



Statement of support for the Shanghai Declaration

Name of organization: Global Center for Aquatic Food Security, Mississippi State University

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Suggested speaker:

Country and/or region: USA

General Statement

Fish are a nutrient-rich and highly traded food commodity; as such, they are a unique global resource that offers opportunity for sustainable and equitable agriculture-led economic growth, strengthened resilience in people and systems, and improved nutrition—particularly for women and children. In the developing world, more than 2.6 billion people depend on fish and aquaculture products for more than 20% of their total animal protein—and in the countries of Bangladesh, Cambodia, Ghana, Sierra Leone, and Indonesia, fish constitute over 50% of animal protein intake (FAO. 2018. The State of World Fisheries and Aquaculture 2018 - Meeting the sustainable development goals. Rome. License: CC BY-NC-SA 3.0 IGO). To meet the growing demand for food and quality protein, reduce potential conflicts over natural resources, and ensure equitable access to fish, innovations are needed in both aquaculture and fisheries to foster sustainable, resilient, inclusive, and profitable production and marketing systems. The aquaculture and fisheries sectors are important to global food security because: **1) Fish provide high-quality animal protein and micronutrients**, including vitamins A, B12, zinc, iron, and selenium. In many countries, fish are the primary source of animal protein; thus, increased consumption of fish and/or fish products has potential to reduce childhood stunting and improve brain development and function. **2) Fish are one of the most widely traded agricultural commodities worldwide**; thus, increased trade (local and regional) has potential to improve livelihoods and increase incomes. **3) Aquaculture and fisheries provide formal and informal employment opportunities** for women and youth. **4) Aquaculture enables diversification of farming systems** through opportunities such as integrated aquaculture, providing increased economic resilience for producers.

Mississippi State University Global Center for Aquatic Food Security (MSU GCAFS)

The MSU GCAFS manages programs to support international development in aquaculture and fisheries to support food security. The center accomplishes this

through management of the Feed the Future Innovation Lab for Fish (Fish Innovation Lab), funded by the US Agency for International Development, and through strategic partnerships, especially with the UN Food and Agriculture Organization (FAO).

The Fish Innovation Lab links and manages research partners around the globe to identify, adapt, and scale promising methods and technologies for local aquaculture and fisheries. Active projects are currently being implemented in Nigeria, Bangladesh, Zambia, Kenya, Cambodia, Ghana, and Malawi. Fish Innovation Lab objectives are to:

1. Generate and make available for transfer improved knowledge, technologies, and practices that unlock the potential of fish production in designated countries to:
 - a. Improve food security and nutrition for the poor,
 - b. Sustainably enhance the resilience of smallholder farming households, and
 - c. Create and sustain inclusive economic growth.
2. Build the capacity of partners to independently generate and transfer fish-related knowledge, technologies, and practices to beneficiaries.
3. Promote adoption and scaling of improved knowledge, technologies, and practices to increase fish production, mitigate risks that threaten aquaculture and fisheries, and improve human outcomes.

Since 2013, the GCAFS has collaborated with the FAO to support its objectives in implementing international aquaculture biosecurity and management of antimicrobial resistance. In 2014, FAO recognized MSU as a Center for Knowledge in Aquatic Animal Disease Diagnostics, particularly for warmwater aquaculture. The MSU GCAFS has provided expertise, leadership, and support to the FAO for its Progressive Management Pathway for Aquaculture Biosecurity (PMP/AB).

Statement of Support

The mission of the MSU GCAFS aligns with the Shanghai Declaration. Specific topics in the Shanghai Declaration Call for Action where the MSU GCAFS is already working (through the Fish Innovation Lab and collaborations with FAO) and can help advance strategic priorities are listed below.

A) Expand the contribution of aquaculture to sustainable food systems towards nourishing nations and providing healthy, nutrient-rich and climate-friendly food to people

The Fish Innovation Lab aims to assess nutrition as a determinant of health, which encompasses health measurement such as stunting, wasting, cognition, etc., and it supports research to identify interventions that optimize human health while promoting sustainable aquatic ecosystems. In particular, the MSU GCAFS aims to delineate and ultimately impact multiple pathways to food security and human nutrition among vulnerable groups (pregnant and lactating

women, infants and young children, and school-aged children), especially individuals living in low-resource households and small-holder farmer/fisher families.

C) Continually improve the performance of aquaculture, and its capacity to respect and better use natural resources and enhance ecosystem services in an integrated and efficient way

The Fish Innovation Lab is conducting research on technologies and practices that advance the productivity frontier to drive income growth, improve diets, and promote natural resource conservation. This includes developing innovations to increase achieved yield of fish in aquaculture, improving availability and nutritional quality of feed (especially removal of fish meal and fish oil), improving genetics and reliability of fish seed, improving aquaculture technology (including polyculture and integrated aquaculture), and enhancing sustainable fisheries management to improve harvest yields and increase reliability.

The Fish Innovation Lab conducts research on scalable technologies that promote sustainability and mitigate food security risks, especially through improved fish and environmental health. This includes increasing the tolerance of fish to biotic and abiotic stresses (including ecological resilience), improving diagnostic capabilities, maintaining healthy and bio-secure production environments, and reducing pre- and post-harvest losses (including ensuring food safety). In particular, the MSU GCAFS supports the FAO mission to improve aquaculture biosecurity through implementation of the PMP/AB.

E) Protect and develop aquaculture-based livelihoods and promote decent work and socially responsible enterprises

The Fish Innovation Lab works to improve knowledge of how to sustainably and equitably improve economic opportunity, nutrition, and resilience in aquaculture and fisheries value chains, households, and communities. This includes identifying how aquaculture and fisheries can help improve nutrition and market opportunities (especially for vulnerable populations), ensuring equitable access to production assets (especially for women and youth), and establishing an enabling environment for fish production.

F) Ensure women's empowerment by enhancing women's full access to equal opportunities through gender-transformative policies and G) Promote opportunities for young women and men

The Fish Innovation Lab works to improve opportunities for women and youth to work in aquaculture and fisheries for equitable workforce participation. More equitable access to high-quality, safe sources of fish-based foods will result in improved dietary diversity and nutrition in vulnerable groups. To support this approach, the Fish Innovation Lab incorporates qualitative or quantitative methods (such as barrier analysis, individual in-depth interviews, focus group

discussions, or larger surveys); collects data disaggregated by gender and age to capture participants' involvement at different stages of the fish value chain; implements culturally and technically appropriate program interventions that provide male and female youth, women, and men with fish-related income-generating opportunities; and strengthens the enabling conditions for women and youth engagement in fish value chains.

A handwritten signature in black ink, appearing to read "David R. Shaw", written over a horizontal line.

David R. Shaw, Ph.D.

Provost and Executive Vice President