

# Opportunity in Adversity: Collective Fish Culture in the Seasonal Floodplains of Bangladesh



## HIGHLIGHTS

- ✓ Collective action increased communication and cooperation, effectively unifying the villagers
- ✓ CBFC enabled them to produce 400 kg fish/hectare, an increase of 133% from baseline production
- ✓ Researchers gained a deeper appreciation for the need to not only look at technical innovations, but also socio-economic, institutional and policy factors affecting local systems

## Outcome Stories

Archana carefully adjusted the settings on the video camera as she waited for the arrival of Meguma, one of the research assistants helping her community to produce a participatory video entitled “The Islands of Dreams and Success.” Archana and her community wanted to share their success and tell their story to other communities. The participatory video came to chronicle how the lives of villagers in Melandi, Rajshahi District in Bangladesh, improved significantly as a result of research supported by the CGIAR Challenge Program on Water and Food (CPWF).

Archana and her community are fully convinced that it was community-based fish culture (CBFC) that made floodplain

fishing a successful intervention in Bangladesh. CBFC enabled them to produce 400 kg fish/hectare, or an increase of 133% from the baseline production. It was not only the volume but also the length of the harvests; traditional fishers, the landless and the poor were able to harvest fish over a longer period of time than prior to the intervention, obtaining higher incomes from fish harvests. This decreased the need for food during traditionally lean months (the flooding season). Collective action increased communication and cooperation, effectively unifying the villagers. The project allowed even those who had no access rights to land, and no investments in the collective fishing venture, to fish, provided that they limited catches to their basic needs.

"The Islands of Dreams and Success" rise out of floods of adversity. Archana and her community share their story of success.



#### About CPWF Outcome Stories

The CPWF Outcome Stories document changes in knowledge, attitudes and practices that have emerged through CPWF-funded research. Outcomes occur when research outputs foster engagement processes that result in changes in practice or changes in behavior. These stories capture outcomes at a specific point in time; outcomes may have evolved since the completion of these projects.

#### Scaling up and out

Past efforts to increase the productivity of seasonal floodplains focused primarily on increasing water productivity per drop during the dry season when farmers were able to plant food crops. The complexities of access and ownership to land, water, and fishing rights posed serious challenges to the successful application of CBFC. A community fishers' society in Beel Mail was able to enter into a leasing arrangement with the support of local authorities. This allowed them to practice fish culture during the flood season when the land is inundated. Before the establishment of the society, households fished individually and competed with one another for the catch. With the introduction of CBFC, households in Rajshahi have learned to work together to manage fish culture activities and to protect the stock. A benefit sharing arrangement was agreed on, according to which landowners and fishers both receive a share of the net benefit from CBFC. The society

has become more financially stable, which in turn strengthened its ability to raise funds for the subsequent year's investments in the fingerlings and fencing needed to prevent the fish from escaping. An extension of the lease was secured through 2012, with support in obtaining an extension for a further three years.

When trialed in other countries, the approach met with variable success. Important lessons were, however, learned about why collective action between households did not work as effectively as in Bangladesh. CBFC was, for example, not successfully adopted in southern Vietnam because flooded areas there are entirely under private ownership. People favored individual fish culture or the planting of a third rice crop instead of engaging in collective fish culture. In Cambodia, farmers also demonstrated a preference for fish culture on an individual basis, using similar technology on their own homesteads and private plots. Their reasons for doing so included



the unpredictability of flood events, economic migration during the flood season, and aversion to collective action. In Yunnan, China, farmers preferred to hire caretakers to look after their fish.

Another important outcome of the project was the opportunity to foster exchanges and build international research partnerships. National Research and Extension System (NARES) partners engaged in the project and reported important changes in their working practices, research knowledge and skills. In China, research partners took greater interest in socio-economic factors and were keen to learn more about the institutional and policy factors affecting their research. They also became aware of the use of participatory research methods, effectively expanding the scope of their research beyond a conventional

analysis of fish productivity. As an outcome, consultations with farmers are now undertaken to better understand their needs and preferences.

### Conclusion

Community-based fish culture in seasonal floodplains can enhance food production. However, this requires an understanding of factors that enable inclusion of fisherfolk and the landless in the distribution and sharing of benefits from the floodplains, under conditions where access to resources is essentially contested. This CPWF project has highlighted how simple technological interventions and informal institutional arrangements can turn adverse conditions like seasonal floods into opportunities to generate additional food and income for people who live and rely on floodplains for their livelihood.

### Reference

Sheriff, N., et al. 2010. *Community-based fish culture in seasonal floodplains and irrigation systems*. CPWF Project Report PN35. Colombo, Sri Lanka: CGIAR Challenge Program on Water and Food.  
[http://cgspace.cgiar.org/bitstream/handle/10568/3924/PN35\\_WorldFish\\_Project%20Report\\_May10\\_final.pdf?sequence=1](http://cgspace.cgiar.org/bitstream/handle/10568/3924/PN35_WorldFish_Project%20Report_May10_final.pdf?sequence=1)

### Project Partners

Agriculture Research Center, Bangladesh  
Freshwater Fisheries Research Institute, China  
Institut D'Economie Rurale, Mali  
Rice Center, Africa  
Fisheries Administration, Cambodia  
International Food Policy Research Institute (IFPRI)  
WorldFish Center  
Agricultural Research Council, Bangladesh  
Research Institute of Agriculture, Vietnam



Andes • Ganges • Limpopo • Mekong • Nile • Volta

### About CPWF

The Challenge Program on Water and Food was launched in 2002. CPWF aims to increase the resilience of social and ecological systems through better water management for food production (crops, fisheries and livestock). CPWF currently works in six river basins globally: Andes, Ganges, Limpopo, Mekong, Nile and Volta.

CPWF is a member of the CGIAR Water, Land and Ecosystems Research Program. The program focuses on the three critical issues of water scarcity, land degradation and ecosystem services, as well as sustainable natural resource management. CGIAR is a global agriculture research partnership for a food secure future. Its science is carried out by the 15 research centers who are members of the CGIAR Consortium in collaboration with hundreds of partner organizations.

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