communities are almost permanently stressed and have no way to cope with the new challenges. We also need research to characterize the agricultural economy in those places that have been abandoned as a result of conflict and what future opportunities might exist in those areas. Research is needed to address How IDPs that

do not return and the incentives needed to help them integrate or to develop their entrepreneurial skills. IDPs that don't return often tend to be the ones with better opportunities, better connections, and better resources, and research is needed to understand what can be done to help them. NGOs (non-governmental organizations) and CSOs (civil society organizations) have a significant role to play in post-conflict environments.

The research areas of radicalization, counter-radicalization and de-radicalization are of interest. Studies suggest that women are less prone to radicalization, so it is important to think about what roles they could play in creating a less risky and dangerous environment. The youth issue is also important to consider.

Adelaja emphasized that agriculture is key to transforming developing economies and reducing poverty, and how well one can prevent and manage conflict will determine the future development potential of many countries. He had not anticipated that conflict would be his primary problem in Nigeria. Effective policies and program interventions require a strong knowledge base, and the volume of work that's needed to fill the gap is so significant that it is necessary to think seriously about a fast-track gap-filling research program. Adelaja said that research in these areas should be conducted using a SWAT team approach. Given the enormous resources allocated to humanitarian assistance, programming decisions should be made on the basis of quality data.

Through experience in building the Conflict, Terrorism, and Development Collaboratory (CTD) at Michigan State University, Adelaja observed that academics are reluctant to work with the security sector, but they're very eager to work with USAID, perhaps because of the aid and development focus of USAID's work. Thus, there's an opportunity inherent in USAID and the Bureau for Food Security to drive both academic and non-academic work.

He concluded that when he worked in Nigeria's Office of the National Security Advisor, the people who were planning for stability and national security didn't talk to people whose work could have an impact on national security. This prompted him to ask how to get the food security and national security experts together and explore the potential for the food security to prevent national security problems. More research is needed to support this kind of work.

Panel Moderator, Julie Howard thanked Adelaja for summarizing what we know and don't know and for outlining research challenges. Howard then opened the panel for questions, first from BIFAD.

## Discussion

**BIFAD member Brady Deaton** stressed the need for a "Marshall Plan" in research, requiring focus on youth and on the political dimensions of every component that is being undertaken in the field.

**BIFAD member Pamela Anderson** expressed her frustration, as a researcher, in dealing with these issues and the fragmentation that the field has been suffering. She mentioned that there are many resources into which researchers haven't been able to tap because there has been too much compartmentalization. This is no fault of the researchers, as they have simply lacked the funding and structures to do so. She asked how we can stimulate brainstorming on tapping into the resources and working together.

**BIFAD member Jim Ash** commented that Emmy Simmons touched on the issue of population but asked *if Simmons could say a few more words on her view on the population issue and how population, as well as education about population, can be helpful.*

Second, Ash felt Cullen Hendrix's presentation indicated that *there is a lack of understanding of the mutuality of welfare among groups e.g., herders and farmers, urban and rural populations, that to outsiders appears to be self-evident. As in all conflict, it's an "us versus them" situation. He asked if there was a missing educational, political, or social piece to achieve recognition of the mutuality of benefit.*

**Dr. Alan Koslow, with Team Rubicon**, an international disaster assistance organization, commented that international natural disasters might be a good laboratory for looking at how to handle hostile and post-hostile situations because there is a much more controlled situation. He noted that everyone made the assumption that food insecurity leads to conflict, but he wondered if this had examined *academically and if there had been a comparison of non-food insecurity situations that have not led to conflict to food insecurity situations that have led to conflict?*

**Dr. David Kraybill, Professor Emeritus, The Ohio State University** commented about the importance of disruption from conflict, resilience, moving from food aid to agricultural development, and social contracts. He asked about the *role of human and institutional capacity building to create deeply rooted foundations that lead to resilience and long-lasting change, and how that relates to existing and past efforts of capacity building.*

**Panelist Emmy Simmons** noted that she touched upon reproductive health in her talk, and one of the themes in the violence literature is violence against women. Another area in the health literature is a huge, unmet demand for contraception. In West Africa, high fertility rates—between six and seven per woman—are affecting the carrying capacity of communities to advance. This is an important conversation for USAID to have with the health group to empower women to control their lives and to ensure that healthcare services, either in a conflict situation or in normal spaces, are actually meeting women's needs.

Simmons cited the conclusion of her recent paper for the Wilson Center and USAID that conflict always causes food insecurity. There is no case in which there's conflict and not food insecurity; however, food insecurity *per se* does not always cause conflict. Of the total number of those who are food insecure, 800 million, only 130 million are acutely food insecure and a smaller number of people is likely to engage in conflict. "Exacerbate", "contribute to", "trigger"—all of these words are the way to think about how food security relates to conflict.

**Panelist Cullen Hendrix** replied that food insecurity as a driver of conflict is more likely to be a significant contributor in contexts that are characterized by a high degree of social polarization in parts of countries where there's relatively weak state presence and, importantly, where interactions between, for example, herding groups and farming groups, or interactions between rural dwellers and urban dwellers, are politicized to the point where there are very clear favorites being played. One can find evidence in the East African community illustrating why there are relatively large levels of violence around these kinds of issues in parts of Kenya, but there aren't similar types of violent interactions in Tanzania, for example.

Recalling Jim Ash's point about education on the mutuality of benefit, the idea is well understood in a

more developed country context. The United States is wealthy enough to support both subsidized consumption for those who need it in terms of targeted benefits and also subsidized production in a variety of ways that are important for the producer economy and more generally for the United States to meet its own food security needs and the food security needs of other countries. Hendrix said that there is potential for education here, but one must acknowledge that in some contexts issues are being framed as zero-sum. There may be a better narrative, but the zero-sum narrative is often a very powerful and attractive one.

On the issue of compartmentalization, Hendrix mentioned encouraging participation by scientists with the policy process. Generational shifts and shifts in incentives by the major funding agencies are encouraging scientists at every point in their career to engage and to be much more aware of their broader impacts. This phenomenon is especially important for the political science and sociology communities, which have historically studied politics but not necessarily wanted to get involved in them, especially in international contexts.

Incentive structures within the academy to promote engaged research are also relevant and vitally important.

**Panelist Leanne Erdberg Steadman** expressed that causality is dangerous in many complex ecosystems around the world and that identifying the causal aspects linking conflict to food insecurity or other factors has bedeviled scholars and policy makers in the context of many violent conflicts. Academics and policymakers should develop better paradigms for exploring the interaction of many factors and actors across dynamic spatial and temporal contexts. We need to avoid demanding small causal pieces of information and then making large decisions based on information that was measured over a small static moment in time. It is possible to become more complexity aware, and we can borrow from the fields of math and physics, which have been working with complexity science involving multiple factors and interactions. Computational modeling allows observation of interactions in real time.

Steadman made a point on the incumbency of research literacy within policy making communities. Following her experience at the Department of State, the White House, and the National Security Council, she was familiar with the desire for a single statistic to prove why a policy intervention will have impact over time. Research literacy—being able to understand the different methodologies and the difference among mixed methods like qualitative and quantitative—is helpful for policy makers to make large-scale decisions. Engagement with the academy, earlier and over time, is incredibly important.

Steadman touched on the question about institutional capacity building. Capacity building is not only very critical in thinking about prevention over the long term but also gives agency back to communities in defining their own future. Capacity building is a provocative and positive framework for equipping communities with the skills and the trades to design their own future—not just the skills that necessary today but also for a more open-ended world.

**Panelist Soji Adelaja** said that capacity is often one of the most significant casualties of a conflict. In northeast Nigeria, local government fled to safer places, hospitals were bombed, Boko Haram took medical equipment back into the Sambisa Forest, and schools were closed. Drawing from his work in Nigeria, Adelaja said the concept of “building back better” means that sometimes the previously existing types of capacity may have caused challenges that led to crisis in the first place. Building new forms of capacity and new ways of thinking about capacity building are both important: capacity for whom, capacity by whom, and capacity led by whom. Often in crisis zones one is building back from basics

because much has been destroyed. Often, even national policy makers have no sense of the crisis coming and didn't have a sense of the relationships that might have led to the crisis in the first place. Adelaja concluded that one does have to convince policymakers about the importance of capacity building before building capacity.

**Moderator Julie Howard** thanked the panelists for the discussion and turned the meeting over to BIFAD Chair Mark Keenum. Keenum also thanked the panelists and Howard, then recognized BIFAD board member Richard Lackey who had joined the session earlier.

Keenum announced a brief break and asked to reconvene at precisely 10:45 a.m.

## Panel 2: Programming Implications: Adaptation and Innovation

- **Greg Collins (Panel Moderator)**, Deputy Assistant Administrator, Bureau for Food Security and Resilience Coordinator, U.S. Agency for International Development
- **Susanna Campbell**, Assistant Professor, School of International Service, American University
- **Sandrine Chetail**, Senior Director for Agricultural Systems, Markets and Financial Inclusion, Mercy Corps
- **Louise Sperling**, Consultant, International Center for Tropical Agriculture (CIAT)
- **Mohamed Abdinoor**, Chief of Party, USAID Growth, Enterprise, Employment, and Livelihoods (GEEL) Program in Somalia, RTI International

BIFAD Chair Dr. Mark Keenum introduced the moderator for the second panel, Dr. Greg Collins. Collins, who spoke earlier, was filling in for the scheduled moderator, Dr. Jessica Anderson, who was unable to attend at the last minute. Keenum reminded the audience of Collins' background. Collins is the Deputy Assistant Administrator for the Bureau for Food Security at USAID. He oversees strategic direction and implementation of Feed the Future programs in the field, the innovative agriculture research and policy efforts, as well as the USAID Center for Resilience. He serves as the agency's Resilience Coordinator.

- **Panel Moderator: Greg Collins**, Deputy Assistant Administrator, Bureau for Food Security, and Resilience Coordinator, U.S. Agency for International Development

Greg Collins connected the first and second panels, noting that Emmy Simmons had described the changing nature of conflict, followed by Cullen Hendrix, who reminded the audience that sometimes dealing with one conflict has downstream effects and that we need to consider this interconnectedness. The second panel would focus on ground-level implementation of complex agricultural programs in crisis areas, taking a development approach. In reference to Steadman's earlier discussion of the concept of social contract, Collins mentioned that a key learning about resilience in somewhat more stable areas, in responding to recurrent crisis, is that transcendent sources of resilience seem to matter most, including social capital, women's empowerment, agency, and aspiration. We can add social contract and social cohesion to that list. These are fundamental in looking at food security, agriculture-led growth, and resilience in contexts of protracted conflict. Collins also highlighted Adelaja's points on the wicked nature of these conflicts and the complexity they present. Noting some of the data and research gaps, implementers and USAID can't afford to wait for the completion of an extensive five to seven-year research program. Collins agreed with Adelaja's idea of a SWAT team for research so that gaps can be addressed in phase 3.0 of Feed the Future. The response must be on the fly because of

rapid changes on the fly.

Collins laid out several themes that Jessica Anderson had formulated to initiate the discussion.

The first theme is conflict sensitivity. As mentioned by Hendrix during the last panel in the example of how Northern Uganda affected fishing in Lake Victoria, an expansive view around conflict sensitivity is needed in terms of downstream effects. More extensive thinking is needed even when claiming to be conflict sensitivity and doing no harm. Effects over space and time must be better understood and not bounded by local effects.

A second theme is to design interventions with conflict in mind. Interventions need to be tailored to the context and to the unique features of each conflict. In conflict there is no single causal effect, rather, there are multiple contingent causations occurring, and each location is distinct in how conditions combine to produce outcomes. It's not as simple as making people food secure and expecting no conflict to occur, but it is known in certain contexts that agriculture and food security are critical components both on the prevention side and on the recovery—or accelerating recovery—side.

Collins emphasized the difficult work of taking things from PowerPoints into the operational sphere with implementation on the ground, which forces stakeholders to think about new operational plans and strategies for dealing with unpredictable, fast changing environments. There has been some work at USAID to develop guidance on what is called “shock responsive programming,” or how to design programs that are able to adjust in the face of shocks and stresses.

Shock-responsive programming was primarily designed in the face of drought and flood events, so Collins asked how it could be adjusted to address conflict. Development interventions must be flexible and adaptive to be part of the solution when a conflict emerges, and they should not simply hand the baton back to the humanitarian side.

Collins introduced the speakers: Dr. Susanna Campbell, an assistant professor at the School of International Service, American University, would speak about the critically important topic of conflict sensitivity. Sandrine Chetail, the senior director for agricultural systems, markets, and financial inclusion at Mercy Corps, would speak of the need for flexibility in programming in fragile environments. Louise Sperling, a consultant at the International Center for Tropical Agriculture (CIAT), would speak about seed security programming, a very specific topic within this broader set of interventions required to not only make progress in areas of conflict but actually prevent backsliding. Finally, Mohamed Abdinoor, chief of party of the USAID Growth Enterprise Employment and Livelihoods program (GEEL) in Somalia, would speak about his work with RTI International and contributions to USAID's resilience work in the Horn of Africa.

Collins welcomed the panelists and invited Campbell to the podium.

**Susanna Campbell**, Assistant Professor, School of International Service, American University

Campbell said that her presentation is a description of conflict sensitivity and its implications and is based on about 20 years of work analyzing the effectiveness of international institutions—bilateral donors, multilateral organizations, NGOs— in war zones. She has performed field work in Sudan, South Sudan, Nepal, Congo, Burundi, and Timor-Leste evaluating the conditions under which large bureaucracies can deliver highly complex, innovative, adaptive programming.

She noted that much of the conversation until now has been about the demand for thinking about food security in conflict-affected countries and how one can actually respond to that demand.

She was one of the authors of the term “conflict sensitivity” in 2002. The basic concept is to understand the relationship of conflict dynamics to intervention and to act upon that understanding in order to mitigate harm and to increase resilience, development, or other objective.

Built into the definition of conflict sensitivity—and part of the organizational challenge of implementing conflict sensitivity—is a core adaptive accountability framework, in which getting regular information, adapting quickly, and solving wicked problems in real time are imperative.

