

## **Advancing Food Science, Quality Assurance, and Sustainable Innovation in Pakistan:**

### **A Strategic Vision Anchored in the Legacy and Future of Pakistan Society of Food Scientists and Technologists**

**Muhammad Atif Randhawa<sup>1,2,3\*</sup>**

<sup>1</sup>National Institute of Food Science & Technology, University of Agriculture, Faisalabad, Pakistan

<sup>2</sup>President, Pakistan Society of Food Scientists and Technologists, Pakistan

<sup>3</sup>Pak-Korea Nutrition Center, University of Agriculture, Faisalabad, Pakistan

**\*Corresponding Author:** [atifrandhawa@uaf.edu.pk](mailto:atifrandhawa@uaf.edu.pk)

The world food system is experiencing a period of radical change with the complex combination of population growth, climatic uncertainty, technological turmoil, and consumer demands. The joint influence of these factors has enhanced the importance of food science and technology as an important solution to some of the most pressing problems of our time including food security, nutritional sufficiency, environmental sustainability, and economic stability. Issues like structural inefficiencies, low technological adoption, and regulatory shortfalls are common and often remain unaddressed in developing countries, such as Pakistan. In this case, scientific institutions, professional societies, and academic platforms play a primary role of paramount importance in shaping the development of the country. It is a privilege and at the same time my duty as the President of the Pakistan Society of Food Scientists and Technologists (PSFST) to make a statement about our institutional heritage, as well as to provide a vision of the future of the Pakistan Journal of Food Sciences.

One of the earliest attempts to institutionalize the field of Food Science and Technology in Pakistan is the Pakistan Society of Food Scientists and Technologists, which was established in 1981. Its foundation was a landmark in the development of food science as an independent and critical science, the one that unites agriculture, chemistry, microbiology, engineering, and nutrition. The reinstatement of the PSFST in the year 1991 further enhanced its mandate, which enabled it to diversify its operations and enhance its status as one of the professional bodies in the country. PSFST has, over the decades, developed into a vibrant platform, bringing together academia, industry, government, and civil society in a platform that ensures collaboration and excellence in food science and technology.

One of the main characteristics in the development of PSFST has been its focus on aligning the national activities with the standards and best practices in the world. This has been majorly facilitated by its membership in the Institute of Food Technologists (IFT), USA, which has availed international expertise, resources, and networks. This association has helped with knowledge sharing and best practices, enabling Pakistani professionals to stay updated with the current global trends in the field of food science. It has equally increased the credibility and the visibility of PSFST, thus making it a major stakeholder in the global scientific society.

Since its establishment, PSFST has been on a clear mission to advance food science and technology for the growth and development of our country. The latter has been accomplished through

a wide range of operations, including the organization of conferences, seminars, workshops, and training programs. Such programs have presented tremendous opportunities for knowledge sharing, capacity building, and networking. They have also assisted in the dissemination of new ideas and innovations, which have helped in defining the direction of the food sector in Pakistan.

One of the most significant contributions that PSFST has made was its influence on food policy and regulation. The society has been keen to engage with policymakers on issues of food safety and quality due to their critical importance in this industry. It is worth mentioning that PSFST has advocated for the establishment of the Punjab Food Authority (PFA), a body aimed at ensuring food safety and hygiene in the province. This achievement underscores the capacity of the society to implement scientific knowledge into feasible policy outcomes, thereby positively impacting human health and consumer protection.

Other than policy advocacy, PSFST has made remarkable investments in education and capacity building as well. The society's collaboration with Global Alliance to Nutrition (GAIN) in screening and curriculum design of food safety programmes indicates its concern with academic and professional training. These programs have also led to the production of a new breed of food scientists who are able to cope with the challenges of current times using the knowledge and skills required by the industry and international standards, while ensuring that curricula are adjusted to both industrial needs and global expectations.

The other field in which the society has made contributions is research and innovation, mainly through its flagship journal, the Pakistan Journal of Food Sciences. Since its revival in 1991, the journal has been an invaluable tool for scientific knowledge dissemination in which original research, reviews, and technical reports have appeared in an extremely wide range of subjects. The new format of the journal denotes a renewed mission in enhancing its academic and editorial quality and global outlook. The journal will adhere to the values of transparency, integrity, and excellence, contributing to the worldwide dissemination of scientific knowledge and aiming to become among the most recognized journals in the field.

PSFST has also maintained strong interest in professional development and networking. The society has conducted numerous national conferences, seminars, and expos where different stakeholders from different sectors have been brought together. These events have facilitated the exchange of ideas, collaboration, and provided a platform where innovations can be highlighted. One of the most outstanding moments for the society was the annual conference held in 2000, in which the then President of Pakistan, Mr. Rafique Tarrar, was the Chief Guest. Besides highlighting the national significance of PSFST's contribution, the event also strengthened awareness of food science within the broader developmental agenda.

