



Board for International Food and Agricultural Development 183rd Public Meeting (Virtual)

Agricultural Growth, Economic Transformation, and the Journey to Self-Reliance: Implications for USAID Programming

Tuesday, October 13th, 2020 | 12:00 pm – 2:30 pm Central Daylight Time

[CLICK HERE TO VIEW A RECORDING OF THE MEETING](#)

Background and Meeting Objectives:

The U.S. Agency for International Development (USAID) is reorienting its strategies, partnership models, and program practices to achieve greater development outcomes and strive toward a future where foreign assistance is no longer necessary. The approach, outlined in the Agency’s Policy Framework¹, emphasizes the concept of “self-reliance”²—defined as the capacity and commitment of a country to plan, finance, and implement solutions to solve its own development challenges in an effective, inclusive, and accountable way.

The Board for International Food and Agricultural Development (BIFAD)³, an advisory committee to USAID, will convene a public meeting to better understand the concept of economic transformation—how underdeveloped and agrarian-based countries shift from subsistence agriculture to a commercially oriented economy with diverse agricultural, manufacturing, and service sectors—and how it contributes to a country’s resilience to shocks, such as COVID-19, and its progression toward self-reliance. Authors of a BIFAD-commissioned study will share preliminary findings and lessons learned on emerging success stories in agricultural and economic transformation and will discuss the implications of this evidence for USAID’s agricultural and food security development and social safety net priorities and programming.

¹ <https://www.usaid.gov/policyframework>

² <https://www.usaid.gov/selfreliance>

³ BIFAD is a seven-member, presidentially appointed advisory committee to 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.

This meeting is open to the public and will be livestreamed via Zoom. On the basis of testimony, including public comments shared at this meeting, BIFAD will provide formal findings, conclusions, and recommendations to USAID on best-bet operational and programmatic investments for catalyzing agricultural productivity and economic transformation. The meeting recording, along with meeting minutes, will be available in archive form following the meeting.

Format: A 2.5-hour virtual meeting, open to the public, with an expert panel and a 20-minute public comment period. The recorded audio/video and minutes will be available in archive form.

Findings, Conclusions, and Recommendations: On the basis of testimony, including public comments shared at the meeting, BIFAD will provide formal findings, conclusions, and recommendations to the Agency on best-bet operational and programmatic investments.

AGENDA

1:00 p.m. **BIFAD Welcoming Remarks and Introduction of BIFAD Members**

[Mark Keenum](#), *President, Mississippi State University and Chair of BIFAD*

1:05 p.m. **Recognition of Outgoing BIFAD Member**

[Mark Keenum](#), *President, Mississippi State University and Chair of BIFAD*

1:20 p.m. **Welcome Remarks**

[Jim Barnhart](#), *Assistant to the Administrator, Bureau for Resilience and Food Security and Deputy Coordinator for Development for Feed the Future*

1:25 p.m. **BIFAD Framing Remarks**

[Pamela Anderson](#), *Director General Emerita, International Potato Center*

1:30 p.m. **Agricultural Productivity and Economic Transformation: Introduction to Concepts and Lessons Learned from Country Case Studies**

- [Thom Jayne](#), *University Foundation Professor of Agricultural, Food, and Resource Economics, Michigan State University*
- [Adesoji Adelaja](#), *John A. Hannah Distinguished Professor in Land Policy, Department of Agriculture, Food, and Resource Economics, Michigan State University*
- [Louise Fox](#), *Non-resident Senior Fellow, Brookings Institution, Global Economy and Development, Africa Growth Initiative.*

- [Keith Fuglie](#), Senior Economist, Structure, Technology, and Productivity Branch, Resource and Rural Economics Division, Economic Research Service, U.S. Department of Agriculture
- [CLICK HERE TO VIEW SLIDES](#)

2:25 p.m. **Improving the Quality of Government Spending on Agriculture**

[Danielle Resnick](#), Senior Research Fellow and Theme Leader, Governance, Development Strategies, and Governance Division, International Food Policy Research Institute

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2:35 p.m. **BIFAD Questions**

Moderated by [Clara Cohen](#), BIFAD Executive Director, USAID

3:00 p.m. **Public Comment Period**

Moderated by [Clara Cohen](#), BIFAD Executive Director, USAID

3:20 p.m. **Closing Remarks**

[Thom Jayne](#), University Foundation Professor of Agricultural, Food, and Resource Economics, Michigan State University

3:25 p.m. **Meeting Adjournment**

183rd BIFAD Public Meeting (Virtual)

Agricultural Growth, Economic Transformation, and the Journey to Self-Reliance: Implications for USAID Programming

Meeting Minutes

Tuesday, October 13, 2020 – 12:00 PM to 2:30 PM CDT

World Food Prize Side Event

BIFAD Members:

Mark Keenum, Board Chairman, President, Mississippi State University
Pamela K. Anderson, Director General Emerita, International Potato Center
Brady Deaton, Chancellor Emeritus, University of Missouri
James Ash, Food and Agribusiness Group Head, Husch Blackwell
Richard Lackey, Founder and Chairman, World Food Bank
Gebisa Ejeta, Distinguished Professor, Purdue University

Speakers:

*Jim Barnhart, Assistant to the Administrator, Bureau for Resilience and Food Security and
Deputy Coordinator for Development for Feed the Future
Waded Cruzado, Montana State University, Former BIFAD Member
Peter McPherson, President, Association of Public and Land-Grant Universities (APLU)
Rob Bertram, Chief Scientist, U.S. Agency for International Development (USAID),
Bureau for Resilience and Food Security
Thomas Jayne, Professor of Agriculture, Food, and Resource Economics,
Michigan State University
Adesoji Adelaja, Professor of Land Policy, Department of Agriculture, Food, and Resource
Economics, Michigan State University
Louise Fox, Senior Fellow, Brookings Institution,
Global Economy and Development, Africa Growth Initiative
Keith Fuglie, Senior Economist, Structure, Technology, and Productivity Branch, Resource and
Rural Economics Division, Economic Research Service, U.S. Department of Agriculture
Danielle Resnick, Senior Research Fellow and Team Leader, Governance, Development, and
Strategies Division, International Food Policy Research Institute*

BIFAD Opening Remarks and Member Introductions

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

Dr. Keenum called the meeting to order and welcomed everyone to the 183rd public meeting of BIFAD. Dr. Keenum mentioned that theme of the meeting was Agricultural Growth, Economic Transformation, and the Journey to Self-Reliance: Implications for USAID Programming. He recognized BIFAD Board members and called on each of them to introduce themselves.

Dr. Keenum noted that the primary purpose of the meeting was to better understand the concept of economic transformation and how it contributes both to a country's resilience to shocks and its progression towards self-reliance. Participants would hear the preliminary findings of a BIFAD-commissioned study on emerging success stories and the implications of the evidence on USAID's programming.

Dr. Keenum encouraged audience participation and invited the submission of brief comments and questions via the webinar question and answer box. He mentioned that the meeting recording and meeting minutes would be available on the USAID, AgriLinks, and APLU websites following the meeting.

Recognition of Outgoing BIFAD Members

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

Before proceeding to the meeting session, Dr. Keenum recognized one of BIFAD's distinguished outgoing Board members, Dr. Waded Cruzado. Dr. Cruzado is the president of Montana State University and was first appointed to BIFAD in 2012 by President Obama. Her leadership in agricultural education and research and vision for tackling global hunger have served BIFAD and USAID well. While serving on BIFAD, Dr. Cruzado chaired the selection committee for the BIFAD awards for scientific excellence in Feed the Future Innovation Labs and led engagement with partners in West Africa. She facilitated dialogue between global tribal college leaders and BIFAD on the issues of poverty, nutrition, and food security. Dr. Cruzado was a strong advocate for the land-grant university system and the principles of Title XII.

Dr. Keenum expressed his personal appreciation to Dr. Cruzado for her years of service to BIFAD and USAID.

Dr. Cruzado thanked Dr. Keenum. She reflected on the past eight years and the incredible opportunity that was afforded to her to serve among such extraordinary leaders in education and agricultural research. Dr. Cruzado thanked all her colleagues on the BIFAD Board. She also thanked Dr. Keenum and Dr. Deaton, the two chairs under whom she worked.

Dr. Cruzado was proud of BIFAD's meetings with faculty, students, staff, researchers, producers, and businesspeople at both Purdue University and the University of Missouri, and Montana State University faculty, researcher, and student pride in welcoming BIFAD to

their campus. She stated that BIFAD's work continues, emphasizing the importance of human and institutional capacity development and women's empowerment in addressing food insecurity. Taking stock of the last few decades, Dr. Cruzado stated that the congressional legislation that had established BIFAD was a work of genius, anticipating by decades, the need for governmental agencies, land-grant universities, public institutions, and private industry to work together. This coalition is indispensable now and will be into the future for self-reliance and the eradication of global hunger.

Lastly, Dr. Cruzado appreciated the job completed thus far and urged everyone to remain committed to the mission, remembering the urgency that the legislation instilled. She thanked the faculty, staff, researchers, and students who had contacted her over the years, saying it was the honor of her life to participate and to be part of the Board.

Dr. Keenum then recognized the Association of Public and Land-grant Universities (APLU), another outgoing associate of BIFAD. APLU was the major support organization to BIFAD for approximately 16 years. Dr. Keenum considered APLU outstanding in serving higher education and public and land-grant universities. He expressed appreciation for APLU's tremendous role in supporting BIFAD and USAID's missions.

