



FEED THE FUTURE

The U.S. Government's Global Hunger & Food Security Initiative



Feed the Future Innovation Lab for Fish

Stephen Reichley, Deputy Director

Photo: Gina Rico Mendez



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The U.S. Government's Global Hunger & Food Security Initiative

ABOUT FEED THE FUTURE

- U.S. Government's global hunger and food security initiative.
- Focus on smallholder farmers, particularly women
- Supports partner countries in developing agriculture sectors to spur economic growth and trade that increase incomes and reduce hunger, poverty and undernutrition

For more information, visit www.feedthefuture.gov.



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FEED THE FUTURE INNOVATION LABS

- Draw on the expertise of top U.S. universities and developing country research institutions to tackle some of the world's greatest challenges in agriculture and food security.
- Led by U.S. universities and central to advancing novel solutions that support our goals to reduce global hunger, poverty and undernutrition
- Use cutting-edge science to research and develop effective technologies and innovations for scaling implementers to address current and future challenges posed by a changing climate and the need to feed a growing global population with safe and nutritious food
- Provide short- and long-term training to support the sustainability of these efforts while training the next generation of scientists

For more information, visit www.feedthefuture.gov/feed-the-future-innovation-labs.





THE FISH INNOVATION LAB

2019

- Quick Starts completed
- Launched 13 competitive research activities

2021

- 19 active projects in 10 countries
- Bangladesh and Nigeria sector meetings
- Launched online trainings targeting researchers: Gender-Responsive Aquaculture & Fisheries; Resilience

2023

- 58 innovations developed over five years
- First in-person Annual Meeting
- Research activity ends
- Dissemination and handoff of innovations

2020

- First full year of competitively awarded research activities
- 5 commissioned activities: geographic scope expanded to Ghana
- First buy-in award (DWF)

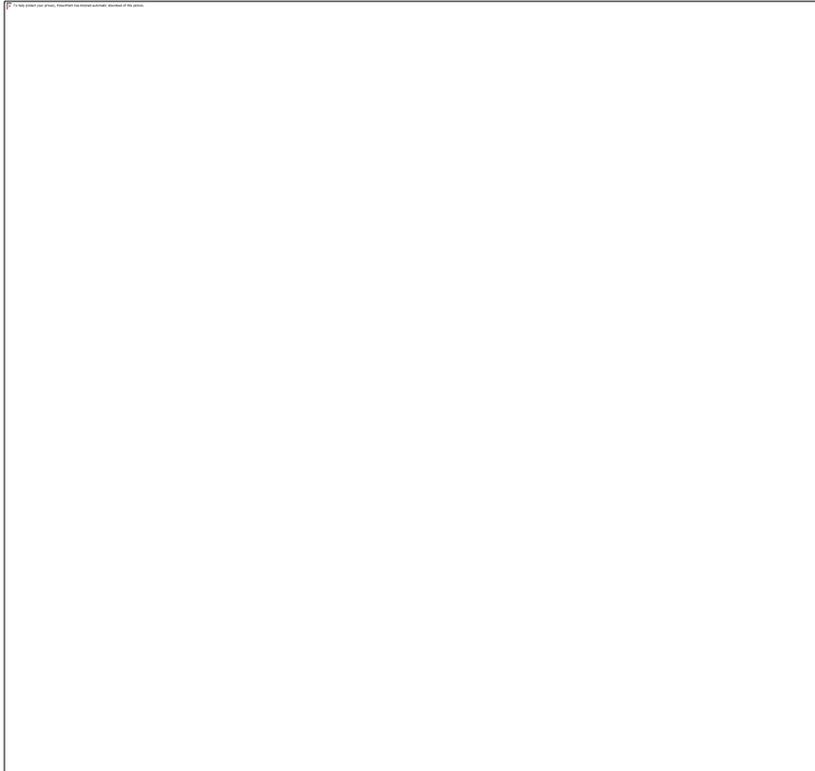
2022

- Establishment of ME at MSU and ME partners
- Quick Starts launched
- RFA implemented: 240 Concept Notes & 39 full proposals





