



WORLD FOOD DAY 2026 YOUTH INNOVATION CHALLENGE

Guidance Note for Students

1. Introduction

The World Food Day 2026 Youth Innovation Challenge is a national competition jointly implemented by the Food and Agriculture Organization of the United Nations (FAO) in partnership with the Ministry of Education, Higher Education and Vocational Education of Sri Lanka and the Hatton National Bank (HNB).

National partners include the Ministry of Agriculture, Livestock, Land and Irrigation; the Ministry of Fisheries, Aquatic and Ocean Resources; the Ministry of Environment; the Ministry of Health and Mass Media; and the Ministry of Science and Technology. Technical collaborators include TRACE Expert City, the Institute of Electrical and Electronics Engineers (IEEE), the Sri Lanka Inventors Commission (SLIC), the Sri Lanka Agripreneurs Forum (SLAF), the Institute of Food Science and Technology Sri Lanka (IFSTSL), and the National Innovation Agency (NIA), along with Square Hub as the technical and facilitation partner.

The challenge aims to inspire university students to develop innovative, practical and scalable solutions to address real-world challenges affecting Sri Lanka's agriculture, fisheries, livestock, environment, climate resilience, food security and nutrition sectors. Students are invited to form multidisciplinary teams and submit innovative concepts that respond to one of the official challenge statements published under the competition.

2. Who Can Apply?

The competition is open to students enrolled in the eligible universities and higher education institutes available here.

Teams may consist of 1 – 5 students from one or multiple faculties and/or across universities and are encouraged to be multidisciplinary.

Eligible Universities/Higher Education Institutes:

1. University of Colombo
2. University of Peradeniya
3. University of Sri Jayewardenepura

4. University of Kelaniya
5. University of Moratuwa
6. University of Jaffna
7. University of Ruhuna
8. Eastern University, Sri Lanka
9. South Eastern University of Sri Lanka
10. Rajarata University of Sri Lanka
11. Sabaragamuwa University of Sri Lanka
12. Wayamba University of Sri Lanka
13. Uva Wellassa University of Sri Lanka
14. University of the Visual & Performing Arts
15. University of Vavuniya
16. The Open University of Sri Lanka
17. Gampaha Wickramarachchi University of Indigenous Medicine
18. General Sir John Kotelawala Defence University (KDU)
19. University of Vocational Technology (UNIVOTEC)
20. Ocean University of Sri Lanka
21. Buddhist and Pali University of Sri Lanka
22. Institute of Surveying and Mapping
23. Sri Lanka Institute of Information Technology (SLIIT)
24. Sri Lanka Institute of Development Administration (SLIDA)
25. National Institute of Social Development (NISD)
26. Aquinas College of Higher Studies
27. National School of Business Management (NSBM Green University)
28. CINEC Campus (Private) Limited
29. Sri Lanka International Buddhist Academy (SIBA)
30. Institute of Chartered Accountants of Sri Lanka (CA Sri Lanka)
31. SANASA Campus
32. Horizon College of Business & Technology (Horizon Campus)
33. KIU Campus
34. Nagananda International Institute for Buddhist Studies
35. Sri Lanka Technological Campus (SLTC)
36. Sri Lanka Institute of Nanotechnology (SLINTEC)
37. Saegis Campus
38. ESOFI Uni
39. Institute of Chemistry Ceylon
40. International College of Business and Technology (ICBT Campus)
41. Benedict XVI Catholic International Institute of Higher Education
42. Royal Institute Colombo
43. Business Management School (BMS)
44. International Institute of Health Sciences (IIHS)
45. Lanka Nippon BizTech Institute (LNBTI)
46. Gateway College
47. The Lyceum Campus
48. British School of Commerce

- 49. Sri Lanka Institute of Tourism and Hotel Management (SLITHM)
 - 50. Sri Lanka Institute of Textile and Apparel (SLITA)
 - 51. The American College of Higher Education (Private) Limited
 - 52. Asia Pacific Institute of information Technology Lanka (Private) Limited
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3. Selecting a Challenge Statement

Each team must select ONE challenge statement from the following thematic areas:

Agriculture

1. Reducing Labour Dependency in Agriculture

Agriculture in Sri Lanka continues to rely heavily on manual labour for key activities such as land preparation, seeding, and crop management. However, increasing labour shortages, rising costs, and reduced interest among younger generations are creating significant constraints for farmers. There is a growing need for solutions that can reduce labour dependency while remaining affordable and practical for smallholder farmers.

