**181st BIFAD Public Meeting**

***Food Security and Nutrition in the Context of COVID-19:***

***Impacts and Interventions***

**Meeting Minutes**

**Thursday, June 4th, 2020 – 1:30 PM to 3:30 PM EDT**

**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

Waded Cruzado, President, Montana State University

**Speakers:**

John Barsa, *Acting Administrator, U.S. Agency for International Development (USAID)*

Johan Swinnen, *Director General, International Food Policy Research Institute (IFPRI)*

Rajul Pandya-Lorch (Moderator), *Director of Communications and Public Affairs & Chief of Staff in the Director General’s Office, International Food Policy Research Institute*

Carl Pray, *Distinguished Professor, Department of Agriculture, Food, and Resource Economics, Rutgers University*

Jimmy Smith, *Director General, International Livestock Research Institute (ILRI)*

Shawn Baker, *Chief Nutritionist, U.S. Agency for International Development (USAID)*

Marie Ruel, *Director of Poverty, Health, and Nutrition Division, International Food Policy Research Institute (IFPRI)*

Saweda Liverpool-Tasie, *Associate Professor, Department of Agricultural, Food, and Resource Economics, Michigan State University*

Maximo Torero, *Chief Economist, Food and Agriculture Organization (FAO)*

**Board Member Introductions and Opening Remarks:**

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

Dr. Mark Keenum called the meeting to order and explained the role of BIFAD. BIFAD members introduced themselves. Dr. Keenum mentioned that the purpose of the meeting was to share the thinking of leading experts on COVID-19 impacts and to support decision making by USAID. Dr. Keenum mentioned that over 1,000 individuals had registered for the meeting and encouraged active participation. He then introduced John Barsa, Acting USAID Administrator.

**Opening Remarks and Stage Setting**

*John Barsa, Acting Administrator, U.S. Agency for International Development (USAID)*

Mr. Barsa expressed appreciation for the importance of BIFAD’s partnership to USAID decision making and to elevating USAID’s leadership in food security and nutrition. He explained that the global ramifications of COVID‑19 extend far beyond the health sector. Social distancing, restrictions around the operation of commercial businesses, and other efforts to limit transmission of the virus have successfully flattened the curve, but they've also come at a great cost. Access to basic services have been disrupted. Businesses have been forced to furlough or lay off employees, reducing household income and putting essential items out of reach for many. Local and national government structures have buckled under the strain of trying to manage the full spectrum of the pandemic's impact. He added that, most urgently, food security and nutrition indicators have deteriorated among vulnerable populations, proposing a serious risk to the gains that have been made against hunger and malnutrition. While these are often described as second‑order impacts of the pandemic, at USAID, they're the primary concern because lives are at stake. Before COVID-19, over 820 million were food insecure, and the pandemic will only exacerbate these numbers. Food and agricultural industries play an essential role for employment, income, and daily sustenance.

Mr. Barsa pointed out that although the entirety of the pandemic’s impact on the global economy remains to be seen, spikes of food prices or sudden loss of income can lead to wide‑spread food insecurity. Pervasive food insecurity often presages civil unrest and instability, which can then create a feedback loop with severe humanitarian consequences. Without timely, targeted, and meaningful interventions, the COVID‑19 pandemic could propel an additional 148‑million people into extreme poverty and subsequently food insecurity.

American interests are closely linked to global stability and human well-being. The U.S. government has demonstrated leadership and committed over $1 billion in assistance toward the COVID-19 response between USAID and the Department of State. The American private sector has committed an additional $4 billion, in an “All of America Response”.

Mr. Barsa explained that development challenges are rarely confined to one single sector.

There are often spillover effects across all areas of USAID’s work. That understanding—embodied by the concepts of resilience and fragility—has prompted USAID to undertake internal reforms to strengthen effectiveness, attack multi‑sectoral challenges, and think more strategically. USAID recently established its Bureau for Resilience and Food Security (RFS), which will build resilient communities, reduce hunger, poverty, malnutrition, and work hand in hand with USAID’s new Bureaus for Humanitarian Assistance and Bureau for Conflict Prevention and Stabilization to respond to global crises in a strategic and integrated fashion. With the new structure, USAID is better able to mitigate and respond to the impacts of COVID‑19 on food security, nutrition, and livelihoods.

Programs like the Feed the Future initiative, which work to root out hunger and foster self‑reliance of partner countries. He provided the example of a yogurt company in Uganda, which through support of Feed the Future is pivoting to safely selling yogurt directly to customers without physical contact and using marketing strategies to reach customers during a nationwide curfew. Supplemental funding from Congress is enabling Feed the Future to expand capability in priority areas, such as helping small businesses stay afloat and undertaking new analytical work to better understand COVID-19’s evolving impacts on food security and nutrition in developing countries.

Mr. Barsa warned though, that given the rapidly expanding scope of the pandemic, there is still additional support needed to meet the full scope of this challenge. There is still a lot to learn about COVID‑19’s unfolding effect on food security and nutrition, but the repercussions will be felt for years to come, long after the pandemic subsides. USAID will examine all of its investments around the world and devise a plan of action to assure they are aligned with the post‑COVID world. In doing so, USAID will seek the guidance of BIFAD and the universities and civil society organizations it engages as partners on how to address impacts.

Dr. Keenum then introduced Dr. Johan Swinnen, Director General of the International Food Policy Research Institute for the next session.

**Overview of Food Systems and Food Security Impacts**

*Johan Swinnen, Director General, International Food Policy Research Institute (IFPRI)*

Dr. Swinnen thanked USAID and BIFAD for organizing the meeting and inviting him to be on the panel.

He explained that COVID is causing a combination of economic recession and food system disruption, so both of these aspects must be addressed. Furthermore, COVID is affecting the poorest among the populations more strongly, so measures and policy should be targeted to those most in need. In addition, the impacts differ strongly between supply chains, allowing us to understand vulnerability of the different systems and identify what creative and entrepreneurial best practices can help supply chains become more resilient in the future. We should focus explicitly on gender and nutrition issues in the policy response because these factors are affected particularly by COVID-19. Dr. Swinnen said it is critical to move from crisis management to making our supply chains and our food systems more resilient for the future.

Dr. Swinnen shared preliminary results from IFPRI studies. COVID impact is a combination of a standard economic recession and food systems disruption. It is estimated that the numbers of people in extreme poverty could increase by almost 150 million people as a consequence of COVID-19 unless very significant policy interventions are introduced, and the majority of these 140-150 million people are in sub Saharan Africa and South Asia. We also know that the impact is not only on the amount of food consumed, but also on the type of food that people consume, and so there is a shift from more nutritious food, which is more expensive, to less nutritious food, which is less expensive. We see predicted reductions in meat, dairy, and fresh fruit and vegetable consumption.

In addition to the recession effect, which reduces access of poor people to food, there is also a major disruption of food systems, which is very different from the effects observed in the 2007 to 2011 period. The data show that the impacts of the disruptions vary quite significantly between different supply chains, and the variations are not random, they're systemic. Those parts of the supply chains which are more labor intensive are more affected by COVID 19, either by the disease itself, which affects labor, or by lockdown measures. Typically, in developing countries, supply chains in general are more labor intensive than in richer countries, which are more capital-, knowledge-, and automation intensive; therefore, developing countries suffer more. In richer countries, some parts of the supply chain, like meat processing or fruit and vegetable harvesting, are also significantly affected. Large-scale staples crop production is less affected in richer countries.

Country-specific modeling efforts for a number of countries show that economic costs of a lockdown result in declines in GDP for the economy as a whole. Several countries show that farming is relatively less affected, processing more strongly affected, and food services very strongly affected.

Consumers or country governments exhibit hoarding behavior when they perceive there will be a shortage of food. According to IFPRI simulations, the impact of export constraints imposed by grain-exporting countries will have a potentially large effect on countries that are importing these staple commodities, particularly rice. Therefore, it is a good thing that the WTO and G20 ministers have called for open trade to avoid the price effects seen in the 2007–2008 crisis.

Poor peoples’ food and nutrition security is disproportionately affected for a number of reasons. First, they spend much larger share of their income on food than rich people do, and their main production factor is physical labor, so they must go out and work to earn an income. If that is not allowed, it affects poor people and households much more than it affects richer people and households, which have access to a variety of ways of earning an income. COVID-19 is disrupting the labor-intensive food value chains more, as well as public social and nutrition programs, like school feeding programs, which are important to poor people. Especially vulnerable to COVID-19 impacts are children, women, and migrants, who can no longer travel to where they used to earn an income.

Dr. Swinnen presented recent survey results from Ethiopia, showing that income declines and nutrition effects are concentrated in the poorest households, which were already consuming less nutritious food before the pandemic (e.g., dairy). Looking at future impact in Ethiopia, data show that services will be affected more strongly than farming. In terms of the GDP impacts of the lockdown, estimates of GDP growth from different lockdown scenarios indicate that even with a fairly long lockdown scenario, the GDP will be higher at the end of the year but will be significantly less than the expected growth pre-COVID.

