



Wetland Fisheries Development Through Community Participation



Introduction

Definition: Floodplain Wetlands are water bodies associated with major rivers systems, connected to them by some means or other, accommodating the swelling waters and serving a great role in mitigating floods and in irrigating crop lands. They are also the habitat for a large number of small indigenous fish species (SIFS) which support subsistence fisheries and provide livelihood for local fisher communities, besides meeting nutritional requirements of the local population.

Resources: India has about 8.0 lakh ha of floodplain wetlands (*beels, jheels, mauns, pats, chhara, etc.*) spread across the numerous river basins in the country. Major wetland areas are in the States comprise – Assam: 1.10 lakhs ha, West Bengal: 0.42 lakhs ha, Bihar: 0.05 lakhs ha, Uttar Pradesh: 1.33 lakhs ha, Odisha: 1.80 lakhs ha, Arunachal Pradesh: 0.42 lakhs ha, Kerala: 2.43 lakhs ha, Manipur: 0.04 lakhs ha, J&K: 0.06 lakhs ha, Gujarat: 0.12 lakhs ha, Haryana: 0.10 lakhs ha (Total: 7.98 lakh ha). Wetlands of Assam, West Bengal, Bihar, Uttar Pradesh, Odisha, Arunachal Pradesh and Manipur States are amongst the most important from fisheries point of view and account for 7.50 lakh ha of wetland water spread area (WSA).

Fisheries: Fish yield from floodplain wetlands has been estimated at 400-800 kg/ha, against the production potential of 1500-2500 kg/ha. Harvesting is a major problem in most of them as they are usually weed-choked obstructing use of fishing gear. Presence of predators often results in high natural mortality of stocked fishes causing low productivity. Thus, enclosure culture systems are adapted to augment fish production from floodplain wetlands, wherein a captive seed stock is grown to fingerlings (*in-situ* or *ex-situ*) on formulated feeds, protected from predators, stocked in the main water body or in cages and harvested in due course of time. This is referred as **Culture Based Capture Fisheries** (CBCF).

Aim & Objectives

- ✓ Conservation of floodplain wetlands (*beels, etc*) and improving the fish habitat.
- ✓ Sustainable development of wetlands by involving fisher community and forming Wetland User Groups (WSGs) so that they have better access to primary resources.
- ✓ Strengthening the capacity of the resource-user communities and their empowerment through training for the overall development of wetland-fisheries through community based resource management.
- ✓ Dissemination of *in-situ* and *ex-situ* fish seed rearing technology in cages & pens.
- ✓ Enhancing fish production and productivity of wetlands by rearing fry in cages/pens/ponds and stocking fingerlings to achieve a production of 2500-3000 kg/ha.
- ✓ Support the development of an institutional base to replicate the project-approach model in the States having wetland resources.

Beneficiaries

- ✓ Beneficiaries include fishermen and their cooperative societies/ SHGs/ fish farmers.
- ✓ The overall increase in wetland fish production would in turn improve the livelihoods of fishers & fish vendors, and provide nutritional security to the surrounding rural population.

Project Location & Implementation

Criteria for selection of Wetlands:

- i. Community-based Combination Strategy shall be adopted.
- ii. Preferably, *beels* leased out to a Cooperative Society would be selected for development.
- iii. Where *beels* are leased out to individuals, the State Fisheries Department/ Corporation shall organize the stakeholder community into a cooperative society.

- iv. *Beels* with WSA 10 ha and above preferred.
- v. *Beels* not within restricted or prohibited area.
- vi. Both registered and unregistered perennial *beels*.
- vii. *Beels* not taken simultaneously for any other development project.
- viii. A committee with the representatives of DoF, CIFRI-NER Centre, COF, Raha, AFDC, to select *beels* for development.

Project Components & Activities

1. Construction/renovation of embankment.
2. Weed clearance in selected wetland.
3. Installation of pens and cages for rearing fry to fingerlings.
4. Rearing Pond construction.
5. Stocking fingerlings in open wetlands for grow out to marketable size.
6. Assistance for craft and gear (capture fisheries).
7. Assistance for fish-vending vehicles (2-wheelers & 3-wheelers with ice box) to promote marketing.
8. Training, demonstration and skill development.
9. Project Monitoring Unit (PMU) with technical participation

Probable Unit Cost & Pattern of Assistance

| Component | Unit Cost (Rs) |
|--|----------------|
| Fish fingerlings (8-10 cm) for direct stocking in wetlands | 2.50 each |
| Cages (6x6x3m) / Pens (0.20 ha); Inputs: fish fry (3-4 cm); supplementary feed; etc. | 3.0 lakh |
| Construction of Rearing Pond per ha | 6.0 lakh |
| Craft and Gear for Wetland Fishermen | 1.0 lakh |
| Assistance to Fish Vendors: 2-wheeler with Ice Box | 0.6 lakh |
| Assistance to Fish Vendors: 3-wheeler with Ice Box | 2.0 lakh |
| Training & Skill Development Programme (50 person per batch for 3 days) | 1.25 lakh |

| Region | NFDB Share | State Share |
|------------------------------|------------|-------------|
| General States | 50% | 50% |
| North East & Hilly States | 80% | 20% |
| Training & Skill Development | 100% | --- |

Estimated Project Costs & Returns

| Item | Amount/Quantity |
|--|-----------------|
| Setup Cost: Strengthening of Wetland Embankment, Deweeding, Construction of Rearing Ponds (up to 0.5 ha), etc. | Rs. 6.0 lakh |
| Inputs Cost: Pen (0.20 ha)/ Cages (6x6x3m); fish fry/ fingerlings; supplementary feed; etc. | Rs. 3.0 lakh |
| Estimated Fish Production/ha/Cycle | 2,500 kg |
| Estimated Returns/ha/Cycle (Rs. 100/kg fish) | Rs. 2.50 lakh |
| Estimated Returns/ha/Year (2 Cycles) | Rs. 5.00 lakh |
| Net Returns/ha/Year | Rs. 2.00 lakh |
| Net Returns from a 10-ha- <i>Beel</i> / Year | Rs. 20.00 lakh |

Advisory Services & Monitoring

- **Aqua One Centre** (AOC) would provide services to the registered fishers and fish farmers.
- Where the beneficiaries choose to avail AOC advisory services, a sum of Rs. 1200/- will be charged per crop towards registration, monitoring water quality, growth, health, etc. If not, this amount will be released to beneficiaries as part of the input cost.
- The AOC will carry out inspection/field visit and submit report to the **Project Monitoring Unit** (PMU), in prescribed format.
- Payment will be made to the AOC per crop, based on receipt of inspection report from the PMU.
- The PMU will compile and submit reports to NFDB crop-wise separately for each Wetland. If AOC is not involved, PMU will collect and compile the data and submit to NFDB.



Contact for further information:

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