

IFPRI 2020 Conference: Building Resilience for Food and Nutrition Security
Side Event on *Food Safety: Options for a Growing Crises*
Addis Ababa, Ethiopia
May 15, 2014

This side event served as a consultation on refining the food safety research agenda for the CGIAR research program on Agriculture for Nutrition and Health (A4NH). First, two perspectives were presented to set the stage for why food safety is an important issue and the goals for the consultation, including specific areas where inputs are needed. **Delia Grace**, a veterinary epidemiologist from the International Livestock Research Institute (ILRI) and leader of the A4NH research area on Agriculture Associated Disease, provided an overview of the current evidence we have on food safety issues in developing countries, particularly informal markets. **John McDermott**, Director of A4NH, led by the International Food Policy Research Institute (IFPRI), explained what advice A4NH is seeking as it thinks about its food safety research agenda moving forward. The presentations were followed by reflections from four panelists.

This document provides a summary of the key points from the session. To watch the entire session on YouTube, click [here](#).

1. Food Safety Research in Informal Markets

Delia Grace explained that food safety is one of the biggest health and economic problems facing developing countries. Contaminated food and water is estimated to be responsible for a significant portion of gastrointestinal illnesses, which remains one of the leading causes of sickness and death. Addressing food safety is a challenging, but it is also an opportunity. In Africa, there is a growing market for highly nutritious, but highly risky foods, like meat, milk, fish, and fresh fruits and vegetables. By and large, these highly nutritious foods are produced by smallholders and are sold in informal markets. Informal markets, by nature, are difficult to regulate but they sell foods that are cheap, fresh, and may include local breeds and varieties that consumers prefer. Even with rapid urbanization and population growth, it is expected that for the next several years, a large proportion of Africa's population will continue to purchase food from informal markets. Therefore, by focusing research on informal markets, we can address what currently represents the largest burden of food safety.

There is a common myth that the poor in developing countries do not care about food safety and that governments should focus more on food security. Food safety is a part of food security: consumers will avoid certain foods, albeit nutritious ones, if they fear the food is not safe. A number of hazards – bacteria, parasites, toxins, antibiotic residues – exist in foods, but the question is whether or not these hazards are truly important from a human health and economic perspective. One way to answer this question is move from a pathogen-based approach to a risk-based approach, which can guide regulation and innovation to ensure that food produced and consumed is safe without penalizing the poor who produce, sell, and

consume it. Delia refers to this concept as ‘safe food, fair food.’ Risk-based approaches can identify the source of food safety problems, which decision makers can use to make evidence-based decisions related to practices and policies affecting informal markets. The message from years of research is that improvements to food safety can be feasible, effective, and affordable.

2. Responding to Growing Concerns, Demands and Needs for New Approaches in Food Safety Research

To begin, John McDermott introduced a couple of basic assumptions guiding the food safety work in A4NH and posed questions that he hoped would be answered in the discussion.

- Food safety is an issue of increasing concern requiring more action
 - Do you agree that there is increased concern and/or demand for food safety?
 - What are your experiences with food safety concerns or demands?
 - Who is concerned about food safety and why?
 - What are the particular target markets or populations of concern?
- There are key knowledge gaps in improving food safety
 - How can research support food safety solutions?
 - Do we know enough now to implement programs at scale?
 - Are technologies, system, policies, and regulations easily transferable across different contexts?

Within A4NH, research priorities are guided by types of food chains, specifically mycotoxins in staple crops, animal source foods, and fresh fruits and vegetables; types of markets, specifically informal and formalizing markets; types of research, such as technologies, institutions, incentives, operational research, policies and regulations; and types of objectives, such as economic or health. John invited the participants to share their advice on prioritization during the discussion.

Lastly, A4NH recognizes research partners need to be engaged, particularly in the area of adaptation of technologies and approaches and also in order to build local research capacity in all areas involved in food safety issues. In addition, A4NH recognizes that we need to build stronger links between researchers and partners that are value chain specific and country-based or combinations of the two. Partnerships will generally fall into four categories: enablers, implementers, value chain actors and representatives, and research. John invited the participants to provide inputs on partnerships during the discussion.

3. Aflatoxin control in Kenya: public health perspective

Abigail Obura, U.S. Centers for Disease Control and Prevention (CDC)-Kenya, focused her comments on food safety challenges specific to Kenya and aflatoxins. Epidemiological studies conducted by CDC indicated that homegrown maize was the source of the aflatoxin outbreak in 2004-2007 in Kenya. There were more than 500 cases of acute aflatoxicosis with a case fatality rate of 40, which is very high. Looking more broadly at the prevalence of longer-term exposure to aflatoxins, a CDC report released in 2011 indicated that 78% of the tested serum samples

had detectable levels of aflatoxin and exposure assessments found no link to gender, age, or socioeconomic level. The message is that in the general population, aflatoxins are consumed by the entire population and so managing aflatoxin exposure is truly a challenge.

Abigael highlighted a couple of major public health challenges in managing aflatoxins. The first is the need for a treatment for acute aflatoxicosis, which currently does not exist. The second is lab capabilities. Nevertheless, there is hopeful progress being made. Results from Ghana on using clay binders in animal feed to reduce aflatoxin absorption suggests that this approach could be adapted for use with humans.