Policies needed to avoid food crises include: strong economic stimulus, social programs and safety nets, gender-sensitive programming, nutrition quality, not just quantity, “green lanes” for food trade, smart social distancing and food system innovation to prepare for the “new normal”, and transparency on global stocks and markets.

Dr. Swinnen concluded that key aspects of moving beyond crisis management include creativity and innovation in restructuring value chains and food systems, making food systems more resilience, and engaging both public and private sectors.

Dr. Keenum then introduced Ms. Rajul Pandya-Lorch, the moderator for the panel discussion.

**Promising Interventions to Support Food Systems and Nutrition**

*Moderator: Rajul Pandya-Lorch, Director of Communications and Public Affairs & Chief of Staff in the Director General’s Office, IFPRI*

Ms. Pandya-Lorch introduced the panel discussion, and then introduced the first speaker, Dr. Carl Pray, Distinguished Professor, Department of Agriculture, Food, and Resource Economics, Rutgers University.

**National and Local Policy Interventions to Support Trade, Finance, Markets, and Enterprises**

*Carl Pray, Distinguished Professor, Department of Agriculture, Food, and Resource Economics, Rutgers University*

Dr. Pray thanked USAID and BIFAD for organizing the meeting and inviting him to speak.

Dr. Pray summarized three main messages. First, the pandemic and related health policies have increased poverty and malnutrition, both because of the disease itself, the social distancing policies resulting in unemployment, and barriers to movement in food supply chains. Second, interventions are needed that focus on the private food supply chains and keeping markets open. This can be achieved by creating “green channels” for the movement of food and agricultural inputs, protecting the health of workers in food supply chains, and through relief programs. Third, in the longer term, the crisis presents an opportunity for policy institutes in the global south to build capacity and demonstrate what they can do to contribute to inclusive food policy‑making and evidence‑based decision‑making.

Private food supply chains are an important focus because these are the dominant source of food. In Africa 80% of the value of food consumed comes through these markets and are largely provided by the small and medium enterprises. Only 20% of the food consumed is produced and consumed on farm, and governments play a relatively small role in the total picture. In addition, food supply chains are a major source of employment. 65% of rural employment is in the food supply chain, and 25% of urban employment is in the food supply chain, which shows the importance of focusing on these chains because of the projected job losses.

He then outlined what interventions can be implemented in the short and long term to keep the supply chains open. First, “green channels” allow movement of food but also movement of agricultural inputs and labor between regions or across international boundaries. They should be clearly defined with input from key food supply chain actors. Open supply chains also require tariffs, taxes, and regulations on markets, and bans transfer of food and inputs to be reduced. Also important are ensuring the safety of labor, providing testing, and providing transportation for labor to move freely and help farmers produce food.

Second, food processing and informal and formal market operations must be maintained to the extent possible while still keeping workers and traders healthy. Completely closing down informal markets is not a possible option, but training, social distancing, and improved health infrastructure can be used to make markets safer. Third, ensuring the functioning of market infrastructure and communications is an important role for government. Fourth, relief programs should be targeted in such a way that they sustain the food supply chain and that distributed inputs and food don’t replace the food supply chain with entirely government services or block some of the activities that can be done best by the private sector. Relief programs should be targeted to vulnerable groups, such as women and minorities.

He discussed longer-term solutions. Food policy systems that have been put in place recently should continue to do their job and to prosper. Since 2000, or even before, there has been a substantial growth of research capacity and food policy advisory capacity in many of the African countries, and countries like India and Bangladesh have large policy advisory systems. All of these systems are still constrained by their limited human capacity, financial resources to get data or do analysis, availability of timely data, lack of input from the key groups in the policy‑making process, including agribusiness, women, and small farmers, and lack of inclusion of food and agricultural policymakers in formulating health and income distribution policies. The crisis is an opportunity to rebuild the policy advisory process by demonstrating what policy systems can do and that they are worthy of more resources from governments and donors. Food policy actors should be included in developing and strengthening COVID-19 responses and plans. Usually food and agricultural policy actors are not included in developing COVID response plans, which are typically developed by disaster management ministries or health ministries, but they need to be at the table. There is an opportunity for USAID and other donors to address constraints of food and agricultural policy advisory actors, to finance and to contract with them to do activities that are important for nations and for donors, and to ensure that they are involved in the COVID-19 response and rebuilding process.

Ms. Pandya-Lorch introduced the next speaker, Dr. Jimmy Smith, Director General at the International Livestock Research Institute (ILRI).

**Interventions to Support One Health and Hygienic Markets**

*Jimmy Smith, Director General, International Livestock Research Institute (ILRI)*

Dr. Smith thanked USAID and BIFAD for organizing the meeting and inviting him to speak.

Dr. Smith outlined three key messages that he wanted the audience to take away. First, human, animal, and environmental health are inextricably linked and require a One Health approach from grassroots to national ministries to global health initiatives and organizations. Second, a One Health approach can make essential contributions to ensuring food and nutrition security and resilience, particularly, in the developing world. Third, a One Health approach offers practical improvements to fresh food markets without jeopardizing human health, food and nutrition security, and resilience. The potential of this approach has been seen in past pandemics such as avian flu, swine flu, MERS, and SARS.

Progress in implementing a One Health approach has been slow. While we are sure about the technical possibilities of the approach, there are huge institutional impediments. We need to improve the institutional opportunities. Dr. Smith explained that in the classic approach in the current institutional configuration, the typical response is to ask questions such as “what do I have to do,” “what am I responsible for,” and “is this my job?” That approach needs to be replaced by a more horizontal approach to tackling diseases, asking the question, “what needs to be done?” Lessons of the pandemic show that we should move forward with a One Health approach and change institutional configurations and relationships.

The time between when an animal is exposed to a pathogen and when humans begin seeking medical help has implications to the cost of control. The longer time to detect the disease, the more expensive it is to control. Cost savings of a One Health approach are substantial. World Bank estimates suggest $25 billion invested in a One Health approach over 10 years can generate benefits of over $125 billion over the same period.

A One Health approach has particular benefits in the context of today’s crisis in food markets. As previously mentioned, 80% of food in developing countries comes from traditional markets, also referred to as informal markets, “wet markets”, or farmers’ markets. These markets are associated with the etiology of pandemics and therefore have become suspect, and in some cases, there are discussions about closing them. A One Health approach can help to improve markets in developing country contexts. Interventions must be tailor made in relation to the complex ways in which humans and animals interact in diverse environments from producer, trader, processor, vendor, and finally to the consumer.

Dr. Smith offered some interventions in three categories: enabling environment, training and simple technologies, and incentives.

The enabling, or regulatory, environment for controlling disease needs to be risk‑based and not a hazard‑based. Regulations must be co-created, targeted, and tailor-made to suit the issue. Wildlife could be banned from these markets, but not all animals are necessarily a threat.

Gender-sensitive training can be offered in simple technologies for controlling the wholesomeness of food in traditional markets. Simple and effective solutions, where meat is offered, include cutting boards, disinfectants, and safe containers for milk. If these solutions are practically applied, markets can be certified, offering incentives to consumer to pay more for safer food. Certification is recognition that food is safe.

Three categories of benefits will accrue from such interventions. First, fresh food will be more available, local consumers on a daily wage will have access to these foods, and producers will have daily income. Second, nutritional benefits will accrue because fresh food markets offer small daily quantities of highly nutritious foods, including milk and meat, in contexts where refrigeration is not possible. Third, a resilience benefit will accrue from varied and nutritious diets, regular food for those on low incomes, and well-nourished, healthier children who are less likely to be stunted.

Dr. Smith concluded by reiterating three important messages: (1) human, animal, and environmental health are inextricably linked and require a One Health approach, (2) One Health implementation offers an opportunity to ensure food and nutritional security and resilience, and (3) One Health can improve fresh food markets without jeopardizing human health.

Ms. Pandya-Lorch introduced the next speakers, Mr. Shawn Baker, Chief Nutritionist at USAID, and Dr. Marie Ruel, Director of Poverty, Health and Nutrition Division at IFPRI.

**Interventions to Support Nutrition, Social Protection, Emergency Response, and Access to Nutrition and Health Services**

*Shawn Baker, Chief Nutritionist, USAID*

*Marie Ruel, Director of Poverty, Health, and Nutrition Division, IFPRI*

Mr. Baker thanked BIFAD for organizing the meeting and inviting him to speak.

What to do now and what do we do as we recover

All actions guided by evidence.