PSFST has also been keen on international partnerships, as it has conducted seminars and workshops with international partners like the Malaysian Palm Oil Board (MPOB). The society has been able to lead new trends and technologies because it participated in key industry exhibitions. In addition, PSFST has developed strong connections with top industry players, including Nestle, Engro, Dawn Foods, Vita, Rafhan Maize, National Foods, Mitchells, PepsiCo, Coca-Cola, Merit, and Pizza Hut, among others. These partnerships have provided students and professionals with excellent opportunities to develop internships, training, and careers.

In addition to its scholarship and professional activities, PSFST has been socially responsible

as well. There are community activities in which the society has participated actively, such as flood relief programs, whose purpose has been to help affected people. The community nutrition work, especially the preparation of educational manuals for school teachers, is indicative of its concern to enhance public health and create awareness on nutrition at the grassroots level. These programs emphasize a broader vision of the society in contributing not only to scientific development but also to social welfare.

Despite the accomplishment of these success stories, the food industry in Pakistan has yet to fully stand on its feet. The country has massive agricultural potential but is unable to compete effectively in global markets because of inefficiencies in post-harvest processing, value addition, and weak infrastructure. The adoption of modern quality management systems is not yet homogeneous, and the use of advanced technologies remains in its early stages. These issues can only be addressed by using a holistic and well-coordinated approach that includes policy reforms, technological development, and capacity building.

This change lies in the management of quality. The introduction of food safety, consistency, and competitiveness is possible with the implementation of internationally accepted standards such as ISO 9000 and Hazard Analysis and Critical Control Points. These systems provide methodological approaches to identify risks, optimize processes, and improve quality across the value chain. In the context of Pakistan's food industry, it is not only a regulatory choice but also a strategic one, because it can facilitate access to international markets as well as build the confidence of consumers.

Another factor that matters in the future of the food industry is technological innovation and development. New technologies, such as precision agriculture, biotechnology, and digital traceability systems, offer fresh avenues for increasing productivity as well as improving quality and transparency. However, the adoption of these technologies carries costs in terms of investment, infrastructure, and technical skills. PSFST is important in that direction because it allows academia and industry to collaborate, while also providing assistance in the formation of favorable policies, research, and development.

Sustainability is one of the defining concepts of modern food systems. Food production and food processing have environmental implications that require a shift towards more resource-efficient and environmentally responsible practices. This includes food waste reduction, optimization of water and energy use, and sustainable packaging. PSFST can contribute to the development of a resilient food system through integrating the notion of sustainability into its programs to assist in balancing economic, environmental, and social aspirations.

The development of human resources remains one of the essential drivers for progress in food science and technology. The modern world consists of multidisciplinary problems that require a multidisciplinary workforce. PSFST has been playing a major role in this field through its training programs, academic partnerships, and student interaction programs. Yet, there is still a need to give more impetus to these activities by matching educational programs to the needs of industry and encouraging continuous professional growth.

Governance and policy frameworks also play a major role in ensuring that the transformation of the food sector is facilitated. Good policies can provide a supportive atmosphere for innovation, investment, and quality enhancement. This involves setting regulatory standards, financial

incentives, and sponsoring research. Cooperation between the state, higher education institutions, and the business community is needed to create coherent plans and achieve sustainable results.

The rejuvenated Pakistan Journal of Food Sciences is seen as a driver in the achievement of these aims. The journal intends to increase its impact on global knowledge by publishing high-quality and peer-reviewed research and advocating interdisciplinary studies. It aims to offer an avenue to discuss the most pressing problems in the field of food science and to promote communication among stakeholders. By doing so, it will be not only a knowledge repository but also a driver of innovation and policymaking.

In prospect, the future of the food industry in Pakistan is based upon how we can build upon the legacy of institutions like PSFST. The Society has been resilient, adaptable, and focused on excellence since its registration in 1981 and revival in 1991. It has high prospects for improving policy advocacy, research, professional development, and community engagement. Going forward, there is an urgent need to enhance institutional capabilities, foster research quality, and connect with international networks.

To sum it up, the PSFST is a source of hope and a gateway of development for Food Scientists and Technologists in Pakistan. Further initiatives that it is undertaking to promote scientific growth, increase standards of quality, and accelerate innovation are vital in ensuring the emergence of a safe, sustainable, and competitive food industry. A stronger PSFST will lead to a stronger, safer, and more innovative food industry in Pakistan. By working together, sharing a vision, and staying dedicated, we will be able to turn obstacles into opportunities and create a strong food system that will sustain the needs of current and future generations.