IUFoST | Strengthening Global Food Science and Technology for Humanity

*IUFoST Releases Plan of Action*

# IUFoST Declaration on the Eve of World Food Day 2021

On the eve of World Food Day 2021 and following the just ended United Nations Food Systems Summit and IUFoST Global Forum around the Sustainable Development Goals (SDGs) to be achieved by 2030, it is a recognised truth that more than two-thirds of the seventeen SDGs directly are related to food. As the World Bank reported, the global pandemic has forced an estimated 100 million more people into extreme poverty, and as it is remembered that IUFoST and its many partners in food production already are providing billions of meals per day, now is the time for accelerated action.

In that context, global Food Science and Technology through the International Union of Food Science and Technology (IUFoST) is re-affirming its commitment and its action plan towards meeting future food & nutrition security challenges and the SDGs by its ongoing actions to address and thus reduce food losses and waste; mitigating environmental effects through encouragement for innovative and new technologies; expanding knowledge of traditional foods and processes and their health impacts; working on influencing consumer demand for healthier foods that restrict unhealthy foods by educating the consumer on food choices/habits and new alternatives, expanding knowledge of how food reacts with the body to reduce over nutrition, improve capacity building and education and training at all levels, especially in combating nutrition maladies and advocating safe food for all. Food sufficiency is tied closely to food safety. Food safety programmes should include public health risks, hazard monitoring, safety objectives based on the various steps in food handling, foodborne disease monitoring and overall science-based food safety guidelines. Promoting these initiatives would empower IUFoST through its national scientific bodies globally and Fellows of the International Academy of Food Science and Technology (IAFoST) and its partners, which can contribute to addressing food system issues at the global level through solutions that meet local needs as well. This approach will fill the void in the supply side gaps, drive demand changes, increase the efficiency of post-harvest operations, reduce the gaps from farm to consumer and promote food and nutrition security.

**Background:**

The IUFoST Cape Town Declaration approved by the XVth World Congress of Food Science and Technology in 2010, reaffirmed the fundamental role of Food Science and Technology in healthy future food systems: “the problem of food insecurity has huge political and economic dimensions and will not be solved without the contribution of science and of food science and technology”. The Declaration then provided an outline of the areas in which FS&T is actively at work for others. (https://iufost.org/cape-town-declaration)

The two core principles emerging from the IUFoST Congress in Cape Town in 2010 remain the same, that is “We recognize that access to nutritionally adequate and safe food is the right of each individual. Accordingly, we re-affirm the commitment made in our Budapest Declaration (1995) in which we recognized the indispensable role of food science and technology and undertook to apply it in seeking to ensure the world-wide year-round availability of the quantity and variety of safe and wholesome foods necessary to meet the nutritional and health needs of the world’s growing population.”

Advances in science and technology over the last decade has illuminated some new insights and revealed opportunities. Some of the priority opportunities may include:

1. There is an elevated recognition to advance from food security to meet calorie requirements to nutrition security with health outcome in mind. Foods can be purposely integrated into individual's diet for improved health and well-being.

2. Food and nutrition security for the under-nourished but with diet transition, obesity and obesogenic food and drink are accepted as greater challenges for Food Science and Technology to deliver technology solutions.

3. Food Science and Technology is a critical and integral part for the entire food, nutrition, and health enterprises. Sciences of food will be more effective if a more inclusive and system view is taken by uniting sciences and technology from agri-food production to processing and distribution to consumption and healthy outcome.

4. Effectively informing all stakeholders and the public about sciences of food is now more important than before. Capacity building to attract and inspire all talents, including those of future generations, is vitally important in ensuring sciences of food for addressing SDG goals.