Mr. Baker outlined topline messages that the current COVID-19 crisis is creating multiple types of shocks that will undermine nutrition, and that nutrition backsliding translates into increased mortality and decreased future potential of children. He explained that at USAID, recommendations have been developed for what should be done now during the response period and what should be done as recovery begins. He stressed that all actions should be guided by the best evidence available. He referred participants to a recently approved USAID [guidance document](https://www.usaid.gov/sites/default/files/documents/1867/External-COVID-19-Nutrition-Guidance-May-2020.pdf) with guiding principles and recommendations for mitigating potential nutrition shocks in the context of COVID-19. Although nutrition has achieved considerable momentum over the last 10 years, COVID‑19 has turned that on its head and has made a lot of other political priorities. He emphasized that nutrition cannot be ignored during discussions around the COVID response and recovery.

Mr. Baker used the conceptual framework from USAID’s multi-sectoral nutrition strategy to frame his remarks. In the framework, multiple sectors and multiple systems are needed to deliver nutrition, but under COVID, every system relied upon to deliver good nutrition is being hit at the same time.

* Livelihoods and food systems are being disrupted
* Health systems are taking a “triple hit” because they have to prioritize responding to the disease itself, they need to adjust their delivery of other services to reduce transmission risks, and clients are either less able or less willing to access services.
* Social protection programs are also being disrupted and can't flex to meet the additional need.
* There is a large burden of undernutrition that occurs in situations with complex humanitarian crises, and the humanitarian response system is being hit on two sides: increased demand because of the crisis and also compromised ability to deliver because of the need to reduce transmission
* Misinformation is a big issue, and there is particular concern around misinformation about breastfeeding that is undermining breastfeeding rates.
* Political prioritization has to be maintained during this crisis. Food and nutrition actors need to have a place at the table in COVID discussions.

He then turned it over to Marie Ruel to share the analysis that is guiding the way forward.

Dr. Ruel gave an overview of malnutrition and progress made in nutrition before COVID. Before COVID, 144 million children were stunted (low height-for-age) or suffered from chronic malnutrition. 47 million children were wasted (low weight-for-height), meaning that they suffered from acute malnutrition associated with high levels of mortality. 38 million children were overweight. There has been enormous progress in the last twenty years in reducing stunting, so it is important not to lose momentum and to backslide. Most of the burden of malnutrition is in Asia and Africa. 2 billion people suffer from multiple micro-nutrient deficiencies, including Vitamin A, iron, and zinc, which are important in protecting us from infections, especially in the time of COVID. Micronutrient deficiencies affect all countries and all people, not just mothers and children. Undernutrition in early childhood is associated with 45% of all child mortality during that period.

Dr. Ruel described who will be affected and how. The first effect will be on health and mortality because of disruptions in the health system, reallocations of resources to COVID, and closures of (or reductions in) preventive health and nutrition services. Increased maternal mortality is expected because services may not be available but also because they may not access services because of worries or concerns about contracting the virus or lack of transport due to mobility restrictions during the pandemic. There will also be increased mortality in children because services like Vitamin A supplementation, immunization, and behavior-change communication services to improve infant and young child feeding and hygiene and sanitation may be disrupted. Increases in mortality due to rises in child wasting are also anticipated because treatment services may not be available, and also because the economic crisis will increase household food insecurity, which in turn is associated with higher rates of child wasting in the short term. In the longer-term, it is likely to persistent poverty and food insecurity will lead to increases in child stunting. Micronutrient deficiencies will be exacerbated because of losses in employment and income and rises in food insecurity which will lead to deteriorations in diet quality. Disruptions in value chains have also been documented, especially for nutrient‑rich foods such as dairy, vegetables and fruits, and meat products, as well as reduced demand for these products due to concerns about their role in the transmission of the virus and unaffordability as incomes drop. Animal source foods and vegetables and fruits are the most important sources of bioavailable micronutrients and therefore, reduced intake of these products is likely to poor diet quality and micronutrient deficiencies. In areas where cheap energy-dense and micronutrient-poor ultra-processed foods are available, substitution to these products to ensure adequate energy intake may lead to overweight and obesity with concurrent micronutrient deficiencies.

Dr. Ruel mentioned that impacts vary over time by life stage given the different nutritional vulnerabilities. Mothers and young children are not likely to die from the virus but are likely to die from hunger. There are different types of vulnerabilities that will be exacerbated. The virus is a multiplier of vulnerabilities. Gender is one vulnerability, but there are many others. The poor will suffer more, urban people are suffering more, women are likely to be more affected in certain circumstances, and the stages of the crisis and related measures that are adopted will affect the type and nature of impact and who is affected.

Preliminary effects of the COVID-19 pandemic on maternal and child mortality have been modeled by Roberton et al. and published in the Lancet Journal in May 2020. The LIST modeling tool was used to estimate additional maternal and child deaths after a 6 month period of disrupted health systems that resulted in lower coverage of essential health and nutrition services, including ante-natal care, immunization, vitamin A supplementation and prevention and treatment of infections and of severe acute malnutrition. The estimates show that with a reduction of coverage of 15 to 45% of health and nutrition services, an additional 56,700 maternal deaths and more than one million additional child deaths are predicted, not taking into account the impacts related to rises in hunger and malnutrition due to the economic crisis triggered by the COVID-19 pandemic. These combined crises will result in rises in both undernutrition (especially wasting, or acute malnutrition in the short term) and maternal and child mortality.

Dr. Ruel then moved on to a discussion about the anticipated impact on diet quality. This will result in micronutrient intakes and rises in micronutrient deficiencies. One important aspect also of the reduction in diet quality is the demand side. The lockdown and sheltering in place have made people worry about having access to enough calories to feed their family, so they focus on staple foods, cereals, and pulses, and on foods that they can store at home (long shelf life dry foods). The poor often do not have refrigeration or any way to keep perishable foods, so they focus on foods that are rich in energy (but not high in bioavailable micronutrients) in order to at least satisfy their energy needs and prevent hunger. There have been reports of reductions in consumption of fruits, vegetables, dairy products, and meat, also because of scares and disinformation. In Ethiopia, results from phone surveys showed that 23% of the sample reported not consuming vegetables and more than 50% reported not consuming animal‑source foods, including raw milk because because they believed that these foods were a major mode of transmission of the virus.

Hunger and malnutrition will result from loss of jobs and income, and we confirmed through phone surveys that 47% of rural households and 32% of urban households in Bangladesh reported having reduced their food consumption because of lack of income; households also reported using coping strategies, with some of them being detrimental to nutrition: eating less, giving less food to children, and eating fewer meals.

On the supply side, disruptions in supply chains also reduce availability of certain foods, especially nutrient-rich fresh and perishable foods such as vegetables, fruits, and animal source foods. There are also shortages of micronutrient supplements such as iron/folate for women during pregnancy. Access to micronutrient supplements is reduced because of trade restrictions or disruptions in local production (lack of inputs, supplies, labor, etc.). Products specifically formulated to treat severe acute malnutrition, including ready-to-use therapeutic foods (RUTFs), which provide micronutrients and calories, are also in short supply. There is also anecdotal evidence of reductions in breastfeeding. If mothers believe that there is virus transmission through breastmilk and stop breastfeeding, then they may use breast milk substitutes made with water that is not safe, increasing the risk of infections in children. She mentioned that the global food system nutrition research communities (the Standing Together for Nutrition consortium) are gathering together to build evidence for nutrition action in the context of COVID-19.

She then passed it back to Shawn Baker.

Mr. Baker explained that although the picture looks grim, there is some hope that the right analysis can inform actions to avert the magnitude of the crisis. USAID is prioritizing saving lives, preventing backsliding, protecting development gains, and generating and using evidence to guide its work and the work of its partners. He encouraged participants to review USAID’s external technical guidance on nutrition.

In terms of humanitarian response, the overarching response is to maintain critical nutrition and health services and potentially integrate distribution of more nutritious food products, but in a way that reduces transmission risk. For example, there are ways to modify acute malnutrition treatment so there is less contact between the service provider and patients. For health systems, the overarching concern it to maintain critical services while reducing transmission. One example is social and behavioral change communication to rely more on media during the crisis and focus strongly on breastfeeding. Strong messages are needed to avoid backsliding in breastfeeding and complementary feeding.

One of the greatest concerns is that all campaigns—for vitamin A supplementation, deworming, screening for acute malnutrition, and vaccine delivery—have been paused in order to reduce transmission risk. USAID is working to make sure governments have shovel-ready plans and programs to get campaigns back up and to get high coverage as soon as conditions on the ground permit it. As the health system is rebuilt, there should be a focus on community platforms, which are the most resilient; ensuring nutrition is mainstreamed; and ensuring that supply chains for nutrition commodities are functional.