Dr. Keenum recognized the support of the Mr. Peter McPherson, President of APLU, noting that he was one of the original BIFAD members, having been appointed by President Ford when BIFAD was created by Congress in the mid-1970s. Mr. McPherson became the administrator of USAID and then served as president of Michigan State University. He is a distinguished leader and has remained a wonderful partner of BIFAD.

Dr. Rob Bertram, Chief Scientist of USAID's Bureau for Resilience and Food Security (RFS), thanked Dr. Cruzado, noting how she had helped USAID in understanding how to strategically engage universities, including the colleges that serve Native American communities Montana. She has embraced the mission and the genius of integrating universities into the U.S. foreign assistance around food security, ending hunger, and improving nutrition. She also gave warm and inspiring leadership on awards to young scientists.

Dr. Bertram thanked APLU for its dedicated 20-year partnership to USAID and BIFAD. He appreciated the APLU team, including Ms. Susan Johnson, Mr. Jordan Merker, Mr. Bernie Burrola, and others who supported BIFAD before them, which had enabled a productive relationship. Dr. Bertram was confident that APLU's work regarding the engagement of Title XII legislation for the future of universities would continue, noting President McPherson's continued commitment and Dr. Cruzado's future leadership chairing the APLU board.

When Dr. Bertram joined USAID in the 1980s, Peter McPherson was administrator, and even today, those in USAID revere him for his ongoing engagement in foreign assistance and international development, particularly in the areas BIFAD works on. Mr. McPherson saw the unique importance of capacity building in leading to self-reliance and mandated that all USAID projects have a substantial element of capacity development integrated into

them. Many university partnerships that he oversaw and encouraged flourished long after funding was over, continuing to inform both partner countries and many U.S. land grant and other universities. His work on oral rehydration therapy was revolutionary, and he did much to promote the life-saving intersection of science with development implications on the ground to save millions of lives. Dr. Bertram said that Mr. McPherson worked hard but had a light touch as a leader because he has faith in people and as a founding BIFAD member is an inspiration to current and future BIFAD alumni.

Mr. McPherson recalled attending the first BIFAD meeting. He stated that APLU is deeply committed to BIFAD and its mission. He mentioned universities' work to create BIFAD during the 1970s. He noted that APLU would work toward university engagement and continued engagement with the Innovation Labs, universities, and BIFAD. Mr. McPherson appreciated Dr. Keenum and other members involved with these universities.

Mr. McPherson recalled late-night phone calls, discussions, and plans in collaboration with Dr. Bertram over the years. He noted that Dr. Bertram has deftly managed the demanding technical problems as a leader in USAID.

Mr. McPherson praised Ms. Susan Johnson as a dedicated, thoughtful, and smart individual who works hard to get things done. He also recognized her colleague, Mr. Jordan Merker, as a very good young man who will do much in his career ahead.

Mr. McPherson thanked Dr. Keenum for his work for BIFAD and Mississippi State University. For the 150th anniversary of the institution's memorial, Dr. Keenum had established a land-grant center within the university's history department. Mr. McPherson praised Dr. Keenum as a man that knows agriculture well, from Washington, to the farm, to the university.

Mr. McPherson thanked everyone for their amazing work and noted that he looked forward to continuing a partnership.

Dr. Keenum thanked Mr. McPherson for his words and for his many years of service to the nation, especially to BIFAD and USAID. He further thanked Mr. McPherson for being a strong advocate on behalf of Feed the Future Innovation Labs, and for all his important work with Congress. He had also appreciated Mr. McPherson's friendship and advice over the years and wished him and APLU well going forward.

Welcome Remarks

Jim Barnhart, Assistant to the Administrator, Bureau for Resilience and Food Security and Deputy Coordinator for Development for Feed the Future

Dr. Keenum turned the meeting over to Dr. Jim Barnhart, USAID's Assistant to the Administrator in USAID's Bureau for Resilience and Food Security and the deputy coordinator for development for Feed the Future.

Dr. Barnhart pointed out that BIFAD's timely support for USAID, particularly regarding food security and nutrition during the COVID-19 pandemic, continues to guide agency decisions as USAID navigates the current pandemic. He also congratulated Dr. Rattan Lal, the 2020 World Food Prize winner. Dr. Lal's life's work in sustainable soil management has made valuable contributions to global food security, climate adaptation, and water quality.

Dr. Barnhart thanked Dr. Cruzado for her eight years of membership to BIFAD. He noted that the USAID Acting Administrator was unavoidably absent from this meeting but that it would have been his pleasure to present Dr. Cruzado with a certificate of appreciation for her work. Dr. Barnhart read the certificate, as follows:

"In recognition of your dedicated service to BIFAD, your passionate leadership has made significant and lasting contributions to advancing USAID's goals of ending hunger and extreme poverty. Your extraordinary commitment has enabled the BIFAD to play a lead role across the United States Government and to assure the highest scientific standards in agriculture and food security."

Dr. Barnhart also appreciated Mr. McPherson's and APLU's support of BIFAD's work over the years and thanked him for the partnership and service to USAID.

Dr. Barnhart expressed excitement about the meeting discussions on the relationships among agricultural productivity, economic transformation, and self-reliance. He thanked BIFAD for undertaking this effort and expressed gratitude to the study team members, Drs. Jayne, Fox, Adelaja, and Fuglie for shining a light on the unique and important role of agriculture-led economic growth in helping countries achieve sustained growth and greater self-reliance. The study's preliminary findings reinforce that the evidence coming out of the agriculture and food security space resonates with USAID's strategic direction—called the Journey to Self-Reliance or strengthening the ability of partner countries to sustainably support their own development agendas and creating the conditions where aid is no longer necessary. In discussing food security and agriculture, the focus is on investments that create long-lasting economic growth that benefits everyone. To achieve this, it is necessary to focus on transforming the systems that underpin food and agriculture—from seeds to markets—increasing their resilience so that they can withstand shocks and deliver benefits to all. It takes partnership, innovation, evidence, and learning to achieve these goals.

Dr. Barnhart stated that as Feed the Future turns 10 in 2020, amidst increases in poverty and hunger due to the pandemic, it is important to remember that agriculture is the engine that drives the economies in which we work. In the meeting, examples would be shared of impacts that are being sustained in the long-term and lessons we can draw from these successes for USAID's strategy going forward. USAID is committed to unpack evidence and work side by side with countries and communities to achieve resilient food systems that deliver food security, nutrition, good jobs, and benefits to society.

Dr. Barnhart congratulated everyone on the report and wished them a successful meeting.

The session was then turned over to BIFAD member Pamela Anderson to set the stage and provide framing remarks.

BIFAD Framing Remarks

Pamela K. Anderson, Director General Emerita, International Potato Center

Dr. Anderson thanked Dr. Keenum. She mentioned that the tribute to Mr. McPherson and Dr. Cruzado was well deserved and thanked them for their service and friendship.

Dr. Anderson explained that Feed the Future is the US initiative to fight global hunger and malnutrition. It was launched in 2010 as a \$1 billion per year initiative with strong bipartisan support from Congress. The initiative works through three main pillars:

1. Improving agricultural production and markets
2. Reducing hunger and improving nutritional status, especially for mothers and children
3. Strengthening resilience of communities to shocks

Dr. Anderson stated that, in the last two years, BIFAD convened a series of meetings to investigate issues related to resilience and nutrition. Today's meeting would take a closer at the core foundational pillar of agricultural production, with a specific focus on sub-Saharan Africa (SSA).

Dr. Anderson mentioned that a meeting was timely for several reasons. The first reason is the trends: in SSA from 2000-2018, the average annual rate of agricultural growth was between 3.6% and 4.6%—the highest in the world. BIFAD wanted to better understand what is driving that sustained agricultural growth and how much variation there is across Africa. Information from experts revealed that, since 2000, there has been significant economic transformation in SSA. In Latin America and Asia, agricultural growth was a principal driver of economic transformation. This sparked BIFAD's curiosity and led to the following questions:

- What does the situation look like in Africa?
- Are people seeing the same thing that was seen in Latin America and Asia, or is there something unique about the transformation in Africa?
- Specifically, what role are agricultural production and growth playing in Africa's economic transformation?

Dr. Anderson noted another trend over the last five decades: the major shift in agriculture from resource-led growth to productivity-led growth. This means that—rather than increasing agricultural production by expanding the amount of land, water, and inputs being used—most agricultural growth now comes from increasing the total factor productivity (TFP), or the efficiency with which these inputs are combined and used to

generate outputs. From 2000 to 2015, TFP accounted for over two-thirds of agricultural growth globally. This led to the following questions:

- Does this hold true for Africa?
- If African countries are moving towards productivity-led growth, what are the key policy instruments enabling this transition?

Dr. Anderson explained that, in addition to these trends, there is new evidence and research emerging that is overturning some of the previously held views on agricultural productivity. For example, the recent publication *Harvesting Prosperity*, by USAID economist Keith Fuglie and World Bank colleagues, questioned commonly held views on the relationship between farm size and productivity in developing countries. According to the publication, new research suggests there is no optimal farm size. Both small and large farms can be equally efficient in their production, with small family farms coexisting competitively with larger farms. This type of finding might underscore the importance of a renewed focus on the research and development (R&D) portfolio on technologies that are specifically suited for small farms, enabling highly productive farming on smaller plots of land.

