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A Community-based Fish Culture Approach

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Key Message

The research showed how simple technical interventions and co-management arrangements can increase fish production, enhance fish species diversity, improve water management and generate tangible benefits for floodplain resource users, particularly poor and landless fishers and non-fishers.

Summary

Three seasonal floodplains, one public (Beel Mail; 40 ha) and two private (Kalmina; 33 ha and Angrar; 31 ha) located in Bangladesh, within the Indo-Ganges river basin, were selected for fish culture trials during the wet season. Selection criteria included availability of suitable infrastructure and the willingness of local communities to participate. A Floodplain Management Committee (community based organization - CBO) was formed at each site, with representatives from all user groups supported largely by the local Department of Fisheries (DoF). Technical interventions involved: the set up of a bamboo fence in the inlets and outlets of the floodplains; stocking large carp fingerlings (31-81 kg/ha); guarding; fishing gear regulation and control of harvest for certain period. Fingerlings were stocked during June-July with fish harvested during October-December. Production and income from stocked and non-stocked fish increased up to 691 kg/ha and US\$ 470/ha, against the baseline production and income 282kg/ha and US\$ 192/ha. The intervention led to improvements in rice production from 6.25 ton/ha to 7.24 ton/ha. The high yield of rice is largely related to improved water management giving rge

advantage of water supply during transplantation of rice and may be related to increased fertility of soil in the floodplains due to different fish production activities carried out in the floodplains.

Several technical, institutional and socio-economic outcomes of the research are found to be innovative and attractive for bringing other floodplains in Bangladesh under improved fish production. For example, the stocking of fingerlings in floodplains by communities worked as an incentive to apply regulatory measures; it is convincing for the members to follow regulations; and most importantly, protected resources from outsiders and indiscriminate harvest of fish from the floodplains. Stocking of large size fingerling allowed setting up of a large meshed bamboo fence, useful to prevent the escape of stocked fish, whilst allowing non-stocked small fish to move freely inside/outside the floodplains, an approach that was useful to gain higher fish yields, whilst maintaining fish biodiversity.

Selection of the right leaders and representative members of the CBO is vital for the success of CBFC as it demands transparency in investing, income earning and sharing of benefits and managing the necessary savings to run the activities over the years with active participation of other members. It worked well if the co-management initiatives are strong, as different institutions need to play important roles to establish legal rights to resolve conflicts among members and outsiders. Due to complexities, the establishment of CBFC in floodplains also demands longer and continued co-management support from formal institutions such as the Department of Fisheries (DoF).