



Session Title: GLOBAL FOOD SYSTEMS GOVERNANCE - THE ROLE OF FOOD SCIENCE AND TECHNOLOGY



Focus of the Session - Integrated Approach to Capacity Building, Food Safety, Healthy Diets and Future Earth through Sustainable Local Solutions to Global Problems

July 5, 2021 - The Food Systems Summit Science Days Dialogue organised by the International Union of Food Science & Technology (IUFOST), is a recognised partner of the UNFSS 2021, IUFOST has engaged its national scientific bodies globally in a dialogue with all those interested on how to bring together the multidisciplinary science linkages. From local to global level the purpose is to create adequate and needed capacity building, empower women and youth for better nutrition, to strengthen policy to ensure future resilient and sustainable secure and safe food systems and healthy diets through the central engagement of Food Science and Technology (FST) in the entire Food Chain. In the introduction the co-chairs have emphasized affordable and accessible technologies, with an integrated microscopic vision and macroscopic application approach to address sustainable secure and safe food systems.

The discussants of the panel were key members representing the global partners such as Rural Outreach Africa, International Food Policy Research Institute, Institute of Catastrophic Loss Reduction, and other strategic partners including R & D organisations, academia, non-governmental organizations and public and private enterprises. They have all addressed the objectives mentioned above and the following key points have emerged to take forward with a focus on an integrated approach to capacity building, food safety, healthy diets and future Earth through sustainable local solutions to global problems. Global food systems must consider urban health, future earth and ecological issues.

Food Science & Technology has already shown the way through research and capacity building, by transforming from traditional to modern, with the transition towards healthier and more sustainable diet, with care taken by bringing the low- and middle-income groups on board across the globe. Food safety and Hygiene should have priority. The capacity building should involve younger generations (millennials, XYZ generations) who have different perspectives and mindsets. As conservation and processing facilities are limited; losses and wastage should be minimized. As rapid changes are taking place in food systems, the focus should be on healthier diets.

As a result of the Covid-19 pandemic, there is increased awareness of food hygiene, sanitation practices and the role of water for washing hands, which is the basic principle in improving food safety. The food system involves everyday logistics that require innovation, transformation and safety aspects. Food safety is becoming the practice and culture in daily handling processing and food consumption. Game changers for food safety in the future may be used as food safety indicators or a food safety index. Less mobilization in food chains should be compensated by utilization of local food commodities combined with food diversification. Science and technology innovation that fits into local culture and consumer preferences must be geared towards healthier diets, complementary with indigenous crops and traditional recipes. There is a strong relationship between local traditional knowledge with healthy diets such as demonstrated with fermentation technology (kimchi, Tempe, Nato etc). Utilization of big data, data analytics and artificial intelligence will lead into personalized food production as part of sustainable food system in the future.

Global movement by emphasizing the synergy and integrated efforts of the multidisciplinary approach must be strengthened, engaging many scientific disciplines and organizations. There should be strong connectivity between food science, health science and social science. The Role of IUFOST with various food science and

technology professionals in many countries must focus on capacity building, food and nutrition safety, supporting micro, small and medium enterprises and providing healthy and safe diets. Good governance in implementing good food policy must be supported by the global movement and implemented at the local level. Coordination and collaboration amongst stakeholders are needed to participate in this complex food systems.

Research and innovation must support the transition of transformation of food system and the existence of traditional and modern food systems. Partnership among stakeholders is the key to achieving successful transition and transformation. Good data along food supply chains, especially on the consumers side, is lacking. Everyone is a consumer and dietary guide lines supported by total diet studies fit for various consumer groups are needed at local, national, regional and global levels.

The success story of the Rural Outreach Africa with outcomes for community, teachers and students is phenomenal. Such success stories need to be integrated into future policy for sustainable, secure, and safe food systems with local innovations to solve global problems. The intervention of Food Science and Technology with Environmental groups working together can make a big difference in value addition. This linkage needs to be strengthened to continue to work together to improve urban problems, ecological issues, reduce waste and hunger and achieve healthy diets for all. One such example where help is needed is highlighted, particularly for countries relying on fisheries. These need to be benchmarked on the traditional transitioning to modern with different scales of economies operating in different regions of the world. Local solutions can be translated to solve global problems through science and implementation of Food Science & Technology. This was showcased by bringing out the knowledge and importance of food conservation and processing over centuries in traditional foods, to ensure food systems and healthy diets. The need for an holistic, integrated, and multi-stakeholder approach was clearly emphasized.