## IUFoST Declaration 2021

***IUFoST and its Membership, Fellows and Associates commit to further mobilisation and towards concrete action in the following areas through stewardship, activism, engagement of business and policy makers, and developing and spreading the science to achieve the SDGs:***

1. ***Renews commitment to delivering the Sustainable Development Goals (SDGs) including no poverty, zero hunger and good health and well-being.***
2. ***Aims for zero food loss and waste for both food security and global environmental conservation through advocacy, sustainable consumption, infrastructural development, waste utilization and unused biological resources.***
3. ***Advocacy to increase budgetary allocation to food and agriculture especially in low-and middle-income countries (LMICs) where there is a widening gap in food production and sustainable consumption levels.***
4. ***Increased capacity building and accessibility of resources especially for poor smallholder farmers and women that account for the bulk of food production and food processing activities in LMICs. Focus on young scientists through mentorships, scholarships, and empowerment of girl students for tomorrow's leadership in Food Science and Technology.***
5. ***Channeling of considerable resources to reducing post-harvest food losses in LMICs, promoting upstream and downstream food processing and market led innovations, removing distortions, and strengthening food value chains. There will be increased emphasis on traditional foods and processes in valuing Food Culture over centuries with an approach for sustainable food consumption and production by considering the importance of social sciences in enabling and empowering communities.***
6. ***Encouraging governments to establish/enhance their food processing and value additions sectors to underscore their critical importance to the economy not only in LMICs but also in high income countries to prevent food wastage.***

7. ***Promotion of the production of safe, healthy and nutritious foods, reduction of the huge burden of food-borne illnesses in all regions and countries, the diet transition for minimising obesity and non-communicable diseases burden (especially reducing very high calorie, fat dense as well as sugar rich foods consumption), strengthening food regulatory sciences and development of new approaches for improving food safety in the food chain.***
8. ***Promotion of food processing for a healthy diet, sustainable food processing research including unconventional sources of foods such as conversion of insects to edible foods and innovative algae bio refinery and emerging technologies where the energy utilization and negative impact on the environment are considerably lower.***
9. ***Promotion of multidisciplinary approach to mitigating the damaging effects of climate change on the close interaction between water, energy and food, and trans disciplinary research to build sustainability and resilience at the water, energy, food nexus in many parts of the world that rely on ecosystem services for agriculture and food processing. Water conservation, clean water and water recycling are processes in which Food Science and Technology applications and competence can be utilized efficiently.***

*Actions:*
*Improving Food Systems by showcasing national and regional opportunities and best practices:*

- *Robustness of food regulatory systems is a prerequisite to sustainable food systems. IUFoST is strengthening its commitment to CODEX through active engagement by its CODEX Committee.*
- *Bridging the gap between academia with the public (inter-government institution collaborations) and private sector is a key to the sustainable food system.*
- *Initiatives for the urban environment for food system. IUFoST can demonstrate through actions of its national bodies. Proof of optimized energy and water usage is available in the urban and indoor agriculture environment through application of Food Science and Technology.*
- *Risk assessment data mining needs capacity building, through collaborative efforts regionally and globally. The behaviours behind producers' production push versus consumers demand pull and relationship with culture need more scientific data. For improving food safety approaches like risk assessment, hazard surveillance / monitoring, surveillance and investigation need to be focused.*
- *IUFoST needs to emphasize producing sustainable foods with considerations on feed **(**animal/aquatic environment/nutrition**)** as much as human food.*
- *Capacity building, empowering younger generation as the drivers for sustainable food systems*
- *Technology exchange within IUFoST adhering bodies especially "upgrading, up cycling", reduction of food loss and waste into industrially valuable products.*
- *IUFoST would focus on bringing awareness through consumer education, together with inter-disciplinary collaborators, to start changing their habits to practice sustainable consumption. Education through communication to all sectors and engagement with consumers, nutritionists, medical fraternity, and the governments continue to be vital. IUFoST national and regional bodies have demonstrated successful communication vehicles to increase scientific knowledge of facts around food. Experts representing Food Science and technology in the areas of fortification, food safety, food processing and product development, production and market economy, human nutrition, food engineering, and quality control would work with partners in agriculture, animal breeding, and genetics, livestock processing, social agencies, government regulatory bodies, and UN agencies including CODEX.*
- *Capacity building and collaborative research efforts are required from governments and must include industry engagement; overall a cross-discipline engagement is needed with food science and technology*