Conflict sensitivity matters because any input into a conflict environment feeds into the existing political dynamics and the existing power struggles and structures—reinforcing the conflict unless one does the opposite. An agricultural input for security is no exception here. In fact, in many ways, the conflict sensitivity field in the industry cut its teeth on food security and agricultural inputs in places like South Sudan and the Congo, in some of the most protracted crises where there was repeated distribution of these agricultural inputs.

The first component of conflict sensitivity is to understand the conflict dynamics: the history, the actors, their interests, how they work with populations, and where they are operating. This is not just a snapshot, a one-time conflict analysis, but an ongoing process of understanding what's happening and the political nature of this context within one is operating.

A challenge is that conflict actors are in no way disconnected from food security. They are the recipients of agricultural inputs and play key roles in the food security value chain and all of its dimensions. Conflict actors have the potential to strengthen or undermine market demand by changing the security environment. Furthermore, because agricultural inputs can be looted, they can be targeted by non-state armed groups trying to feed their troops and to manipulate and control access to these goods by the population. It's a challenging environment, and conflict sensitivity first involves understanding that environment.

Even more difficult is analyzing the causal relationship between intervention and that environment. It's important to know how the environment is being affected and how it is being understood and analyzed in real time. It's also important to know how agricultural inputs feed into existing conflict dynamics that might be captured by one group or another. There is an example in south central Somalia in which Al Shabaab has been taking agricultural inputs both to feed their troops and to manipulate which populations get access. This also happens to be one of the most famine-stricken areas in Somalia.

Campbell asked how we should intervene with food aid and inputs in these contexts, while ensuring that the aid does not feed into a conflict, and at the same time helping people who suffer from famine, malnourishment, and extreme food insecurity. It is not an easy problem to solve, but it is important to solve it with eyes wide open.

Campbell noted how the location of agricultural inputs and engagement with communities and government officials reinforces discriminatory property rights practices. Property rights—or, who has access to which kind of land or who can use agricultural inputs—is part of the conflict dynamics both in terms of cause of the conflict and effect of displacement. In Burundi, there's debate over who can

access limited land and which returnees can have access to which plots of land. The decision of whom one will work with and to whom one will give agricultural inputs determines who has access and who can ensure their own livelihood. These are highly political decisions, and the point of conflict sensitivity is that we can't avoid these. One can ignore them but that doesn't mean that they go away.

Facilitating formal market systems may either reinforce or undermine informal markets that might have benefited the most marginalized groups. When formal markets come in, they can overtake and reinforce the power structure and can undermine the most vulnerable people that need help.

Which value chains are most perversely affected by ongoing conflict? There is an interesting example from Northern Mali, in relation to the conflict there. The fisheries value chain was not affected because the rebels didn't like fish and were afraid of water. The livestock value chain was heavily affected primarily because when people were displaced, they were moved to areas where they couldn't raise their livestock. And secondly, livestock are easy to loot. The non-state armed groups could take the livestock and both feed their troops, but also sell it on the market, making money for themselves. It's important to see how different inputs go into a highly contested conflict economy.

Finally, program staff in each location and how they can reinforce or undermine conflict dynamics need to be considered. Campbell provided an example from her research in Burundi. Tutsi staff represented the government status quo, and when they talked to and tried to build trust with the Hutu communities, they were seen as reinforcing the Tutsi power structure, or giving favors to their friends. To be conflict sensitive is to know the staff: who they are, what they're doing, and how they are viewed by the community.

The difficult question is what one can do in these contexts. Campbell's research suggests that the solution is to decentralize and to become highly politically engaged. This means that in a conflict-affected country, things change fast, so it is important to adapt quickly and recognize that there will be failure in some cases, as even the most detailed complex analysis will be quickly outdated. Three elements are critical: regular information about the relationship between the evolving conflict dynamics and programming, downward accountability with key stakeholders in communities that are empowered to hold staff accountable for being responsive to these complex dynamics, and a focus on responsiveness.

This focus on responsiveness means rejecting the idea that the solution is to give goods. The solution is to respond to the needs in that context as they are changing through short, quick, feedback loops, which is very different from many development programming time frames and even many humanitarian timeframes. The solution is not to spend money or deliver inputs. The solution is to respond to changing needs and to empower local stakeholders who themselves can build resilient communities and infrastructure to increase food security in these contexts.

Moderator Greg Collins thanked Campbell for her presentation and welcomed Sandrine Chetail to the podium.

- **Sandrine Chetail**, Senior Director for Agricultural Systems, Markets and Financial Inclusion, Mercy Corps

Sandrine Chetail noted that she recently returned from 15 years in the field and would share some of the learning that she and others at Mercy Corps have collected in different contexts. First, \$16 billion is

the cost of the damages and the losses in the agricultural system in Syria in five years, from 2011 to 2015. Yet, 6.7 million Syrians still, after five years, rely on agriculture as a safety net for their food and for their revenues. This demonstrates that the agricultural system plays a major role in building the resilience of the population affected by the conflict.

Support for this agriculture system needs to be on the “street front”. First, it is necessary to prevent the complex destabilization of the food system. Second, they food systems need to be rebuilt fast so that livelihoods can resume. And third, they need to be rebuilt better so that they're more inclusive, and they don't fuel the conflict. The question is how to do that effectively.

Chetail presented the Mercy Corps resilience framework, which asks five simple questions to help navigate programming options: resilience to what (in terms of the conflict situation), resilience of what, resilience for whom, resilience through what, and resilience to what end. Examples of protracted crisis from Uganda, DRC, and northeast Nigeria are characterized by high levels of violence, displaced populations, and long time periods

Chetail summarized learnings across the three geographic contexts. Responding to the question “resilience to what”, she drew upon Mercy Corps' experience selecting which markets should be supported. In DRC, the cabbage market was selected because it was important in the local diet presented clear economic opportunities for the population, especially women. However, cabbage is also the preferred crop for the militia because it is easy to cook and harvest. The militia stole the harvest from the people that Mercy Corps was trying to serve. Not only did Mercy Corps not accomplish anything to improve the wellbeing of the population that they were serving, but on top of that, they put that population at risk. Mercy Corps quickly shifted to the bean market, which offers the same beneficial nutritional outcomes and economic opportunities, but is much more difficult to harvest and to cook, and therefore less likely to be stolen by the militia groups. The selection of markets is critical in the effort to increase the resilience of the population that is being served.

Responding the question “resilience for whom”, it is widely agreed that within displaced populations, women and youth are the most affected. It is important to leverage the skills of displaced people so that they can contribute to the local economy and/or to develop new skills that they can use when they return home. In Uganda, Mercy Corps worked with the local communities to put together sharecropping agreements so that the refugees could produce and contribute to the local economy.

Responding to the question, “through what”, it is important to examine the what, the when, and the how. In a protracted crisis situation, there are peaks of violence followed by periods of relative stability, and, again, followed by peaks of violence. Violence is accompanied by limited movement. Taking the freedom of movement as a proxy indicator can help show what kind of intervention should be implemented. As violence increases, freedom of movement decreases, and the need is greater to focus interventions at the household level to maintain food security by, for example, building local solutions. In Northeast Nigeria, farmers do not have access to chemical fertilizers because of restrictions, which can be an opportunity to promote the use of bio-fertilizers that can be produced and accessed locally so that farmers don't miss an agricultural season. Similarly, when freedom of movement is restricted, people need a local solution for storage and processing so they don't lose their harvest.

When there is less violence, freedom of movement can resume, and in these conditions, one can have a much more systemic impact on the food system. For example, options like building social cohesion to strengthen the local structure can be explored. Support to farmer groups that include both refugees and

local populations is an example from Uganda. With an economic incentive in mind, groups can form and strengthen social cohesion.

Through this approach, one can also start addressing some of the drivers of conflict, like land access and water access in the DRC, for example. She noted that Mercy Corps is working with the local governments and the local communities to formalize land titling and sharecropping agreements across ethnic lines. The aim is to have a more systemic impact at this level.

She concluded that flexibility and agility are needed to program in this way—not year to year, but month to month, or, week to week, because these contexts are extremely volatile and may change from one moment to the next. Adapting the programming to the situation means that there needs to be more assessment and reassessment, not only at the beginning of a project, but throughout the implementation period. One needs to make sure that what's going on is understood, which in turn means a longer time frame for interventions during a protracted crisis.

Only after a six-month assessment in northeast Nigeria did Mercy Corps really understand all the market forces that were at play and the drivers of conflict and have the confidence to design interventions for that context.

Involving a broad range of actors is important. Traders, for example, are incredibly resilient, have their own sources of information, and can shift from one road to the next. Building on local actors is critical to having an impact. Finally, it is also important to address operational barriers and to ensure that procurement systems, financial systems, and monitoring systems are in place to respond with agility.

Moderator Greg Collins thanked Sandrine Chetail and invited the next speaker to the podium.

- **Louise Sperling**, Consultant, International Center for Tropical Agriculture (CIAT)

Louise Sperling introduced her focus on seeds, seed security, and conflict. She noted that seed is a big issue and is normally the first entry point in agriculture after a disaster. Sperling shared statistics to give an idea of the scale of investment in seed. FAO budget figures for seed rehabilitation programs increased seven-fold over the period 1996 to 2003, and the value of FAO special relief funds in 2011 was \$750 million. FAO supported 76 countries with seed projects in 2016. Sperling emphasized three points: (1) seed and the vulnerable are linked; (2) seed represents big money—about \$32 billion a year; and (3), if used well seed can be an incredible source of innovation, for example, for the introduction of climate-smart and nutritious varieties, even in conflict. In practice, however, particularly in conflict zones, the same seed responses are used again and again, prompting the question: is programming in conflict areas being effectively, and can it be improved? She cited data from several countries in sub-Saharan Africa in which seed aid has been repeated over many decades.

Sperling showed data on where smallholders, including IDPs, source their seeds, drawing from a large, USAID-funded dataset including 16,000 observations globally and about 11,000 in Africa, including in conflict areas. The formal seed sector provides less than 3% of the seed sown across crops. In contrast, 36% of seed comes from farmers' own stocks, and another 30% from local markets, which are the largest off-farm channel. Overall, two-thirds of sourced seed comes from local channels. However, USAID and the Bill and Melinda Gates Foundation put most of their money into formal providers: agro-dealers and other private seed businesses. Community-based seed producer initiatives—also often supported by donors (through university and other projects)—provide less than 0.5% of the seed.

Sperling asked where one should invest to have strategic impact and how to leverage all channels. Sperling asked why we do not also invest in the local markets.

Continuing on the theme of markets, Sperling contrasted images of formal (agro-dealers) and informal markets. Informal markets are, importantly, the primary source of more diverse, more nutritious crops and, surprisingly, most serve the IDP population, according to the data. The informal markets are important for everyone, but particularly for the stressed.

In summary, for small holder farmers; own stocks and local markets are key. The formal sector and seed companies have a modest importance, and local markets often serve farmers even in high-stress conflict areas.

Sperling shared results from two field cases. In Rwanda in 1994, the genocide hit in the middle of the growing season, and 30 different agencies were distributing seed in a country the size of Switzerland. In the first quarter, farmers' own stocks provided about half of seeds, and the market and relief sources each provided equal shares. In the following season, own stocks and local market were over 90 percent of the seed farmers' sourced. Relief seed was only 6 percent, but the NGOs continued relief seed for another eight seasons because that is what the paradigm was and that's what they knew how to do.

In the case of northwest Syria, Catholic Relief Services (CRS) teams were there before the Russians bombed in 2015. Farmers procured seed mostly from traders and somewhat from their own stocks and, in fact, the harvest was so good that seed use was up 13 percent. Thus, there was a conflict, but seed use and harvests were abundant. NGOs working in southern Turkey felt that because of the conflict, they needed to create nutritious food baskets for people who were suffering. However, what traders and farmers wanted was to sell their own outputs. They didn't want food to come in; they wanted their food to go out. These are just two examples of counterproductive and even possibly destructive practice.

Sperling then offered four practical suggestions. First, in conflict areas it is important to leverage the existing informal markets much more. Traders go to high risk areas routinely. She noted that the markets with which she and her team work routinely move 400 to 2,000 metric tons, at a large scale. These traders are also conflict savvy, and it's not enough to talk about conflict sensitivity. It's necessary to talk about people who can navigate conflict, get things done, and move in and out of areas easily.

Second, formal markets can also be leveraged, but it's necessary to be more careful in choosing the companies with which aid organizations work. These formal sector companies should have wide crop variety portfolios, routinely serve and be committed to an area, and be conflict savvy enough that they won't run away at the first sign of trouble.

Third, a more academic point, aid organizations should develop sector-specific technical advice for conflict areas, for example, in sectors such as seeds, pests, or storage. Technical guidance can help determine what can be done in what kinds of conflict, what kinds of seed security response can be implemented in what kinds of conflict, and what one can do with water. For seed, it is obvious that all that is sown must be able to be harvested (so the length of stable periods is important). One has to also consider the intensity of management needs. This kind of advice is not difficult to provide and could save aid organizations from many mistakes in practice in the field.

Sperling spoke of the importance of refining conflict typologies. Currently, the International Committee

of the Red Cross (ICRC) can provide typologies on armed versus unarmed levels of violence, but for agriculture, it is important to understand the kinds of conflict scenarios that allow different types of interventions.

Sperling concluded by reiterating that field action next steps should include leveraging informal markets and formal markets and that management or technical tools should develop sector-specific guidance and develop or refine conflict typology.

Panel Moderator Greg Collins thanked Sperling then introduced Mohamed Abdinoor and invited him to the podium.

- **Mohamed Abdinoor**, Chief of Party, USAID Growth, Enterprise, Employment, and Livelihoods (GEEL) Program in Somalia, RTI International

Mohamed Abdinoor is based in Mogadishu, Somalia, and the Growth Enterprise Employment and Livelihoods (GEEL) project works across Somalia in both conflict and non-conflict zones.

Conflict, war, humanitarian assistance, and crisis are common mental associations with Somalia, but there is a different Somalia. Although Somalia has been in protracted conflict for the past 28 years, communities have developed coping and mitigating strategies, ideas, and innovations. They have developed ways to “go around” and find solutions to their problems. The GEEL project is leveraging Somalia’s resources and ability to move into the next generation.