He emphasized the need to be vigilant about the diets of infants and young children and diets of pregnant and lactating mothers. He called out the importance of ensuring that there is no backsliding in large-scale food fortification in the response. There have been some anecdotal reports that governments, in wanting to make it more palatable to industries, have stopped reinforcing fortification mandates. We should double down on fortification to ensure micronutrient security in those stakeholders that are most stable parts of the food system. He also called out social protection programs. With increases in poverty that are projected, it is likely that these programs will need to be strengthened and expanded, and as they are built, to shape them in a way that prioritizes uptake of nutritious foods and health and nutrition services. With good analysis guiding actions, maintaining political will, and making sure food and nutrition partners have a seat at the table in COVID-19 discussions, we can ensure that the legacy of the pandemic is not children who have lost their lives and their potential.

Ms. Pandya-Lorch introduced the next speaker, Dr. Saweda Liverpool-Tasie, Associate Professor in the Department of Agricultural, Food, and Resource Economics at Michigan State University.

**Interventions in Nigeria: A Case Study**

*Saweda Liverpool-Tasie, Associate Professor, Department of Agricultural, Food, and Resource Economics, Michigan State University*

Dr. Liverpool-Tasie thanked USAID and BIFAD for organizing the meeting and inviting her to speak.

Her work focused on food supply chains in Nigeria and reflections on the COVID19 responses and was supported by the Feed the Future Food Security Policy Innovation Lab in Nigeria.

She summarized the key findings on the COVID‑19 response in Nigeria. A series of well‑intentioned government interventions—sometimes varying significantly across the federal, state, and sub‑state levels of government—could have been better designed and coordinated to create opportunities for learning and to leverage the existing synergies among the different units. Going forward, there have been some efforts to improve coordination. Dr. Liverpool-Tasie advocated for greater coordination and greater engagement of key stakeholders, including researchers and nutritionist.

Dr. Liverpool-Tasie explained the importance of recognizing the complex nature of food supply chains in the design and implementation of interventions in response to a shock or pandemic like COVID‑19. More attention must be paid to what she called “essential nonessentials”—those activities that were considered nonessential and therefore non-exempt and restricted in operations in many of government policies, but which were actually critical for the effective operation of food supply chains.

For example, there was inadequate attention in many states to the transportation needs of key economic agents, including those who were considered essential—farmers, traders, and health workers. In many states, important input suppliers—both for crop and animal production and for manufacturing and processing of food—were not considered essential, but disruption of their activities had a negative spillover effect on many essential functions.

An important premise of her presentation is the critical role of markets. In nationally representative data from Nigeria, the share of the total value of household consumption that is purchased is very high, even in rural areas, where it is almost 80%. Therefore, any shock to markets and operational food supply chains has direct effects on food security and nutrition because of the direct effects on the supply side—access to food, what is available, price, and quality—and also the demand side—the livelihoods of millions of individuals engaged in small and medium-scale enterprises along the supply chain, including farmers.

The first case of COVID-19 in Nigeria was recorded on February 27, 2020. In March, 2020, there was a series of government orders: a March 30 federally mandated lockdown in Lagos, the epicenter of the virus, in Ogun State neighboring Lagos, and in the federal capital of Abuja. Several other states across the country instituted their own lockdowns, with varying degrees of restrictions.

Dr. Liverpool-Tasie presented findings from her ongoing, collaborative work with several Nigerian universities since 2017/2018, studying the chicken maize supply chain. She has been collecting information from representative samples along nodes of the value chain (e.g., maize traders, feed mills, feed traders, chicken hatcheries, chicken farmers, chicken processors, and chicken traders) to understand the structure of the chicken maize supply chains and likely impacts of COVID-19. Supplementary data for the study have been collected through monthly calls to actors along the chain to document the impact of COVID-19 on their activities. The example of the chicken maize supply chain reflects the critical importance of markets.

The value chain engages over 1 million people directly and is highly commercialized, with over 80% of the poultry products consumed in Nigeria going through food supply chains. Over 75% of the chicken farmers in the sample—even the smaller producers—buy feed. Maize farmers also buy other inputs. Logistics plays an important role in the trading of commodities like maize, 80% of which is transported through third‑party logistics. The findings from the poultry value chain are broadly applicable across other commodity chains.

She cited two examples of variable policies regarding markets. In Edo State, in southern Nigeria, the government never closed the market. When the pandemic started in March, the government fumigated urban markets, moved the traders from urban markets to secondary schools that were closed, and promoted social distancing, but it allowed the market to operate every day. However, in many other states, including Abuja, there were restrictions in the number of days and hours for trading activities and in the month of April, for example, wet markets were only allowed to be open between 8:00 a.m. and 6:00 p.m. on Wednesdays and Saturdays. These restrictions had several implications. First, reduced trading activities had a direct negative effect on the income of traders, many of whom depend on daily sales to meet household needs. In addition, those who sold perishable products faced significant declines in the quality of their product and spoilage of their product without adequate storage. Restricting movement and commercial activity in wet markets to these time periods on these restricted days also resulted in more people in these wet markets and an increased probability of virus transmission.

She also discussed variation in policies across states in Nigeria concerning “essential non-essentials”, drawing upon preliminary results from discussions with actors along the value chain. In Kaduna State, feed sellers were not considered essential, and survey respondents saw significant declines in their earnings from the inability to sell or ability to sell only 8 days in the month. Restrictions affected feed sellers but also numerous other respondents (chicken hatcheries, fish hatcheries, fish farmers, and chicken farmers), who also mentioned that they faced significant challenges in accessing feed for poultry or fish. Respondents also faced challenges in getting transportation to pick up or collect these items. In contrast, in Oyo State in southern part of Nigeria, feed was considered an essential service. But 90% of respondents still faced issues with logistics and transportation in trying to secure their input. Between the end of March and early April and May, maize and soy prices increased significantly by about 40% and 35%, respectively. Similarly, maize farmers reported increased costs or limited availability of inputs because of the high cost of transporting inputs from peri-urban or urban areas to rural areas and getting products from rural areas to urban areas. Processors similarly reported challenges in getting packaging materials, charcoal, and other inputs critical for their operations.

She concluded that the pandemic response should prioritize safety but also not forget the “essential non-essentials”. The response needs to ensure that small and medium-scale enterprises continue in their roles of producing food, processing food, delivering food, and employing people. The response should support enterprises and minimize distortions to their activities, unnecessary imposition of costs, unnecessary layoffs of workers, and unnecessary closures. The response should also incentivize enterprises to upgrade their practices and improve infrastructure and safety for more informal enterprises in wet markets, allowing trading but providing water for handwashing, more information about health and safety, and personal protective equipment (PPE). Greater coordination and interactions in the response to the pandemic at the federal, state and local levels are starting to occur, but greater involvement of the private sector and the research community is needed in these conversations to guide post-COVID responses. More data and evidence from research are needed to understand the complexities of food supply chains in order to support government and donor interventions to COVID and future crises. Research is needed to guide the development of more resilient food supply chains and to protect incomes, and more local researchers need to be engaged. Many Innovation Labs are engaging with local researchers.

Ms. Pandya-Lorch introduced the final speaker, Maximo Torero, Chief Economist at the Food and Agriculture Organization (FAO).

**Linking Agricultural Growth and Resilience Outcomes for Long-term Recovery**

*Maximo Torero, Chief Economist, Food and Agriculture Organization (FAO)*

Dr. Torero thanked USAID and BIFAD for organizing the meeting and inviting him to speak.

Dr. Torero said that the coronavirus pandemic has delivered a crushing “one-two punch” to the global economy—a dual shock to both supply and demand. The pandemic is a serious threat to food security because even though there is enough food for everyone in the world, it is not a given that people will have access to it. The first phase of the pandemic— containment characterized by lockdowns—disrupted the global food supply chain. Food has to move from where it is produced to where it is needed. Fortunately, and thanks to the effort of farmers and workers, food supply chains have been moving, and delays created by logistical bottlenecks are being solved. The second phase of the pandemic is a global recession. Surging job losses mean that people are losing income to buy food. The food crisis is triggered by lack of income rather than high food prices.

In April 2020, the IMF estimated that the global economy would shrink 3 percent in 2020. To put this into perspective, during the 2007-2008 financial crisis, the world economy didn’t contract at all. In May, the IMF said the growth forecast could be even larger. Going into June, it seems likely that the global growth could drop between 5 and 10 percent. Even before the pandemic, hunger was worsening, increasing by 10 million people from 2018, nearly 60 million in the last five years, and 690 million people undernourished in total by 2019 with a projection of 840 million people by 2030. If the global economy contracts between 5 and 10 percent, between 38.2 and 80.3 million people in the countries that rely on food imports could be added to the count of food insecure. Overall, across all countries in the world, between 83-132 million people would be added to the undernourished. The rise in the hungry will expand in the poorest and most unequal regions. It will accelerate economic inequality, which will worsen hunger.