The publication argued that sustaining growth and agricultural productivity will depend upon farmers adopting a steady stream of new practices and technologies, and that will require strong national agricultural research, development, and innovation systems. Looking forward, it will be important to ask how the Feed the Future initiative can increase its support to strengthen R&D capacity in SSA.

With these trends and questions in mind, BIFAD commissioned a study to explore the current understanding of the relationship between agricultural growth, agricultural production, and economic transformation in SSA. To address the issue of silos in the Feed the Future pillars of agricultural production, nutrition, and resilience, the study scope included exploring the current evidence for linkages among agricultural growth, economic transformation, and resilience, including to shocks such as COVID-19.

Dr. Anderson expressed her excitement over the report and looked forward to the presentations and discussions.

Dr. Keenum thanked Dr. Anderson for her remarks and invited the four study authors to share findings and discuss the implications of the evidence for USAID programming.

Agricultural Productivity Growth, Resilience, and Economic Transformation in Africa

Thomas Jayne, Professor of Agriculture, Food, and Resource Economics, Michigan State University

Adesoji Adelaja, Professor of Land Policy, Department of Agriculture, Food, and Resource Economics, Michigan State University

Louise Fox, Senior Fellow, Brookings Institution, Global Economy and Development, Africa Growth Initiative

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

Dr. Jayne thanked Dr. Keenum and the previous speakers for doing a great job in establishing the purpose, aims, and ideals of the study. He also appreciated his coauthors for their great work in producing the study, which was now in the final stages.

Dr. Jayne stated that Africa has changed drastically in the last 20 years. USAID programs must evolve in ways that account for these rapid changes in the African landscape. New trends are affecting both the world as well as Africa, and it is important for African leaders, as well as USAID leadership, to proactively anticipate those trends and respond to them.

Dr. Jayne stated that, over the course of the work, it was evident that SSA was composed of many diverse countries for which one size does not fit all. The study team attempted to review African countries by their stage of economic development. Some countries are considered fragile, with very challenging governance issues, while others are considered resource-rich, with unique challenges of their own. The team considered the differing implications for four different country types.

Dr. Fox shared the conceptual framework that was used in developing the study and analyzing the existing research, explaining that it was essentially a synthetic study.

Dr. Fox noted that the framework has two elements: economic transformation and resilience. She stated that extensive research indicates that both elements are critical processes for sustained growth and improvement in material welfare. She explained that economic transformation and resilience are the conceptual pillars that hold up overall economic development today. Increased productivity in agriculture is a critical part of both processes.

Dr. Fox stated that, during the early stages when the countries are poor, agriculture kickstarts transformation and, as agriculture shrinks as a share of the GDP because of structural transformation, other parts of the economy grow more rapidly and take over a larger share of the economy. Agricultural transformation and increased productivity in agriculture continue to underpin the transformation process until a country reaches upper middle-income or “rich” country status.

The second pillar, resilience, is the capacity to manage shocks and keep assets from declining. Resilience has two elements. At the national level, resilience is how countries get rich. Evidence shows that today’s rich countries did not get rich through having a phenomenal rate of economic growth. They got rich because when shocks happened—for example when recessions occurred—they were not very deep, and countries were able to get out of them quickly. Resilience also occurs at a household economy level.

Dr. Fox stated that at the national level, economic transformation enables resilience, which in turn helps to encourage development. Higher human capital, political stability, and voice and trust are important for resilience because when a shock happens, it is necessary to negotiate

an exit strategy among various interests. Therefore, a political system that allows for negotiation is required, which implies voice and trust. Countries with exclusionary economic policies and inequality have difficulty making such negotiations because people are left behind. Similar factors operate at the household and community level: income, access to food, access to basic services, all increase the ability of households and communities to manage risk. At lower income levels, household savings and formal and informal safety nets are very important for resilience. As households and communities become richer, insurance takes on a more important role. Assets, savings, and adaptive capacity—built partly through education and partly through social capital—are important.

All these factors enable low-income, lower middle-income, and even upper-income countries to realize sustained growth, and they are enabled by agriculture-led development. Agriculture is a necessary but not a sufficient condition. Other parts of the economy are also needed for economic transformation and growth to occur and for other sectors to take over a larger share of the economy.

The team's review of the evidence showed that all countries in Africa are not the same. African countries are at different points in their process of transformation and building resilience. The least resilient countries are the fragile states. Resource-rich countries—countries whose exports are made up of more than 50% minerals, such as oil, stones, and metals—are also not as resilient. There is, therefore, significant overlap between resource richness and fragility. Dr. Fox noted that lower-middle-income countries are transforming most rapidly and are relatively resilient compared to countries in the other categories. Some lower-income and lower middle-income countries have recently started to satisfy the definition of resource rich countries, and the study team concluded that agricultural-led development could help affected countries avoid the resource curse.

Dr. Jayne shared key findings that undergirded the report. There is strong evidence that the SSA region is transforming in positive ways. Agricultural growth in Africa has been higher than in any other region of the world over the past 20 years starting from a low base. In terms of percentage growth, it is about 50% higher than the world average, and it is about double what Africa was achieving from 1982 to 2000.

The second finding was that agricultural growth remains a major driver of economic growth in Africa. There is a very high degree of correlation between agricultural growth and overall economic GDP growth. When agriculture does well in a particular year, overall economic growth rates rise as well. The converse is also true. Despite Africa's diversification in recent years, economic growth is still driven by growth in agriculture.

Looking at the four country groups that Dr. Fox had identified, the fragile countries have the highest correlation between agriculture and GDP, followed by low income and lower-middle-income countries. Resource-rich countries are less linked to agricultural growth because of their reliance on minerals and metals.

A similar pattern was identified for countries about the share of the labor force still in agriculture. Low-income and fragile countries still have a large share of labor force working in agriculture as compared to lower-middle-income and resource rich countries.

Dr. Jayne noted the relationship between agricultural labor productivity and poverty reduction. Countries that experienced stronger agricultural labor productivity also exhibited declines in poverty rates. Countries with low agricultural labor productivity, had stagnant or slightly increased rates of rural poverty. Both in terms of economic growth and poverty, there is a strong relationship between agricultural growth and changes in living standards.

Dr. Fuglie presented a third finding from the report. Agricultural growth in SSA continues to rely primarily on the expansion of cropland, whereas rapid economic transformation requires productivity-led agricultural growth. Dr. Fuglie reviewed the evidence on sources of growth in agriculture and discussed emerging success stories in the agriculture-led growth transformation process. Since the 1990s, in Africa, we have seen an acceleration of agricultural growth to over 3% per year. More recently, Africa has surpassed other developing countries in agricultural growth.

If we look at the sources of the agricultural growth, other developing countries have moved away from relying on expanding land, irrigation, or intensifying the use of inputs per acre toward Total Factor Productivity (TFP)-led agricultural growth. TFP growth is an indicator of how fast technology in the agricultural sector is changing and a shift toward relying on improved technologies, improved practices, and higher value commodities to grow agriculture rather than using more inputs to grow it. In contrast to most developing country regions, Africa's agricultural growth is relying primarily on expanding area under cultivation and the use of other inputs. Raising total factor productivity on existing cropland remains a huge challenge for Africa. The drivers of TFP-led growth include: a steady stream of technologies from an R&D system, creating an enabling environment for farmers to rapidly access and adopt technologies, and allowing the private sector to invest in the agri-food value chain enhancement and connect to smallholder farmers.

Dr. Fuglie presented evidence on emerging success stories. Bangladesh has made remarkable progress in the last two decades. Bangladesh was one of the poorest and most food-insecure countries in the world, but since the 1990s, it has been able to accelerate agricultural growth from under 2% to over 4% annually and to sustain this level of growth. That growth has been led by increases in TFP rather than expanding resources. The period during which the agricultural acceleration occurred also witnessed substantial reductions in extreme poverty and child stunting in Bangladesh. An increase in TFP growth was not the sole factor, but a major contributing factor to that change.

Turning back to Africa, Dr. Fuglie presented another emerging success story from Ethiopia. Since the 1990s, the Ethiopian government has made agriculture its central focus in its development strategy and has been able to accelerate agricultural growth to over 5% per year. Although much of this growth comes from expanding resources, productivity-led growth has also played an important role. The same improvement in social welfare,

reduction in poverty, and reduction food insecurity was observed in Ethiopia during this process of accelerated agricultural growth, as in Bangladesh.

Ghana experienced a period of economic stagnation in the 1960s and 1970s. However, after a period of successful policy reforms that were introduced in the 1980s, Ghana was able to accelerate its agricultural growth to an average of almost 5% per year. Much of the growth, especially over the last decade, came from productivity. The study focused on the northern part of Ghana which, historically, has had the greatest concentration of poverty and malnourishment. There was evidence to show that in the north (the Guinea-Savannah zone), there has been increased acceleration of agricultural growth and a sharp reduction in poverty and child stunting.

Despite each region's different circumstances and conditions, all of them used smallholder agriculture to accelerate agricultural growth. All the countries had widely different conditions—from lowland rice to highland cereals to the root and tuber crops of the Guinea Savannah zone. One thing the countries had in common was creating conditions of macro and political stability. Second, they provided a steady stream of innovations suitable for adoption by smallholder farmers and used market liberalization and other policy reforms to incentivize and create an enabling environment for farmers to adopt technologies and for the private sector to invest in agri-food systems. Finally, especially in Ethiopia and Ghana, they invested in rural infrastructure, such as roads, to connect smallholder farmers to emerging market opportunities. This was compelling evidence that the strategy of smallholder agricultural productivity has worked to bring countries toward an inclusive economic transformation process that has social outcomes of poverty and malnutrition reduction.