Somalia has the largest livestock population in Africa and is a large exporter of livestock—4.6 million head in 2015. Somalia also has the longest coastline—3,333 kilometers—in Africa, and fisheries and marine resources have great potential. Somalia was one of the largest exporters of bananas in the 1990s, and this sector employed around 120,000 people across the country.

Irrigation also has great potential, as 8.9 million hectares of irrigation or irrigable land run along the two major rivers of Somalia. Somalia is also the seventh largest exporter of sesame, and sesame production is on the rise. Last year and this year, sesame exports were around \$300 million from Somalia.

Abdinoor discussed the role of diaspora. On a recent trip to Minnesota, Abdinoor spoke with a Somali community about social capital. Last year the remittance to the Somali financial services sector was an estimated \$1.4 billion. So even during crisis, drought, and emergency conditions, the diaspora community—not only in Europe or in the U.S. but across the Horn of Africa—had been able to remit revenue into the Somali community.

Somalia also has a large population of young people; 70 percent of the population is classified as youths.

GEEL is able to work in conflict areas by putting mitigation measures in place. At project inception, GEEL conducts political economic analysis to identify the key actors and stakeholders in different value chains. This is a critical step because of the issue of elite capture or certain groups feeling unhappy about what is being done. Understanding who the key players are and leveraging ownership—community ownership and even private sector ownership—is a critical step.

Next, there must be honest conversation with the key actors. For example, there are two value chains on frankincense and dry lemons that were thought to have high potential, but they had to be dropped

because the key players there were not willing to change. They were not willing to be more inclusive or partner with aid organizations in a more honest and strategic way. So conversations about issues like accountability and joint ownership are necessary to have with partners and can be difficult. Leveraging the private sector has been a key strength of the GEEL program and another important strategy for engaging in conflict areas. The private sector can include cooperatives, small- medium- or large companies, women's groups, and associations. While there is a lot of work on humanitarian assistance, long-term interventions can leverage both the diaspora and the Somali community.

GEEL is partnering with private sector entities, including sesame exporters, seed and fertilizer companies, agro-dealers and input suppliers, and fisheries value chain actors around innovations and technology. The goal of the project is not just to create employment, but also to build capacity and to introduce new technologies, new ideas, and innovations in agriculture, including fisheries and livestock.

GEEL leveraged \$10 million of diaspora investments in Somalia out of a total of \$26 million of investment. GEEL works with 5,800 micro enterprises. These can be small agro dealers or large companies ranging from a revenue base of \$500 up to \$1,000 U.S. dollars. To operate in a conflict space, one has to work with many different types of actors.

Although there is a large focus on direct humanitarian delivery of assistance in Somalia because of conflict, cost sharing, co-ownership, and co-investments are key for conflict mitigation. For any community project, people have to put resources on the table to have ownership. People will protect their assets in a conflict because they have the ownership and a stake in it. A cost-sharing approach has made it possible to mitigate implementation challenges. GEEL insists on ownership and contribution; there are many ways of quantifying community contribution, including money, level of effort, and labor. In the sesame seed sector, because of the drought, there has been significant distribution of free seeds, which do not meet purity and germination standards, and many community members recycle their old seeds. GEEL has worked with private companies to develop a seed multiplication system to improve productivity. One diaspora-owned company, Filsan, draws upon U.S. university-educated Somalis and their knowledge of knowledge improving and rehabilitating agricultural production. Working with companies and diaspora groups interested in long-term agricultural production and introducing new technology are the key indicators of success, in contrast to the direct delivery or distribution of free seeds.

The other example is fisheries. GEEL works with a private company called Habo Tuna, which has invested over \$3 million of its own money, while GEEL has provided technical assistance on, market linkages, quality improvement, and HACCP standards. Habo Tuna employs 300 people at the factory and another 700 who catch fish. Most of the employees are young people, and the project's goal is to create employment opportunities for youth.

GEEL, a pilot project, provides a resilience approach for intervening in a conflict zone. Although GEEL wasn't designed as a resilience project, it has helped Somalia prepare better for drought. In the 2017 drought, as compared to 2011, and even this year, the government had better capacity and was better prepared, and NGOs were much more adaptive.

Abdinoor listed top recommendations: (1) to invest in long-term development and resilience interventions in fragile or conflict areas to shift the focus from humanitarian assistance., (2) to commercialize advanced agriculture technologies and innovations that are adapted to and relevant to conflict. (3) to leverage the private sector and other donor investments in key infrastructure through

strategic partnerships; (4) to build the capacity of the public sector; (5) to integrate regional efforts and initiatives, particularly cross-boundary and regional initiatives; (6) to focus on youth and women with a focus on agribusiness-, technology-, and innovation-driven agriculture to scale up employment and job creation opportunities.

Moderator Greg Collins thanked Abdinoor for his reflections on Somalia's potential. He added that there is a huge inflow of capital, not just to allow people to manage shock events, but as investment. It's wonderful to see how GEEL and RTI are leveraging that in the private sector.

Collins opened up the next 15 minutes for questions, initially from BIFAD and then from the wider audience.

## Discussion

**BIFAD Chair Mark Keenum** mentioned that BIFAD had convened the meeting within response to USAID Administrator Mark Green's concerns about how the Agency should address needs in conflict areas. He was struck by the scale of displacement—more than 70 million people—not only within their own countries but across borders into foreign nations. He asked panelists what type of resilience initiatives they would suggest to help long-duration refugee populations that have no property rights in the hosting nation.

**Moderator Greg Collins** called for another question or two from BIFAD before turning to the panel for response.

**BIFAD Member Pamela Anderson** asked *what panelists would request from the traditional research for development community, and if there were research outputs needed to support conflict-sensitive work that the community is not getting now.*

**BIFAD Member Jim Ash** asked Mohamed Abdinoor about effective interactions with diaspora populations and if there were structures in *place for Somalia or other areas to leverage that resource.*

**BIFAD Member Gebisa Ejeta** asked the panelists to discuss the implications of their work to the organization of development agencies—given that the same agencies address both conflict and development—and to recipient countries' approach to development.

He was particularly struck by Abdinoor's contribution and the partnerships developed in Somalia in conflict areas—areas where working partnerships between host countries and the development agencies have not been successfully developed. *He asked what Abdinoor's advice would be to both development agencies and countries in terms of how investments are perceived.*

**Moderator Greg Collins** asked the panel to reflect on the questions. He stressed the importance of short, brief questions, key insights, key reflections, and key reactions.

**Panelist Mohamed Abdinoor** touched on the challenge of IDPs in Somalia, saying that there are both push and pull factors of displacement. The biggest push factor for displacement is security and Al-Shabaab, especially in agricultural lands. The pull factor is the humanitarian assistance that most of the IDPs in Somalia, especially around the main cities, receive. The IDPs are a safe haven, and there's a lot

of support.

As the government is pushing back on Al-Shabaab, territories are being freed up. Normally, when the IDPs return to agriculture land, they don't return with the entire family back; often, only males or young people will return to the farms.

As mentioned earlier, in the 1990s, there were large banana plantations in Somalia. GEEL has been working with some private companies to expand banana cultivation. As a result, there has been an increase in people, especially young people, who are returning to the farms and working with companies like Filsan. Distribution of subsidized seeds and fertilizer packages is being combined with humanitarian assistance to encourage IDPs to return to areas that are now more secure and safe to begin farming.

Thus, packages for agriculture interventions are developed, and this is where the humanitarian space and development space pair well together. WFP (World Food Programme) in Somalia is piloting packages for progress in which they buy maize from small scale farmers for distribution in humanitarian assistance in areas of need.

**Panelist Louise Sperling** responded to the question about the role of the research sector. For example, GIS technologies have been used to evaluate which markets serve which areas.

Analysis of the demand side in conflict settings, especially among populations at risk, is another area to which research can contribute. Another area where research can contribute is in providing sector specific advice. A final area in which research could contribute is high-level evaluation of interventions.

For example, most farmers in the world access modern varieties through aid rather than through markets, and it is not known if they replant those modern drought-tolerant varieties. We invest in giving away new varieties for free, but we have no idea what happens in the next season.

**Panelist Sadrine Chetail** spoke to the question on displaced populations. She noted that Mercy Corps has tried to systematically ask questions during design and implementation: first, what happens if the population with which they're working must be displaced, and second, what if there's an influx of refugees or IDPs in the areas of intervention?

Evidence from Syria suggests that people with more mobile assets are more resilient because if they have to be displaced, they can take their small livestock with them and not lose everything.

There is only anecdotal evidence on how to build the resilience of a displaced population, and this would be a potential area for future research.

**Panelist Susanna Campbell** said, in response to the question about refugee populations, that it's important to realize that often there are more people displaced or dispersed beyond camps. In camps, it is possible to help with short-term food security issues. However, expanding food availability to support people who are dispersed in the population living with friends family members presents a more intractable problem.

She advised that researchers focus on the "how", not just the "what". Researchers should assess the impact of systemic interventions and also explore mechanism-based evaluation and process-based evaluation, in which one tries to capture how to do work in a way that builds ownership and capacity.

It's important to invest in researchers in conflict-affected countries and build their capacity to conduct research

A major problem with development is that the modalities of aid are constricted to primarily bilateral cooperation—the privileges, the preferences, and the politics of the government—and ignores the population. Most development aid, the largest proportion of ODA, is currently given to fragile and conflict affected countries.

**Moderator Greg Collins** commented that development practitioners have failed in some sense, thinking that they are going to continue solving problems indefinitely. It is a fundamentally problematic approach to development. He commented that Mark Green's vision for a journey to self-reliance is about building the commitment and capacity of countries, and not just the government, but the private sector, and communities to address their own development challenges. If development agencies are held to a standard in which their success isn't measured by whether or not development outcomes were achieved, but whether or not country capacity and commitment were achieved, there is potential to fundamentally change the approach they take to development. This framework begins to get at the question of how development agencies should be structured.

He thanked the panelists and his colleagues.

## Public Comment

**BIFAD Chair Mark Keenum** returned to the podium and thanked everyone for their input. He opened the floor for public and online comments and questions.

### **Question/Comment: Dr. Ed Price, Texas A&M**

Price conveyed his appreciation for the panels and the topic on conflict and development. Dr. Price is from Texas A&M University and works with the USAID-funded lab for conflict and development. A concern is how far upstream it is possible to go in designing technologies for conflict regimes. Price thinks there is ample evidence that development can be designed to favorably affect conflict and, even further upstream, that crop and animal technologies can be designed to affect conflict.

Price gave a quick example. Texas A&M University is working with the International Center for Tropical Agriculture (CIAT) to develop a cassava plant that is particularly adapted to conflict regimes. CIAT also has genetic material for lima beans rich in cyanogens, which could be removed by a farmer but would make it hard to steal and utilize. He is interested to learn how far upstream we can go with designing systems for conflict affected areas.

### **Question/Comment: Dr. David Kraybill, The Ohio State University**

David Kraybill, professor emeritus at The Ohio State University commented that institutional and organizational capacity building is the basis for household and community resilience in the social, political and economic context of a country. Resilience offers a framework for thinking about how political, social, and economic stability can be achieved post conflict.

### **Question/Comment: Dr. Ed Price, Texas A&M University**

Ed Price commented that during the Iraq engagement, the minister of agriculture of Iraq commented that the greatest challenge she faced was the lack of cooperation among aid agencies working in

country. Vietnam, in contrast, was a positive example of unified interagency cooperation in foreign assistance that was successful in supporting enormous changes in the agricultural sector

**Question/Comment: Dr. Cullen Hendrix, University of Denver**

The maritime space isn't usually considered a conflict-affected space because the conflict modalities typically don't have a strong kind of naval component.

Somalia, however, is an outlier because of the links between the collapse of fisheries related to livelihoods and participation in piracy. Aquaculture and fisheries development are a significant component of USAIDs programming in this space.

**Question/Comment: Louise Sperling, International Center for Tropical Agriculture (CIAT)**

Sperling said that Dr. Ejeta's point that development experts don't think about conflict is very telling and true. She raised the issue that conflict is no longer a niche situation. She asked how the development and humanitarian discourse could be changed to be more proactive about not just responding to conflict but figuring out how to design and manage it. Conflict is no longer a niche situation, and that has implications for development professionals.

**Question/Comment: Julie Howard, CSIS**

Howard reflected on IDPs and an experience that she and Emmy Simmons shared near Abuja, Nigeria.

They visited three different camps where displaced people from the Northeast had settled around Abuja, and each was markedly different. The first camp was sad, roofs were leaking, people looked forlorn, and there was a welcoming committee with a list of needs.

The second community didn't have time for them because they were so busy. One could barely distinguish the community of displaced people from the wider neighborhood of Abuja. The community had organized its own school, had tried to figure out how it was going to integrate, and had sent people to different areas to do farming. It had already integrated into the host community. It was part of urbanization and was bringing its skills to bear in new economic considerations. It did not have time to compile a list of needs for the visitors, but it did receive a lot of assistance, including water tanks.

The third community had solar lights, laid-out streets, and amazing cohesion within the community. People had organized around markets. Local context and strengthening local leaders are important. The solution to displacement may not be sending people back from where they came. Many people displaced for four or five years may never go home.

She said the focus should be capacity building to develop needed skills rather than returning people to their farms.

**Question/Comment: Dr. Soji Adelaja, Michigan State University**

Adelaja commented on the importance of early warning systems. Many leaders in conflict areas didn't see conflict coming and agree that a crisis that has set in is more expensive to address than preventing a crisis in the first place.

Adelaja carried out analysis in Nigeria to convince his bosses that they needed to do something to prevent future crisis. He estimated the costs of averted crisis by looking at development costs in different parts of the world. He concluded that it is far cheaper to avoid crisis in the first place than to

spend on military, humanitarian assistance and post-crisis redevelopment.

Better ways to predict conflict could help decision makers avert conflict. Most policy makers don't realize that there are factors that lead to conflict.

**Question/Comment: Susan Karamiha, Louisiana State University**

Karamiha mentioned domestic policies that intersect with agriculture in Central America. She conducts research in Honduras with farmers and reminded BIFAD and the audience that agricultural development in Central America, with people fleeing violence, often crosses with domestic policy.