PORTFOLIO OF ACTIVITIES: AFRICA

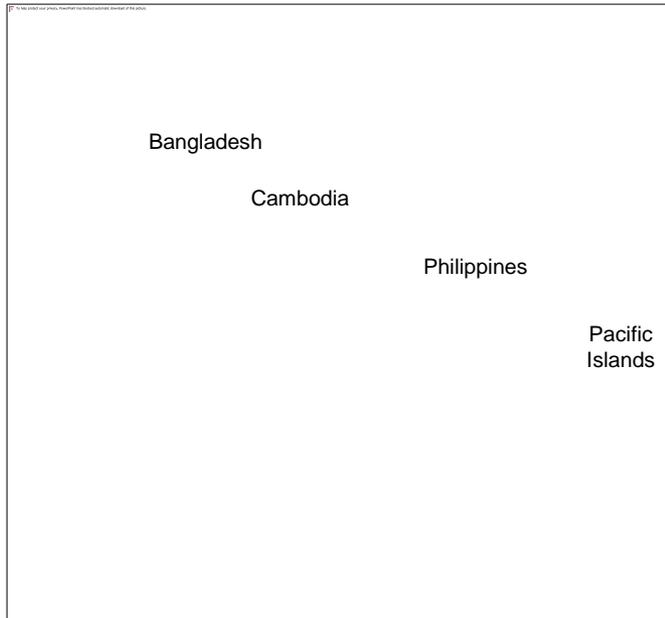


Area of Inquiry	Activity	Country
1	Integrated rice-fish farming (RFA)	Nigeria
1	Black soldier fly larvae (RFA)	Nigeria
1	Lean production systems (RFA)	Nigeria
1	Coral reef sustainability (RFA)	Kenya
1	Zambia feeds (QS)	Zambia
2	Improving biosecurity (RFA)	Nigeria
2	Multivalent bacterial fish vaccine (DC)	Zambia
2	Assessing invasive crayfish (DC)	Zambia
2	Distant water fleets (BI)	Madagascar, Pacific Islands, Peru, and the Philippines
3	Nourishing nations (RFA)	Nigeria
3	FishFirst! Zambia (RFA)	Zambia
3	Samaki Salama (RFA)	Kenya
3	Micronutrient impact of oysters (DC)	Ghana
3	SecureFish (QS)	Kenya
3	Cold chain analysis (QS)	Nigeria
3	Fish4Zambia (QS)	Zambia





PORTFOLIO OF ACTIVITIES: ASIA



Area of Inquiry	Activity	Country
1	Cryogenic sperm banking (RFA)	Bangladesh
1	Bighead catfish (RFA)	Cambodia
1	Sustainability of fisheries (RFA)	Cambodia
1	Carp genetic improvement (DC)	Bangladesh
1	Rohu genome sequencing (QS)	Bangladesh
2	Foodborne pathogens (RFA)	Bangladesh
2	Distant water fleets (BI)	Madagascar, Pacific Islands, Peru, and the Philippines
3	Machine learning (RFA)	Bangladesh
3	Market analysis/ value chain (DC)	Bangladesh





HIGHLIGHTS OF RESEARCH OUTPUTS

Indicator	Male	Female	Total
# Participants in short-term agricultural sector productivity or food security trainings	1,276	891	2,167
# Participants in USG food security programs	2,151	2,030	4,181
# Individuals who have applied technologies or practices	1,013	465	1,748*
# Individuals who participated in USG supported long-term trainings	24	18	37

*Sex-disaggregated data unavailable for 270 individuals





FARM DIVERSIFICATION THROUGH RICE-FISH FARMING IN NIGERIA

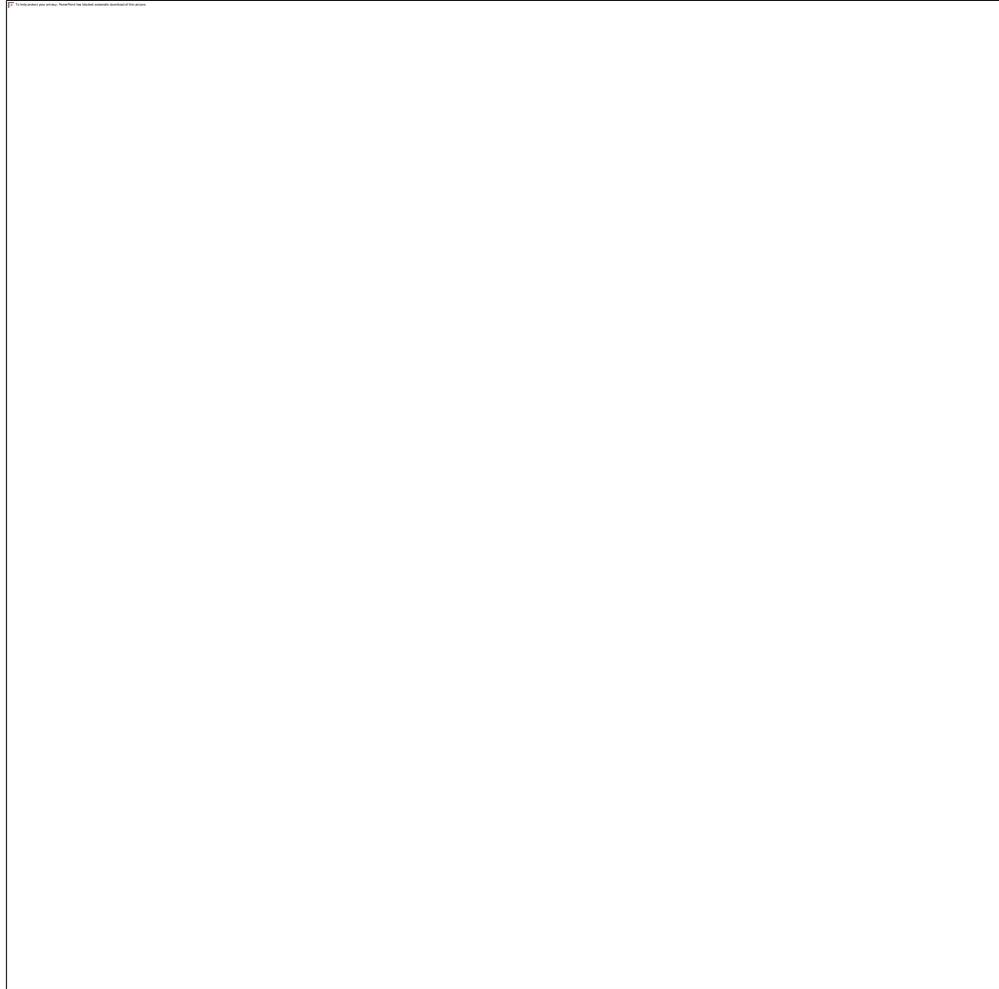
- Led by FAO, the University of Ibadan, and the University of Georgia
- Used results from three rice-fish demonstration sites in Kebbi and Ebonyi States to develop a technology guide used by more than 100 farmers to successfully introduce fish into their rice fields
- Over 700 farmers trained on integrated rice-fish farming
- Results:
 - More efficient use of resources and higher production
 - Increased local supply of nutritious food for home consumption
 - Boosted income generation through the sale of fish