Dr. Jayne noted the differences in African countries' abilities to transform their economies and to recover from shocks like COVID-19 and other aspects of resilience. Dr. Jayne shared evidence highlighting indicators of future economic transformation, such as the Infrastructure Development Index. Fragile countries are generally ranked lowest in terms of their infrastructure. Low-income countries are next, at 41%, with lower-middle-income countries ranked the best. The ranking is also lower for resource-rich countries. This is a common pattern for many indicators of future economic transformation.

Technological innovation and agricultural R&D are another central indicator of future economic transformation. Lower-middle-income African countries spend five to six times more per farmer on agricultural R&D than low-income and fragile countries. Resource-rich countries, despite their greater wealth and tax revenue, are not spending as much on agricultural R&D per farmer as lower-middle-income countries.

Enabling the business of agriculture, or regulatory environment, influences private investment in agriculture and are another important indicator of future economic transformation. The highest ratings of the index of enabling the business environment are in the lower-middle-income countries. Resource-rich countries had the highest ratings on percentage of adults who use the internet (2017 data), and Dr. Jayne mentioned that the statistics from 2005 indicate only a 1 to 2% percent of adults using internet; between 2005 and 2017, there has been a rapid rise in the percentage of people using the internet. The

indicator on domestic credit to the private sector as a percentage of GDP is also led by the lower-middle-income countries. On government effectiveness, a World Bank indicator on governance, lower-middle-income countries are significantly better. Increased effectiveness permits governments to address more complex challenges to achieve economic transformation. The types of activities governments can and should undertake depends on where countries are on this continuum.

Other indicators show that lower-middle-income countries are more effective in delivering healthcare and other public services to their populations. Child stunting rates and under-five mortality rates are also lower in lower-middle-income countries. Curiously, resource-rich countries are not doing better, despite having more resources. Lower-middle-income countries also lead on percentage of the rural population with potable water, percentage of rural electrification, and secondary school completion. Dr. Jayne noted that the general pattern of lower-middle-income countries being better positioned for sustained economic development was seen throughout the study. For governments to deliver public services to their constituents, they need to mobilize their surplus and tax revenue. Low-income and fragile countries do not have the capacity to do this. Countries need economic growth to raise revenue and spend money on services that would benefit their populations.

Dr. Jayne highlighted the significant increase in women who own their own financial accounts, between 2011 and 2017, across all country categories except resource-rich countries. The percentage of men owning a financial account, including a mobile bank, has also at least doubled in most country categories, except for the resource-rich countries. Dr. Jayne explained that there has been a rapid improvement in people's access to banks and financial accounts for both men and women, especially in lower-middle-income countries.

Where lower-middle-income countries are not doing so well is in the indicators of resilience and ability to cope with shocks. One indicator of resilience is land degradation, and the lower-middle-income countries have the highest proportion of degraded land. They may be more vulnerable to climate shocks, and this may signal areas where assistance could be provided. There is not much difference among country categories on trade openness indicators.

Dr. Fox summarized that the evidence is persuasive that there has been great economic transformation in Africa, but it has been uneven. Some country categories have done better, but fragile states have generally done worse in all areas. Dr. Fox described what the analysis suggests might be a way forward and where agriculture-led development and productivity-led development fit in.

She stated, in the short-term, Africa needs to arrest economic decline associated with COVID-19, restore macroeconomic stability, and start the process of reducing debt service so that they can invest in the future. About half of IDA-eligible countries are currently in, or at risk of, debt distress. In the medium-term, countries need to identify a path to sustainable growth, which means growing their economies, increasing productivity, and developing resilience. These are the key elements, but the next steps depend on the specific context of each country.

Dr. Fox stated that there are many issues that are common to both the agricultural and non-agricultural sectors. Countries need to support investments in agricultural productivity growth (including agricultural R&D, extension, market liberalization, enabling environment, improved land management practices, and land tenure, which Dr. Adelaja would describe momentarily) but also expand trade links to grow both the agriculture and non-agricultural sectors. Low-income countries need to build infrastructure, while lower-middle-income countries need to improve infrastructure quality, meaning better management, green technologies, and leapfrogging. They also need to increase the efficiency of public spending, especially for social services.

Dr. Fox said that education is critical for economic transformation and resilience, but Africa has a huge learning crisis. Africa needs to refocus on learning as children are not learning in schools. Additionally, financial deepening, insolvency, and domestic resource mobilization are needed to finance the necessary investments.

Dr. Adelaja laid out broad strategies to facilitate agriculture-led development, focusing on recommendations for each of the four country categories.

Low-Income Countries

The low-income countries are still early in the development process but growing fast, and several, like Rwanda and Ethiopia, have crossed into lower-middle-income country status. These countries are dependent on agriculture, in which a larger share of the economy tends to be in agriculture. They need to build their systems while they grow.

The overarching goal for low-income countries is to accelerate productivity-led agricultural growth by increasing on-farm productivity and developing the rural economy. This can be achieved through development and strengthening of the agricultural R&D system through rapid adaptation of existing technology, which means a focus on expanding adoption and enhancing productivity. Public extension should be revitalized and should focus on scale-appropriate technology for smallholder farms. These smallholder farms are the engines of development in these countries. Improving the policy environment and the capacity for policy development, expanding rural road networks and other basic infrastructure, streamlining the land tenure process, and facilitating land and rental markets should also be prioritized. Investing in irrigation, rural water bodies, and dams to enable better water management is critical to the success of agriculture in these countries. Cooperatives and out-grower schemes should be encouraged because farms in low-income countries tend to be small and need larger operations to facilitate their access to inputs. Rural areas need a stronger political voice to build support for positive policies to support agriculture.

Lower-Middle-Income Countries

Lower-middle-income countries already have the basics in place. They have ongoing research extension, some markets, and basic transportation systems. Economic transformation is already underway in these countries discussed above. They are making progress with political rights and government effectiveness, but gaps remain with respect to infrastructure.

The overarching goal for lower-middle-income countries is to accelerate productivity-led growth in agriculture through greater specialization and commercialization, and through the development of downstream value chains. To achieve this, the focus should be on R&D via a broader variety of commodities, which are in greater demand in the more advanced environments found in lower-middle-income countries. Bringing universities into the agricultural research process was also highlighted in the study as a next step for low-income countries. More research should focus on market development, as it is crucial to the next stage of building stronger markets. Expansion of extension activities to harvesting, drying, and market development should be prioritized for lower-middle-income countries. Additionally, building greater connections between farmers in various value chains, especially agro-processing, and increasing efforts to attract foreign direct investment into agriculture are essential. Connecting rural areas to markets and pursuing expansion of innovative credit access programs should be prioritized in lower-middle-income countries. Affordable mechanization should be a focus, and opportunities for solar energy, mini tractors, minor processing equipment should be made available and expanded upon.

Fragile States

Dr. Adelaja described the relationship between resilience and fragility. Resilience and fragility cannot be ignored in SSA countries because of the growing incidence of conflict, climate change, economic shock, and the new pandemic. The current fragile states are the Central African Republic, Somalia, Zimbabwe, the Democratic Republic of the Congo, Chad, South Sudan, and Sudan. There are other states that are arguably fragile, but their resource richness masks their fragility. The root causes of fragility include inequality, lack of voice, ethnic fractionalization, governance issues, and lack of economic progress. Exposure to conflict, climate, health, and economic shock tend to throw countries off their growth path. Lack of resilience inhibits the ability of countries to mitigate shock. Countries that are resilient tend to be able to weather the storm and bounce back quickly. Countries that are not resilient are thrown off their growth path for much longer and may require assistance with humanitarian programs and intervention, resettlement programs, rehabilitation, peace building, and redevelopment efforts to get them back on track. It is important to note that resource-rich states are also thrown off their path by their resource dependence.

For fragile states experiencing conflict and unrest, fragile systems, significant poverty, governance issues, and destruction, the overarching goal should be to restore political stability and begin to rebuild the rural economy. To achieve this, countries should focus on restoring security and political stability, invest in peace-building activities, and increase the voice of rural communities. Humanitarian programs and safety nets should be used to reduce household deprivation. Countries should rehabilitate farming systems that have been destroyed, including supporting resettlement efforts, as people move back into their farming communities. It is also important to rehabilitate rural and community infrastructure, including health and education. In some fragile countries, basic infrastructure, such as community wells, have been destroyed, so help is required to get countries back on track, recognizing that there is an opportunity to build back better through this support. It is particularly important for fragile countries to focus on strengthening the country's capacity

to formulate policy and improve their budget management systems. This is particularly important for the ministries of agriculture, which advocate for agriculture and budget.

Resource-Rich Countries

Dr. Adelaja noted that the mineral wealth of resource-rich states tends to mask some degree of dysfunctionality. Resource-rich countries have not invested their high revenues effectively and have a non-farming mineral sector that tends to compete with agriculture and with some of the other non-agricultural sectors that need to grow in a transformational way. These countries typically also have overvalued exchange rates driven by commodity cycles, making economic diversification difficult. Such countries include Angola and Zambia. Resource-rich countries have significant growth volatility and low resilience capacity. The recommended overarching goal for interventions in resource-rich countries is to fight Dutch disease¹ through target agricultural support and inclusivity.