**Question/Comment: Philip Steffen, Bureau for Food Security (online)**

Phillip Steffen, from USAID's Bureau for Food Security, commented that one of USAID's objectives is to advance U.S. national foreign policy interests. In the case of Yemen, he said, USAID is aligned through the U.S. government with the Republic of Yemen government, and this puts USAID on one side of the conflict. Since aid is not neutral, all aid sends a signal. He asked panelist Susanna Campbell how USAID partner staff can be viewed as sincere, effective, and inclusive in their work so that all benefit?"

**Panelist Susanna Campbell** said USAID must decide how it wants to align with the government. If it's possible to detach the programmatic piece and create better localized relationships, build trust, cost share, and institute localized accountability mechanisms that might help correct for some of the bias. Top-down bias can completely undermine what is happening at the programmatic level...

**Question/Comment: Ed Price, Texas A&M University**

Price said it's not useful to distinguish development post-conflict from development during conflict. That separation is somewhat artificial. Price said that history shows that those who have been in conflict often return to conflict, in a conflict trap. The best way to support recovery from conflict is to be engaged during the conflict period. Former USAID Administrator Andrew Natsios believes that the basis for recovery from conflict needs to be established while the conflict is ongoing. Entrepreneurs and those trying to make a living in conflict areas deserve to have a partnership—other than in humanitarian relief—in actual development efforts.

**BIFAD Chair Mark Keenum** commented that some youth are born in and grow up in displaced settings and referred to the need for education and skill development in agriculture for these individuals, as well as the importance of conflict prevention and conflict mitigation through agriculture-led growth.

He invited Dr. Julie Howard to the podium for her closing remarks.

## Closing Remarks

- **Panel Moderator: Julie Howard**, Senior Advisor (Non-resident), Global Food Security Project, Center for Strategic and International Studies

Howard commented that the vision of what's possible to accomplish with human capital in Somalia, coupled with entrepreneurial acumen and support of the diaspora, is amazing. She congratulated Abdinoor and GEEL for their project and for showing what is possible in a conflict setting.

Summarizing the first panel, she said that global hunger is disturbingly on the increase today, after many

years of decline, especially in areas where there has been increasing prevalence of conflict, often climate related.

Feed the Future has compiled an impressive track record since it started in 2010, but the times have changed. The first phase of Feed the Future very purposefully selected countries that were stable, had good governance, and were committed to increasing their own investments in agriculture. As the second phase is underway, Feed the Future is adapting to respond to the new reality of rising hunger in more fragile, climate-, and conflict-related places.

Thus, the first panel provided an overview of the available evidence to help guide Feed the Future at this inflection point. The panel agreed that a focus on agriculture, food systems, and agriculture-led livelihoods is essential for survival and recovery in conflict-affected areas. However, a new response paradigm is required. Humanitarian and development interventions need to be integrated and implemented together with an understanding of underlying political economy factors that may contribute to or hinder recovery.

Both panels stressed that strengthening the capacity of countries—individuals, and institutions, and at community levels and national levels—to prevent and manage conflict determines their future development potential and survival.

Greater focus on food and agricultural development may be key to preventing social unrest and violent conflict, given the potential for creating income and employment opportunities for those most vulnerable to extremism, especially youth.

The first panel highlighted needs, including preventing extremism from taking hold in fragile states and an approach that focuses on building national and local partnerships with leaders in government, civil society, the private sector, and including women and youth.

Reducing vulnerability requires not only after-the-fact interventions but precautionary investments in creating and building social cohesion, improving governance; and building trust between people and their governments.

More focus is needed on equipping youth with the knowledge and skills to enable a secure and prosperous future and to be a force for positive change.

One of the most important takeaways from the first panel was that solving shared critical challenges can provide a potential avenue to rebuild trust between people and governments.

For example, addressing corruption in the agriculture space through greater transparency and anti-corruption efforts in the food and trade space can demonstrate that it is possible repair a social contract and rebuild trust.

Including youth in movements to change a community's trajectory, e.g., in adapting to climate change, also offers a positive alternative and can deliver some of the “benefits” offered by extremist groups: a sense of belonging and a shared cause. There are many unexplored opportunities in agriculture to take a page out of the playbook of extremist groups but put efforts toward something constructive space.

Howard mentioned importance of understanding and anticipating the political dimensions of

agricultural development policies and programs. Policies and programs intended to alleviate certain types of food and livelihood insecurity can exacerbate other tensions, e.g., between rural and urban groups, or between ethnic groups, or can lead to overexploitation of natural resources. It is critical to address the tension between food security as a component of human security—which underlies humanitarian assistance and agricultural development programming—and food security as a component of national security, national economic interests, and domestic political power..

Howard said more work is needed to understand how to effectively integrate humanitarian, agricultural development, and national security strategies. Studies of these dimensions have traditionally been stove piped. Effective policy and program interventions will require a much stronger knowledge base that examines the cross-linkages and effects across the three dimensions.

She reflected briefly on the second panel, noting that the learning and success from Feed the Future in the market, capacity, finance, and research spheres needs to be directed more purposefully toward conflict and fragile-affected areas. Howard noted the important potential role of the diaspora as a vital part of strengthening the private sector, providing investment resources, and rebuilding social contracts.

Keenum then called on Collins for his closing remarks.

- **Greg Collins (Panel Moderator)**, Deputy Assistant Administrator, Bureau for Food Security, and Resilience Coordinator, U.S. Agency for International Development,

Collins reflected on the criticism that development in northern Kenya could not be done because it was a place where recurrent crises happen. USAID has ignored the advice to wait until the recurrent crises stop to do development in northern Kenya. Five years later, after a commitment to long-term development investments in northern Kenya—including inclusive agriculture-led growth as a cornerstone of resilience efforts, in partnership with the government of Kenya and with many donors—poverty dramatically declined between 2013 and 2018. Even more powerful was the change in agency, the ability of people to shape their own future, from 32 percent baseline in 2013 to 72 percent in 2018.

Clear progress is being made in relation to climate shocks in the Horn of Africa, and now it is necessary to again adapt to an even more complex problem set: the confluence of not only climate, but conflict.

Collins mentioned that both panels emphasized that development is possible in these places and that we must not continue the trap of aid work in a perpetual humanitarian state. The problems must be approached developmentally.

He continued that in places like Niger and Burkina Faso, there is a need to further adapt a portfolio to deal with recurrent climate events, to extremist threats spilling over the border from Mali. The need is urgent, and we can't afford to wait for the project cycle or the research cycle to begin to adapt.

The meeting's conversation was heartening to Collins and also offered extremely useful insights on causes, links, downstream effects, and operational needs for working in these areas.

In conclusion, Collin noted the importance of adapting the lessons of successful initiatives like Feed the Future to complex risk environments in order to have impact.

Collins thanked the panel and the audience.

## Adjourn

**BIFAD Chair Mark Keenum** thanked Collins and recognized Drs. Beth Dunford and Rob Bertram for their leadership and service.

He also thanked and recognized Drs. Jessica Anderson, Karen Duca, and Clara Cohen from USAID and Susan Johnson, Devin Ferguson, and Dr. Tag Demment of APLU/

Keenum adjourned the session adjourned and noted that the meeting would reconvene at 2:30 pm, after lunch.

### **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  
Pamela K. Anderson, Director General Emeritus, International Potato Center  
James M. Ash, Esq., Food and Agribusiness Group Head, Husch Blackwell LLP  
Richard Lackey, Founder and CEO, World Food Bank

### **Afternoon Session Speakers**

- **Mark Keenum**, President, Mississippi State University and Chair of BIFAD
- **Mark Green**, Administrator, United States Agency for International Development (USAID)
- **Shenggen Fan**, Director General, International Food and Policy Research Institute (IFPRI)
- **David Kraybill**, Professor Emeritus, The Ohio State University
- **Stephanie Mercier**, Senior Policy Advisor, Farm Journal Foundation
- **Brady Deaton**, Chair BIFAD Awards Committee and Chancellor Emeritus, University of Missouri
- **Yihun Dile**, Assistant Research Scientist, Texas A&M University
- **Abeyou Worqlul**, Assistant Research Scientist, Texas A&M AgriLife Research
- **Jean-Claude Bizimana**, Associate Research Scientist, Texas A&M University
- **Jean Baptiste Ndahetuye**, Ph.D. Candidate, Swedish University of Agricultural Sciences and Lecturer, Veterinary Medicine, University of Rwanda

## Welcome and Introduction

- **Mark Keenum, President, Mississippi State University and Chair of BIFAD**

Dr. Keenum welcomed attendees to the 180th public meeting of the Board for International Food and Agricultural Development, BIFAD and called the afternoon session to order. He reminded the audience that BIFAD traces its roots back to 1975 and its establishment was a provision of Title XII of the Foreign Assistance Act. BIFAD is a seven-member board appointed by the president of the United States, and Dr. Keenum noted that through this event, BIFAD is fulfilling its mission as an advisory board to the

administrator of USAID.

Dr. Keenum called on the members of BIFAD to introduce themselves. Following introductions, Dr. Keenum described the focus of the afternoon session's first panel. He noted that at the request of administrator of USAID, Mark Green, BIFAD commissioned a study to understand how the United States benefits from agricultural and food security investments in developing countries.

International agricultural development and food security investments by the U.S. government have been made across a wide range of areas. These areas of investment include agricultural research, human and institutional capacity development, productivity, nutrition, and resilience. However, a recent summary that collects a broad array of these impacts together and translates them into accessible language has not been available. The new study and accompanying policy briefs will help inform U.S. citizens, the executive branch, government partners, development partners, the higher education community, the agriculture community, and the U.S. Congress of the important investments in agricultural development and how those investments directly benefit U.S. taxpayers.

Chairman Keenum welcomed and introduced the administrator of USAID, Ambassador Mark Green. Mark Green was sworn in as the 18th USAID administrator in August, 2017. Prior to joining USAID, he served as president of the International Republican Institute and from 2007 to 2009 as the U.S. Ambassador to Tanzania.

Prior to serving as U.S. ambassador, he served four terms in the U.S. House of Representatives representing Wisconsin's eighth district. While in Congress, Green helped craft key policy initiatives including the Millennium Challenge Act and President George W. Bush's HIV AIDS program, PEPFAR. He is currently serving his third term on the board of directors of the Millennium Challenge Corporation, having been appointed to that post by President Barack Obama in 2010.

Green also served on the Human Freedom Advisory Council for the Bush Institute and on the board of Consensus for Development Reform. He holds a law degree from the University of Wisconsin Law School and a bachelor's degree from the University of Wisconsin-Eau Claire.

## Opening Remarks

- **Mark Green**, Administrator, United States Agency for International Development (USAID)

Ambassador Mark Green spoke of the honor of leading more than 10,000 dedicated professionals at USAID, where everyone knows each day why they're there and comes to work with a simple mission to lift lives, build communities, and lift the human condition. He described USAID as an irreplaceable part of American leadership around the world, a projection of American values, and an expression of American compassion.

Green believes that the role of American leadership doesn't just lift lives in far off lands but is good for America, creates opportunities in America, and is also good for American business and for communities across the United States.

Administrator Green explained that in discussions with BIFAD members about the real difference USAID is making in the world, members noted how foreign assistance is good for America too but that these

benefits had not been documented through a rigorous, objective analysis of data. He asked BIFAD to take up the challenge, and the results, as presented in this newly released study, are extraordinary, even beyond what Green had hoped. Foreign assistance investments in agriculture and food security are good for America as well as for foreign policy. Foreign assistance is a wonderful way that the nation can do well by doing good. Foreign assistance is an important part of American leadership, but it's also an important part of the American economy and does support American jobs.

Green is determined to see the study results on the desk of every member of Congress. He sees the report as a new step in the overall effort to educate opinion leaders about the value of American leadership around the world. Green concluded that he is grateful to the members of BIFAD for the work and is looking forward to the work that USAID and BIFAD will do together, not just to raise awareness of and promote the report also tap into a combined experience to do even more with programs, both benefiting those that we serve around the world but also to accelerate American economic opportunity.

## Keynote

- **Shenggen Fan**, Director General, International Food and Policy Research Institute (IFPRI)

Chairman Keenum introduced the keynote speaker, Shenggen Fan. Since 2009, Dr. Fan has served as the Director General for the International Food Policy Research Institute (IFPRI). He joined IFPRI in 1995 as a research fellow conducting research on pro-poor development strategies in Africa, Asia, and in the Middle East. He serves as a member of the league group for the Scaling Up Nutrition (SUN) movement and is advisor on agriculture, food security, and nutrition to many national governments, including China and Vietnam. Dr. Fan received a Ph.D. in applied economics from the University of Minnesota and a bachelor and master's degree from Nanjing Agricultural University in China.

Fan stated how proud IFPRI is to support BIFAD and to work with the Association of Public and Land-grant Universities (APLU) in producing the report, "How the United States Benefits from Agricultural and Food Security Investments in Developing Countries." He acknowledged and thanked senior researcher, Joe Glauber and authors, David Kraybill and Stephanie Mercier for their work on the report.

Fan established that the United States benefits from many different channels of U.S. foreign agricultural aid and, while one of the major purposes for U.S. international agriculture development is to help the poor and hungry people of Africa, South Asia and Latin America, there are dual benefits to both developing countries and to American farmers, companies, workers, and consumers. Recipient countries' benefits include improved technologies, increased policy making capacity, and improved national agriculture research capacity.

As a result, developing country productivity in food and agriculture has improved, and the entire agriculture–food system has been transformed. Agricultural transformation has, in turn, led to improved household income, improved nutrition and health, and improved overall economic health in recipient countries.

Studies have demonstrated how U.S. agricultural international investment and other countries' investments have benefited the recipient countries, but this new report highlights how the U.S., as an investor in foreign aid, has also benefited. For example, the United States benefits from much stronger

university capacity. Universities in the United States have benefited from international agricultural investment. In addition, the productivity of U.S. farmers has benefited from using technologies developed by national agriculture research system (NARS) and the CGIAR, with which IFPRI is affiliated.

