



# Brackishwater Cage Culture

## For Sustainable Aquaculture in Coastal Regions of India

### Introduction

Brackishwater is water having salt content more than that of freshwater but less than that of seawater. It results from mixing of freshwater discharged by the rivers and canals with seawater. Typically, salinity of brackishwater ranges from 0.5 to 30.0 parts per thousand (‰), and this water is highly productive. Fishes adapted to such salinity range are known as euryhaline fishes and often occur in coastal waters, estuaries, backwaters, coastal lagoons/ lakes, etc. Most of the fishes adapted to brackishwaters are tasty and have a high market value.

It is estimated that there are 12.40 lakh ha of brackishwater areas in India, some of which could be beneficially put to use for aquaculture of highvalue fish and shellfish.

NFDB is promoting brackishwater cage culture with an integrated approach in the backwaters and estuarine regions of the country as an alternative livelihood and income generation programme for the coastal population under Blue Revolution Scheme of Government of India with ICAR-CMFRI as the technology partner. It is also proposed to involve 'Aqua One Centers' to promote this technology and to assist the coastal fish farmers.

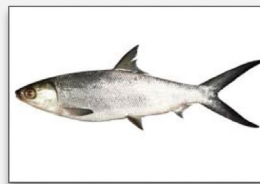
### Aim & Objectives

- ✓ To encourage farming of high-value fin fishes and enhance their production.
- ✓ To build a good team of skilled professionals who would form a strong link between the farmers and the researchers.
- ✓ To establish a self-sufficient well equipped '**Aqua One Centers**' in all the coastal districts of the country to address the existing and emerging technical problems of brackishwater fish farmers.

- ✓ To assist in marketing of the product by providing training to farmers on use of '**Fish Sales App**' developed by CMFRI and thereby exclude the role of middlemen.
- ✓ To increase the farmer's income by increasing productivity, reducing mortality, increasing unit sale value of farmed product and encouraging integrated farming practices.

### Targeted Fish Species

Milk Fish *Chanos chanos*, Asian Seabass *Lates calcarifer*, Grey Mullet *Mugil cephalus*, Pearlsport *Etroplus suratensis* and Nile Tilapia *Oreochromis niloticus*, Silver Pompano *Trachinotus blochii*.



Milk Fish



Asian Seabass



Grey Mullet



Pearlsport



Nile Tilapia



Silver Pompano

### Beneficiaries

- ✓ Fishermen living in hamlets along the backwater areas, farmers involved in aquaculture and owning homestead near backwater resources; societies or entrepreneurs of coastal region will be directly benefited by this project.

- ✓ Beneficiaries include SHGs/fishers/ farmers/ societies/ entrepreneurs.
- ✓ Fisherwomen would be encouraged to earn their income and become independent by doing cage culture activities as it requires less capital investment but gives more financial benefits.
- ✓ There would be overall development of fisheries in the backwater resources of States and this in turn will improve the standard of living of rural population in the coastal districts of the State.

### Project Location & Implementation

- Project location would be at suitable sites in the estuarine/ backwaters/ lagoons of coastal States
- The **"Aqua One Centre"** would provide training and technical knowhow on fish and shellfish farming in cages to the beneficiaries.
- Management of cages will be under the technical guidance of ICAR-Central Marine Fisheries Research Institute (CMFRI).
- There will be periodic evaluation of progress by **CMFRI Project Monitoring Unit (PMU)** for the successful operation of the project.

### Probable Unit Cost & Pattern of Assistance

Component	Unit Cost (Rs)
Cost of GI Cage (4 x 4 x 3 m), inputs	2.50 lakh
Small Feed Mill (1 - 5 quintals/day)	10.00 lakh
<b>'Aqua One Center'</b>	20.00 lakh

Region & Category of Beneficiaries	NFDB Share	Beneficiary/ State Share
<b>Other States</b>		
General Category	24%	76%
SC/ ST Women & their Cooperatives	36%	64%
<b>Union Territories</b>		
General Category	40%	60%
SC/ ST Women & their Cooperatives	60%	40%

### Estimated Project Costs & Returns

Item	Amount/ Quantity
Setup Cost: GI Cage Unit (4 x 4 x 3 m), Inputs: Fish Seed, Feed, etc.	Rs. 2,50,000
Culture/ Grow-out Duration	6 months
Weight of Fish at Harvest (average)	1.0 kg
Expected Yield/Cage/8 months	2,000 kg
Estimated Returns/Cage/8 months (Sale Price Seabass @ Rs. 300/kg)	Rs. 6,00,000
Estimated Total Costs/Cage/8 months	Rs. 2,50,000
Net Returns/Cage/8 months	Rs. 3,50,000

### Expected Outcome

- Availability of high-value fish to local/ domestic markets will prevent the supply of low-quality fish to the consumers.
- It will increase the income and generate alternative employment opportunities to coastal population.
- Efficient use of water bodies in a production perspective will reduce pollution of coastal waters.
- Empowerment of fishermen, women, unemployed youth, etc. by providing self-employment, income and entrepreneurship opportunities.
- Some 500 Cages are proposed to be installed in each of the maritime States.
- An additional 1000 tonnes of high-value fish is expected to be produced by each maritime State.



Contact for further information:

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