Challenge:

How might we develop affordable and practical solutions to reduce human labour in key agricultural practices such as land preparation, seeding, planting, and crop management for smallholder farmers in Sri Lanka?

2. Smart Detection of Plant Nutrient Deficiencies

Improper fertilizer use is a major challenge in Sri Lanka, often leading to both reduced crop productivity and environmental damage. Farmers may lack access to simple tools to assess soil fertility and plant nutrient needs, resulting in overuse or underuse of inputs. There is a need for accessible, low-cost solutions that help farmers make informed decisions on nutrient management.

Challenge:

How might we enable farmers to accurately detect soil fertility levels and plant nutrient deficiencies in a simple, affordable, and actionable way to optimize fertilizer use?

3. Early Identification of Crop Pests and Diseases

Pest and disease outbreaks significantly impact crop yields and farmer incomes in Sri Lanka. Early detection and timely intervention remain a challenge, particularly for smallholder farmers who may lack access to expert advice. There is an opportunity to explore innovative tools, including digital and AI-based solutions, to support early identification and response.

Challenge:

How might we develop accessible solutions to help farmers identify crop pests and diseases early and take appropriate remedial actions?

4. Determining Optimal Harvest Maturity

Harvesting crops at the right stage of maturity is critical for quality, market value, and reducing post-harvest losses. However, many farmers rely on visual judgment, which can lead to inconsistencies, especially in fruits and vegetables. There is a need for simple and reliable methods to determine optimal harvest timing.

Challenge:

How might we support farmers in accurately determining the optimal maturity stage of fruits and vegetables to improve quality and reduce losses?

5. Smart Water Management and Irrigation

Water management remains a critical issue in Sri Lanka's agriculture, particularly in paddy cultivation and fruit and vegetable farming. Inefficient irrigation practices, coupled with climate variability, can lead to both water wastage and crop stress. There is an opportunity to integrate real-time data such as soil moisture and rainfall forecasts to improve irrigation decisions.

Challenge:

How might we develop affordable and automated irrigation solutions that optimize water use based on soil moisture levels and weather conditions for different cropping systems?

Fisheries

1. Reducing Post-Harvest Quality Losses

Post-harvest losses in the fisheries sector significantly affect seafood quality, food safety, and fisher incomes in Sri Lanka. These losses often arise from inadequate handling, poor storage, inefficient transport, and limited preservation practices across the value chain.

There is a need for practical, affordable, and scalable solutions to improve post-harvest handling, cold chain management, and preservation techniques in order to enhance product quality and market value.

Challenge:

How might we develop practical and cost-effective solutions to reduce post-harvest losses across the fisheries value chain and improve seafood quality, safety, and value addition?

2. Waste Management in Fisheries Harbours

Poor disposal of fish waste, plastics, fiberglass, and other solid and liquid waste in fisheries harbours leads to environmental pollution, health risks, and operational inefficiencies. Sustainable and scalable waste management solutions are needed to improve harbour sanitation, reduce environmental impacts, and promote resource recovery through recycling and value addition..

Challenge:

How might we develop practical and environmentally sustainable solutions for the collection, treatment,

reuse, and recycling of fish waste and other harbour waste streams to improve fisheries harbour management and environmental performance?

3. Addressing Abandoned, Lost and Discarded Fishing Gear (ALDFG)

Abandoned, lost, and discarded fishing gear (ALDFG), along with inactive fishing vessels, pose significant environmental, navigational, and economic challenges in coastal and marine areas. Innovative and sustainable approaches are needed to recover, recycle, repurpose, and responsibly dispose of these materials while minimizing their impact on marine ecosystems.

Challenge:

How might we develop sustainable and scalable solutions to prevent, recover, recycle, repurpose, and responsibly dispose of abandoned, lost, and discarded fishing gear and inactive fishing vessels?

4. Enhancing Coastal Fishery Resources

Sustaining and enhancing coastal fishery resources is essential for ensuring food security, supporting livelihoods, and maintaining healthy marine ecosystems. Innovative approaches are needed to improve fish stock productivity, promote resource sustainability, and strengthen the resilience of small-scale fisheries.

Challenge:

How might we develop innovative and sustainable solutions to enhance coastal fishery resources, improve ecosystem productivity, and support resilient small-scale fisheries?

5. Ensuring Adequate Fish Fingerling Supply for Inland Fisheries Development

Sri Lanka has approximately 12,000 reservoirs with significant potential for Culture-Based Fisheries (CBF) development. However, inland fish production is constrained by the inadequate availability of quality fish fingerlings required for reservoir stocking.