Another benefit has been jobs. The private sector in the United States, including food companies, has benefited from foreign assistance investments with increased export of food and agriculture products. When emerging economies and developing economies experience rapid economic growth, they demand more and better agricultural and food products. This has led to more jobs for Americans and more exports from the United States. In addition, the investment in agriculture and food security in developing countries has led to reduced conflicts and reduced migration, and, as a result, the world has become safer.

Fan spoke of the improvement of farming technologies in recipient countries and the adoption of new technologies and practices that raise productivity resulting from U.S. investment. Many of these technologies are the result of collaboration between U.S. universities, U.S. partners, the CGIAR, and beyond.

A key element of the report is the agriculture–food system transformation that results from improved productivity across production, processing, transportation, imports, exports, wholesale, and retail—an entire value chain. Value chains combined together comprise a food system. Transformed food systems mean more jobs generated, more value added, and more exports for recipient countries.

Improved agricultural productivity has been shown to increase household income, particularly small holder household income, in many developing countries. And currently, the majority of hungry and undernourished people are small holders in these countries. They spend a large proportion of their income on food, health care, and education. As a result of improved agricultural productivity, the nutrition status of their children and households will improve. More efficient and effective food systems, higher household income and improved human health and nutrition contribute to the sustainable growth of national and regional economies.

All this will also help the United States benefit from its investment, for example, in the growth of U.S. exports and jobs. Every dollar of agriculture exports stimulates \$1.87 in business activity in the United States. And every \$1 billion in U.S. agriculture export supports more than 8,000 full-time jobs in the U.S. economy. Fan emphasized that this is not part-time informal jobs, it is full time jobs that are needed to support middle-class families.

With regard to spillover of technologies, the CGIAR and the national agricultural research system develop many technologies, and these technologies have spilled over to the United States. U.S. farmers have adopted many of these technologies that have been generated through that system.

Fan noted that when he was a young researcher, almost 25 years ago, he did a study to look at how the United States benefited from international research on rice through germplasm exchange. Traveling to Mississippi, Louisiana, Arkansas, and California—all major rice producing states—the majority of the rice produced in the United States has something to do with the international agricultural research system. The majority of the varieties have germplasm from the CGIAR or from other national agriculture research system in Asia and Africa, particularly Asia.

This investment benefits U.S. consumer health and nutrition. For example, U.S. consumers benefit from

foreign aid supporting the search for solutions to soil and plant-borne toxins. Up to \$2.3 billion in crop losses are estimated lost every year because of these toxins. Another big problem in many Asian countries is African swine fever. The U.S. has invested quite a bit with Africans to stop that disease from spreading to the United States and other countries. That investment will also have very high returns.

With regard to nutrition, supporting a national agricultural research system in developing countries leads to increased production of more diverse fruits and vegetables in those countries. These investments increase U.S. availability of diverse tropical fruits and vegetables during the off-season and represent is a nutritional benefit for American consumers.

Fan reiterated that global and U.S. security is another benefit of foreign assistance in food security and agriculture. Investments leading to higher economic growth, lower poverty, and improved nutrition will reduce migration and reduce conflicts. We know that conflict, migration, and undernutrition are linked. Whenever there is hunger, there will be conflict and migration, and through investment we can both increase local production and productivity and reduce hunger and undernutrition in conflicted countries and zones.

Looking forward, the world will face even more challenges. Fan asked how the world will feed larger populations, given that 98 percent of the global population growth will come from developing countries, particularly in Africa. A huge challenge, between now to 2050, will be producing 50 percent more food and producing better quality, more healthful and more nutritious food.

To sustainably feed a growing population, a food systems transformation is essential. Technology is important, but the whole food system must be transformed. Food systems transformation can generate better jobs, better income, and increased global security in Africa, in South Asia, and also in the United States and Europe. Fan emphasized that continued American investment in foreign agriculture will be vital to help secure a better future for the whole world.

The bottom line is that recipient countries benefit from U.S. investment in agriculture and food security, but the United States also benefits. He called for continued scaled-up investment to ensure the human security, food security and nutrition security of future generations.

BIFAD Chair Mark Keenum thanked Dr. Fan and welcomed the next speakers to the stage.

## Study Overview

Mark Keenum introduced the next speakers. Dr. David Kraybill is professor emeritus at the Ohio State University. His research is focused on agricultural economic development. He is fluent in French and Swahili and resided in Africa for a number of years, including a sabbatical year as a Fulbright scholar at Makerere University in Uganda and, more recently, as Chief of Party for the Innovative Agriculture Research Initiative (IAGRI), a USAID-funded project on human and institutional capacity building in Tanzania. He has received the international award of merit from the Gamma Sigma Delta honor society and has worked as a consultant to the World Bank, IFPRI, RUFORUM, Rockefeller Foundation, the U.S. Department of Agriculture, and other agencies.

Keenum then introduced Dr. Stephanie Mercier. Dr. Mercier is a senior policy advisor with the Farm Journal Foundation and previously served between 1997 and 2011 as Chief Economist for the

democratic staff of the United States Senate Agriculture Committee, where she covered a wide variety of issues for the committee, among them domestic farm programs, climate change, risk management, international agricultural trade, agricultural development, and food aid policy. Prior to that, she served as a team member for the trade policy and programs area of the Economic Research Service (ERS) of the U.S Department of Agriculture.

Dr. Mercier has a bachelor's degree in economics from Washington University in St. Louis and a PhD in agricultural economics from Iowa State University.

Keenum thanked both speakers for their work and turned the podium over to them.

- **David Kraybill**, Professor Emeritus, The Ohio State University

Dr. Kraybill stated that he and Dr. Mercier would give a broad picture of the report. The report translates the best research available, from both the research community as well as the practitioner community, and makes it available to policy makers.

The report has three major sections. The first two sections provide background and inputs, including the level of U.S. government investment in agricultural foreign assistance. The third part, and the bulk of the report, is the outcomes—U.S. benefits of those inputs that have not yet been very well documented.

Referring to a slide presentation, Kraybill said that the report first looks at U.S. non-military aid expenditures. In 2017, U.S. non-military aid expenditures (adjusted for inflation) were \$33.3 billion. This is 0.17 percent of the U.S. GDP. That is a little bit less than one fifth of one percent of GDP and 0.87 percent of U.S. government expenditures, a little bit less than 1 percent of all U.S. government expenditures. Kraybill noted that the general public usually thinks U.S. non-military aid is about 24 or 25 percent of the U.S. government budget.

He pointed to U.S. foreign agricultural aid expenditures, again adjusted for inflation, in 2017—\$1.4 billion or 4.2 percent U.S. non-military aid 0.04 percent of U.S. government expenditure, about one 20th of 1 percent. One can see that U.S. foreign agricultural aid rose from 2001 to 2011 and peaked during this period in 2011. It has declined somewhat since then.

Kraybill showed figures of USAID agricultural aid expenditures supplied by the Agency for the report. The report highlights expenditures by the Bureau for Food Security (BFS), as well as regional bilateral programs by USAID Missions. Of particular interest to BIFAD, the funding for research and development has been fairly constant over this period, totaling \$142 million in 2017.

Kraybill spoke about recipient country outcomes U.S. government inputs are targeted at the level of farms, families, and institutions and involve technology and human and institutional capacity development. To achieve food security impact, changes at those levels must result in transformation of agricultural and food systems, with household and economic development the ultimate end.

The study tried to categorize the major U.S. benefits. One category of benefit is increased research capacity benefiting U.S. university research institutes. Another category of benefit was increased U.S. agricultural productivity, benefiting U.S. farmers. Other categories of benefit are increased agricultural trade and investment benefiting U.S. companies, increased jobs and income benefiting U.S. workers,

greater availability of seasonal and tropical foods in the United States benefiting U.S. consumers, and greater global stability benefiting U.S. citizens.

Dr. Mercier took the podium to present the agricultural productivity benefits and their spillover effects.

- **Stephanie Mercier**, Senior Policy Advisor, Farm Journal Foundation

Dr. Stephanie Mercier noted that farmers have been the beneficiary of public sector investment in agricultural research and key sets of institutions for more than 150 years, starting with the land grant system and the U.S. Department of Agriculture in 1862 through the Morrill Act, the establishment of agricultural experiment stations under the Hatch Act in 1887, and the cooperative extension services under the Smith-Lever Act in 1914.

As a result of these investments, U.S. agricultural productivity has increased markedly over the last hundred years, 268 percent over the 58-year period between 1949 and 2007. Total output has been going up uninterrupted over that period while, except for a brief jump in the mid-1970s, the inputs have been flat. That's a remarkable increase in productivity.

The United States also benefits from U.S. investment in international agricultural research, which has occurred through two streams of investment. One pathway of investment has been U.S. support of the CGIAR system, starting in the 1940s when the precursor to CIMMYT in Mexico embarked on wheat and corn research and was then established formally as CIMMYT 1966.

The broader CGIAR system was established in 1971 and encompasses CIMMYT and 14 other institutions around the world. For every \$1 the United States has provided to the CGIAR system, \$17 in economic returns to United States agriculture is estimated—a good return on investment. Mercier showed a map of CGIAR center locations globally. IFPRI is in the United States, and CIMMYT is in Mexico, but the other CGIAR centers are scattered around Latin America, Asia, and Africa.

Another channel through which the United States invests in international agricultural research is U.S. universities. Collaborative Research Support Programs or CRSPs—collaborative research partnerships between U.S. universities and their foreign counterparts and some NGOs—were initiated in 1977 and ran through 2012 and focused on such areas as aquaculture, integrated pest management practices, and beans. A key component the CRSP model was the training of thousands of young foreign scientists who pursued advanced degrees at U.S. universities.

In 2013, the CRSP system was replaced with the Feed the Future Innovation Labs, which are more focused on developing and scaling up technology. There are now 24 Innovation Labs headquartered at 15 different U.S. universities.

The report includes examples of major returns of research investments to U.S. farmers. U.S. farmers have reaped tremendous benefits from wheat and rice productivity research. Improved yields and reduced input costs from both wheat and rice generated estimated cumulative benefits to U.S. farmers of \$3.4 billion to \$15.6 billion across a 33-year period from 1960 to 1993. The return on investment to American taxpayers for CGIAR wheat and rice research is two cents per \$100 of U.S. wheat production and nine cents per \$100 of U.S. rice production—a good return.

A more recent study from 2016 estimated that for wheat alone, the financial impact of CIMMYT

research is between \$140 and \$180 million annually. That represents a rate of return between 32% and 41%.

Technology spillover is also important when it comes to addressing crop and animal diseases. The economic impact of avoidance technology is sometimes difficult to estimate. Thus, it's important to look at what would have been the outcome if that research hadn't been done.

One example is Ug99 wheat stem rust, which spread from Africa into Asia starting in 1999 but has not yet entered the United States. . Economic studies have looked at the potential impact of the disease on the United States. One study suggested damage could range from as little as \$1.5 billion –in one state up to nearly \$10 billion for a multi-year outbreak across multiple wheat-producing states in the Great Plains and loss of international markets. Thus, the cost savings of prevention technology would represent a major benefit to the United States.

There are similar spillover benefits to farmers who raise peanut, or groundnuts. Peanuts are an important staple food crop in both Asia and sub-Saharan Africa and the fourth-most important source of edible oil in the world. Peanut research, funded by USAID, creates technologies and knowledge that increase the production, quality, and consumption of peanuts around the world, including in the United States. This work is being carried out by the University of Georgia, initiated under the CRSP system and continuing through the Feed the Future Innovation Lab for peanut research.

Many new varieties developed by this USAID program have been released in the United States and include such enhanced traits as improving oil content to extend shelf life and increasing fungal disease resistance.

Another research focus area is aflatoxin, a natural carcinogen produced by mold found in peanuts and other crops that is a deadly and costly threat to food safety around the world. Aflatoxin is an infrequent problem in the United States, but outbreaks are very costly.

Peanut research that could be helpful to U.S. farmers includes the development of peanut varieties resistant to the mold, *Aspergillus flavus*, that produces aflatoxin and research on, and management of insects and soil pests that exacerbate the production mold. In addition to the work at University of Georgia, the Nutrition Innovation Lab at Tufts University is exploring how aflatoxin consumption affects child development. The Post-Harvest Loss Innovation Lab at Purdue is exploring ways to prevent aflatoxin-producing mold from spreading in grain storage.

Sorghum research is another research investment that benefits the United States. Development of a sugarcane aphid-resistant variety of sorghum through a USAID-funded program led, in 2018, to the commercial release of 19 different varieties in the United States with built-in resistance.

The quantified benefits to U.S. sorghum producers was almost \$400 million in 1989 alone—a very good return. Other research on edible beans has resulted in the release of commercial varieties in the United States of 40 different varieties.

Mercier concluded that these were just a few of many examples showing how U.S. farmers have benefited directly from U.S. investment in agricultural research. Other spillover benefits for crops and livestock can also be documented, including the research, training, and hands-on experience that American graduate students gain through their involvement with these programs.

- **David Kraybill**, Professor Emeritus, The Ohio State University

David Kraybill continued describing some of the other benefits. The export and job benefits to the United States are quite significant, making the point that the bulk of export growth has been in developing countries. Breaking down bulk commodities over the last 20 years, 77 percent of the growth of U.S. exports has been in exports to developing countries. There's been a decline in the exports of bulk commodities to developed countries. Looking at high-value products, 125 percent of the growth has been in developing countries with 27 percent in developed countries. The takeaway is the importance of continued economic growth in developing countries to stimulate the demand for U.S. exports. The number of U.S. full-time in the United States supported by agricultural exports in 2018 was about 1.2 million and included jobs in the on-farm and non-farm sectors. In addition to the export of agricultural commodities, U.S. agriculture-related goods are also exported, including feed and fodder, fertilizer, agricultural chemicals, seeds, and farm machinery.

Another area is the export of agricultural technology via licensing agreements. Kraybill showed a slide with a photograph of the PICS hermetic crop storage bag. It was developed in the late 1970s and 1980s at Purdue University under the USAID-funded Bean Cowpea CRSP. The technology had a long evolution, and the initial development was funded by USAID.

