

Good Practices 7: April 2014



COMMUNITY BASED SEASONAL FLOODPLAIN MANAGEMENT: BRAC'S INITIATIVE IN EXTENDING AQUACULTURE TECHNOLOGY



Bangladesh is yet to fully exploit its vast flood plains for increasing fish production. BRAC has piloted an approach that can sustainably enhance the productivity of these flood plains through community based fish production. Md. Sirajul Islam, Sankar Kumar Biswas, Md. Mazanur Rahman and K.M Shahriar Nazrul from BRAC share their experiences with this approach here.

CONTEXT

Though aquaculture production in Bangladesh increased considerably during the past four decades, the production is almost pond based. The country is yet to fully exploit its vast open/semi-closed water bodies that remain almost fallow throughout the year for increasing its fish production. During 2011-12, the fisheries production from floodplains was 257 kg/ha in contrast to the pond production of 3,615 kg/ha. As the country has 2,710,766 ha of seasonal floodplain area where required water depth for fish culture is obtained atleast 4-6 months, it is important to explore appropriate options for effective use of these physical resources (DoF, 2013).



A partial harvest from a seasonal water body at Gopalganj district

Box 1: Fisheries in Bangladesh

About 10% of Bangladesh population is directly or indirectly depend on fisheries for their livelihood. 60% of its national animal protein consumption is from fish. 2.46% of Bangladesh's export earnings come from fish and fish products. This sector contributes 4.39% to Bangladesh's Gross Domestic Product (DoF, 2013). The fisheries sector is also playing an important role in the economic up-liftment of the poor of Bangladesh. The country has three major fisheries resources, namely Inland capture (34%); Inland Culture (48%) and Marine Capture (18%). Inland fisheries comprises of rivers, ponds, estuaries, *beels*, floodplains, *haors*, *baors*, brackish water etc. where there are 260 fish and 24 prawn species. However, the availability of indigenous fishes have reduced largely in recent times mainly due to loss of natural habitat of fishes due to intensive agricultural operations and changing climatic conditions.

INTERVENTIONS

Considering this issue, Agriculture and Food Security Program (Box 2) of BRAC has initiated a step to conserve indigenous fishes and increase fisheries production through proper management of fallow water bodies of the Northern and Southern Bangladesh.

Box 2: Agriculture and Food Security Program (AFSP)

AFSP is trying to enhance food security and reduce hunger and malnutrition through promotion of environmentally sustainable agricultural production system. Besides agricultural research, development and marketing, the program is also disseminating agricultural technologies through farmers' participatory large scale block demonstration. The strategy is to convert single cropped areas to double or triple cropped areas, introduce stress tolerant crops and fish varieties and accommodate high value non-rice crops in the rice-based cropping systems through the use of shorter maturing crop varieties.

AFSP follows a "community based management approach" where in communities living near to the flood plains are encouraged to form committees and each committee forming different sub-committees to manage different activities related to fish production. Its key objectives include:

- Promote effective management of the unused/under-used water bodies through sustainable fish culture,
- enhance overall fish production including conservation of few small indigenous fish species,
- meet the protein demand of the poor communities,
- create an alternative source of income and
- improve their socio-economic conditions.

It is expected that by stocking quality fingerling and good management practice in these vast area of seasonal waterbodies the overall fish production of the country can be maximized to several folds. In some parts of Bangladesh, this approach has been successful in converting waste lands to resourceful water bodies. In 2013, the program has organized these activities in 7 different floodplains having 73 acres in *Pirojpur Sadar*, *Bagerhat Sadar*, *Kachua*, *Tungipara*, *Kaunia*, *Lalmanirhat Sadar* and *Pirgacha Upazilas*.

GOOD PRACTICES

Survey and selection of participants: At the very beginning of the culture season the adjacent communities around the floodplain was surveyed to identify the probable participants. The following criteria are used for the final selection.

- marginal farmer
- engaged in aquaculture either in own land or by lease
- permanent resident of the locality
- female farmer preferred incase she is the head of the family
- have a national ID card and
- interested in receiving training or orientation from the program

Group formation: To ensure the successful floodplain production, committees were formed with the selected participants. Each committee forms sub-committees having 5 members in each. The organizing committee members were selected from the leaders of the different sub-committees. These committees are solely responsible for different post-stocking activities and preventing harvest of the fish stock before the appropriate time.