Resource-rich countries can achieve this by carefully managing Dutch disease, reducing economic volatility, expanding R&D to a wider variety of commodities, and engaging mission-oriented universities in agricultural research. Extension also needs to be reformed in these countries, focusing on accountability, stakeholder voices, and more demand-driven services. To create an enabling environment for agriculture and agri-allied businesses, resource-rich countries should aim to attract foreign direct investments into agriculture, expand their rural transportation and market infrastructure, focus on quality-assurance systems, and expand credit access to farmers and the rest of the economy working with the private sector.

Dr. Fox stated that USAID's overarching goal is country self-reliance, or basic economic, political, and social development. Transformation and resilience are required for countries to become self-reliant. This includes the agriculture sector as well as the development of a modern non-farm, private sector. The two work together and should not be considered separate objectives.

The implication is that USAID should not pull out of the agricultural productivity space because agricultural productivity is so important to USAID's other objectives, including overarching self-reliance and achieving tangible progress on the Global Fragility Act, Prosper Africa, etc. Moreover, agricultural productivity is important to countries' goals. Very few other donors can replace USAID's role, especially, for example, in private sector engagement. The strength of the US agricultural system has been its continuous private sector engagement, and that has carried over to US development assistance. No other donor brings this strength to the table. The US private sector and university-led R&D system has developed relationships throughout SSA and may have a comparative advantage in supporting the development of strong private and public sector agricultural institutions in Africa. Lastly, the skill sets among USAID staff are not found in most other bilateral aid

¹ The Dutch disease refers to an economic paradox that occurs when large resource discoveries in oil or minerals harms a country's broader economy. Symptoms include a rising currency value leading to a drop in competitiveness and loss of jobs in other tradeable sectors. Resource discoveries can also lead to increased rent-seeking behavior and a decline in governance and public sector management effectiveness.

agencies. USAID has been a thought leader and an innovator on agricultural policy, capacity development, and private-sector-led development.

A second message is that a one-size-fits-all approach cannot be used to support SSA's transformation. As USAID is considering a third round of the US Government Global Food Security Strategy, the team recommends that when considering interventions, USAID differentiate by type of country and where that country stands in terms of economic transformation and resilience, because the policy levers are quite different. For example, in resource-rich countries, we cited the importance of managing Dutch disease. That is a macroeconomic challenge. This is not a challenge that a food security strategy could manage on its own. That does not mean that agriculture should not be important in the US government country strategy in a particular country, but it is important to recognize that macroeconomic conditions dominate. Likewise, with fragile countries, agriculture-led growth is difficult to achieve when there are land conflicts and restricted mobility for travel or farming because of violence. We need think about the relevance of an agriculture-led growth strategy in this context. A nutrition strategy is relevant, but not necessarily an agriculture-led economic growth strategy. The balance of how to achieve nutrition, resilience, and agriculture-led growth objectives differs by country, even in the lower income vs lower-middle-income countries. In lower-income countries, the income level of households is too low, and the income elasticity of demand for dietary diversity is too low at those income levels to achieve it by agriculture-led growth alone. In these contexts, the health system and the water system need to be involved. In lower-middle-income countries, in contrast, there are more of these conditions in place, and agriculture-led growth can be expected to also address some of the nutrition points.

Dr. Keenum thanked the study team for their outstanding presentation and hard work in creating the report. He called on Dr. Danielle Resnick to conclude the presentation session of the meeting.

Improving the Quality of Government Spending on Agriculture

Danielle Resnick, Senior Research Fellow and Team Leader, Governance, Development, and Strategies Division, International Food Policy Research Institute (IFPRI)

Dr. Resnick's remarks focused on the political economy and governance issues that need to be considered for agriculture to achieve its potential within Africa.

Dr. Resnick reviewed four policy pillars or axes considered important for supporting agriculture. The first policy pillar focuses on creating a broader enabling environment to support agriculture, building human capital, strengthening regulatory systems, and minimizing arbitrary trade distortions. The second policy pillar focuses on scaling up productive and equitable investments in the agricultural sector. The third policy pillar addresses policy implementation bottlenecks. We know that most policies falter at the level of getting implementation on the ground or getting policies implemented in the way they were designed. The final policy pillar focuses on enhancing value addition through selective interventions, including through different agricultural processing interventions. Overall,

there are different political economy and governance issues that permeate each of these areas.

Dr. Resnick first discussed the enabling environment policy pillar. There is a rich scholarship on price distortions and the political economy of price distortions for African agriculture. The quintessential work of Bob Bates discussed the use of price distortions up through the early 1990s, which were driven by one-party states' suppression of agriculture to cater to a restive urban class and to avoid protests in urban areas. Since the 1990s, democratization in the region was credited with relative rates of assistance that tended to favor agriculture over non-agriculture. The reasoning was that, with democratization, rural voters had greater weight in the policy process. There are, however, still large trade distortions, even in democracies, and particularly for politically important grain crops. More than 80% of export bans from 1988 to 2017 occurred just after the year 2000. One of the reasons for this, particularly in more pluralistic systems, is the capacity for well-organized interest groups to lobby for their own position. For example, in Zambia, there is a lot of volatility regarding maize export bans, often due to the government having trouble balancing the interests of powerful farmers' organizations, millers' organizations, grain traders, and sophisticated urban consumer groups. There is a lot of backtracking regarding export taxes and bans. Distortions are not bad on their own. Many OECD countries and Asian developmental states², which African countries are often told to emulate, also use distortions. However, distortions need to be strategic, rather than arbitrary or volatile, as this harms the private sector. A strong state capacity and resistance to the demands of the loudest lobbying groups are required.

Dr. Resnick discussed issues related to the second important policy pillar, scaling up productive and equitable investments. In the African region, as in most parts of the world, politicians favor attribution for policies with high visibility and short-term benefits for which they can be credited within an electoral cycle. This is a common explanation for why African agricultural budgets are more skewed toward highly visible outputs, such as input subsidy programs or infrastructure programs, rather than low-visibility public goods, particularly agricultural R&D and extension. On top of this, presidential initiatives can also be divorced from institutionalized policy planning frameworks, like national agricultural investment plans and medium-term expenditure frameworks, leading to supplemental budgets being approved without parliamentary oversight. Certain conditions may create incentives for a longer-term agricultural investment. In some cases, political elite have an agricultural background. In others, a higher share of commercial farmers sees the value of hybrid seed or investing in a quality agricultural extension system. In other situations, in more autocratic systems, food insecurity is seen as a threat to regime legitimacy. Therefore, there is a large incentive to ensure long-term investments and agricultural development.

Dr. Resnick mentioned that of the many challenges related to the third policy pillar, implementation bottlenecks, two stand out. One implementation challenge is the

² The "developmental state" concept emerged to explain the rapid economic transformation of East Asian countries in the 1950s and 1960s. Key features of such states included a central role for government intervention, industrial policy, and a meritocratic bureaucratic isolated from political interference.

undermining of incentives through the principal–agent problem³, particularly between politicians and bureaucrats. Political interference is especially prevalent in the bureaucracy within SSA. One overt instance occurred in Uganda, where the military was brought in under Operation Wealth Creation to serve as extension agents under the guidance of the President’s brother. Other subtle instances of political interference include national agricultural research staff receiving civil service pay scales that vary from those of university scientists, creating disincentives for research. According to IFPRI research, this is hindering the growth of a new generation of scientists within the National Agricultural Research Systems (NARS). These issues can be demoralizing and can reduce incentives among those charged with implementation.

Dr. Resnick highlighted vertical and horizontal coordination of agri-food responsibilities as a second key implementation challenge. An example of horizontal fragmentation is when agricultural R&D falls under the mandate of a ministry of science and innovation rather than a ministry of agriculture. Vertical fragmentation occurs as, increasingly, many countries in Africa have adopted decentralization initiatives and devolution of services to the local level. Agricultural extension is one of the services that is often devolved under the mandate of ministries of local government. For example, in Ghana, after the agricultural extension services were devolved in 2012, there was a decline in agricultural budgets as local politicians prioritized more visible budget items, such as schools and health clinics, over agriculture. With an increased shift away from focusing on agriculture toward supporting agri-food systems, the challenge of vertical and horizontal coordination will become more pronounced and will push consideration of whole-of-government responses.

Dr. Resnick reflected on the fourth pillar, enhancing agricultural value added. Enhancing agricultural value add is closely related to the four country typologies described by the study team, because successful agro-industrialization requires moving beyond enabling environments toward creating strategic environments. Enhancing agricultural value add is not something that fragile states would be expected to do but rather lower-middle-income countries. Enhancing agricultural value add requires high state capacity to address upstream and downstream coordination failures, to help businesses deal with self-discovery externalities, and to foster growth coalitions between businesses and states⁴. Growth-oriented business-state relations exist when the state and business have overlapping interests and cooperate to increase investment and key public goods, in contrast to predatory, collusive, or capture-based coalitions between state and the private sector. A review of evidence about the agro-industrial policy in Africa indicated that agro-processing sectors where there is some type of benefit for the ruling party coalition have tended to be favored by elites in terms of new initiatives. Two examples include the Ugandan dairy industry versus fish processing and sugar processing versus the fish sector in Mozambique.

³ The principal–agent problem refers to inconsistencies between the goals of an implementing agent and those of the principal who delegated power to that agent.

⁴ State capacity refers to the technocratic skills, resources, and infrastructure to effectively implement policies as intended. Self-discovery externalities refer to the extra monetary and time costs confronted by businesses as they try to identify new products that can be profitably produced.