Taking PICS bags to commercialization and eventually to the manufacturing and licensing stage was funded by the Bill and Melinda Gates Foundation. The technology is now licensed by PICS Global, a for-profit corporation that calls itself a social enterprise affiliated with Purdue. It's sold annually to 3 million farmers in 58 countries.

Regarding processing standards, in a food system in the early phase of technology development—for example, development of animal feed production or fortification—standards have to be set. Standards are tied to technology, which is tied to goods that can be exported. The introduction of those kinds of standards also results in increased exports.

The United States further benefits from increased availability of seasonal and tropical foods. Agricultural foreign assistance contributes to the improvement of entire food systems in developing countries that are exporting to the United States, which results in improved, more hygienic, lower priced, and environmentally conserving exports of foods to the United States.

Nearly all of the coffee, cocoa, and spices consumed in the U.S. comes from developing countries. Some of these commodities—coffee in particular—have benefited from investment by USAID. Imported vegetables, of course, during the cold season are a benefit to U.S. consumers.

Regarding global disease control, Kraybill noted that USAID has several programs—some of them directly under agriculture and some indirectly under agriculture—that help contain the spread of crop and livestock diseases like African swine fever, Ug99 in wheat, and others.

Kraybill also discussed the global and national security benefits of USAID investment in agricultural and food security foreign assistance. Reasons for concern about global stability, of course, are humanitarian. Although the humanitarian motivation has been the primary one, there's also an economic motive as well. A joint study conducted recently by the United Nations and the World Bank found that the international community saves \$16 in crisis response and reconstruction expenditures for every dollar

spent on conflict prevention measures.

The relationship between food security and global security is complicated. As one of the speakers said, whenever there's a conflict, food security is at stake. Does food security cause conflict? Sometimes, but it's not the only cause of insecurity.

What is known is that that food security is closely related to several other factors drive conflict. For example, chronic food deprivation leads to a sense of economic grievance, and if certain groups are involved, they may feel particularly aggrieved.

Economic growth that improves income and material wellbeing of a large share of the population is generally stabilizing both economically and politically. Over the past decade, most published empirical studies in foreign aid and economic growth have found that aid has a positive impact on economic growth, but with a lag. That's in contrast to many studies that were done in the previous decade that found little relationship. The more recent studies find that, yes, there is an impact, but with a considerable lag. One of the implications is that long planning horizon is required, and there has to be a willingness to commit in the long term.

Growth-inducing foreign aid also may reduce international migration. There are not that many studies on this issue, and there have been conflicting results. But a recent study, a very impressive study of 141 countries over a longer period of time, finds that foreign aid does reduce international migration but only after 11 or more years.

Another very interesting recent study of 103 countries over a relatively long period of time, 15 years, finds that rural development aid reduces international migration, but urban development aid does not reduce international migration. Urban development doesn't increase international migration, but it doesn't reduce it.

Kraybill stated that development assistance creates opportunities for the United States to build relationships in developing countries before global crises occur. While it's possible to surge troops onto the battlefield, it's not possible to surge trust into a situation.

The long-term relationships that are built by universities, research institutes, and many of the U.S. partners that USAID funds contribute to building that trust. Long-term investment is essential.

Kraybill concluded that the report emphasizes that agriculture is a driver of broad-based economic growth in low-income countries, and this broad-based growth builds resilience in the recipient countries and in regions of the world. The report, *How the U.S. Benefits from Agricultural and Food Security Investments in Developing Countries*, is available to the public online at the following link:  
<http://ebrary.ifpri.org/cdm/ref/collection/p15738coll2/id/133419>

**BIFAD Chair Mark Keenum** thanked the speakers and opened the discussion for public comment.

## Public Comment

**Question/Comment: Julie Howard, CSIS**

Howard asked *how much the United States contributes to agricultural research relative to other countries, and relative to the need for agricultural research in developing countries.*

Howard spoke of the tremendous competition for agricultural research funding. The report would be very helpful in showing why agricultural research is so important. There is still a yawning deficit in this area, in spite of the need for dramatic significant transformation of agricultural systems that lies ahead to meet nutritional and environmental challenges.

**Presenter Stephanie Mercier** she said that although these statistics weren't provided in the report, the United States provides the single largest contribution to the CGIAR system—a share of about 24 percent. Certainly, there's room for increase, but the United States is a top contributor among donor countries.

Mercier then said that within the U.S. domestic budget there's room for improvement in agricultural research spending; she feels that the United States is resting on its laurels. The Farm Journal Foundation did a policy brief on this issue a couple of years ago. The United States' public sector research is now falling behind China in terms of annual expenditures. Agricultural production must increase at least 50 percent in order to feed the 10 billion in global population in 2050, and there is not enough investment in agricultural research to get to that point.

**Presenter David Kraybill** called for an estimate of what the agricultural research investment should be. Although there has been substantial focus on the important SDGs (Sustainable Development Goals), that global conversation has not adequately elevated the importance of agriculture

Discussions about resilience and long-term ability to grow and to cope with a variety of shocks are really discussions about capacity building, and the needs are enormous. Looking at the institutions that deliver the goods and services in agriculture, there is enormous under-funding of universities, research institutes, and, by extension, the whole apparatus. An estimate is needed of the investment to address these issues.

**Presenter Stephanie Mercier** added that those who do the Global Agricultural Productivity (GAP) report every year have shown that the productivity growth rate needed to feed those 10 billion people is not being met. This is documented evidence that warrants more discussion.

**Question/Comment: Mike Lesnik, Meridian Institute**

Lesnik welcomed the report and stated that the payback on agricultural investment has had impressive ratios. He asked if the findings of the report were a surprise or not, if the authors felt this area could be further plumbed, and if the findings were attributable to the tendency of U.S. investments emphasize productivity and technology.

**Presenter Stephanie Mercier** replied that it has been known for some time that there are always very strong returns on investments in research and extension. The first figure cited was from work that Phil Pardey and others did in 1996, which was not new research but cited existing studies. Pardey's research has been around for a long time, and others are doing that work.

Returns that high suggest that there is underinvestment in agricultural research. A lot of good research could be done but is simply not being funded.

**Presenter David Kraybill** added that in any political environment the message that investment is not a zero-sum game is important. The authors end up the report saying everybody benefits from it.

**Question/Comment: Sylvain Roy of CNFA (Cultivating New Frontiers in Agriculture).**

Roy stated that he was very pleased with the results of the study. He said it was important for those involved in international development to promote the result of this study and to update it from time to time. He said the study would be a very important tool.

Sylvain said that one benefit missing from the report was citizen diplomacy.

For example, USAID for more than two decades has funded the Farmer-to-Farmer program. Every year, hundreds of American volunteers are deployed to the field, and the result is eye opening. When the American volunteers return to the United States, they know much more about the importance of international development and different cultures, and they are more inclined to support the continued investment in foreign development aid.

**Presenter David Kraybill** said that the Farmer-to-Farmer program had done a better job than many other programs in telling the story about how it benefits the United States.

He was surprised by the gap in evidence and the dearth of programs that report and track indicators to document their impact in the United States.

The 1975 amendment to the U.S. Foreign Assistance Act that created BIFAD clearly states that U.S. agricultural foreign assistance is supposed to generate dual benefits to the recipient countries and to the United States, yet documenting the impact to the United States is not a formal part of the reporting.

Kraybill suggested that associated programs should gather the data and tell the stories. More specifically, there should be some quantitative indicators of impact to help get the story out.

**Presenter Stephanie Mercier** continued that there is much more research looking at the returns on research. There are some studies that look at returns to both research and extension, but there aren't too many that just look at extension alone. For that kind of analysis, hard data are needed.

Mercier also said that many researchers would love to work on that. She has been a fan of the Farmer-to-Farmer program since her work on the Senate Agriculture Committee, when she helped to try to expand funding for it. However, some of the benefits are intangible.

She noted that she works with many farmers involved with Farmer to Farmer, and the effect on American volunteers is profound, but it's very difficult to quantify. With a program like Farmer-to-Farmer there are tangible benefits and documentation of additional productivity gained under those projects. We could work with some of that documentation, but much of it can't be captured with a single number.

**Question/Comment: Saskia Hendrickx, Deputy Director of the Livestock Innovation Lab at University of Florida**

Saskia Hendrickx thanked the authors for the report. She asked *how USAID and BIFAD were planning to*

*disseminate the findings and if Innovation Labs could contribute to that effort.*

She said that USAID Monitoring and Evaluation systems are very rigorous and that the Innovation Lab community also documents its work and prepares success stories, but there is room for improvement. The Labs would be interested in working with BIFAD.

**BIFAD Chair Mark Keenum** mentioned that on Thursday of this week; Dr. Kraybill would speak about the study at an Innovation Lab side-session.

Keenum said that BIFAD hopes to highlight the study and get the message out widely. The Board had lunch with Administrator Green and discussed an event on Capitol Hill, to which members of both House and Senate Agriculture committees, foreign relations committees, and their staff to can be invited to hear about the results of the study. BIFAD plans to give a copy to every single member of Congress.

Keenum also noted he served and worked with Dr. Mercier on the Senate Agriculture Committee many years ago and for Senator Thad Cochran. Cochran was a strong advocate for working abroad and understood the importance of helping other countries. The Cochran Fellowship Program legislation was created and sponsored by Senator Cochran. Keenum said there were members of Congress on both the House and Senate Agriculture committees are very sympathetic to helping provide funding, appropriations and foreign assistance, but they hear from constituents who want them to reduce foreign assistance spending.

The reason why is highlighted in this study in the direct, real benefits back to farmers, taxpayers, and consumers, and for U.S. national security. The purpose of the study was to boil this down and put it into language people can understand.

BIFAD intends, as a board, to publicize the study and work with USAID to disseminate the findings. He said he remembered years ago when major agricultural commodity organizations were opposed to the United States spending money and helping developing countries for fear that they would be competitors with U.S. farmers, but, Keenum believes, the study shows that is not the case. The United States is helping countries help themselves and become customers of the United States agricultural products.

**Presenter Stephanie Mercier** said that one of the core platforms of the Farm Journal Foundation to bring farmers in from key states to discuss global food security with members of Congress. The report will be helpful in providing concrete examples of the benefits derived by taxpayers, consumers, and farmers from these programs.

Mercier referred back to legislation that Keenum mentioned earlier, the Bumpers Amendment from 1985, behind which she believes the American Soybean Association (ASA) was the driving force. ASA has completely reversed its position and is now among the strongest advocates in the farm community. They also have their own nonprofit foundation that engages in agricultural development. The farming community is starting to understand how important this is to their members as well.

**Question/Comment: Louise Sperling, Consultant, International Center for Tropical Agriculture (CIAT)**

Sperling called the report a tremendous accomplishment and congratulated the authors. She asked the authors to reflect on *some of the possible inhibitors of agricultural and food security foreign assistance investments achieving greater impact, including increasing institutional overhead costs and heavier*

*bureaucratic reporting requirements.*

**Presenter Stephanie Mercier** noted that when this process started the authors hoped to make a rigorous estimate of the impact of individual investments. However, this proved unrealistic because it is challenging to untangle so investments in developing countries. The United States may have an investment at a university, but so does DFID (Department for International Development in UK) and other donors.

In addition, investments in agricultural research and development involve a much longer time horizon. Some research investments that were reviewed were made in countries in the 1960s and 70s. Much of report is qualitative.

Mercier added that the authors considered areas in which they can be more rigorous. Export multiplier numbers are available across all exports, not just U.S. exports. Although more could be done, the report is solid nonetheless.

**BIFAD Chair Mark Keenum** thanked the speakers and recessed the meeting for ten minutes.

## BIFAD Award for Scientific Excellence in a Feed the Future Innovation Lab

- **Brady Deaton**, Chair BIFAD Awards Committee and Chancellor Emeritus, University of Missouri
- **Yihun Dile**, Assistant Research Scientist, Texas A&M University
- **Abeyou Worqlul**, Assistant Research Scientist, Texas A&M AgriLife Research
- **Jean-Claude Bizimana**, Associate Research Scientist, Texas A&M University
- **Jean Baptiste Ndahetuye**, Ph.D. Candidate, Swedish University of Agricultural Sciences and Lecturer, Veterinary Medicine, University of Rwanda

BIFAD Chair Mark Keenum called the meeting into session and introduced the BIFAD Awards Committee Chair, Brady Deaton, to begin the awards ceremony section of the meeting.

Dr. Brady Deaton is Chancellor Emeritus of the University of Missouri. He served as chancellor and chief executive officer of the University of Missouri from 2004 until 2013, adding to many years of service and experience in higher education, including senior positions at the University of Missouri since 1989. Since leaving University of Missouri, Deaton served 12 years at Virginia Tech, the last four as associate director of the office of international development. Deaton holds a Bachelor's degree in agricultural economics and an MA in diplomacy and international commerce from University of Kentucky. He also earned a Master of Science and a PhD in agricultural economics from the University of Wisconsin.

- **Brady Deaton**, Chair BIFAD Awards Committee and Chancellor Emeritus, University of Missouri

Deaton shared how pleased he was to have chaired the awards committee for BIFAD. He noted how inspired he was during the process when looking at the good work USAID sponsors with the Innovation Labs at universities and other institutions in the world.

The BIFAD awards, in the early years, recognized the tremendous work of the CRSPs. The awards were reestablished in 2012 following a meeting with Innovation Lab Directors. The award ceremony highlights the benefits of the Innovation Lab work and the excellence that's being created by USAID

through the Innovation Labs.

The BIFAD awards for scientific excellence are for individuals working with the Feed the Future Innovation Labs. The awards recognize individual researchers or research teams for their significant achievement originating from work performed under the USAID-funded Feed the Future Innovation Labs.

Two awards are given annually: one for an individual researcher or a team of researchers and one for a student researcher. The principal criteria for the award are: (1) demonstrated scientific and technical merit of the research; (2) relevance of the research to developing country, national, or regional agricultural research priorities; (3) potential for the research to have a broader impact at scale that contributes to improvements in developing country food security, nutrition, resilience, and inclusive sustainable agriculture-led economic growth; and (4) evidence of commitment to inclusive development and local capacity development.