From her perspective, Abigael identified screening for aflatoxins in food produced by smallholder farmers as a priority research issue. Giving greater attention to solutions that decentralize lab capacities for detecting aflatoxins at the local level should be made. In terms of what sectors partners should be engaged, she noted that it is impossible to divorce agriculture from health when it comes to aflatoxins. Partners from across sectors should be engaged.

4. Food safety challenges in Zambia: protecting livelihoods and consumer health

Mweshi Mukanga, Zambian Agricultural Research Institute (ZARI), shared that within his department, they are asking themselves if agricultural research is developing food safety technologies that farmers want and that will improve their access to markets. One such example comes from eastern Zambia, where in the past, a large number of farmers were exporting groundnuts to Europe. When the European Union (EU) modified their regulations related to acceptable limits of aflatoxins in groundnuts, most of these farmers were unable to produce groundnuts that met these regulations. Mweshi's institute is part of a project under Feed the Future with partners from IITA and ICRISAT, which is looking at both biological control and non-biological control measures to mitigate aflatoxins in groundnuts so that the farmers can access these export markets again. Mweshi emphasized Abigael's point about the need for developing lab capacity to test for aflatoxin. He reported that one lab has been established in Zambia through Feed the Future and another one is in progress. These labs are vital for both farmers and companies trying to market safe groundnuts.

Stakeholder awareness is an urgent need. At present, people can't tell if crops are contaminated with aflatoxins or not. Thus, they are unable to assess and manage risks. Stakeholders and policy makers in particular also need to be informed about the risks and the consequences of ignoring aflatoxins. Another critical food safety issue Zambia is facing pertains to perishables, particularly the use of pesticides on fresh fruits and vegetables. ZARI is looking more closely at this issue with the understanding that the short fresh fruits and vegetables value chains could mean that people consume produce that has been sprayed with pesticides just 3-4 hours prior.

Mweshi emphasized that the food safety research agenda needs to bring a variety of partners on board – government ministries, academic communities, local communities, and private sector companies. In Zambia, the research community needs support to scale up biotechnology,

like aflasafe.™ Farmers need to be made aware that there is a solution to their problem and governments need to be made more aware of the problem and how enforcement and regulation can be used effectively and fairly.

5. Working cross-sectorally in Southeast Asia to improve food safety

Hung Nguyen, Hanoi School of Public Health, explained that the food safety context in Southeast Asia is quite different from Africa. Most countries in Southeast Asia have been able to cope with the food security issues, so now the focus has shifted to food safety. As economies improve, consumers are willing, and able, to pay more for higher quality food.

In Vietnam, there is a significant gap between the interests of policy makers and academics. In Hanoi, Hung is part of efforts to bring policy makers from ministries of agriculture and health to work with food safety researchers. In this process, his group learned that the issues they were investigating did not align with the concerns of policymakers, which were sensitive to consumer concerns. Hung emphasized that it is important for researchers to find a common language and agenda with policy makers. Secondly, research can give us a good understanding of the situation, but we need to move more quickly from research into testing interventions. As an example, in Vietnam, Hung is involved with a project on pork safety. Research indicates that slaughterhouses are the major source of the problem. There are some very simple changes that can be done in the slaughterhouses to improve the quality. In another project, their research suggests that cross-contamination is an issue. Addressing food safety is not always about a single food or a single sector, which is where Ecohealth approaches can improve our understanding of the problem and generate effective solutions. Lastly, we need simpler food safety approaches that can be adapted to different contexts.

The cross-sectoral issues associated with food safety require cross-sectoral partnerships. The recently enacted food safety law in Vietnam has increased the authority the Ministry of Agriculture has over food production. As a result, there is some political will to bring the ministries of agriculture and health together on food safety issues. Academic researchers identified a niche – risk assessment – where they could offer expertise to government ministries that needed to build capacity in this area. Based on Hung's experience in Vietnam, this has been a logical way to build cross-sectoral partnerships around food safety.

6. Food safety and its implications to transboundary trade in Africa

Martha Byanyima, Common Market for Eastern and Southern Africa (COMESA), shared her excitement that food safety is rising on the agendas of both research and development. One major food safety challenge is in the area of capacity of both the public and private sector. Governments need to understand the extent of the problem and the human health burden and to be able to have science-based approaches for addressing the challenges. For industry, they are in need of cost-effective, practical technologies to solve the problem.

Academic research has been useful, but more applied research – research aimed at developing and testing interventions that address food safety problems – is needed. Another area of research that is needed is research that examines risk-profiles for particular sectors. The research community needs advice or partners that can assist with communicating research results to industries and government with accompanying advice on what could be done.

There are a number of challenges related to capacity. As an example, Martha explained that there is currently a trade war on raw milk between two countries in Africa. Their focus is on differences in the standards, when from a risk-based perspective, their focus should be on the product and the safety of the product to the consumer. The ability to use risk-based approaches to solve market issues is lacking in Africa. Many food safety issues facing Africa currently are transboundary in nature. Therefore, when countries have differences in their food safety systems – standards, regulations, inspection systems, laboratories – it becomes a barrier to trade. Tools to establish equivalence and mutual recognition have not been adapted into tools governments can use. The focus should be on equivalence. COMESA is involved in negotiating solutions, but it takes time.

