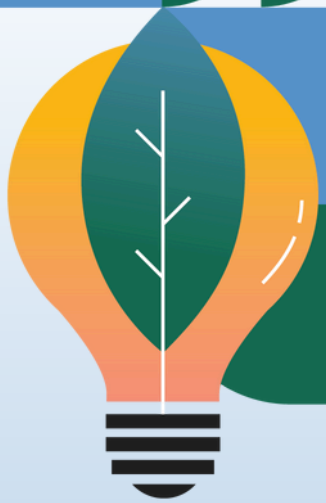
WORLD FOOD FORUM | GLOBAL YOUTH ACTION



TRANSFORMATIVE RESEARCH CHALLENGE 2025

Sustainable Aquaculture Prize

Sustainable Aquaculture Prize

(Co-hosted by Shanghai Ocean University and the FAO Fisheries and Aquaculture Division (NFI))

Aquatic food, produced through aquaculture and capture in marine and freshwater ecosystems, is essential for global food and nutrition security. While capture fisheries face significant challenges aquaculture has emerged as the fastest-growing food production sector, accounting for over 50% of the world's aquatic animal production. However, the sector encounters critical issues, including climate change, biodiversity loss and ecosystem degradation, which necessitate innovative, research-driven solutions to bridge the gap between science and practice.

The Sustainable Aquaculture Prize seeks to empower young researchers to develop transformative and scalable solutions that advance sustainable aquaculture practices. This initiative aligns with the FAO Blue Transformation Roadmap (2022–2030) and incorporates the principles outlined in the FAO Guidelines for Sustainable Aquaculture (GSA). These guidelines emphasize the critical roles of youth and women in the sector and promote cross-disciplinary approaches to tackling complex challenges. By prioritizing technological innovation, on-farm management and multi-stakeholder partnerships, the prize contributes to achieving the Sustainable Development Goals (SDGs) 2 (Zero Hunger) and 14 (Life Below Water).

Objectives of the prize:

The Sustainable Aquaculture Prize encourages youth-led innovations that address critical gaps in sustainable aquaculture development. With a focus on affordable and accessible technologies, this initiative intends to:

- Promote environmental sustainability, social equity and economic resilience in aquaculture practices.
- Bridge the science-to-practice gap by accelerating adoption of innovations among small-scale and resource-limited producers.
- Foster collaboration between researchers, value-chain stakeholders and industry leaders.
- Empower youth to shape sustainable aquatic food systems and inspire the next generation of blue food innovators.

Themes of the prize:

The research topics of interest for the Sustainable Aquaculture Prize include:

- **Sustainable aquaculture intensification and expansion** with key areas including resource-efficient production systems (e.g. farm level productivity enhancements such as pond optimization and water quality management), smart farming technologies, integrated agriculture and aquaculture systems, sustainable seed and feed innovations, ecosystem and cluster-based approaches (e.g. development of aquaculture zones and cluster models).

- **Upgraded value chains for farmed aquatic food systems** to enhance social, economic and environmental viability. This includes developing efficient value chains, circular economy, post-harvest preservation technologies to reduce food loss and waste, digital traceability and certification systems for transparency, market access solutions, cold chain innovations and value-addition technologies for niche aquaculture products.
- **Exploration of ecological aquaculture systems and technology** for the development and implementation of ecologically sustainable aquaculture systems that integrate biodiversity conservation, habitat restoration and ecosystem services. This includes research on integrated rice-fish systems, polyculture and other systems that enhance environmental resilience while maintaining productivity.
- **AI and digital solutions for aquaculture** with a focus on developing artificial intelligence, machine learning and digital monitoring systems to improve aquaculture operations. Relevant technologies include disease prediction models, environmental monitoring and prediction systems and automated feeding systems.
- **Climate-resilient aquaculture practices** that can withstand climate change impacts such as rising temperatures, ocean acidification and extreme weather events. This includes research on resilient species selection, adaptive management practices and infrastructure design.
- **Waste reduction and the circular economy** in aquatic food systems throughout the aquatic food value chain, from production to consumption. This includes research on by-product utilization, post-harvest technologies and circular economy models.

What will not be eligible?

The following topics fall outside the scope of this prize and will not be considered:

- **Non-aquatic food systems**: Research related to terrestrial agriculture, livestock or plant-based food systems, even if they involve sustainability innovations, falls outside the scope of this competition.
- **High-capital, non-scalable technologies:** Technologies requiring significant financial investment, specialized infrastructure or expertise beyond the reach of resource-limited communities will not be considered.
- **Policy advocacy without practical implementation:** Proposals centered solely on policy advocacy without a clear pathway to on-the-ground impact will not be considered.
- **Theoretical academic models without field implementation plans:** Proposals lacking clear plans for pilot testing or community engagement within 12–24 months will not be considered.

Application Deadline:

Researchers must submit their applications by 9 May 2025.

What do young researchers gain?

- **Research funding:** Winning teams receive up to USD 10 000 in research funding to implement their research projects. In addition, one team will be selected from the winners of each TRC category as the overall winner of the 2025 Transformative Research Challenge and will be awarded an additional USD 10 000 in research funding.
- **Global visibility:** Finalist teams receive recognition for their innovative work through the WFF website and social media channels, showcasing their projects to a global audience.
- **Networking opportunities:** Finalist teams will be able to connect with a global network of young leaders, agrifood experts and representatives from the public and private sectors, as well as the United Nations.
- **Capacity development:** Semi-finalist teams receive expert guidance to strengthen their skills in research proposal development.
- **Invitation to FAO headquarters:** Finalist teams are invited to present their research at the **TRC Finals** held at **FAO headquarters in Rome** in **October 2025**, in front of a high-level jury and a global audience via live stream on a range of platforms including UN Web TV.
- **Post awards support:** Finalists are invited to apply for the WFF Youth Food Lab incubator programme. Winning teams may also receive continued support to further develop and implement their research proposals.

In addition, winning teams will receive:

- **Personalized mentorship** from Shanghai Ocean University scientists and global experts through virtual sessions and specialized trainings.
- **Networking opportunities with investors,** value-chain stakeholders and research institutions, including participation in the WFF flagship event and access to the Global Sustainable Aquaculture Advancement Partnership (GSAAP).
- **Access to resources** such as Shanghai Ocean University laboratory facilities and specialized tools for modeling and analysis.
- **Global visibility** through the FAO and Shanghai Ocean University platforms, including media campaigns, feature articles and industry webinars.