Challenge

How can Sri Lanka develop an innovative, scalable, and cost-effective solution to ensure the timely availability and distribution of sufficient quantities of quality fish fingerlings for stocking seasonal and perennial reservoirs to maximize inland fish production?

6. Affordable and High-Quality Aquaculture Feed Development

Sri Lanka has significant potential to expand its aquaculture industry, which can contribute to food security, employment, and rural economic growth. However, the sector's growth is currently constrained by the limited availability of good quality, cost-effective aquaculture feed. High feed costs and inconsistent feed quality reduce farm profitability, limit adoption of aquaculture technologies, and hinder sector expansion.

Challenge

How can Sri Lanka develop an innovative, scalable, and economically viable solution to produce and supply high-quality, low-cost aquaculture feed to support sustainable expansion of the aquaculture sector?

7. Disease Control and Biosecurity in Shrimp Aquaculture

Sri Lanka's shrimp farming industry plays a vital role in export earnings, rural employment, and coastal livelihoods. However, the sector is severely affected by recurring disease outbreaks, which lead to significant production losses, farm closures, and reduced investor confidence. Weak biosecurity practices, inadequate early warning systems, limited disease diagnostics, and poor farm-level management practices have intensified the problem, threatening the long-term sustainability of the industry.

Challenge

How can Sri Lanka develop an innovative, scalable, and cost-effective solution to prevent, detect, and manage shrimp disease outbreaks through strengthened biosecurity measures and improved farm management practices to ensure a sustainable shrimp farming industry?

Livestock

1. Improving Livestock Feed Solutions

Feed availability and quality remain key constraints in livestock production, affecting productivity and farmer incomes. There is a need for affordable, locally available, and nutritionally balanced feed solutions suitable for different livestock systems.

Challenge:

How might we develop sustainable and cost-effective feed solutions to improve livestock productivity in Sri Lanka?

2. Value Addition and Marketing for Livestock Products

Many livestock producers face difficulties in accessing markets and increasing the value of their products. There is an opportunity to explore innovative processing, branding, packaging, and marketing solutions for meat and livestock products.

Challenge:

How might we improve value addition and market access for livestock-based products through innovative and practical solutions?

3. Prevention of Zoonotic Diseases

Zoonotic diseases continue to pose risks to both animal and human health. Strengthening early detection, awareness, prevention, and monitoring systems is critical for improving health security and resilience.

Challenge:

How might we develop practical solutions to support the prevention and early detection of zoonotic diseases in Sri Lanka?

Environment and Climate Resilience

1. Household Waste Segregation and Management

Poor household waste segregation contributes significantly to environmental pollution and inefficient waste management systems. There is a need for practical approaches that encourage behaviour change and improve waste management at household level.

Challenge:

How might we encourage effective household waste segregation and management through practical and scalable solutions?

2. Human–Wildlife Conflict Mitigation

Human–wildlife conflict continues to affect livelihoods, agriculture, and biodiversity conservation in Sri Lanka. Innovative approaches are needed to reduce conflicts while ensuring both community safety and wildlife protection.

Challenge:

How might we develop sustainable and community-friendly solutions to reduce human–wildlife conflict in Sri Lanka?

3. Soil and Water Management Efficiency

Land degradation, soil erosion, and inefficient water management continue to threaten agricultural productivity and ecosystem sustainability. There is a need for solutions that improve soil health, water retention, and efficient resource management.

Challenge:

How might we improve soil and water management efficiency to strengthen agricultural and environmental resilience?

4. Climate Adaptation and Resilience

Climate change impacts are increasingly affecting livelihoods, food systems, and natural resources in Sri Lanka. National adaptation priorities and identified technology needs present opportunities for innovative climate resilience solutions.

Challenge:

How might we develop practical and scalable solutions that strengthen climate adaptation and resilience in vulnerable communities?

5. Invasive Alien Species (IAS) Detection Systems

Invasive alien species pose growing threats to biodiversity, ecosystems, and agriculture. Early detection and monitoring systems are needed to support timely action and management.

Challenge:

How might we develop innovative systems for the early detection and monitoring of invasive alien species in Sri Lanka?

6. Alternatives to Single-Use Plastics in Agri-Food Systems

Single-use plastics are extensively used across Sri Lanka's agri-food sector for packaging, storage, transportation, retail, and food service applications. At the same time, Sri Lanka possesses considerable potential for the development of sustainable alternatives derived from locally available resources, including banana leaves, areca nut leaf sheaths (kolapath), coconut coir, sugarcane bagasse, paper-based materials, and other agricultural biomass. Despite growing interest in these alternatives, their adoption remains limited due to challenges related to cost, scalability, technical performance, food safety compliance, and market acceptance. There is a need for innovative and practical solutions that can accelerate the transition towards sustainable alternatives while maintaining the functionality required throughout agri-food value chains.