Following-up on the case of groundnuts in Zambia, which Mweshi mentioned, Martha noted that smallholders do not have the tools or skills to meet the standards, so they are pushed out of the market. In Zambia, it is now the exporters that are helping to mitigate the problem and drawing in smallholders. They are investing and empowering smallholders to participate in the EU market. Therefore, it is important to involve industry and the private sector.

7. Discussion

Following the presentations, the participants were asked to form small groups and discuss two questions, including whether or not food safety is a critical research issue. The summary is noted below.

What's your burning question – either something that was not answered or the one question that was asked, but not answered?

- Do we know what level of awareness people across sectors have of food safety?
- We know some farmers overuse pesticides. Why? What is the effect on their own health?
- How do we balance our goals of improving food access with food safety?
- If good practices are known, then when and why does good behaviour break down? Is it about lack of knowledge or poor incentives or both?
- How can moving towards a truly risk-based approach be done? If we answer that, it should help guide our research focus. What could be the operational frame for moving towards such a risk-based approach?
- Who will pay for this? What has been proposed is the creation of more expensive products and if there is no demand from consumers because they are not aware of the need for safer products, then farmers will not be incentivized to sell safer food.
- Not enough was said about the systems approach and the cultural issues related to food safety.

*What should the priorities be for the A4NH food safety agenda and what partners are needed?
The research agenda should include...*

- **Systematic studies** on specific sectors (e.g., meat, fruits and vegetables), smallholder size, and income level. Some related research questions could be: what are the causes of producing unsafe food at producer-level, trader-level, and retailer-level; why are people consuming unsafe food – it is an awareness issue or is it due to lack of resources; what are the causes of non-implementation of regulatory frameworks; what interventions are already available to producers, traders, retailers, and so on; and how can we implement these interventions at different levels.
- Validated and accredited **rapid tests** for aflatoxins that can be used in country. We need more labs that can do the tests and we need more affordable tests. More retrospective studies need to be done in order to determine if levels of aflatoxin have always been this high or how much change has occurred.
- **Supply-side** (primarily determining the technologies that would improve the practices of smallholders that improves their access to markets) and **demand-side** (primarily about understanding how to make information more accessible and increase awareness among poor consumers) studies; research needs to be **differentiated across sectors and populations**
- Studies on the issues around **processing and acquisition of foods**
- **Risk factor** and **risk transmission pathway** studies. Rather than looking at it economic vs health, the two could be integrated by asking, ‘what are the opportunity costs of not addressing food safety’
- Studies that link **aflatoxin exposure and human health effects**, particularly the impact on child growth
- Effective approaches to **scaling up research findings**

Other considerations...

- We need to move to a risk-based approach. Specialists working on food quality and health concerns should work more closely with political and social scientists to do a rapid assessment using a well-established resilience framework to get a holistic understanding of the situation and the primary drivers. Then, use that as a basis to think more specifically about the kinds of integrated knowledge and research programs that need to be developed to address this in different regions across the globe.
- How can access, export, and safety of food be optimized? Some research may inadvertently block progress in one of these areas, so how can research actually optimize the three?
- In terms of who will finance these changes, first, set the priorities. Next, ask governments and other partners to contribute. Perhaps research that shows the benefits of safer food is needed, so the increased cost is not passed along to poor consumers.
- Think about food safety from the farm to the mouth. This approach will then identify what partners need to be engaged.

8. Summary

John McDermott thanked everyone for the stimulating discussion and invited participants to share more ideas with himself or Delia Grace. John summarized the main points.

- There is a growing concern and widespread support for food safety research, which reaches across sectors and actors in the value chain. The demand for research is related to shedding light on some of the obvious and hidden concerns and disseminating the results so that sectors can move forward together with a common understanding about what is changing, what can be done to improve the situation, and how.
- The logic behind our research has to be related to risk mitigation and providing evidence that is accessible. We need to take a systematic approach, possibly differentiated by different sectors and value chain actors, and a lot of ideas were shared today about how that could be done. Furthermore, our research has to be embedded within delivery, capacity and decision-making.
- Several good points were made about economics and health, including the importance of cost-effectiveness studies and understanding what motivates behaviour for the various actors in value chains.
- Considering food safety in terms of holistic diets, rather than by individual commodities, will strengthen our approach and recommendations.
- Strong plea for diagnostics, which are high-quality, affordable, and accessible. This diagnostic capacity has to be integrated into on the ground decision making.
- There was not a lot of discussion on technologies. Nevertheless, technologies need to be linked to practice. A common theme from the discussion was the issue of how to increase knowledge and awareness and change practices through behaviour change communication.
- On partners, we need to broaden our perspective and bring together the biological and social and economic dimensions of food safety. Relatedly, we need to improve our understanding of how to leverage the private sector and build upon market-based approaches.