Nomination applications were considered against the four criteria by a group of peer scientists, screened for conflicts of interest, in both categories. Deaton stated that all nominees were outstanding and that competition was tight. The selection committee was proud of the opportunity to recognize the excellence of the work.

Deaton announced that the 2019 BIFAD award for Scientific Excellence of a Senior Researcher or Research Team in the Feed the Future Innovation Lab was given to a group from Texas A&M University associated with the Innovation Lab for Small-Scale Irrigation. The BIFAD Award recognized Dr. Yihun Dile, Dr. Abeyou Worqlulul, and Dr. Jean-Claude Bizimana.

Deaton congratulated the awardees and welcomed them to the podium.

## Presentation by Awardees

### ***BIFAD Award for Scientific Excellence in a Feed the Future Innovation Lab: Senior Research Award***

- **Yihun Dile**, Assistant Research Scientist, Texas A&M University
- **Abeyou Worqlulul**, Assistant Research Scientist, Texas A&M AgriLife Research
- **Jean-Claude Bizimana**, Associate Research Scientist, Texas A&M University

Dr. Dile expressed his gratitude and introduced the project.

Dile explained that first phase of the project was in three countries: Ethiopia, Ghana, and Tanzania. It was a five-year project, and now it is extended for another five years. The second phase of the project is focused in Ethiopia, Ghana, and West Africa region.

The project has four components: (1) a household survey to look at the adoption of small-scale irrigation; (2) demand-driven research conducted by partners in Ethiopia, Ghana, and Tanzania; (3) development of an integrated decision-support system to assess the impact of small-scale irrigation in focus areas; and (4) capacity building.

Dile gave an overview of the integrated Decision Support System (IDSS). The research is

multidisciplinary and encompasses both natural resources and social science fields to address the impacts of small-scale irrigation on research questions like agricultural production, environment and sustainability, household income, and nutrition.

Dile outlined how the awardees have been trying to address these research questions using three models. The Soil and Water Assessment Tool (SWAT) model is a large-scale biophysical model that shows the impact of small-scale irrigation at the watershed or national level.

Another model, Agricultural Policy Environment Extender (APEX), is also a biophysical model but looks at the impact of farming systems at the field scale, mainly the impact of farming systems on agricultural production. FARMSIM is a socio-economic farm simulation model that looks at the impact of irrigation at the household level. These three models exchange data and assess the impact of small-scale irrigation across scales, from households to the watershed and to the national level.

The findings of the IDSS research were in high demand by the national governments—the Ethiopian government, as well as the Ghanaian and Tanzanian governments—for planning, monitoring, and program design. As an example, Dile showed a figure of land suitability analysis using soil data, land use data, climate data, and socioeconomic data, such as access to markets, road network, etc. The models consider these factors to identify high-potential areas for small-scale irrigation.

High potential areas for small-scale irrigation in Ethiopia are in the central and northern parts of the country. These data were of substantial use to the Development Bank of Ethiopia, which was interested in determining investment locations and giving loans for farmers and small enterprises in the country. The project provided this data to them to assist with decision making.

Dile showed a map of water resources potential— another output from the IDSS model and the SWAT model—including surface runoff, groundwater recharge, soil water, and soil moisture. The western part of Ethiopia has water resources potential—more than 750 millimeters—sufficient to cultivate a crop for high production. These data were in high demand by the Ethiopian River Basin Authority and the Ethiopian Agriculture Transformation Agency, which contacted the project and were provided this information.

For the analysis the team used biophysical models and agent-based models assessing the potential for scaling small-scale irrigation in Ethiopia, Ghana, and Tanzania. Although this presentation featured the outputs for Ethiopia, the same work was done for the other two countries.

Ethiopia has a high potential—almost 1 million hectares of suitable land—for small-scale irrigation, benefiting up to 5.8 million people. The net profit from the small-scale irrigation is about \$2.6 million USD for small holder farmers. High potential areas are located mainly in the Northern part of Ethiopia in the Lake Tana area, as well as in the Rift Valley Basin. But other areas in the Amhara, Oromia, and the southern region also have high potential for small-scale irrigation.

Ghana is a small country, a quarter of the size of Ethiopia. Still, for that country, the potential for small-scale irrigation is high. About 115,000 hectares of land are suitable for small-scale irrigation benefiting about 700,000 small holder farmers. The economic return is up to \$285 million USD. The high-potential areas in Ghana are located mainly in the Northern region of the country.

Tanzania is the same size as Ethiopia. However, the potential is a little bit less than Ethiopia's because of

the large amount of protected land in Tanzania for tourism and other purposes. Tanzania is not as densely populated as Ethiopia. Thus, about 3 million people would benefit from small-scale irrigation, generating up to 781 million USD. The potential for small-scale irrigation is located across different parts of the country.

Dile concluded that there is high potential for small-scale irrigation across sub-Saharan Africa. He then introduced the next speaker, Dr. Abeyou Worqlul.

- **Abeyou Worqlul**, Assistant Research Scientist, Texas A&M AgriLife Research

Worqlul said that after determining the potential land available for irrigation, and assessing water resources in terms of surface runoff and shallow groundwater recharge, the team next estimated the potential area for adoption of small-scale irrigation.

He showed a slide overlaying irrigation products and land potentially suitable for irrigation. A multi-criteria evaluation was used. Using the SWAT biophysical model, the team estimated the surface runoff potential and also the shallow groundwater potential.

A third factor—socioeconomic data that representing access to market in terms of population density, price, and access to roads—was overlaid. Then finally, the team came up with probability of adoption.

This information was important for the Ethiopian Ministry of Agriculture, the Ministry of Water Resource, and the Development Bank of Ethiopia for prioritizing investments in different parts of Ethiopia. The same is true in Ghana and Tanzania. The model also estimates water scarcity, assuming that 50 percent of the water would be environmental flow. The researchers determine the probability of water scarcity so that they can approach small-scale irrigation investment cautiously.

One component of the project is capacity building. The researchers have tried to institutionalize IDSS at different organizations such as universities, government agencies, CGIAR centers, NGOs, and the private sector. The project has shared the IDSS with universities—Bahir Dar University in Ethiopia and Dar Es Salaam University and Nelson Mandela Science and Technology University in Tanzania. These universities have included the IDSS in their curriculum. Bahir Dar University in Ethiopia has started a graduate program on irrigation through support from the ILSSI project.

Many government institutes have used the IDSS tool for their planning and evaluation. For example, the Development Bank of Ethiopia is interested in prioritizing investment using the irrigation area suitability maps. Business authorities in Ethiopia are also interested in the tools.

The CGIAR centers—like the International Water Management Institute and the International Livestock Research Institute—are partners of the Innovation Lab for Small-Scale Irrigation. They are also interested in IDSS tools, such as the SWAT and APEX tools, to do environmental analysis for design and evaluation.

As part of the Innovation Lab for Small-Scale Irrigation, the researchers also build the capacity of male and female early and mid-career scientists to use the IDSS tool for evaluating the impact of agriculture and management practices on production, environmental sustainability, household income, and nutrition.

The team has provided biannual short-term training in Ethiopia, Ghana, and Tanzania using local data. The training has attracted approximately 50 to 70 students, researchers, and private sector representatives. Through this short-term training the project has trained more than 700 people.

Texas A&M University has also provided long-term degree training. Participants from Ethiopia, Ghana, and Tanzania are invited for intensive training on the IDSS tools to two to three-month periods. The participants become ambassadors of the Innovation Lab and the IDSS tools.

Other training by the project includes graduate program training and farmer training. The graduate program includes instruction on how to use the IDSS tools to evaluate the impact of conservation agricultural practices on production environmental sustainability, household income, and nutrition. The training program for farmers includes water management, fertilizer management, and general agricultural input management practices.

Worqlul turned to his colleague, Jean-Claude Bizimana, to conclude the presentation.

- **Jean-Claude Bizimana**, Associate Research Scientist, Texas A&M University

Jean- Claude Bizimana described the validation of the researchers' approaches and tools, and the importance of validation to ensure credibility of the approaches among users.

Methods and the results have been validated through rigorous peer review processes as is standard for scientific publication. About 35 papers have been published, and most of those are on the individual tools, methods, or approaches that make up the IDSS. A few of those papers are exclusively on the integrated approach itself.

Students from the partner organizations in the host countries have been using the tool for their research theses, and several of them have been awarded a graduate degree in those host countries. The publications are freely available to the public.

Bizimana explained how the research results are providing the foundation for farmer self-reliance. Self-reliance of farmers and sustainability of the results are important goals of the activity, and for this reason, farmers have been at the center of the research.

The farmers have been involved in all the field studies for improved data collection, for on-farm demonstration of technologies, and for capacity building of farmers to understand field research, including challenges and opportunities.

Although it has not yet been widely adopted by farmers, the solar pump in Ethiopia has potential as a future tool because of its advantages compared to traditional irrigation methods, including the rope, the washer pump, and the motor pump. .

The solar pump operates on renewable energy readily accessible by small holder farmers, can do a better job irrigating small field plots, and does not require much maintenance. The main constraint to adoption is the high capital cost of the tool; however, the private sector is working to reduce the cost of the tool in hopes that it can be affordable to farmers.

Bizimana added that the government of Ethiopia enacted a law that provides tax exemption for

agriculture equipment tools, including irrigation tools such as solar pumps. Those who are involved in importing those tools have a 100 percent tax exemption, which is a very encouraging signal toward tool adoption.

He thanked BIFAD for recognizing and encouraging the research group, as well as USAID and the American people for the financial support of research. He thanked Texas A&M University senior leadership for strategic and scientific support and the farmers, extension workers, and government workers who worked with them.

**BIFAD Awards Committee Chair, Brady Deaton** thanked the awardees and introduced the award recipient for the BIFAD Award for Scientific Excellence in a Feed the Future Innovation Lab Student Award, Jean-Baptiste Ndahetuye. Ndahetuye is a student researcher with the Livestock Innovation Lab at University of Florida.

Jean-Baptiste's research looks at milk production practices, udder health, and their impact on milk quality, safety, and processability in Rwanda. The research has informed the development of training materials for farmers, milk middlemen, para-veterinarians, and opinion leaders in the communities as well as the national mastitis control program. Ndahetuye became the principal investigator on the project at the lab while pursuing his PhD at the Swedish University of Agricultural Sciences.

#### ***BIFAD Award for Scientific Excellence in a Feed the Future Innovation Lab: Student Award***

- **Jean Baptiste Ndahetuye**, Ph.D. Candidate, Swedish University of Agricultural Sciences and Lecturer, Veterinary Medicine, University of Rwanda

Ndahetuye thanked the Board for the honor and the USAID-funded Feed the Future Livestock Innovation Lab at University of Florida for the grant to carry out the project. The project focuses on milk production practices, udder health, and impact on milk quality, safety, and processability in Rwanda. The researchers are located in Rwanda and in Sweden. Team members' areas of expertise were complementary expertise to accomplish the project's objectives.

Since 2006, the government of Rwanda has been importing exotic cows for distribution to poor families the Grinka program. The program's objective was to meet the population's nutrition and food security needs through milk consumption. However, the dairy cows suffer from mastitis, a disease characterized by inflammation of mammary glands because of bacterial infection.

This disease leads to lowered milk yields and affects milk quality and safety—all of which in turn affect the livelihoods and incomes of farmers. The objective of the project was to study and characterize the disease in terms of prevalence, causative pathogens, and risk factors among small dairy holders linked to milk collection centers in Rwanda. Another objective was to build the capacity of key actors in the dairy value chain from farm to milk collection centers.

In the Rwandan dairy value chain, dairy farms aggregate and sell their milk at a collection point, where it is transported to a collection center to be chilled and then distributed to processors and raw milk sellers.

Milk quality is critical; milk from farmers can be rejected because of poor quality, and mastitis affects milk quality. The overarching goal of the study was to improve milk quality and farmer income by

reducing mastitis prevalence and milk rejection at collection points.

When Ndahetuye started his PhD, he had initially intended to focus on one region but was able to include four more regions in the study, as well as a capacity-building component. Through the project, two Master's students and also key actors in the dairy value chain in Rwanda have been trained.

A baseline analysis found that the disease was highly prevalent in cows—about 48 to 82 percent, a minimum of one cow in two with the disease, and, in some cases, eight in 10 cows.

Analysis of the regional variability of pathogens causing the disease showed that the major pathogens are *Aurea staphylococci* and *Staphylococcus aureus*. These pathogens are resistant to the antibiotics that farmers use regularly—a substantial challenge.

The pathogen analysis informed the training program, which was offered at a first level for farmers, milk middlemen, para veterinarians, and community opinion leaders; and at a second level for program-trained trainers, private and public veterinarians, and milk collection center managers. The trainings focused on mastitis prevention and control, proper milking routine, cow shed management, post-service of milk handling, and milk safety.

Next, Ndahetuye introduced a video, “Making Milk Safer in Rwanda”, describing his process and the need to reduce mastitis.

*Transcript of video:*

“I’m Jean-Baptiste Ndahetuye. I work with the University of Rwanda. And I've been involved in this project since its conception.

It is important too that bad milk doesn't reach the hands of the vulnerable, including children and women. We believe our good control will lead up to decrease of the prevalence of the disease and will enhance milk quality, and, ultimately, when the udder of the cow is healthy it produces more milk. So, I would say healthier milk has a very important impact on nutrition of the children and women.

When we measured the udder infection using the California Mastitis Test, a simple test that tests each udder of the cow, farmers were excited about seeing the results, seeing the status of the udder of their cow. The test is visual. Farmers are able to see the status of their dairy cow in terms of their udder health. And they are excited to take the course of action of the control of the disease.

And now, farmers are getting more money from their milk. And farmers are reporting that they have started now implementing necessary changes to control udder infection. And they are cleaning their cow shed more frequently. They are cleaning their hands before milking. And that has resulted in better quality of the milk. And such healthier milk is a great benefit for the kids that drink the milk and overall the consumer that drink the milk from such cows. And I'm glad about it as well.”

Ndahetuye closed by acknowledging the help they received from the Livestock Innovation Lab and thanked BIFAD once again for the award.

BIFAD Award Chair Brady Deaton thanked the speakers and provided final remarks.