Although donors know where the food crisis countries are and how many millions of people are undernourished currently using standardized classification systems (Integrated Phase Classification), it is not yet known where the new food insecure hotspots will be. Dr. Torero called this “measuring the invisible”. It’s essential to identify and measure emerging food insecurity hotspots. FAO looked at different channels of transmission of COVID-19 and ranked countries from higher to lower risk in each channel. Most food crisis countries are in Africa, and structural vulnerability is high in this region, but other non-food crisis regions also exhibited high risk, including in South America, Eastern Europe, Asia, and SIDs (Small island development states). FAO is working to develop and deploy the Food Insecurity Experience Scale (FIES) across 100 countries to identify emerging hot spots of food insecurity. Normally, this is measured only in food crisis countries.

Importantly, many people will lose their jobs as a result of COVID-19. Food systems generate 1.28 billion jobs (formal employment) and 3 billion livelihoods (self-employment, informal employment, seasonal labor, and migrant labor) globally. 451 million formal jobs are at risk due to COVID and 1 billion livelihoods. Jobs at risk are concentrated in the food processing sub-sector (60% of food processing jobs are at risk), food services (60%), and distribution services (60%). A smaller percentage of at-risk jobs (21.26 %) are in primary production. It is important to target efforts to bring solutions.

Governments must focus their efforts with an understanding of what Dr. Torero described as the health–food–development “tri‑ology”. Up to now, we have been in a lockdown process by decree, but we are still experiencing significant problems with COVID 19. If we move toward restarting economic activity without taking care of health issues, we will move from a decree-based lockdown to a health-based lockdown. That’s important in food systems and something that we need to carefully assess.

Our focus should be to address the immediate needs of the most vulnerable populations through emergency food assistance, nutrition interventions, and enhanced and accessible safety nets. Although food will be available, it will be lost in the field because it is not exported: either it will be in local markets or wasted. We need to find ways to link that food to markets or to safety net programs to help the poorest. For example, the United States provides support to farmers with the condition that they package food that will be wasted because of lower demand for food banks so it can be distributed to the neediest.

A major problem today is that the cost of a healthy diet is too expensive for the poor. Healthy diets are estimated to be, on average, five times more expensive than diets that meet only dietary energy needs through a starchy staple. If we compare the cost of different diets relative to the international poverty line, most countries can afford an energy-sufficient diet; however, an energy-sufficient diet causes the problems of malnutrition, overweight, and obesity. Healthy diets are unaffordable to many people, especially the poor, in every region of the world. The most conservative estimate shows they are unaffordable for more than 3 billion people in the world.

We need to work with smallholders with innovations and investments to enhance productivity and resolve liquidity problems, including guaranteed bank loans to reduce risk, e-commerce, crop calendars to optimize planting and harvesting, storage facilities, cooling facilities, drying facilities, and optimization of market locations.

Although trade restrictions that were imposed have being removed, and we don’t have problems at this point, we do need to increase market access and create additional demand for intraregional trade. In Africa, despite an agreement on intra-regional trade, non-tariff measures—a result of food safety issues—are still a major challenge. An opportunity is to build a Pan-African Food Safety Agency to minimize those trade-offs. There is a need for change in processing and packaging plants, including logistics innovations, robotics, automation, controlled environments, and retraining the labor force.

Dr. Torero concluded that the major challenges in the context of the pandemic relate to food access and not availability. Accelerating change and taking advantage of future opportunities should be a focus of the long-term recovery effort.

**Questions by BIFAD and Discussion**

*Moderator: Rajul Pandya-Lorch, Director of Communications and Public Affairs & Chief of Staff in the Director General’s Office, IFPRI*

Ms. Pandya-Lorch opened the floor to questions from BIFAD.

Dr. Pamela Anderson thanked all the speakers and directed a question to Shawn Baker. She explained that one of the really positive outcomes from the last major shock, the 2007 to 2008 grain price crisis, was that donors and governments focused on and invested in nutrition. Multiple systems are failing, and those are the same systems that drive nutrition outcomes. She asked what concrete measures and efforts policy‑makers and donors are taking into account so that these impacts on nutrition can be mitigated. What are they, where are they, and then how does USAID, together with the broader donor and development community, elevate nutrition concerns so that there is no backsliding?

Mr. Baker answered that analysis on the likely nutrition impacts are difficult to do so the numbers are not available, and thus the work that Dr. Ruel is involved in is so critical. Secondly, there are multiple other conflations, and one of them is what was seen in the West Ebola crisis that even with that horrific virus, the impacts of the disruptions caused more deaths than the impacts of the virus itself. That phenomenon is exactly what is being seen in one of the conflations. The impacts of disruption are what is causing the biggest crisis.

The next question came from Jim Ash. He asked a question for the record. He explained that there is a need to better understand how essential and non‑essential elements of the economy and the markets work together and what needs to fall into which category. There may be differences in the way that the positive impact that direct consumer stimulus aid may have versus aid to structural elements of the markets. He expressed that people should begin to create some sort of baseline *lingua franca* using the lessons that will be learned from this pandemic to create a pathway that can be studied, learned, interpreted, and delivered when these crises arise in the future. Furthermore, how can the various universities, private/public sector and governments work together to have some sort of across‑the‑board, sensitive to local cultural and local market economies, plan or blueprint that at least on a limited basis can address a very systemic baseline?

Dr. Brady Deaton asked about growth‑based intervention strategies. He mentioned that there has been a decline in economic conditions that have led to greater rates of hunger in the world in the last three years. COVID‑19 is almost a wake‑up call. Several of the speakers emphasized the importance of growth‑based strategies, and those intervention strategies need to be looked at within a growth context. It is critical from the standpoint of building human health and from the standpoint of identifying the appropriate essential non‑essentials. He requested more discussion on it.

Dr. Swinnen answered that the crucial thing is that the breakdown of the supply chains now is very different than what happened in 2007 to 2008 food price crisis. He offered the analogy of the transition disruptions that occurred in eastern Europe and central Asia in the 1990s. We learned from that experience how food systems work, how institutional innovations can take place, and how innovation contracting systems can overcome these challenges with new technology. That experience can teach us about the potential for resilience for the future.

Dr. Pray also addressed this question. He observed that growth‑based strategies have not yet been dealt with very much. He explained that he believes what is concerning is the impact of the budget crises that are coming on the growth-promoting public sector institutions such as the agricultural research system, the universities, and the extension systems. We need to consider or take into consideration some of these growth‑based strategies.

The next question came from Richard Lackey. He mentioned that there is a platform‑type model that already exists that could be built upon, along the lines of the global public health intelligence network, that would allow for a notification network that would include diseases, both human and animal, but also the actions that could follow, very much like what would be used in medicine as an algorithm for treatment of a specific disease state to notify in the case of an outbreak. He mentioned that the challenge would be where there are a lot of public stakeholders and a lot of small players working directly with the people on the ground that don't necessarily have their voices heard at a higher level. He asked how something could be created where the private sector can quickly be drawn in and plug in to participate and help, and not only in helping to resolve the challenge, but then helping to preserve it and helping build seed supplies, storage of excess food that's dried and used later when there is a need, etc. He further asked, is there a platform‑type model that already exists or is there an idea for one that could be built to resolve that?

Dr. Torero answered that today, there are few tools with predictive power. FAO is developing an approach called “Hand in Hand” to bring together science with socioeconomics. The science part is developing early warning and early action models to be able to respond quickly, for example, to the desert locust crisis. Socioeconomic factors are central and need to be combined with the science because of the effects of recession. When health protocols were decided for COVID‑19, they were done in silos, and potential socioeconomic consequences—what are being experienced today—were not considered. We need to think about our approach in a more systemic way.

The next question came from Mark Keenum. He explained that the presentations had a common theme of food chain disruptions due to COVID. He found very impactful the notion that food chain disruptions from COVID-19 will cause more deaths of citizens in developing countries than the virus itself. He asked how U.S. university research could address critical issues of developing country food chains.

Ms. Pandya-Lorch then turned the meeting over to Dr. Keenum.

**Public Comment Period**

*Moderator: Clara Cohen, BIFAD Executive Director, USAID*

Dr. Cohen thanked Dr. Keenum and all the speakers. She then invited participants to submit questions, and explained that, although not all comments and questions would be addressed aloud, they would all be included in the official record of the meeting (see Appendix below for edited version of the meeting chat box).

The first questions were on local and global production. The first came from Gary Alex, who said that the crisis would suggest that greater self-sufficiency would make food systems more resilient. That flies in the face of past strategies to link and often depend on global markets. He asked how likely this is to play out. Relatedly, Carla Brisotto from the University of Florida asked if we can really rely exclusively on local production. That works for vegetables and fruits (assuming that we convince people to eat seasonally), but less so for cereals.

Dr. Cohen directed this question to Dr. Swinnen.

