The 2nd International Conference on Global Food Security

Keiron Audain
Department of Food Science and Nutrition,
University of Zambia, Lusaka, Zambia

Take-away messages from the Junior Researcher Task Force

The second international conference on Global Food Security was held at Cornell University in Ithaca, New York, on October 11–14, 2015. It was co-hosted by Cornell University, Columbia University, and Elsevier Publishing, along with the Daniel and Nina Carasso Foundation as an Exclusive Platinum Partner. Well over 600 participants from more than 60 countries were in attendance, representing a diverse range of research domains within the context of global food security.

Following up from the 2013 conference in the Netherlands, the aim of this meeting instalment was to further broaden the participation of multi-disciplinary researchers, journalists and policy-makers involved in all aspects of food security. Organizers placed special emphasis on ensuring that the information presented at the conference was shared far beyond the attendees. This was the idea behind the Junior Researcher Task Force (JRTF) – a group of 22 competitively selected researchers assigned the task of disseminating conference information on social media. Special training in communication methods was provided to the JRTF members the day prior to the conference. In addition, eleven 90-minute "workshop cafés" were organized, in which participants had the opportunity to engage in critical discussion of some of the trending topics related to food security, such as: "Is there a role for genetic engineering in ensuring a food-secure world by 2050?"

"Organizers placed special emphasis on ensuring that the information presented at the conference was shared far beyond the attendees"

Highlights from the plenary sessions

A few of the important highlights from the plenary sessions included an insight into the state of food security in a commodity-driven world. Global economic growth has led to several countries moving from low-income to middle-income status. The growth in commodities such as aquaculture and soybeans has created opportunities to increase income per capita and combat micronutrient deficiencies (hidden hunger) within emerging economies, and thus improve cognitive development among the

Conference attendees at the Bailey Hall during the plenary sessions

respective populations. However, such growth occurs against the backdrop of environmental degradation, and is accompanied by the risk of homogenization of the food supply.

The sustainability of food security and nutrition was also discussed, stressing the importance of rethinking the global food system with a focus on sustainable intensification, gender equality, fair trade and the reduction of food wastage. Methods to reduce the impact of climate change on current food systems were highlighted. Agriculture, which contributed 49 gigatons of greenhouse gases in the year 2010 alone, cannot be excused from emission targets. The impact of climate change is indeed a real one: losses in yield and damage by crop pests are already occurring, and are predicted to increase considerably by 2050. Hence the need for the promotion of climate-smart agriculture, which focuses on reducing emissions without compromising productivity.

Small-scale African farmers are highly reliant on markets, yet grossly disadvantaged by their dependence on these. Market access needs to improve in order to benefit the poorest smallholders, which can be achieved by the provision of reliable and low-cost market information, as well as low-risk contracts. It was pointed out that small markets in many developing countries are reassuming control of the pricing of their commodities, and that Africa needs to follow suit.

The question of whether smallholder farmers can benefit from agriculture and food security policies highlighted the need for trustworthy and transparent institutions to assist farmers with trading. With more people to feed and fewer resources with which to feed them, food security is becoming an increasingly complex problem. Agriculture can indeed play a more involved role in improving nutrition, and therefore needs to become more nutrition-sensitive. This means much more than simply investing in biofortification.

The argument was put forward that genetically modified (GM) crops should be allowed and promoted in Africa, given the need for micronutrient-enriched foods as well as pathogen- and weed-resistant crops. However, it was advised that GM technology should be implemented only when no other alternative is available.

Behavioral economics should be considered in the context of developing food policies to promote better nutrition. It is important to identify, and communicate with, consumers who put little thought into their food choices and habits.

It was highlighted that global arable land expanded at a rate of 0.5% per year between 1986 and 2010, and that this increase has been accompanied by extensive deforestation. Yet this has done little to combat global hunger. Instead, there has been an increase in the consumption of foods high in sugar, sodium and animal protein, which in turn contributes to hidden hunger. As consumers become more aware of the sustainability of the foods they purchase, there are growing efforts to preserve available land by increasing agricultural adjustments to maintain land quality.

Sustainable food systems: From consumption to production

The Daniel and Nina Carasso Foundation hosted a special symposium on Sustainable Food Systems entitled “From Consumption to Production.” Essentially, a sustainable food system resembles

Plenary Speaker Eleni Gabre-Madhin from Eleni LLC in Ethiopia

a situation whereby total food and nutrition security is achieved, coupled with a low environmental impact. However, the agricultural intensification model is not considered sustainable, as exemplified by declining aqua systems and inefficient irrigation. Such a system also erodes genetic diversity and keeps farmers in poverty due to the need to purchase high-cost inputs. At present, 80–90% of livable land is under agricultural production. There has, however, been an explosion of innovation to preserve ecosystems, such as the Evergreen Agriculture Project in West Africa. In essence, the entire agricultural landscape needs to be re-examined, and sustainable development must be led locally. Indeed, a sustainable food system will have long-term social and economic benefits that will be reflected in nutrition and health outcomes. Thus it is beneficial to examine the food system from a consumer's perspective in order to help identify and develop innovative solutions. One such solution is "food systems literacy," whereby the consumer is educated as to how the food system affects individual food choices and dietary behaviors.

The remainder of the conference consisted of oral presentations that covered a broad array of topics from multi-sectoral researchers. Research presented by Smith and colleagues from Harvard University and Tufts University highlighted the effects of pollinator loss on global health. It was stated that a total removal of pollinators could reduce the global supply of fruits by 22.9%, vegetables by 16.3%, and nuts and seeds by 22.1%. All of these foods are major sources of micronutrients and play a role in lowering the risk of communicable and non-communicable diseases.

Empirical results from work done by Chiputwa and colleagues from the World Agroforestry Centre (ICRAF) in Kenya and the University of Göttingen in Germany showed that equipping smallholder farmers with certification to supply organic products improved both income status and gender equity, which in turn improved micronutrient and calorie consumption.

Data from the International Lipid-Based Nutrient Supplement research program showed that lipid-based nutrient supplements improved linear growth, decreased stunting and wasting prevalence, and improved aspects of cognitive and behavioral development in children aged 6–18 months from rural Burkina Faso who were being monitored and treated for malaria and diarrhea. Research conducted at the International Potato Center (CIP) in Uganda revealed that upon the promotion of biofortified orange-flesh sweet potato, the crop was adopted by 45,000 households with children under the age of five years, particularly in areas where farmer and community groups were involved.

"More communication across disciplines is required"

The take-away messages from the conference included the need for an increase in communication across disciplines to combat the complicated problems related to food security. In addition, multi-sectoral partnerships must play a more prominent role in helping to alleviate the current data constraints across various aspects of the food system.

Correspondence: ***Keiron Audain,***
Researcher and Visiting Lecturer in the Department of Food Science and Nutrition, University of Zambia, Great East Road Campus, PO Box 32379, Lusaka, Zambia
Email: *keiron.audain@googlemail.com*