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“Fish was difficult to get before, but now with rice-fish farming, there is access to fish.”

“The fish from the rice-fish system has better taste than the fish we normally collect from water bodies around us which are often dirty.”

Amarachi Nweke
Farmer



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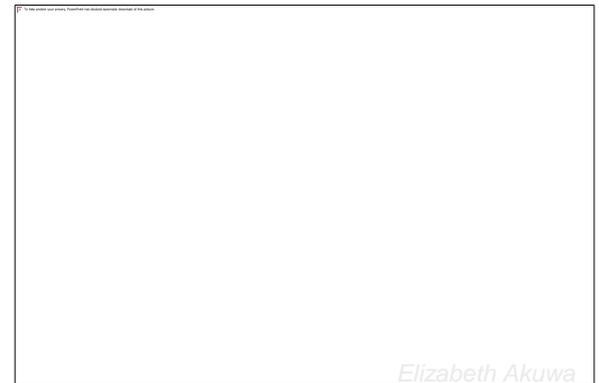
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RESEARCH ACCOMPLISHMENTS

Area of Inquiry 1: Improving Productivity

- A high-quality genome sequence for rohu carp was produced, on-farm performance trials showed that overall improved strain fish weighed ~37% more than fish from the unimproved strain at harvest.
- 40 Nigerian producers were trained to become Lean subject matter experts, who then engaged 219 farms to take 602 actions of 219 mini projects which reduced waste streams to improve operational efficiency, reduce production costs, and reduce postharvest losses.





RESEARCH ACCOMPLISHMENTS

Area of Inquiry 2: Risk Mitigation

- Science-based approaches were implemented to determine risks derived from fish disease in Nigeria and a Resident Aquatic Veterinarian Network was established to collect and analyze fish samples to identify disease threats.
- Surveillance of foodborne pathogens in tilapia and pangas at retail fish markets and super shops in Dhaka City led to a better understanding of relative risks between the two types of shops.



Arnold Irabor



Md. Khorshed Alam





RESEARCH ACCOMPLISHMENTS

Area of Inquiry 3: Human Outcomes

- Low-literacy tools were developed to educate 120 women and youth fish processors in Delta State of Nigeria using a seven-module nutrition and food safety curriculum that covered general nutrition education, food safety, and fish-handling practices.



Brianna Bradley





FUTURE RESEARCH AREAS

Climate-Smart Aquatic System Innovations

- Sustainable fish feed production (local ingredients, sustainable replacement of fish meal/fish oil)
- Improved genetics
- Aquaculture technology improvement, including integrated agriculture-aquaculture systems and carbon-neutral production
- Sustainable fisheries management

Nutrition and Food Systems

- Integrated interventions to improve nutrition
- Aquatic food systems, including fish value chains and trade
- Food safety in fish products and fish processing
- Social inclusion in fish value chains

- Fish health and aquaculture biosecurity
- Improved fish feed, including fish meal and fish oil replacement
- Improved fish seed through enhanced fish genetics and selective breeding





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STAY TUNED



- Be on the look out for our upcoming request for applications to fund a new round of research activities.
- Visit our website by scanning the QR code:



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WorldFish



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