

SHRIMP FARMING AND RESEARCH IN BANGLADESH ADAPTS TO COVID-19 PANDEMIC

by M. Mahfujul Haque and Ben Belton

The COVID-19 pandemic has impacted tremendously every aspect of the economy in Bangladesh, including aquaculture. The entire aquaculture supply chain and marketing system is facing multiple challenges. Many fish farmers have reduced their activities due to low demand and uncertainty. At a time when many people are afraid to invest in aquaculture, Golam Kibria Ripon, a farmer from Paikgacha, Khulna, in southern Bangladesh, is successfully continuing his shrimp production and trading activities.

“The only thing I do and the only thing I know is shrimp culture. Whatever the situation is, I have to continue as many people depend on my business for their livelihoods,” said Ripon.

Ripon is a successful shrimp farmer and shrimp trader who has engaged in the aquaculture business since 1996. His business employs about 20 full-time staff, including five women. He noted that due to the COVID-19 pandemic, for the first time in his career he is experiencing such major disruptions in the shrimp business. In response, he hired 10 temporary staff to deliver the postlarvae (juvenile shrimp) to farmers during the pandemic, after nursing the shrimp fry himself, and began to deliver harvested shrimp to the processing plant with his own vehicle.

“Now I know how to cope and survive in an extreme situation. The demand of shrimp will not decrease, [and] all I have to do is to make sure to transport the harvested shrimp to the processing plant,” said Ripon. Ripon ensures the health and safety of his staff by providing proper sanitizing facilities in his farms and maintaining basic preventive procedures.

Ripon is a farmer participant in the Feed the Future Innovation Lab for Fish (Fish Innovation Lab) project Machine Learning for Better Aquaculture. This project's objective is to identify emerging technologies and innovative practices in aquaculture value chains and pilot digital extension approaches that accelerate their adoption to enhance productivity, efficiency, resilience, and human nutrition while reducing the transaction costs and time associated with traditional forms of technical research and extension.

To address this objective, the project team is undertaking a comprehensive survey of fish and shrimp farmers in southern Bangladesh. Pretesting and refining draft questionnaires is a key element in the research design. Though the team planned to conduct questionnaire development through face-to-face meetings in Bangladesh, this proved impossible due to COVID-19-related travel restrictions. With quick planning and innovative thinking, the partners successfully adapted their plans and conducted the questionnaire drafting through a series of virtual meetings.



Ripon on his farm. *Submitted by authors*

MACHINE LEARNING FOR BETTER AQUACULTURE TEAM

Lead PI and U.S. PI

Ben Belton, PhD
Michigan State University

Bangladesh PI

Mohammad Mahfujul Haque, PhD
Bangladesh Agricultural University

Bangladesh Co-PI

Khondker Murshed-e-Jahan, PhD
WorldFish

U.S. Co-PI

Amipouyan Nejadhashemi, PhD
Michigan State University

Collaborators

Hazrat Ali
WorldFish

Ricardo Hernandez, PhD
International Center for Tropical Agriculture

However, a big remaining challenge was how to pretest the questionnaire with the farmers in the field, particularly with shrimp farmers in the remote Khulna region like Ripon.

To cope with this crisis, the team invited Ripon to attend a virtual meeting for pretesting the questionnaire. Although he was unfamiliar with the videoconferencing application, the Machine Learning for Better Aquaculture team was able to quickly teach Ripon how to use it so that he could participate in a questionnaire pretesting interview lasting about three hours.

Conducting the interview remotely allowed for researchers based in the US and Bangladesh to meet with this local producer and continue progress on the research that will benefit shrimp farmers across southern Bangladesh. The questionnaire was translated from English to Bangla for better communication prior to the interview.

“I think this research will identify our problems, such as shrimp disease and disappearance of stocked postlarvae that affect our farming, and according to the nature of problems we will find a proper solution from the researchers,” said Ripon. “I am the General Secretary of

Paikgacha Shrimp Farmers Association. I can organize the shrimp farmers of my locality to receive advanced training on shrimp farming, disease management, and other topics through the Zoom platform. Moreover, we have a big Facebook group, which we can use to share any useful information among the shrimp farmers.”

The participation of a very knowledgeable shrimp farmer early in the research process provided a significant boost to questionnaire design and helped the project to meet its milestones on time, despite disruptions linked to COVID-19. This successful experiment in pretesting a questionnaire with a farmer in a remote area indicates possibilities for conducting other project activities, including workshops and information dissemination activities, virtually if COVID-19 continues to make travel or face-to-face meetings difficult.

ABOUT THE FISH INNOVATION LAB

The Fish Innovation Lab supports the United States Agency for International Development’s agricultural research and capacity building work under Feed the Future, the U.S. Government’s global hunger and food security initiative. Mississippi State University is the program’s management entity. The University of Rhode Island, Texas State University, Washington University in St. Louis, and RTI International serve as management partners.

www.feedthefuture.gov
www.fishinnovationlab.msstate.edu

This story was made possible by the generous support of the American people through the U.S. Agency for International Development (USAID) under the Feed the Future initiative. The contents are the responsibility of the Feed the Future Innovation Lab for Fish and do not necessarily reflect the views of USAID or the United States Government.