Dr. Swinnen answered that the questions are a bit simplistic in terms of the analysis and conclusions. He does not think it is the case that global supply chains have fallen apart and domestic supply chains have held up. There has been just as much disruption in the domestic supply chains as in the global supply chain. He also mentioned that having a portfolio supply is good, so having a combination of domestic production and global supplies is probably a resilient way of looking at the future.

The next questions addressed cash transfers. Sampson Opio said that to relieve the food crisis during COVID‑19 and lockdown measures, some countries opted for cash transfer measures and others opted for food rations directly. He asked for comments on the efficiency of the two methodologies in ensuring access to food during the crisis. Deepa Thiagarajan from Michigan State University asked how nutrition and food safety can be mainstreamed into humanitarian aid programs that work through cash transfer modalities.

Dr. Ruel answered that, unfortunately, it is not the simplest approach that would be the most efficient because both cash and food are needed. Cash is needed for keeping the economy going, for purchasing, for buying food, and possibly for buying those nutrient‑rich foods. Food assistance would be useful for just what is being done now, providing staple foods and pulses, and food that provides calories. Both food and cash have a role and it is easier to distribute staple foods than nutrient‑rich foods that are perishable.

Dr. Torero agreed with Dr. Ruel that an optimal combination of food assistance and cash is needed. The problem in some of the cash transfer programs occurred, for example, in Argentina, where debit cards were distributed without restrictions and could be used to purchase foods that were not healthful. On the other hand, a program in food distribution instead of cash transfers in Chile created scarcity because it was not able to provide the food that it was supposed to provide and had to stop the program. If we can keep market fundamentals operating and we have the supply of food available, then cash can be used properly with certain restrictions to buy healthful foods. The United States has the right idea to bring fruits and vegetables into local markets and to the food banks. Would allow them to buy what is optimal.

The next questions dealt with engagement with researchers. David Tschirley at Michigan State University said that the fact that the work in Nigeria was done in close collaboration with Nigerian scholars is so important to achieving impact and building sustainable systems for policy and policy research. He asked if Dr. Liverpool-Tasie could speak more about ways she engaged with Nigerian scholars to carry out collaborative research and the implications this has for broader practice. Duncan Boughton, at Michigan State University, asked what support researchers need to effectively engage with decision‑making and how USAID labs can support them to be more effective.

Dr. Liverpool-Tasie explained that using USAID funding in Nigeria, the work was done collaboratively through two main mechanisms. One was through collaborative research teams that were composed of senior scholars at Nigerian universities, their graduate students or younger scholars, and Michigan State University faculty, and individuals from the government or private sector. The second was through a scholars’ program that was funded through the Food Security Policy Innovation Lab in Nigeria, which brought several Master’s and Ph.D. students from various Nigerian universities to Michigan State University. There, the scholars were paired with mentors and took classes to improve their research skills. The scholars continued to work with these mentors once they returned to Nigeria. Besides collaborative learning, another benefit of the program has been the development of a network of scholars across Nigerian universities so that when the COVID‑19 shock occurred, there were already teams on the ground that could leverage the foundation of the surveys and collect additional information using phone interviews and WhatsApp to understand COVID-19 impacts. Long-term relationships with scholars in the countries where we work enables us to have a pool of people we can work with and to move beyond individual to institutional capacity strengthening.

She also addressed Duncan Boughton’s question about how to take it forward. This needs to be done not only at an individual level also at the institutional level. Institutions need to be well linked and have a critical mass of scholars that rapidly conduct research necessary to respond to questions from policymakers, donors, or the private sector.

Dr. Cohen then turned the meeting over to Dr. Keenum for some final remarks.

**Meeting Adjournment**

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

Dr. Keenum thanked everyone in the audience. He also thanked Rajul Pandya‑Lorch and all the presenters. He thanked the members of BIFAD; Clara Cohen, Rob Bertram, Shawn Baker, and Jim Oehmke at USAID; Susan Johnson and Jordan Merker at APLU; and Adam Ahmed, Clarissa Perkins, Jennifer Leopold, Tyler Wellman, and Elizabeth Leiby at KDLT. The meeting was adjourned.

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

August 27, 2020

**Appendix: Edited Webinar Chat Box**

**Number of Participants: 562**

*Note: The chat box record has been edited to include specific points.*

Titus Awokuse: Estimated negative impact of COVID-19 on Nigeria appears quite large. I wonder what assumptions went into the model predictions.

Kate Reinsma: Can you please explain what you think is needed to create/build more resilient food systems?

Demba Ndiaye: In Africa, particularly in Senegal, grassroots initiatives don't have the proper support to take advantage of this transformative momentum in Agricultural projects launch... Any way FTF or similar initiatives can boost such potentials in West Africa?

Gary Alex: The crisis would suggest that greater self-sufficiency would make food systems more resilient. That flies in the face of past strategies to link and often depend on global markets. How is this likely to play out?

Ghada Ahmed 2: Covid19 highlighted structural problems in global food value chains

Paul Mason: Timor-Leste urgently requires "green channels" now. The country is already facing a severe shortage of seed and other input supplies, due to the COVID-19 induced restricted flow of goods across borders.

Ghada Ahmed 2: 2000s have been focused on export-oriented strategies from African markets a system which started shifting prior to COVID19, and the pandemic accelerated shifts in markets, trading and tech adoption

Ghada Ahmed 2: global value chains are restructuring and increasing vulnerabilities of countries highly dependent on imports

Joseph Kalasa : Including food /agricultural experts in COVID19 response teams would be important indeed

Richard Lackey: Good point @Ghada. There is a need for strategies that also include local resiliency derived from local production and storage.

Carolyn La Jeunesse : Fabulous to see increasing attention to and emphasis on the One Health Approach! Thank you!

carla brisotto: Can we really rely exclusively on local production, though? That works for vegetables and fruits (assuming that we convince people to eat seasonally) a little bit less for cereals

Elliot Faminu: resilience in Africa is in strengthening rural productions, where over 70% production is from.

Barakat Mahmoud: I agree, the one health approach should be adopted by all!

Tshomarelo Dikgole: for the One health approach can food safety knowledge by consumers also be addressed?

Rainer Asse: Wonderful to see ILRI's successful and great work in One Health featured here!

Ghada Ahmed 2: industrial animal health systems led to market concentration and health issues from farm to table

Gary Alex: I don't know that I have ever heard anyone disagree with the One Health Approach. The problem probably comes in implementing it with coordination across such complex sectors and institutions.

Ghada Ahmed 2: We are talking about certifications as the market is being disrupted by blockchain

Lopa Saxena: it’s the co-creating of solutions which can make a distinct difference in relation to expected outcomes

Joseph Kalasa : We all are in a complex relationship. Animals, humans and the environment. So one health is a viable solution to COVID 19 pandemic

Tshomarelo Dikgole: Safer food is more expensive, this then leaves the low income and the poor more vulnerable, food safety knowledge at consumer level thus need to be prioritized to mitigate the spread of diseases from farm to fork.

Priscila Henriquez: The post-Covid-19 scenario seems bleak from the perspective of many Latin American and Caribbean countries. International cooperation has practically disappeared from the region and it is time to look for opportunities that may arise from this situation.

Paul Johnson: How can the One Health Approach remain resilient in the face of increasing climate changes with extreme weather disasters and other catastrophes?

Barakat Mahmoud: Also wet markets should be modernized; please read my own opinion to prevent future COVID19 <https://www.foodsafetymagazine.com/enewsletter/modernized-wet-markets-an-approach-to-prevent-future-global-public-health-crises/>

<https://www.foodsafetymagazine.com/enewsletter/the-covid-19-pandemic-food-safety-an-eyewitness-to-the-global-war-against-the-invisible-enemy/>

Janie Dubois: agree with Gary Alex... we all agree, it is just complicated to apply...

Demba Ndiaye: Dr Jimmy Smith one health is an ongoing initiative?

Ghada Ahmed 2: Our research in West African dairy value chains shows that value chain design is key to shifting countries from dairy importers to meeting dairy demand locally

Ghada Ahmed 2: Covid19 impacts include an increase in transaction costs and foreign exchange, making access to imported agri inputs very expensive

Richard Lackey: @Carolyn La Jeunesse, I would think total production locally would be almost impossible in urban markets and likely not preferred even rural markets, but one part of a holistic strategy might benefit from an increase in local production; sourcing. for a variety of reasons that include the cost and risk of transportation as a factor in market price volatility and resiliency...just as an example.

Zillur Rahman: we should first thing to do is to ensure and also boosting the availability of raw material essential for production

Dr. H. Larew: Here's something outside of the envelope...IF ANYONE KNOWS OF POETS WRITING ABOUT PANDEMIC-CAUSED HUNGER, PLEASE ENCOURAGE them to submit their work to POETRYXHUNGER@gmail.com. We’re posting powerful poems on the Poetry X Hunger website for use by anti-hunger groups. Thanks!