Challenge:

How might we develop practical alternatives to single-use plastics that reduce environmental impacts while maintaining food safety, product quality, functionality, and economic viability, while achieving widespread consumer adoption?

Food Security/technology and Nutrition

1. Affordable Nutrient-Dense Foods for Food-Insecure Communities

Many households in Sri Lanka and other Asian countries continue to face economic challenges that limit access to nutritious foods. There is a need for affordable, nutrient-dense food products that can improve nutrition while remaining accessible to low-income populations.

Challenge:

How might we develop affordable, nutrient-dense, and culturally acceptable food products that improve nutrition and food security among vulnerable populations?

2. Natural Alternatives to Artificial Food Additives

The increasing use of artificial colours, flavours, and other additives to enhance food appearance and consumer appeal has raised concerns regarding health and consumer preferences. There is a need to identify natural alternatives that maintain product quality and acceptability.

Challenge:

How might we replace synthetic food additives with safe, natural alternatives while maintaining the taste, appearance, shelf life, and consumer acceptance of food products?

3. Sustainable Plant-Based Protein Solutions

Protein deficiency remains a nutritional concern, particularly among vegetarian and low-income populations. Developing affordable and sustainable plant-based protein sources can contribute to improved nutrition and food security.

Challenge:

How might we develop sustainable, affordable, and nutritionally balanced plant-based protein foods that can serve as alternatives to animal-derived proteins?

4. Minimal Processing for Improved Nutrition

Many conventional food-processing methods result in the loss of essential nutrients and bioactive compounds. There is growing interest in technologies that preserve nutritional quality while ensuring food safety and shelf stability.

Challenge:

How might we develop innovative minimal-processing technologies that preserve quality, improve shelf life, and ensure food safety?

5. Healthier Fat Alternatives for Better Public Health

The excessive consumption of unhealthy fats contributes to obesity, cardiovascular disease, and other non-communicable diseases. There is a need for healthier fat alternatives that can be incorporated into commonly consumed foods.

Challenge:

How might we develop healthier fat alternatives or reformulate food products to reduce unhealthy fat consumption without compromising taste, texture, or affordability?

6. Food Waste Reduction and Upcycling

Large quantities of agricultural and food-processing by-products are discarded despite containing valuable nutrients and functional compounds.

Challenge:

How might we mitigate food waste by transforming food processing by-products and agricultural waste into safe, value-added food ingredients or products?

7. Climate-Resilient Food Products

Climate change is affecting agricultural productivity and the availability of conventional food raw materials.

Challenge:

How might we develop innovative food products utilizing climate-resilient crops and underutilized local resources to strengthen food system resilience?

8. Fortified Foods to Combat Hidden Hunger

Micronutrient deficiencies remain prevalent among children, women, and vulnerable populations.

Challenge:

How might we develop innovative fortified foods that address micronutrient deficiencies while remaining safe, affordable, and widely accessible?

Teams should clearly identify which challenge statement their innovation addresses.

4. How the Challenge Works

Stage 1: Launch

June 2026

The competition is officially launched and applications open.

Stage 2: Submit Your Idea

July 2026

Teams submit their Concept Note addressing one challenge statement.

All submissions will be evaluated by an expert review panel.

Stage 3: Virtual Pitching Round

August 2026

Approximately 25 teams will be shortlisted and invited to pitch their ideas virtually to an expert evaluation panel.

Students should ensure they are available during this period.

The top 10 teams will be selected to proceed to the prototype development phase.

Stage 4: Innovation Bootcamp and Prototype Development

August – September 2026

The Top 10 teams will participate in an innovation bootcamp consisting of:

- Preliminary virtual learning sessions
- Mentorship from experts
- Prototype development support
- Technical guidance
- Business and commercialization guidance

Teams must also be available to travel to Colombo during the first week of September to participate in the final in-person bootcamp session.

The Top 10 teams will receive:

- Technical mentorship
 - Incubation support
 - Networking opportunities
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Stage 5: Prototype Pitching Round

Early October 2026

The Top 10 teams will present their completed prototypes to an expert evaluation panel in Colombo.

Teams should be prepared to:

- Demonstrate their prototype
- Present evidence from testing
- Explain the innovation's impact and feasibility

The Top 5 teams will advance to the national finals.