Dr. Resnick stated that it is important that advocacy for agro-processing or agro-industry avoid exacerbating social divisions, especially in formerly fragile states whose axes of division and cleavages are still present. For example, environmental concerns over land and water use, or employment benefits, could be seen to disproportionately benefit certain communities over others.

To conclude, Dr. Resnick noted that state capabilities, whether in implementation or scaling up investments, are key and point to the need to strengthen public sector management and oversight, not just in ministries of finance and planning but also for budgeting and monitoring and evaluation (M&E) oversight throughout agri-food ministries and agri-food systems. Dr. Resnick recommended supporting governance software, including parliamentary agricultural committees, audit institutions, and revenue agencies.

A second recommendation is creating constituencies for reform from the bottom up, particularly among citizens and business. Given politicians' preoccupation with policies that favor voters, it is important to consider how to encourage citizens to think about the benefits of low-visibility goods like agricultural R&D. This includes improving budget transparency—which is quite low in the region—and citizens' access and oversight of agricultural budgets. Strengthening smallholder and business organizations is also important to ensure equal standing at the negotiating table with governments.

A third recommendation is enhancing policy coherence. African governments have committed to many different goals, including the agriculture but also in health, education, and decentralization, so it is important that some initiatives pushed on the agriculture side are not undermining initiatives that have been committed to in other sectors.

A fourth recommendation is avoiding a one-size-fits-all approach and recognizing country typologies in terms of economic circumstances, political incentives, and state capacities. The variations in countries suggest the need for more realism in pushing for continental commitments and targets through the African Union.

Dr. Keenum thanked Dr. Resnick for her presentation. He introduced the next session, which was BIFAD members' questions and discussion.

Questions by BIFAD and Discussion

Moderator: Clara Cohen, BIFAD Executive Director, USAID

Dr. Cohen congratulated the panelists for the outstanding presentations. She noted that a 25-minute Q&A session would be held. Questions would be received from BIFAD members first. Audience members were requested to submit their questions into the Q&A box for the next session. Dr. Cohen invited a question from BIFAD member Dr. Pamela Anderson.

Dr. Anderson thanked the five panelists for their excellent presentations and the exciting work completed in the study. She noted that phase three of Feed the Future will begin in 2022. In preparation for this new phase, over the coming year, a new global food security strategy will be drafted. In the work that was presented, the team very appropriately took a

broad lens, but many of the recommendations, such as large infrastructure investments, large agricultural investments, governance issues, land tenure, and access to credit, are investments that are made the country level, with assistance from partner agencies. Dr. Anderson hoped that, when BIFAD issues the full report, USAID will be able to share it with USAID missions, but also with the World Bank, the African Development Bank, and IFAD, in accordance with the broader mission.

Dr. Anderson asked the panelists to reflect on USAID's priority investments moving forward with a new global food security strategy, specifically around capacity development, an area that USAID has invested in significantly, despite the sense that, in recent years, the strategy and investments have not been as strong as in the past and considering a new Local Capacity Development unit that has recently been established at USAID.

Mr. Jim Ash thanked the panelists for the fascinating presentations. He asked how large a role country governments' own research and development investments played in countries that exhibited significant improvement and growth. He also asked if the increase in productivity was related more to changes in production methodologies, to changes in crop choice and diversification, or to development of stability, e.g., crop insect resistance. Mr. Ash asked where the team would spend \$1 to improve agricultural development in a smallholder community if smallholder productivity has led to significant positive change and that not all countries can increase agriculturally appropriate land.

Dr. Brady Deaton commented that the presentations highlighted a fabulous, high-quality study. A common theme each speaker raised was education. Dr. Deaton asked if education should be a cohesive major point of the transformation effort. He noted that Dr. Fox mentioned the need to focus on learning, while others mentioned adult education and expansion of extension. Dr. Deaton asked if education, as a major investment sector in the economy, deserved a special thrust of its own. Looking forward to the next phase of Feed the Future, he asked if expanding capacity in the educational sector could capture the ability to use transdisciplinary educational approaches and research and innovations in agriculture that can occur when educational institutions play a partnership role with local governments and with the national government, as they have and do in the United States and in Asian countries. In summary, rather than bringing in education as a fragment, it should be pulled together as a cohesive whole and developed in a more methodical fashion.

Mr. Lackey stated that he enjoyed the presentations and looked forward to the follow-up. Recognizing that all countries are not equal and cannot be treated the same, Mr. Lackey asked the speakers what key catalysts of development fall under the subsector of technology, whether there is a specific area of technology that seems to help, and what overarching catalysts fall under capacity development.

Referring to the principal-agent problem in Dr. Resnick's presentation, Mr. Lackey noted that frequently there are collaborative developments or direct funding in partnership with other organizations. Mr. Lackey asked if methodologies exist to embed leadership or individuals with accountability standards to make sure that actions and metrics are pushed into the

system, in addition to being measured as results come out. He also endorsed Dr. Deaton's question about incorporating education into structures.

Dr. Keenum was very impressed with the presentations. He particularly appreciated the discussion of country self-reliance in terms of economic development and agricultural product development, recalling a trip to Ghana to visit a cocoa processing plant and fruit processing facilities for international export with former President Kufuor. Dr. Keenum noted that, just as Dr. Resnick had touched upon in her presentation about broad enabling environment, these facilities were made possible because of the Ghanaian government's role in creating an investment-friendly environment for agricultural processing businesses. Dr. Keenum stated that in countries that had the potential, government must create a pro-business market to entice businesses to relocate and invest. He asked what role USAID could play in working with governments to create pro-business environments for agricultural investment.

Dr. Cohen opened the floor to the presenters to respond to the questions. She called on Dr. Jayne to initiate the discussion and asked presenters to consider the direct roles of USAID and their priority investment areas when responding.

Dr. Jayne responded that in response to Dr. Anderson's question about Feed the Future 3.0, one crucial aspect of the study is the importance of agricultural R&D in promoting agricultural productivity growth. Keith Fuglie's work demonstrated just how important agricultural R&D is. Extension systems do not have much to offer unless they have new technologies and innovations to put on the table. Except for fragile countries, a key priority is to rehabilitate, strengthen, and sustain agricultural R&D technical innovation. That ties directly to Dr. Deaton's question about education because the quality of the workforce in any country is influenced by the skill level and training of people graduating from that country's universities. Although less than 10% of Africans are likely to attend university, there is a huge diffusion effect from those who are trained in tertiary education, because the graduates of tertiary education, in turn, become secondary school teachers and fill the ranks of technical and vocational education and training schools (TVETS), agricultural training colleges, cooperatives, and extensions systems. The quality of a country's tertiary education also influences the pace at which it develops a cadre of advanced-degree agricultural scientists who contribute to that country's technical innovation and growth. Dr. Jayne highlighted this profound diffusion effect and said that the role of education is highlighted in the report.

Dr. Fox also responded to Dr. Deaton's question on education. She explained that the Bureau for Resilience and Food Security is one bureau within USAID, but there is also a unit for education with an education policy and an economic growth unit with an economic growth strategy. The USAID education policy⁵ was released in 2018 and covers primary, secondary, and higher education. Dr. Fox said that Africa needs to address a serious learning crisis. The African region has funded education substantially but is not getting value for money. With fertility rates of four to six children per woman, the education system must continue to

⁵ USAID Education Policy at <https://www.usaid.gov/education/policy>

expand, and if the system is not delivering quality—because most fourth-grade teachers cannot pass a fourth-grade exam—it is necessary to deal with the learning crisis at the primary and secondary levels. Dr. Fox agreed with colleagues in institutions of higher education about the importance of higher education in Africa but called for new funding models and public-private partnerships, including in the agricultural sector. In terms of special treatment for education in Feed the Future, colleagues from USAID worked with the education group on the education policy and on implementation of the education policy, but the focus should be public-private partnerships, better governance, and new modes of funding for affordability of expanded education.

In response to Dr. Keenum's question, Dr. Fox stated that USAID is about to launch a new economic growth strategy, which will cover the enabling environment for business, including what actions governments should take, for example, to increase investments in infrastructure, improve regulation of markets, and solve coordination problems. The strategy will be launched in January 2021.

Dr. Fuglie spoke specifically to the questions raised about sources of growth and where the best value of agricultural investment might be for public resources. Looking at the productivity growth in Africa, Dr. Fuglie believed that it is a result of improved technologies being adopted by farmers, which not only raises yields, but protects crops from diseases and other environmental constraints. He noted that there had been recent success with drought resistant crops, drought-resistant varieties, disease-resistant varieties, and so forth.

There is a combination of resilience and yield improvement built into a lot of the technological developments coming out of the R&D system. In addressing the best value for one additional dollar, evidence from the agricultural public sector in Africa seems to suggest that it is the agricultural R&D system, as well as rural infrastructure, especially feeder roads to cut travel time for farmers and to improve their market access.

Dr. Fuglie also commented on education. Evidence suggests the importance of combining research and education at the graduate level. However, there has been a deterioration in the research capacity of universities in Africa. Research needs to be shored up to sustain the capacity of the entire agricultural innovation system in Africa.

Dr. Adelaja referred to Dr. Keenum's question about the importance of an enabling environment and what could be done to help countries improve their environment for business. He felt that there is still a need for more research on the role of better business climates in facilitating economic growth and development, particularly targeted to the categories of countries discussed in the report. It is also important for technical assistance programs to focus on educating the government, not just giving them research information or the empirical evidence but helping them to understand how much their countries might grow if they fixed some of the bottlenecks in their business environment.