Ghada Ahmed 2: This where adopting a system approach is key

Richard Lackey: @Ghada Ahmed. I agree completely. A systemic approach

Joseph Kalasa : Misinformation is one big challenge. Fake news touches almost every part. And so misinformation on covid 19 and nutrition could be very fatal, especially in predominantly rural communities/population

Gayatri Rao: @Joseph Kalasa, very good point, false information on precautions and cures is a challenge

John Porterfield: What support is provided to technology for food sustainability and improving agricultural revenue, such as BEAM seed treatment, within capacity of smallholders > <https://www.youtube.com/watch?v=18FVVYKU9gs> and WetLaCulture by Prof Wm Mitsch?

Zillur Rahman: Maintaining the supply chain by ensuring the transport facilities is the key to successful handle of this pandemic situation

Lopa Saxena: @Richard @Ghada tensions & contradictions across multi-scalar dimension of systemic approach is what has made it operationally difficult despite its conceptual significance

Carolyn La Jeunesse : @Joseph Kalasa, thank you for mentioning this. We saw this during Ebola when healthy animals were slaughtered and discarded because of concerns of zoonotic transmission. Simply terrible losses.

Richard Lackey: Wonderful insight @Lopa. How could it change for the better? Where do you see the best places to start?

Ghada Ahmed 2: A systems approach will allow a more holistic view

Ghada Ahmed 2: Systems approach and then deep dive in segments that are creating balance and imbalance

Lisa Lauxman: Is there any data on youth mortality?

Ghada Ahmed 2: UN Data

Gina Kennedy: Thank you Marie and Shawn for mentioning diet quality and the need to protect diet quality in addition to food security

Demba Ndiaye: Resilience strategies in Africa can draw from NADP pre-covid-19 with more focus on nutrition and value added @diasporaonline

Erna Abidin: There is a resilience crop which was suggested and promoted by a media during the G20 Meeting in London in 2013, as Super Food, such as Orange-fleshed sweetpotato. However, all types of sweetpotato, i.e. white, yellow and purple are nutritious for people in developing countries such as SSA and Asia, and globally recognized at this moment. Reputed Agriculture 4 Development Stichting/Foundation Limited team has started working on it in Ghana (<https://reputeda4d.nl/portfolio/>). We are welcome any one who wants to help and collaborate with us as we are working at the ground level to improve the livelihood of resource-poor people who are really showing the worst during the Covid-19 pandemic.

Zillur Rahman: Diet quality will be ensured by ensuring quality food.

Dick Tinsley: In looking at diet quality should you factor in the dietary needs to optimize you economic opportunities which is usually largely manual labor requiring 4000 kcal/day vs. normal availability of only 2500 kcal/day

Christus Miderho: With this ....it is possible to create a group ( skype, whtasapp ,.....) to improve all ideas on food safety, Hunger , Nutrition , .....during covid-19 crisis? and maybe look for a solution.....Just a suggestion

Ghada Ahmed 2: Food subsidies and cheaper options play a big role in food choice

Demba Ndiaye: With local grassroots organizing approaches in West Africa, lack of seed resources remains even more critical now...

Zillur Rahman: Most of the Asian and African people are far more behind the daily calories needed.

Lopa Saxena: @Richard@Ghada -- systems approach can be critiqued as apolitical/ecological if not driven by a clearly normative agenda -- of socially just, equitable, and resilient food systems

Ghada Ahmed 2: The key is how you do it. The art is in the approach

Stephen Walsh: Nice to see the comments relative to crop production and its role in contributing to nutrition outcomes.

Ghada Ahmed 2: an approach that considers economic, social and environmental development

Richard Lackey: Agree @Lopa Saxena

Carolyn La Jeunesse : @Lopa Saxena thank you for your observations on systems approach.

Paul Johnson: Maybe a better question is how do we empower the local producers and supply chain stakeholders to increase their inputs/production during crisis such as the COVID-19 pandemic

”Agnes” Agnieszka Grocholska: By the end of the day, we have a farmers ranchers food processor, it all up to them how this is going to be centered. What type of incentives, resources we can offer to food production, and how fast we can implement to everyday life? Different foods from different sources produced differently.

Erna Abidin: Ghana is our first entry-point to work in, however, we would like to go further to Burkina Faso, Mali, Nigeria, as well as in Indonesia, the countries which we are familiar with and having our experiences and contacts. Currently, our work to harmonize the partnerships between private and public sector.

Dick Tinsley: Also need to increase their access to contract mechanization to make certain the crops are planted in a timely manner. this is normally overlooked in most crop management programs

Joseph Kalasa : Good presentation really. I note that child mortality so high... Of course one element am thinking about: obesity and covid\_19. My former student and I are having idea to look at the link between BMI and covid\_19... Are the obese more re susceptible to covid\_19 or not? How could I be helped on this?

Stephen Walsh: Carl Pray highlighted that 20% of food consumed is ‘produced and consumed at harm level' - while 80% is via markets. This statement has huge implications if taken write large as a starting point and warrants a deeper dive in terms of countries, population demographics, and rural versus semi-urban.

Dr. Md. Salim Ullah Eusufzai : Prof. Dr Md Saim Uah Khan Eusuzai, IUBAT University, Bangadesh Is there any data on income reduction of poor and extreme poor will be 75%?

Asma Lateef: In the COVID response, what can be done to address the challenges around price and perishability of nutrient rich foods to ensure access and availability?

Ghada Ahmed 2: COVID19 system disruption. It needs to be a disruptive opportunity for the greater good

Samson Opio: To relieve the vulnerable families from food crisis during COVID-19 and subsequent lockdown measures, some countries opted for cash transfer methods while others opted for giving food rations directly. Comment on the efficiency of the two methodologies in ensuring access to food during crisis

Madeleine Smith: Malawi is scaling up the cash transfer program in urban areas. I think social protection systems need to be rapidly expanded. And we also need to prevent many food system stakeholders who are in wage-earning jobs, or just above the poverty line, from backsliding.

Richard Lackey: Great points on the Essential-non-essentials....inputs, transportation, markets.

”Agnes” Agnieszka Grocholska: Mechanization in West African country as well as in India food supply chains will mitigate pollution and slowing domino reactions in Climate Changes.

Adewale Obadina : There is need to also look into the challenge of food safety along the food value chain

David Tschirley: The fact that the work in Nigeria was done in close collaboration with Nigerian scholars is so important to achieving impact and building sustainable systems for policy and policy research. Can Saweda speak more about ways she engaged with Nigerian scholars to carry out collaborative research and what implications this has for broader practice?

Deepa Thiagarajan: How can nutrition and food safety be main streamed into humanitarian aid programs that work through cash transfer modalities?

Adewale Obadina : @Deepa, I agreed with you

Dick Tinsley: Those interested in more details on the hard choices smallholder farmers have to make in balancing energy for labor and quality of diet are welcome to visit the website: <https://smallholderagriculture.agsci.colostate.edu/>

NseAbasi Etim: I'm Dr NseAbasi NsikakAbasi Etim from Nigeria and I live in Nigeria. Government took a lot of measures to control the spread of the virus

Deepa Thiagarajan: @ Adewale Obadina--this is an area of struggle for WFP, UNICEFs, MSFs and the like.

David Tschirley: Important to note: we are finding that trader associations in Tanzania have been very active and effective promoting social distancing in markets, despite ambiguous policy statements coming from government.

Adewale Obadina : @Deepa, what is the way forward?

”Agnes” Agnieszka Grocholska: In high developed countries the solutions to supply chains coming to work on changes in culture established in Food Supplies and provides more opportunities to innovative

Ghada Ahmed 2: Challenges with access to inputs. This is also what we learned from aquaculture farms

Anne Maftei: the Mastercard Foundation Rural & Agricultural Finance Learning Lab have been producing a series of briefs, digging into the complex combination of challenges smallholder farmers and agri-SMEs have been facing due to the COVID crisis. The latest one looks at, agri-SMEs, who are being squeezed by both decrease in consumer demand and operational / logistical challenges of trying to run a business under restrictions and an ever evolving context > <https://www.raflearning.org/post/covid-19-emergency-briefing-agri-smes-operating-uncertain-financial-operational-and-supply>

Ghada Ahmed 2: Inputs are now expensive and not readily available

Osayanmon Wellington Osawe: @DavidTschirley...I quite agree with you that building close collaboration and strengthening this collaboration on the ground is an important policy agenda going forward in the fight against hunger and poverty. And I think Saweda has been doing great using this framework

David Tschirley: @osayanmonsellingtonOsawe - I agree she and her team have been doing great work!

Richard Lackey: Where have you seen in emerging markets the private sector quickly partnered with govt and non-profits?

Ghada Ahmed 2: Another critical challenge impact of COVID19 on gender and youth

John Alosias 2: With all these powerful points, we shouldn't under-estimate the influence of actors actively engaged in the chain (I mean all of them).