It was highlighted that low quality and unsafe fisheries products and water constitute major health and wellbeing problems of most countries in Africa. They cause mortality and malnutrition in all age groups and have lower productivity overall. In addition, climate change has also been modifying fishery products distribution, productivity and increasing the vulnerability of the Africa region's economies and food security. To tackle the problems of food safety systems, quality requirements and post-harvest conservation and processing at national and regional levels, a great deal of interdisciplinarity, intersectorality and socio-economic efforts are needed in a well-coordinated manner.

The health and wellbeing of a country depends on sustainable, secure, nutritious, and safe food, where FS&T can make an impact through innovations suitable for both low- and middle-income countries. The example of grains in Indonesia for sustainable food policy is possible with judicious FST application and has been demonstrated in a number of countries globally. It will also help in improving the economic status of the country and region. The example of the success story of dairy industry in India, transforming itself from a net importer to net exporter and top global producer of milk for past 23 years, by involving small and medium scale industries is model worthy of emulating globally in different strata of the economy.

Similarly, Fruits and Vegetables are another area that needs to be focussed through FST to address the challenges and having potential in Africa, Latin America, South Asia and many other countries and regions, where horticulture is thriving. It was emphasized, that plant-based food is more resilient, sustainable, secure, nutritious, and safe and this food should be the focus for both low- and high-income countries. The basic need of capacity building in these areas at different levels was the focal point. Urbanization of developing countries increases the need to address problems of Food Safety, availability, and affordability through FST. Several examples of successful local solutions for global problems with scaling up through FST intervention were presented and deliberated.

It is necessary for consumers to consider significantly changing daily diets to reduce the consumption of foods of animal origin due to the high impact the production of these products on the environment and the climate change and to increase appropriate technologies to mitigate the environmental aspects as much as possible and to reduce food waste in the many populations relying on foods of animal origins. Consumer behaviours that can lead to unhealthy diets need to be modified and re-directed by consistent scientific information and resources backed by governmental policies.

Food safety is a major public health problem worldwide, affecting especially populations from small and medium size countries and children under five years old. Therefore, efforts to reduce the burden of food safety directly impact the purpose of meeting various Sustainable Development Goals. This is why food safety is one of the action tracks defined by the 2021 UN Food Systems Summit. As part of the efforts to address food safety, a robust project was presented to improve consumer perception and behavior in relation to food safety, aimed at increasing awareness among consumers and to help them make better choices and demand for food safety of the products they buy. Capacity building, and education based on science are the answers, supported by government policies and funding both for scientific communications for all sectors and research funding.

The points that have emerged around Food Science and Technology and related sciences, which require global cooperation and strengthening of national, regional and international policies and funding include:

- Strengthening the linkage between Food Science & Technology and Environmental groups;
- Innovating, including appropriate technologies fit for low- and middle-income countries with affordability, accessibility and an adaptable technology, which can make an impact;
- Prioritising working directly from Farm through to the consumer to reduce food losses and waste, to ensure a sustainable, secure and a safe food supply was emphasized many times
- Ensuring resilient & sustainable healthy diets involving, plant-based foods, dairy, and fisheries with a balance between them and other foods. These healthy diet components appear to be more suitable in most of the regions both from the carbon footprint and climate change perspective, as well as global warming issues.

In conclusion, the importance of primary and processed agricultural commodities such as livestock, fisheries, dairy and plant-based foods will continue as the main drivers of global trade, economic growth, and socio-economic development. The role of sustainable and integrated agricultural practices in the global food chain is important for each sector of crops, ocean wealth, dairy and animal welfare in various regions.

The need for the intervention of adaptable Food Science and Technology in sustainable Food Chains for value addition and by and co-product utilization is urgent. Demand-driven production and productivity of food commodities in the regions need the intervention of innovative technologies from farm to consumer inclusive of reduction of food losses and waste.

These actions must lead towards creating a greener and sustainable environment and mitigating issues of climate change and in creating a better carbon footprint. Issues of capacity building, food safety, adequate nutrition security, and future earth agenda need immediate focus through FST. These concerted actions must lead towards a safe, secure and nutritious food for all, equitable and inclusive for healthy diets using modern scientific tools and appropriate technologies involving industries and consumers for public good. These emerging policies need to be executable at ground level and also be affordable in various countries and regions.