

## FROM RICE TO FISH: BOOSTING PRODUCTIVITY AND NUTRITION THROUGH FARM DIVERSIFICATION

By the Farm Diversification team

Amarachi Nweke is a 27-year-old farmer in Ikwo Community of Ebonyi State, Nigeria. She was away on a trip when the Feed the Future Innovation Lab for Fish Farm Diversification Team first visited her community to discuss with farmers and community leaders the possibility of converting rice fields to incorporate fish farming. Upon her return, she learned about the activity from family and neighbors, which piqued her interest, and she reached out to the research team, requesting to learn more about rice-fish farming.

"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



*Amarachi Nweke attended a workshop put on by the Farm Diversification team to learn more about rice-fish farming. (Photo provided by FAO/Femi Ajayi)*

"When I heard about the activity, I was delighted to learn that I can combine my rice cultivation with fish farming," Nweke said. "I could tell it would bring benefits to me and other people who decide to participate. The possibility of combining rice and fish production brings hope to me and my people that we can produce more in our fields."

The Fish Innovation Lab research team provided training for smallholder Nigerian rice farmers like Nweke, who had little to no knowledge of aquaculture or how to implement climate-friendly rice-fish farming using an agroecological approach. This method promotes ecological processes in agriculture, such as using organic manure and reducing the need for pesticides. By combining rice and fish production in the same area, farmers were able to maximize their yields.

Nweke actively participated in managing the pilot demonstration plot in her community. She took charge of daily fish feeding and growth monitoring, learning about various technical aspects of modifying rice fields for fish farming. This included constructing sumps and trenches, managing water in the rice fields, establishing a fish feeding regime, and caring for rice using only organic manure.

She observed that "the panicles (i.e., a cluster of rice grains on the plant) were larger" under the new rice-fish practice compared to the traditional farming system in her community. She credited this to the rice having more space between plants than a traditional system. She noted that because the panicles were larger, she was not surprised that the output of rice was more than what she would have obtained from a traditional plot of similar size. She confirmed that spacing rice plants at specific intervals, as was done in the activity, boosted rice production.

## ACTIVITY TEAM

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At the community level, Nweke said that one of the activity's major achievements has been the quality of fish that comes from the integrated rice-fish system. Before the initiative, she said it was difficult to get fish, and the ones that were gathered were frequently from contaminated, dirty water where people had disposed of waste, making the fish taste unpleasant and discouraging people from eating them.

"In the Ikwo community, which is already well-known for rice cultivation, the new farming method presents an opportunity to increase farm productivity and profitability at the individual farm level," she said. "After seeing that it is possible to adapt rice fields to also grow fish, more farmers in the community have shown interest in adopting the combined rice-fish system. This will be highly beneficial because in addition to rice, we can sell fish, which is better-tasting and of higher quality."

According to Nweke, rice-fish farming is a straightforward way to make more money and provide more food to consume at home. Additionally, the challenge of lacking constant electricity for fish cold storage has been resolved through the recommendation and training component of the activity on fish smoking. This allows farmers to preserve and store fish without worrying about spoilage or waste.

"There are several other areas in Ebonyi State and in Nigeria as a whole where adapting rice fields for integrated rice-fish farming would significantly change the farmers' life for the better," Nweke said. "I hope this type of work continues, so more farmers learn about this farming practice, and it continues to add value to farming families."

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## 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.

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