*as the coordinating component to ensure the safety and sustainability of the traditional food chain. Identification of accountable bodies, securing public/private co-funding and progress tracking systems are key success factors.*

- *Real food challenges are in handling scarcity, inefficient use of natural resources, small and fragment structures, sub optimal agricultural practices and poor management and lagging food safety and traceability standards. These sectors need greater attention from policy makers. More collaborative work is needed between academia and industry with local government participation. This is not to replace sustainable agriculture and not to increase the energy requirement per grain of production.*
- *Develop food packaging materials and processes that will extend shelf life, reduce waste, and are sustainable and economical.*
- *Food Science and Technology has a central role to play to guide traditional, indigenous crops, through local technology processes that have been established over centuries in local kitchens and marketplaces to scale them up with the use of appropriate technologies. More research should be focused on the components of traditional foods, and processes related to the environment (soil, climate, water resource). Traditional processes for scale-up and adaptation to other localities need to be explored. Appropriate food engineering approaches, and standardisation, in conjunction with cultural and environmental reference points, would ensure the safety of the traditional foods.*
- *Disruptive technology interventions and other new innovative technologies (3D Printing, High Pressure Processing, etc.) through cutting edge R&D in many food research Institutions and academia with capacity building is an important agenda with food industry interface.*
- *The food link to healthy diet and sustainability is in production, processing, marketing and more – we need to be active in promoting quality of foods, not just quantity. Consumers can be informed about sustainable consumption and how to achieve a healthy diet and that this needs the application of Food Science and Technology.*
- *The role of food industries in the food chain from farm to consumer is an important aspect of sustainable food consumption and food processing and the need for constant interactions with the latest innovations in Science and Technology is critical. IUFoST needs to work together with the private sector on some of the challenges related to diet transition with obesity and NCDs, especially high calorie and fat dense as well a sugar-rich foods. IUFoST will work closely with all stakeholders to address these issues, including involvement of consumers through education.*

*Other key objectives for global Food Science and Technology (through IUFoST) are:*

*a) Enlist academic, research, and higher education institutions to build capacity, actively support various flagship programs of governments on food and nutrition,*
*b) Engage with food businesses to ensure availability of safe and healthy food, while creating demand for safe and healthy food through a social and behavioral change of citizens,*
*c) Expand the knowledge base of the profession through collaboration and cross-disciplines, to foster dialogue between sectors*
*d) Enable further growth of the associations and professional development of their members.*

*The intended result of these actions is to prepare a skilled, highly qualified and resilient agri-food workforce for the future. This can be accomplished through primary education in food, food processing and distribution, and nutrition. They will improve health and well-being in homes and communities which will provide a healthy future*

*workforce. These actions will also provide teachers and training-the-trainer programmes related to the future food industry directed towards tuned and sustainable food systems through equitable education programmes in Food Science and Technology from the grassroots. The development of a knowledge base that uses new and innovative technologies, artificial intelligence, robotics, and digitalization is needed through appropriate partnerships with the core competence of Food Science and Technology. Additionally, these actions highlight the need for collaborative partnership between academia/government and the industrial sector joining hands in establishing a sustainable food system for future generations.*

In light of these continuing actions and commitments and in the spirit of this declaration on the eve of World Food Day, the search for sustainable food solutions are the triggers for IUFoST mobilization, as the global voice of food science and technology. Translation of success stories throughout the world using Food Science and Technology can significantly help in achieving the SDGs and future resilient and sustainable food systems. IUFoST has challenged its members and associates to work on all fronts; to increase research; to engage creatively with partners across business, policy and science; to improve processes; to reduce dependence on water and to reduce waste and re-use resources and to build capacity through education in all and for all sectors. The international community of food scientists, technologists and engineers will meet at the IUFoST General Assembly in 2022 in Singapore to assess the effect of the mobilization and actions arising.