Dr. Resnick responded to Mr. Lackey's question about principal-agent issues and ways to embed leaders with accountability standards. She also stated that there are lessons relating to Dr. Anderson's question about capacity development. Many different public sector

capacity models are being experimented with across the region. For example, the use of performance contracts is increasingly being explored as a possible method. Rwanda is one of the archetypal cases through their *Imihigo* system, in which bureaucrats were accountable to different ministries and to the president, helping to build accountability into the system. Presidential delivery units, in which a set of objectives is embedded in the office of a high-level official (e.g., the president, prime minister, or minister of finance), can also be used to provide guidance and create performance standards. Different models can be examined in more depth to see which work and which do not, to gain traction on capacity development initiatives. Dr. Resnick said that Dr. Keenum's comment about the enabling environment is also very important. It does not mean that the public sector must step out of the way to allow the private sector to operate; the public sector has quite an active role in that setting. Past President Kufuor was credited with transforming the environment in Ghana to one that was more pro-business. Previous governments had been very distrusting of businesses, so Dr. Keenum's example was very apt.

Dr. Fox responded to the issue of technology. African countries need technology transfer to help them raise productivity as well as the ability to adapt technologies. Agricultural R&D helps them adapt the technology, but then the technology must be shared. There are other important factors, including trade openness and not restricting the entry of new technologies. Many countries restrict the entrance of new technologies in agriculture, as well as other sectors. A competitive private sector is more likely to bring in new technologies and use them. Lastly, Dr. Fox stated that foreign direct investment (FDI) has been one of the most effective vehicles of technology transfer. She argued that secondary education is needed to absorb much of the new technology (i.e., people need to be able to follow directions), and some higher education is needed as well.

Dr. Cohen thanked all the BIFAD members for their questions and the presenters for the responses.

Public Comment Period

Moderator: Clara Cohen, BIFAD Executive Director, USAID

Dr. Cohen transitioned to the public comment period. Members of the audience were requested to submit their questions to the Q&A box for the presenters. They were also asked to include their organization and the name of the person to whom they were directing their question. Dr. Cohen mentioned that any unread comments or questions would be included in the official record of the meeting, which BIFAD would consider when formulating their findings, conclusions, and recommendations from the meeting.

Dr. Duncan Boughton from Michigan State University, asked, given the weak National Agriculture Research System (NARS) in Africa, how capacity can be built so that increases in R&D expenditure can be more effective.

Dr. Fuglie responded that research tends to work like "slow magic". It takes a long time to develop new technologies and get them out to farmers. Research investments need to be steady and, sometimes, payoffs are not seen for years or decades. Dr. Fuglie stated that a lot

can be done with research spending in the short-term, when governments are committed, especially in an environment like Africa, where there are strong regional centers that can be drawn from, including the Consultative Group on International Agricultural Research (CGIAR) system, which targets half of its resources toward African agriculture, as well as regional centers of excellence in different commodities. It is possible to leapfrog and, through the technology transfer process, make good innovations available quickly by building on these international connections; focusing the NARS effort, especially those that are nascent and lack capacity for deep science; screening and testing materials from outside; and adapting those to local conditions.

The history in low-income countries has been to focus on food crops and major staples, but once farmers and consumers start earning more money and these items become more affordable, they quickly move to diversify into other types of commodities. Low-income households spend most of their money on basic staples. As soon as they receive a little bit more income, they move to diversify their diets into meat, milk, vegetables, and fruits. Dr. Fuglie stated that there is increasing market demand for these kinds of products. That provides a market opportunity for farm diversification and agri-business investment to meet this growing demand. Therefore, much can be done with research investments in the short-term by focusing on the adaptation strategy linked to the international and regional centers of excellence together with infrastructure improvements to link farmers to markets.

Dr. Hillary Egna, Oregon State University, requested additional information on the relationship between agricultural labor productivity and poverty, especially for lower-middle-income countries. She asked for the recommendations for countries in the lower right quadrant of the figure (see slide 13 from the presentation)⁶.

Dr. Jayne noted that the lower right side of the figure included countries that were not achieving agricultural productivity growth, labor productivity growth in agriculture, and had either small increases in poverty rates or poverty rates were stagnant. Dr. Jayne said that the priorities would be the same for these countries: R&D, extension, enabling environment, infrastructure, education, and improving tertiary education. He noted that there have been several meta-studies done on this subject. He referred to Mr. Ash's earlier question about the greatest impact for monetary value. Several studies⁷ have been done in Asia and other regions that analyzed the payoffs to poverty reduction and economic growth from alternative public investments in agriculture. The top investments with the highest payoff are always in R&D, enabling environment to improve policies, and extension systems, when they work well. In contrast, input subsidy programs, credit subsidies, and mechanization subsidies are usually near the bottom of the list in terms of low payoffs to poverty reduction and economic growth. This gives a general notion of where the biggest bang for the buck will be, and it applies to those countries that have not gotten agriculture moving much.

⁶ https://www.aplu.org/projects-and-initiatives/international-programs/bifad/Jayne_Adelaja_Fox_Fuglie_FINAL.pdf

⁷ Mogues, T., Yu, B., Fan, S., and McBride, L. 2012. The impacts of public investment in and for agriculture: Synthesis of the existing evidence. ESA Working Paper No. 12-7. Food and Agriculture Organization of the United Nations, Agricultural Development Economics Division. Online at <http://www.fao.org/3/ap108e/ap108e.pdf>

Dr. Cohen summarized questions and comments from Dr. Elsa Murano, Texas A&M University Borlaug Institute, Ms. Vivian Bernal-Galeano, Virginia Tech, and Dr. Deanna Behring, Penn State University, about the relationship between low government effectiveness in resource-rich countries and corruption, inequality, and lack of world voice.

Dr. Adelaja responded that, in resource-rich countries, there is a tendency to overly focus on the sector that is bringing in resources, in some cases, oil, and in other cases, minerals. The stakeholder base in these countries usually reconfigure to center around these major sectors, so the political voice of farmers or other sectors become weak. These countries also tend to have a significant amount of corruption. People see the wealth around them, but economic conditions are not always good enough for a large section of society. This is one of the reasons why we see higher levels of corruption and ineffective governance. Dr. Adelaja mentioned that in the case of Nigeria, where the financial resource contributions of oil are still significant, there is an intrinsic bias against other industries. People do not see the value of agriculture. Furthermore, resource-rich sectors attract rent-seeking and leads to an increase in corruption and insider dealing.

Dr. Fox added that there is a deep literature on the resource curse, including a long-term study of the United States. The literature shows that US counties that were mineral rich in the 1800s have more violence today, suggesting that the resource curse can be very long-lasting. The resource curse comes about because the resource money comes into the public budget. There is no reason why that money must come in transparently. If taxes are collected to pay for things the government does, the government at least must explain to people where their tax money is going. However, if the money was obtained from the resource, there is no need for transparency. The elite compete for that resource money for private gain rather than for public gain. This is a fundamental governance challenge that dominates. The resource curse does not occur in Norway or Canada because resources in those countries were discovered after the institutions of government, voice, and accountability had already been developed. The problem for a country such as Angola, or in many countries that were colonized, is that resources were extracted well before the development of institutions of government. Resource extraction inhibited the development of institutions of government. The hope is that, in countries such as Kenya, Ghana, and Senegal, which already have some type of established government institutions, the government can avoid the resource curse.

Dr. Fuglie added that the resource curse is not just about corruption and poor governance; it can also affect well-governed countries. The term “Dutch disease” originated after the events of the Netherlands’ economy, when it discovered North Sea oil, and then all other sectors of the economy started to suffer. This was not because of poor governance, but due to the overvaluation of the exchange rate that hurt the competitiveness of all other sectors. Dr. Fuglie stated that the report references comparisons between Indonesia and Nigeria, and how they handled the windfall of oil revenues in the 1970s. Both countries experienced relatively high levels of corruption from oil wealth, but Indonesia targeted a lot of its resources to agriculture and managed its exchange rate well, not to discriminate against its agricultural sector. Thanks to these actions, Indonesia was able to sustain significant agricultural growth that reduced poverty and has continued to perform better since that

time. Thus, it is possible, with good macroeconomic management, even with relatively poor governance, to address some of the challenges faced by resource-rich countries.

Ms. Vivian Bernal-Galeano, Virginia Tech, asked if there are any significant differences in the public perception of new technologies and the science between lower-middle-income countries and resource-rich countries.

Dr. Fuglie believed that the issue comes down to the regulation of technologies and the willingness to accept new technologies. There has been a lot of resistance to genetically modified crops; many people have written that lack of access to these innovations are disadvantaging farmers in Africa. This prevents many good innovations from addressing issues that affect resilience and resistance to pests and diseases. Dr. Fuglie felt that the question is critical, and the investment that USAID has been making to build capacity within these countries to create trustworthy regulatory systems for these technologies is an important step to addressing these bottlenecks.

Dr. Julie Howard, Center for Strategic and International Studies, asked what, beyond resilience, should USAID's priorities be for responding to growing environmental health, nutrition, and climate change issues.