Stage 6: World Food Day National Showcase

16 October 2026

The Top 5 finalist teams will present their innovations at Sri Lanka's national World Food Day event.

Finalists will showcase their solutions before:

- Government representatives
- Development partners
- Universities
- Private sector leaders
- Investors
- Media

The World Food Day showcase will determine the final competition winners.

5. Important Participation Requirements

By applying to the competition, teams agree that if selected they will participate in the following activities:

Activity	Participation Requirement
Virtual Pitching Round	Top 25 teams

Virtual Innovation Bootcamp Sessions	Top 10 teams
In-Person Bootcamp in Colombo	Top 10 teams
Prototype Pitching Round in Colombo	Top 10 teams
World Food Day National Event	Top 10 teams

Teams should ensure that at least two team members are available to participate in all required activities.

6. Travel and Accommodation Support

To ensure participation from students across Sri Lanka:

Top 10 Teams

Travel and accommodation costs for up to **two team members per team** will be covered for:

- In-person bootcamp activities in Colombo
- Prototype pitching round in Colombo
- World Food Day national event in Colombo

Additional team members may participate at their own expense, subject to venue capacity.

7. Awards and Recognition

Top 10 Teams

- Certificate of Participation
- Exhibition space at the World Food Day national event
- Opportunity to present innovations to investors, private sector representatives and development partners

Top 5 Finalist Teams

- Certificate of Achievement
- World Food Day Medal
- National recognition at the World Food Day event

Top 3 Teams

- Cash awards
 - National recognition
 - Opportunities for further support and visibility
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8. What Makes a Strong Submission?

The strongest submissions will demonstrate:

A Clearly Defined Target User

Avoid broad target groups such as:

- ✗ Farmers
- ✗ Fishers
- ✗ Consumers

Instead, define specific users such as:

- ✓ Smallholder vegetable farmers in Nuwara Eliya
- ✓ Women-led fish processing enterprises in Mannar
- ✓ Urban low-income households with school-aged children
- ✓ Dairy farmers with fewer than ten cattle in Kurunegala

The more specific the user group, the stronger the solution design.

Practicality in Sri Lanka

Judges will assess whether the innovation can realistically work in Sri Lanka.

Teams should consider:

- Cost
- Availability of materials
- Ease of use
- Local manufacturing potential
- Maintenance requirements
- Regulatory requirements
- User acceptance

Innovation and Originality

An innovation does not have to be completely new globally.

Your innovation may be:

- A solution already used in another country and introduced to Sri Lanka
- An adaptation of an existing innovation to Sri Lankan conditions
- An improvement to an existing local solution
- A completely new invention

Teams are expected to research whether similar solutions already exist and explain how their solution differs.

Prototype Feasibility

The concept should be realistic enough to be developed into a prototype if selected among the Top 10 teams.

9. Intellectual Property and Originality

Students should make reasonable efforts to determine whether similar solutions already exist.

Possible sources include:

- Patent databases
- Academic journals
- Google Scholar
- Industry publications
- Product catalogues
- Internet searches
- Expert consultations

Teams should disclose any similar solutions identified and explain how their proposed innovation differs.

Participation in the competition does not transfer ownership of intellectual property.

Innovations remain the intellectual property of the student teams, subject to competition rules and applicable laws.

Teams shortlisted for prototype development may receive guidance on intellectual property protection and commercialization pathways.

10. Concept Note Submission Requirements

Teams must submit:

Required Documents

1. Completed Concept Note Submission Template as a PDF file
2. Any supporting material relevant to the concept
3. University student confirmation for all team members

Submission Deadline

31 July 2026

Email your perfected concept note submission (as a PDF file) including the link to your video submission and other supporting documents to FAOLK-Media@fao.org by **31 July 2026** - ensure that the total weight of all attachments in the email are **less than 15MB**.

11. Beyond World Food Day

The challenge aims to support promising ideas beyond the competition itself.

Selected teams may have opportunities to:

- Connect with investors
- Explore commercialization pathways
- Receive mentoring support

- Access innovation and entrepreneurship networks
- Explore intellectual property protection options
- Develop pilot projects and scale-up opportunities

The World Food Day Youth Innovation Challenge is not only a competition, it is a platform to transform innovative ideas into practical solutions that can strengthen Sri Lanka's agrifood systems and contribute to a more food-secure and sustainable future.

We encourage all participants to think boldly, innovate responsibly, and design solutions that can make a meaningful difference in the lives of people across Sri Lanka.

National Partners



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Livestock, Land, and
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