Melissa Nagadya: Very interested in looking at trade vs food security mainly during their trying moment small scale Famers needing to trade at the same time feeding the Families

Noubia Gribi: All actors of the Value chain need to be considered and the enabling environment

Duncan Boughton: Question for Prof Saweda Liverpool-Tasie: based on your experience in NIgeria, what support do researchers need to effectively engage with decision makers and how can USAID innovation labs support them to be more effective?

Ghada Ahmed 2: We used a cluster development lab method for engaging value chain stakeholders and it is works well

Oyinkan Tasie: One positive takeaway from the shock, particularly in developing countries like Nigeria is that Government Lockdown were found on the rule of law (although recognizing the need for some amendment). This is insightful as developing countries strive to strengthen institutions without which no policy, even well crafted and found on evidence based can make any meaningful impact

Joseph Kalasa : I support question by @Duncane B...

Ghada Ahmed 2: In the process of putting together a virtual engagement strategy to engage with fisheries value chain actors in ACP

Ghada Ahmed 2: and assessing COVID19 FS impacts in MENA

Deepa Thiagarajan: @ Dave Tschirley In contrast trader associations and terminal markets in Indian city have acted as precursors for large scale coronavirus clusters in wet-markets in rural, urban and peri-urban areas. There is a public push to shut down 'wet markets' totally. This move in turn would exacerbate reduced access to nutritious foods in these markets and economies.

William Meyers: Very curious on the map why Ukraine, Belarus, Lithuania and Latvia are a similar dark blue? The are very different coutnries in many ways so how are they similar and how are they different form neighboring countries?

Elliot Faminu : @Maximo very true. Lots of post harvest losses too

Ghada Ahmed 2: agritech is an interesting area to explore here. Especially agritech innovation in these countries

Ghada Ahmed 2: I met amazing innovators in Egypt, Morocco. Niger, Mali, Nigeria, Ghana, Kazakhstan and many places

Ghada Ahmed 2: Tapping into local innovations

Elliot Faminu : processing too, since over 40% is lost thru waste

Gary Alex: I may be missing something, but I don't see much yet on a call for any new directions for USAID food and agricultural programs post-COVID19. Maybe the conclusion is that nothing new is needed and that may be right. But USAID is doing a lot of different things. Do they all need to continue as is? Maybe. But this would be important for BIFAD to comment on. And, as part of this it would be well to ask the question if anything being done has had negative effects.

Joseph Kalasa : The healthy diet...the most vulnerable and have been in restrictions, the healthy diet will be a tall order after covid\_19 indeed. Tgere is need for world leaders to something especially for vulnerable people!

Noubia Gribi: MENA is also "hit" very badly as in some countries like Lebanon COVID-19 followed a terrible the economic crash in late 2019

Lourdes Martinez: Big problem with plants in the US!!

Ghada Ahmed 2: Yes Food prices are quite high

Adewale Obadina : @Maximo I appreciate you mentioning the food safety issue in Africa countries

Demba Ndiaye: Food safety is one thing, but post harvest remains a key challenge...

Janet Helms: Your comments are pointing at the plants, however, we know it is more complex than the manufacturing environment. Many of the outbreaks have been tied to community, living, or social situations outside of the plant environment. What thoughts do you have in addressing those areas of exposure and community spread?

Noubia Gribi: @Demba Ndiaye: how about food waste?

Demba Ndiaye: I have a plan to work on, data driven that needs to be upscaled... We need partners for the West African Region

Demba Ndiaye: @Erna Abidin Huge swaths of CBOs and CSOs in Africa now are taking the lead on local development and I can't wait to see such being properly guided

Joseph Kalasa : @Demba Ndiaye...how about southern Africa, Malawi?

Ghada Ahmed 2: I think we continue to use traditional approaches that we are comfortable with to address an unprecedented event

Ramesh Deshpande: The roles of the government, the private sector and the market, need to be clearly stated! There is a lot of wishful thinking here without clearly noting who should what?

Ghada Ahmed 2: We need to revaluate and use COVID19 crisis for a paradigm shift instead of trying to do more of the same

Adewale Obadina : @Demba, Noubia both waste and post-harvest are all a major challenge of food security in Africa. But food safety deals with human health which makes it a serious issue.

Dick Tinsley: be careful of relying on governments to make certain they have the financial resources to follow up any responsibilities assigned to them

Demba Ndiaye: @Noubia Gribi

Food waste in the context of developing countries like ours, based on first level scale of food production, most wastes are "eligible" to biogas systems whereby even serving for basic fertilizers can help, with more tech uses biogas systems can be combined with any other wastes leading to scale energy generation as well...

Ghada Ahmed 2: Need to invest in agriculture means we need to invest in farmers

Lopa Saxena: isn't unlimited growth strategies at the root of many of the 'unprecedented' spread of COVID-19 impacts??

Ghada Ahmed 2: farmer education is one of the key opportunities that we need to invest in

Demba Ndiaye: In the farmers' environment and that leads to Sustainability in Rural & Agricultural Development... not one without the other and today Farmers organizations in West Africa and beyond are more prone to partnerships than ever before...

Elliot Faminu : @Demba adoption is the issue, would biogas be easy to adopt? or adding value?

Lopa Saxena: a good question -- how do you get the private sector buy-in?

John Alosias 2: @Shawn Baker, can you comment on prioritization in relation to immediate priorities on the ground versus donor priority area?

Ghada Ahmed 2: it depends who in the private sector, right?

Namukolo Covic: The question though that has not really been addressed for Sub Sahara Africa is where will the financial resources come from to invest? When we were dealing with already constrained fiscal environment even before COVID-19?

Naomi Gokwat: In Nigeria, Plateau State, there is lots of post harvest loss especially with perishables. Farmers are facing difficulty in accessing fertilizer for the farming season and affordability is another big challenge. There is need to invest in farmers especially in the rural areas.

Ann Koontz: From Ann Koontz - Relief International. There is a Food Security Cluster COVID work group looking at the greater industry influence/impact on food security and this includes the private sector food production, processing, etc. supply chains.

Ghada Ahmed 2: Our research shows that collaboration with large global agrifoods did not have the type of spillover effect that we need to develop a local or regional agrifood marker

Dick Tinsley: How accurate is the data on the virus from developing countries? the index I am following shows low rates of infection.

Ghada Ahmed 2: agrifood market

Demba Ndiaye: @John Alosias 2 When it comes to priority, I do believe that Money have to follow the need based on research and its developmental prospects... not that donor should lead the Agenda, they're enablers...

Joseph Kalasa : @Covic...yes...what new financing strategies are in place. Its not a secret that most sub Sahara Africa nations are struggling financially already even before covid\_19. So the quest of financing need to be addressed quickly

Demba Ndiaye: @Dick Tinsley

Data overall is accurate loopholes in light of lack of testing for most, but global research pointing that local environments play a major win for Africa overall...

Adewale Obadina : @Dick there is the challenge of availability of enough testing kits.

Namukolo Covic: Kalasa I see the situation of limited being extremely critical because the economic disruptions will limit the amount of tax revenues for governments even further.

Stephen Walsh: The assessment that '' economic impact is worse than the pandemic' is based on negating the deaths and despair prevented by social distancing measures....

Benard Oloo: What are the immediate priorities for SMEs in developing countries to continue successful business now and post covid19?

Demba Ndiaye: Demba: Strategy First llc (Insurance & Financial Services - Washington DC) I'm working with a network of Farmers Organizations in West Africa mainly, any NEW financing mechanism available for the region related to boosting local agricultural production in light with low solvency based on conventional standards...

William Scott: How important is increased financing for value chain actors. One banker in Nigeria told me his bank was making increased for mechanization and for traders. William Scott - Dexis Consulting Group

Keith Moore: local is different from domestic supply chains. perhaps the research hasn't been done yet.

Mrityunjoy Kunda: During covid-19, safe production and rapid growth of production is important. For rapid and safe production RAS and Bioflok Fish culture system need to be introduced in a wider range. Small Indigenous fish species (SIS) is highly nutritious, so that along with other species SIS can be tried in RAS and Bioflok system-research needed.

Jane Lowicki-Zucca: Would you comment on the ways in which COVID-19 is affecting the roles and prospects for young people, including through a gender lens, in food systems? How best to ensure their protection, while also cultivating their contributions and any new opportunities opened up by the pandemic?

Kojo Ahiakpa: Are the immediate priorities for SMEs in developing countries encompassing

Oscar Hernandez Vela: One of the main concerns, is regarding the food availability because of transport restrictions. In the case of families attended by Feed the Future Coffee Value Chains in Guatemala, the people covered by the project has home gardens and poultry as source of protein and micronutrients, but the rest of the community don´t have it.

Janet Helms: Adobe Connect was not a good medium; I struggled on both my laptop and my phone to have a good experience. Suggest other technology.