Agrifood systems face complex and unprecedented challenges related to climate change, biodiversity loss, migration, conflict, economic instabilities, and COVID-19. Inequality of income is also growing the world over, and many rural inhabitants live in poverty or extreme poverty.

According to the Food and Agricultural Organization (FAO) the world is not on track to achieve zero hunger by 2030. It is believed that science, technology, and innovation can accelerate the transformation of agrifood systems so that they become more efficient, inclusive, resilient, and sustainable platforms offering better production, better nutrition, a better environment, and a better life, leaving no one behind.

With increasing global populations, the consumption of food and food-derived products has been increasing. However, to meet the daily demand of food for each individual is also challenging due to climate change and increasing numbers of climate calamities, greater food wastage and loss, and rises in global food prices and so forth. Innovative approaches are therefore required during each phase of the food supply chain, from food production, processing, supply, through to sustainable consumption.

On 7th November 2022, The International Conference, "Agri-food Innovations in the Quest for Food and Environmental Security", organized by Research and Innovation Support for Higher Impact (RISHI) will contribute to strengthening the link between science, research and innovation and to provide solutions in line of food and environmental security.

This Research Topic will welcome original research and review papers (both from conference attendees and wider external audiences) on the following topics, including but not limited to:
• innovation in agri-food systems;
• innovation in agri-food processing;
• innovative food products and health;
• innovation in food security;
• innovation in food waste management.

Frontiers in M334icrobiology is proud to launch this mini-series of Research Topics for the International Day of Awareness of Food Loss and Waste 2022. We aim to raise awareness of such issues and provide new research on possible solutions to tackle global food loss and waste. It is crucial to reduce food loss and waste to provide improvements to agri-food systems and aid in achieving food security, food safety, improved food quality and nutrition - which ultimately result in4545 zero hunger. Reducing food loss and waste also contributes significantly to the reduction of greenhouse gas emissions, as well as pressure on land and water resources.

Worldwide, an estimated 20-40% of crop yield is lost primarily due to pests and pre-harvest diseases. For example, mycotoxigenic fungi that contaminate grain crops can reduce grain quality and crop yield, as well as present a health risk to humans and livestock. Furthermore, climate change influences the prevalence and severity of crop diseases which in turn will affect disease management and the efficacy of control measures.

This Research Topic aims to further understanding of pre-harvest diseases in crops; display advances in identification and control methods; and assess the impact of climate change on crop pathogens.

We welcome Original Research, Reviews, Mini Reviews, Perspective, Methods and Opinion articles. Subjects of interest include but are not limited to:

• Identification of bacterial, fungal and viral pathogens causing disease in crops;

• Management of soil-borne diseases of crop plants;

• Advances in detection methods for pre-harvest pathogens;

• Advances in treatments for infected crops;

• Preventing pre-harvest disease through innovative control measures and applications for crops.

Explore the other collections within the Fight Against Food Waste series:
Fight Against Food Waste: Combating Contamination and Spoilage
Fight Against Food Waste: Turning Food Waste Back Into Food
Fight Against Food Waste: Closing the Loop with Composting