## Closing Remarks

Brady Deaton highlighted the Innovation Labs of the University of Florida and Texas A&M University as wonderful examples of the kind of collaboration that USAID has with scientists at U.S. universities reaching out to the world, and he noted that one can see tremendous impact that this research is having already and will have in the future.

Deaton remarked that the Board would continue this recognition program. Showcasing the BIFAD Award at the World Food Prize is important and provides a backdrop for the impact of food security programs in real time and into the future.

Deaton encouraged Innovation Labs to submit nominations. He acknowledged that it is a considerable amount of work to put these nomination packages together, but the nominations year after year are excellent and the Board appreciates the work that the nominees do.

## Adjourn

**BIFAD Chair Mark Keenum** thanked Deaton for working on the Awards Committee and congratulated the speakers once again. He summarized the day, which started with the session on agriculture and food security in conflict-affected and fragile areas, followed by a lunch meeting for BIFAD with the USAID Administrator. The afternoon continued with the release of the BIFAD-commissioned study on the U.S. Benefits of USAID investments in food security and agriculture, before ending with the presentation of the BIFAD awards.

He thanked the staff of the Association of Public and Land-Grant Universities, Susan Johnson and Devin Ferguson, for their outstanding work in organizing and coordinating the event. He also thanked Clara Cohen for her leadership and partnership with the Board and as a liaison between BIFAD and the USAID Administrator.

Keenum concluded his remarks and adjourned the meeting.

We hereby certify that, to the best of our knowledge, the foregoing minutes are accurate and complete.

Mark Keenum, Ph.D., Chairman, Board for International Food and Agricultural Development  
Clara Cohen, Ph.D., Executive Director and Designated Federal Officer, Board for International Food and Agricultural Development

January 16, 2020

## APPENDIX

### ACRONYMS:

<b>Acronym</b>	<b>Definition</b>
<b>AGP</b>	Office of Agricultural Policy
<b>APEX</b>	Agricultural policy environment extender
<b>APLU</b>	Association of Public and Land Grant Universities
<b>ASA</b>	American Soybean Association
<b>BFS</b>	Bureau for Food Security
<b>BIFAD</b>	Board for International Food and Agricultural Development
<b>CG</b>	Refers to CGIAR
<b>CGIAR</b>	Consultative Group for International Agricultural Research
<b>CIMMYT</b>	International Maize and Wheat Improvement Center
<b>CNFA</b>	Cultivating New Frontiers in Agriculture
<b>CRSPs</b>	Collaborative Research Support Programs
<b>CTD</b>	Conflict, Terrorism, and Development Collaboratory
<b>DFID</b>	Department for International Development (UK)
<b>DRC</b>	Democratic Republic of the Congo
<b>FAO</b>	Food and Agriculture Organization of the United Nations
<b>GEEL</b>	USAID Growth, Enterprise, Employment, and Livelihoods Program
<b>GIS</b>	Geographic Information System
<b>IAGRI</b>	Innovative Agriculture Research Initiative
<b>ICRC</b>	International Committee of the Red Cross
<b>IDP</b>	Internally displaced people
<b>IDSS</b>	Intelligent Decision Support Systems

<b>IFPRI</b>	International Food Policy Research Institute
<b>IRRI</b>	International Rice Research Institute
<b>ISIS</b>	Islamic State of Iraq and Syria
<b>MCC</b>	Milk Collection Center
<b>ODA</b>	Office of Development Assistance
<b>PICS Global</b>	Purdue Improved Crop Storage
<b>RTI International</b>	Research Triangle Institute International
<b>SUN</b>	Scaling Up Nutrition
<b>UN</b>	United Nations
<b>USAID</b>	U.S. Agency for International Development
<b>WFP</b>	World Food Programme

**AGENDAS with links to slides and livestream recording:**

## **Board for International Food and Agricultural Development 180<sup>th</sup> Public Meeting**

***Morning Session:***

***Agriculture and Food Security in Fragile and Conflict-Affected Contexts***

**Tuesday, October 15<sup>th</sup>, 2019 | 8:30 am – 12:30 pm Central Daylight Time**

[View the Panel 1: State of Knowledge recording here](#)

[View Panel 2: Programming Implications recording here](#)

### **Background and Objectives:**

The Board for International Food and Agricultural Development is a seven-member, presidentially appointed advisory board to the U.S. Agency for International Development (USAID) established in 1975 under Title XII of the Foreign Assistance Act, as amended. The provisions of Title XII mandate that USAID bring the assets of U.S. universities to bear on development challenges in agriculture and food security. At the request of USAID Administrator Mark Green, BIFAD is examining issues around agriculture and food security in fragile and conflict-affected contexts, including issues around displacement and its effects on food systems.

Today, addressing food insecurity means operating amidst conflict and fragility. Last year, every country in a protracted food crisis was also engaged in violent conflict (FAO 2018). There is an urgent need to understand the unique challenges of improving the agricultural sector and food security in conflict-affected and fragile contexts—including those in which large populations are displaced—in order to strengthen investments in evidence-based food and agriculture programming tailored for these contexts. This BIFAD public meeting begins to address this need by bringing stakeholders and sector experts together for a timely discussion on the subject.

The event will specifically address the following questions: What is the state of knowledge on the relationship between conflict, fragility and food systems? What are the implications of this relationship for food security? How can food security and agricultural investments be most effective in preventing conflict or accelerating recovery in post-conflict settings? What are the unique needs of affected populations?

A desired outcome from the meeting is a clear statement on the importance of (1) understanding the relationship between food systems, conflict and fragility for food security goals, and (2) ensuring that food security programming is tailored to the unique needs of these contexts, with a special focus on how food security can prevent conflict and accelerate recovery from conflict.

This public meeting is open to all stakeholders and the general public, but will be of particular relevance to development practitioners and NGOs; private sector entities; faith-based organizations; donors; government stakeholders; and multilateral organizations working in agriculture, food security, and nutrition in conflict-affected and displaced population contexts. The event will be made available in livestream to a virtual audience and recorded audio and video will be made available in archive form.

## AGENDA

8:00 a.m.      **Registration**

8:30 a.m.      **Welcome and Opening Remarks**  
*Mark Keenum, President, Mississippi State University and Chair of BIFAD*

8:35 a.m.      **Setting the Stage and Context**  
  
*[Matt Nims](#), Deputy Director, Food for Peace, U.S. Agency for International Development  
[Greg Collins](#), Deputy Assistant Administrator, Bureau for Food Security, U.S. Agency for International Development  
[Thomas Duffy](#), Director, Office of Agricultural Policy, Bureau of Economic and Business Affairs, U.S. Department of State*

9:00 a.m.      **Panel 1: State of Knowledge: Fragility, Conflict, and Food Systems**

*The goal of the panel is to understand the state of knowledge on the relationship between conflict, fragility and food systems, the implications of this relationship for food security, and the evidence gaps in our understanding of these relationships.*

This panel reviews the evidence on the relationship between conflict, fragility, and food systems. Why and how can conflict disrupt food systems, and why and how do food systems enable or mitigate conflict? The panel explores big picture impacts for entire countries and economies to micro-level impacts to consumers, smallholders, and rural communities in places such as the Sahel, northeast Nigeria, Somalia, Mali, Haiti, and Bangladesh.

Food systems play an important role before, during, and after conflict. The link between food insecurity and conflict is prominent during price spikes or competition over natural resources. Land disputes,

access to markets, and local corruption can promote food insecurity and conflict alike. During conflict, farmers can be targeted for their food assets while people broadly lose food access and adopt negative coping strategies that reduce nutrition. These impacts in turn can play a role in radicalization and rebel group recruitment. In light of this evidence, how can we avoid inadvertently doing harm? What do we need to know next?

### **Panelists and Topics:**

**Panel Moderator, [Julie Howard](#), Senior Advisor (Non-resident), Global Food Security Project, Center for Strategic and International Studies**

**[Emmy Simmons](#), Senior Adviser (Non-resident), Global Food Security Project, Center for Strategic and International Studies**

[KEY STATISTICS AND TRENDS OVER TIME ACROSS MAJOR KINDS OF CONFLICT](#)

**[Cullen Hendrix](#), Professor, Korbel School of International Studies, University of Denver and Non-resident Senior Fellow, Peterson Institute for International Economics**

[THE POLITICAL ECONOMY OF CONFLICT AND FOOD SECURITY](#)

**[Leanne Erdberg Steadman](#), Director, Countering Violent Extremism, U.S. Institute of Peace**

[COUNTERING VIOLENT EXTREMISM, ESP. AMONG YOUTH](#)

**[Soji Adelaja](#), Hannah Distinguished Professor in Land Policy, Department of Agricultural, Food and Resource Economics, Michigan State University**

[FUTURE RESEARCH NEEDS, EXAMPLE OF BOKO HARAM](#)

### **Discussion**

10:15 a.m. **Break**

10:45 a.m. **Panel 2: Programming Implications: Adaptation and Innovation**

*The goal of this panel is to address how food security and agricultural investments can be tailored to fragile and conflict-affected contexts, and how practitioners can harness existing evidence and generate new ideas for promoting agriculture and food security amidst conflict and fragility.*

This panel examines best practices on how to ensure food security and agricultural investments are context-driven: conflict-sensitive, flexible to the unique characteristics of conflict and fragility, and effectively integrating humanitarian and development assistance when necessary, and attuned to the needs of displaced populations. Beyond tailoring investments, new ideas are crucial in these settings too. For instance, portable assets and skills and creative ways to build market access are all promising ideas that could increase food security and resilience amidst conflict. In fragile contexts, innovative solutions are needed that can address thorny issues such as corruption or illegitimate governance too.

Under what conditions can practitioners expand or support markets amidst fragility or even conflict? How can practitioners develop agriculture-led growth programming suited for these contexts? What other creative ideas can build the resilience of people experiencing conflict and fragility?

### **Panelists and Topics:**

**Panel Moderator, [Greg Collins](#), Deputy Assistant Administrator, Bureau for Food Security, U.S. Agency for International Development**

[PROGRAMMING PRINCIPLES FOR WORKING IN THESE CONTEXTS - LINKING THE EVIDENCE BASE WITH INTERVENTIONS](#)

**[Susanna Campbell](#), Assistant Professor, School of International Service, American University**

[ACHIEVING INCLUSIVE, CONFLICT-SENSITIVE FOOD SECURITY PROGRAMMING](#)

**[Sandrine Chetail](#), Senior Director for Agricultural Systems, Markets and Financial Inclusion, Mercy Corps**

[FLEXIBLE PROGRAMMING AMIDST CONFLICT AND FRAGILITY](#)

**[Louise Sperling](#), Consultant, International Center for Tropical Agriculture**

[AGRICULTURE AND SEED SECURITY PROGRAMMING:-- CONFLICT AND STRATEGIC LINKS TO THE FUTURE](#)

**[Mohamed Abdinoor](#), Chief of Party, USAID Growth, Enterprise, Employment, and Livelihoods (GEEL) Program in Somalia, RTI International**

[SUSTAINABLE INTERVENTIONS- LEVERAGING LOCAL SYSTEMS](#)

### **Discussion**

- 12:00 p.m. **Public Comment Period**  
**[Mark Keenum](#), Mississippi State University, BIFAD**
- 12:25 p.m. **Closing Remarks**  
**[Panel Moderators](#)**
- 12:30 p.m. **Adjourn**  
**[Mark Keenum](#), Mississippi State University, BIFAD**

**Board for International Food and Agricultural Development  
180<sup>th</sup> Public Meeting  
Agenda**

**Afternoon Session:**

***BIFAD Award for Scientific Excellence in a Feed the Future Innovation Lab  
Announcement and Launch of BIFAD Study, How the United States Benefits from  
Agricultural and Food Security Investments in Developing Countries***

Tuesday, October 15<sup>th</sup>, 2019 | 2:30 pm – 4:20 pm Central Daylight Time  
Downtown Marriott Salons A-C | Des Moines, IA

[View the recorded session online](#)

**AGENDA**

- 2:30 p.m.     **Welcome and Opening Remarks**  
[Mark Keenum](#), *President, Mississippi State University and Chair of BIFAD*
- 2:35 p.m.     **Launch Event, BIFAD-Commissioned Study: *How the United States Benefits from Agricultural and Food Security Investments in Developing Countries***
- Opening Remarks**  
[Mark Green](#), *Administrator, USAID*
- Introduction and Background**  
[Mark Keenum](#), *Mississippi State University, BIFAD*
- Keynote Address**  
[Shenggen Fan](#), *Director General, International Food Policy Research Institute (IFPRI)*  
[View Slides](#)
- 2:50 p.m.     **Study Overview**  
[David Kraybill](#), *Professor Emeritus, The Ohio State University*  
[View Slides](#)

*Stephanie Mercier, Senior Policy Adviser, Farm Journal Foundation*  
[View Slides](#)

3:15 p.m. **Public Comment Period**

3:30 p.m. **Break**

3:45 p.m. **BIFAD Award for Scientific Excellence in a Feed the Future Innovation Lab:  
Senior Research Team Award**

[Brady Deaton](#), Chancellor Emeritus, University of Missouri, BIFAD;  
Chair, BIFAD Awards Committee

3:50 p.m. **Presentation by Awardees**

[Yihun Dile](#), Assistant Research Scientist, Texas A&M University  
*Abeyou Worqlul*, Assistant Research Scientist, Texas A&M AgriLife Research  
*Jean-Claude Bizimana*, Associate Research Scientist, Texas A&M University  
[View Slides](#)

4:00 p.m. **BIFAD Award for Scientific Excellence in a Feed the Future Innovation Lab:  
Student Award**

[Brady Deaton](#), Chancellor Emeritus, University of Missouri, BIFAD

4:05 p.m. **Presentation by Awardee**

[Jean Baptiste Ndahetuye](#), Ph.D. Candidate, Swedish University of Agricultural  
Sciences; Lecturer, Veterinary Medicine, University of Rwanda  
[View Slides](#)

4:15 p.m. **Closing Remarks**

*Brady Deaton*, Chancellor Emeritus, University of Missouri, BIFAD  
[Mark Keenum](#), Mississippi State University, BIFAD

4:20 p.m. **Adjourn**

*Mark Keenum*, Mississippi State University, BIFAD