Dr. Jayne responded by identifying the role of resilience in contributing to other goals such as environmental health, nutrition, and adaptation to climate impacts. The study results indicate that in countries that can get on a growth path, transform their economies, and invest in infrastructure and public service delivery, growth has made them resilient. Economic growth leads to resilience, and resilience leads to economic growth. Improved resilience is important for agricultural productivity growth and other engines of growth. There is a feedback loop between resilience and economic transformation that is one of the top-level conclusions of the report. It indicates that USAID was on the right path to highlight resilience and to highlight resilience, even in naming the new bureau, the Bureau for Resilience and Food Security. Those interconnections between economic growth, productivity, and resilience have not come out so clearly in the past but can promote resilience in the future.

Dr. Cohen read a final question from Dr. Jim Oehmke in the Bureau for Resilience and Food Security about the 2017 Global Food Security Strategy, which recognized the importance of agri-food systems as part of economic growth. She asked the presenters to comment on what should be the right mix of government and donor programs to support farm-led productivity growth and efforts to promote investments and employment in agri-food systems.

Dr. Fox stated that there should not be a gap between the role of government and the role of donors. If USAID is interested in self-reliance, it should primarily support government programs, complementing and amplifying what the government is able to do. The interventions that develop the private sector overall also develop agri-food systems. The markets that do not work and inhibit development of the private sector, and the ones that have externalities, also inhibit the development of agri-food systems. So, if the environment, water, and pollution are not regulated, they inhibit the development of agri-food systems and

other systems. Financial sector regulation and deepening are important for agri-food systems because they depend on private investment in new enterprises, as well as for other parts of the economy. Therefore, anything that encourages the private sector—bringing in new technology, lengthening value chains, exporting, importing, and trade openness—is going to help develop agri-food systems. The range of things the government must do is quite complicated. For example, to export high-value crops, government must develop quality assurance systems, the port needs to function for agri-food systems, products must be able to come in and go out, and the transportation and energy systems need to function. The development of agri-food systems requires a nimble government and a more sophisticated approach to governing than simply trying to get growth on the farm. The linkages between on the farm and off the farm must be nurtured and supported.

Dr. Fox gave a final comment on agricultural labor and productivity: the initial conditions in the agricultural system matter. While countries such as Brazil were able to gain a lot of agricultural productivity in their agricultural system because the land was very concentrated, it did not help to reduce agricultural poverty; whereas in Africa, the land is not yet very concentrated, so it still has potential to do that.

Dr. Cohen ended the Q&A session by thanking the panelists for their responses and the participants for their thoughts and questions. Dr. Cohen added her congratulations to outgoing BIFAD member, Dr. Cruzado for her contributions to the agency and to BIFAD over the years. Further thanks were extended to APLU for the years of service to BIFAD, especially to Mr. McPherson, Ms. Johnson, and Mr. Merker, as well preceding colleagues who had worked with BIFAD in the past. Their contributions to USAID and to BIFAD leadership were very much appreciated.

Dr. Keenum thanked Dr. Cohen for moderating the Q&A session. He also thanked the audience and participants for their questions and the presenters for their answers. The meeting was turned over to Dr. Jayne for closing remarks.

Closing Remarks

Thomas Jayne, Professor of Agriculture, Food, and Resource Economics, Michigan State University

Dr. Jayne expressed his gratitude to Dr. Keenum for the session. The comments received during the meeting will help the authors to refine and target the messages in the report, due to be completed toward the end of 2020. Fifteen to twenty-five years ago, people were expecting poverty reduction and rising living standards. They were thinking of this in terms of helping farmers to be more productive and improving their livelihoods, but without paying attention to changing the composition of the labor force, so that instead of having 80% or 90% of people farming in the country, it would trend down towards 10% or 15%. This attention to not just improving livelihoods in rural areas but also to stimulating the economic transformation process is much better understood today than it was 10 years ago.

The notion of structural and economic transformation and how it interacts with resilience is key to the report. As initially mentioned, Dr. Jayne said that the study team's top-level

conclusion was that, to promote resilience, promoting growth and productivity, especially in the main sector of the economy, which remains agriculture in most countries, is a key priority, as well as keeping cognizant of the diversity of the different categories and countries (the fragile ones, the resource-rich ones, etc.).

Dr. Jayne said it was a great pleasure to work with his co-authors Drs. Fox, Adelaja, and Fuglie. He also thanked Ms. Evgeniya Moskaleva, who provided excellent research assistance with this work. Dr. Jayne thanked BIFAD for helping to refine and set the parameters for the study, highlighting key issues. He also thanked USAID colleagues, especially those in RFS, with whom the team had several conversations and who helped to refine key issues. Dr. Jayne thanked APLU for the support provided over recent months.

Dr. Keenum thanked Dr. Jayne for the closing remarks. He thanked the presenters and the authors for their work and looked forward to seeing the final product. Dr. Keenum urged participants to continue to stay in contact with BIFAD and to submit any comments that they might have for BIFAD as a board.

Meeting Adjournment

Mark Keenum, Board Chairman, President, Mississippi State University

Before wrapping up, Dr. Keenum gave his appreciation to Dr. Cohen and Dr. Barnhart for their leadership. He noted Dr. Bertram's outstanding leadership and commitment over the years to USAID and its mission. He also thanked Dr. Jim Oehmke at USAID. He extended his appreciation to Ms. Johnson at APLU for her excellent work behind the scenes in guiding everyone, and her work and service to BIFAD. Lastly, he thanked Mr. Merker at APLU, as well as the APLU events team, Mr. Winston Savoy, and Ms. Kaelin Jackson, for all their help. Dr. Keenum adjourned the meeting.

Number of Participants: 122

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 10, 2021

Appendix 1: Webinar Chat Box

Winston Savoy, APLU Events: Hello everyone, thanks for joining us today! Closed captioning is enabled for this webinar. Please click the closed caption button in your toolbar at the bottom of your screen, then select show subtitle. A full transcription of the meeting will be shared with the recording at the conclusion of the webinar.

Clara Cohen: Welcome participants! We're glad you're here! Please submit your comments and questions during the meeting to the Q&A box. We will begin a public comment period at 2 pm CDT.

Clara Cohen: BIFAD's recommendations from its September 14 meeting on COVID-19 and nutrition are now available on the USAID web site:

<https://www.usaid.gov/bifad/documents/bifad-findings-conclusions-and-recommendations-september-14-2020-covid-19-and-nutrition>

Susan Johnson, APLU: [https://www.aplu.org/projects-and-initiatives/international-programs/bifad/Fuglie et al Harvesting Prosperity.pdf](https://www.aplu.org/projects-and-initiatives/international-programs/bifad/Fuglie%20et%20al%20Harvesting%20Prosperity.pdf)

Susan Johnson, APLU: Sorry, hyperlink didn't work.

Susan Johnson, APLU: Here it is again.

Susan Johnson, APLU: [https://www.aplu.org/projects-and-initiatives/international-programs/bifad/Fuglie%20et%20al Harvesting%20Prosperity.pdf](https://www.aplu.org/projects-and-initiatives/international-programs/bifad/Fuglie%20et%20al%20Harvesting%20Prosperity.pdf)

Susan Johnson, APLU: The Public Comment session will begin at 2:00 pm CDT. Please submit questions at any time using the Q&A feature.

Clara Cohen: Participants, thanks for all the great comments and questions so far.... please continue to submit questions and comments for the public comment period.

Brady Deaton, BIFAD: Thanks for being with us today! Much to ponder.

Brady Deaton, BIFAD: Thanks for joining our session!

Appendix 2: Q&A Transcript

<p>Why are resource-rich countries low in terms of government effectiveness? Is it because of corruption?</p>	<p>Elsa Murano, Texas A&M University</p>
<p>How are the equality indicators in these countries compared to low-income and lower-middle-income countries?</p>	<p>Deanna Behring, Penn State University</p>
<p>I wonder if these countries also have high Gini coefficients. (Measures of income inequality)</p>	<p>Vivian Bernal-Galeano, Virginia Tech</p>
<p>Would you talk more about the relationship between Ag Labor Productivity and Poverty, especially for lower-middle-income countries such as Kenya, but also for Zambia and Madagascar? In a chart you showed early in the session, what might account for the low pace of rural transformation shown for these countries and how is this slow pace related to ecological resilience or economic resilience (lower right quadrant of your chart)? Based on this analysis, should we be worrying about Kenya going forward?</p>	<p>Hillary Egna, Oregon State University</p>
<p>Many low-income and lower-middle-income countries in Africa have very weak R&D systems. Increasing public expenditure allocations to weak R&D systems may not be an effective investment unless their capacity is first increased. But capacity enhancement in R&D takes time. How important is it to make "patient capital" investments in country R&D systems in lower-income and lower-middle-income African countries? What is the potential contribution of US assistance in this space?</p>	<p>Duncan Boughton, Michigan State University</p>
<p>There has been a lot of discussion at the World Food Prize this week - and other venues - about the importance of significantly rethinking and revising food and agricultural systems to respond to growing environmental, health/nutrition and climate change issues. Beyond what you have said about resilience, do you have any other comments about priorities for USAID to respond to these critical challenges?</p>	<p>Julie Howard, Center for Strategic and International Studies</p>
<p>Are there significant differences in public perception of new technologies and science between lower-middle-income countries and resource-rich countries?</p>	<p>Vivian Bernal-Galeano, Virginia Tech</p>
<p>The 2017 Global Food Security Strategy recognized the importance of agri-food systems as part of economic growth. What should be the right mix of government and donor programs to support farm-led productivity growth and efforts to promote investments and employment in agri-food systems?</p>	<p>Jim Oehmke, Bureau for Resilience and Food Security, USAID</p>