Training: Participants are provided training on various aspects of improved fish culture technologies. These trainings are intended to motivate farmers to be interested in community based fish production and the key topics covered include selection of good quality fish fry/fingerling, application of lime and fertilizer, harvesting procedures, benefits of community-based floodplain management approach etc. At the beginning of the season an orientation was provided to the participants and regular trainings are conducted at least once in a month. The trainings are provided by the specialists of the program and also government officials at a convenient location near to the water body. During the final harvest day, (popularly known as field day), the neighboring farmers are also invited to observe the success of these interventions.



Meeting session among the committee members of a floodplain fishery

Financial support: Financial assistance in the form of a grant is provided to each participant for stocking fish in the waterbody, namely. Rohu, Catla, Mrigal, Silver Carp, Tilapia and Grass Carp in the ing ratio of 30:15:10:15:15:15 respectively. Participants then managed the rest of the grant for pre and post-stocking management activities. It was found that the program provided about 80% of the total production cost in the last year. When receiving the grant from the program, farmers have to sign on a resolution document having the following pre-conditions:

- fish cultivation will be operated according to the suggestions of BRAC authority
- no other fish fry/fingerling will be stocked beyond BRAC suggestion
- farmers will participate spontaneously in the trainings, orientations or field days organized by BRAC
- farmers will save at least 40% of the profits from this intervention to stock fingerlings in the subsequent year
- farmers will collectively address issues related to fish poaching, natural disasters, water quality management etc.

Technical support: Experts of the program visit the water body twice a week and provide improved knowledge o fish culture to the participants. The program has a team of Sector Specialists (Fisheries) in each of the enforcement areas and the participants work closely with the Programme Head and Program Manager (Fisheries).

Box 3: BRAC

BRAC, an international development organization based in Bangladesh is the largest non-governmental development organization in the world, measured by the number of employees and the number of people it has helped, as of November 2012. Currently it operates in 509 Upzillas of Bangladsh (spread over 64 districts) BRAC has programmes in diverse areas such as agriculture, health, education, microcredit, community empowerment, disaster and climate change, gender, human rights, road safety, migration, social enterprises, etc. In its programme on agriculture and food security, it builds systems of production, distribution and marketing of quality seeds at fair prices, conducts research to develop better varieties and practices for the agricultural sector, offer credit support to poor farmers, and promote the use of efficient farming techniques and proven technologies. Agricultural extension services are provided through its trained extension personnel, comprising of a diverse group of agronomists, technical assistants and aquaculture experts. Currently BRAC has operations in Afghanistan, Pakistan, South Sudan, Sri Lanka, Uganda, Tanzania, Sierra Leone, Liberia, and the Philippines.

The program is designed to provide financial and technological support to each of the participant community in one culture season. However, regular follow-up of the participants' activities will go on in the following years and technical support will be provided to them in case they require. The program intends to cover 200 acres of floodplain under community based fish production by 2015.

IMPACTS

Productivity: At the end of final harvesting it was found that the average production was 766 kg/ha which is significantly higher than the average country floodplain production.



Release of fingerlings



Good harvest from a seasonal floodplain at Bagerhat district

Income: Farmers earned 82,926 tk/ha (1063 US\$) by investing 53,133 tk/ha (681 US\$) in this activity. The benefit-cost ratio (BCR) was 1.56. Most important achievement of the approach is that participant farmers have saved at least 40% of their total income in a joint account which will be used for the next year fingerling stocking.

CONCLUSIONS

After successful completion of year 1, it is clear that the participants have learnt to adopt the latest production technologies in increasing fish production from the flood plains. The programme has only made a beginning and it will extend such activities in more seasonal floodplains this year. We hope all farmers in the flood plains will adopt this approach eventually, thereby contributing to enhanced food security and faster reduction of poverty in the country.

REFERENCE

DoF, 2013. National Fish Week 2013 Compendium (In Bengali). Department of Fisheries, Ministry of Fisheries and Livestock, Bangladesh. 124-130 pp.

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