



# Additional livelihood activity for the coastal fisherwomen through nursery rearing of Asian seabass (*Lates calcarifer*) in backwaters



GAF 8 (TS-226)

**Bhuvaneshwari, T.\***, Jayakumar, R., Subburaj, R., Geetha, R., Vinay, T.N.,  
Kailasam, M. and K.P. Jithendran

**ICAR – Central Institute of Brackishwater Aquaculture  
(CIBA)**

**Chennai 600028**

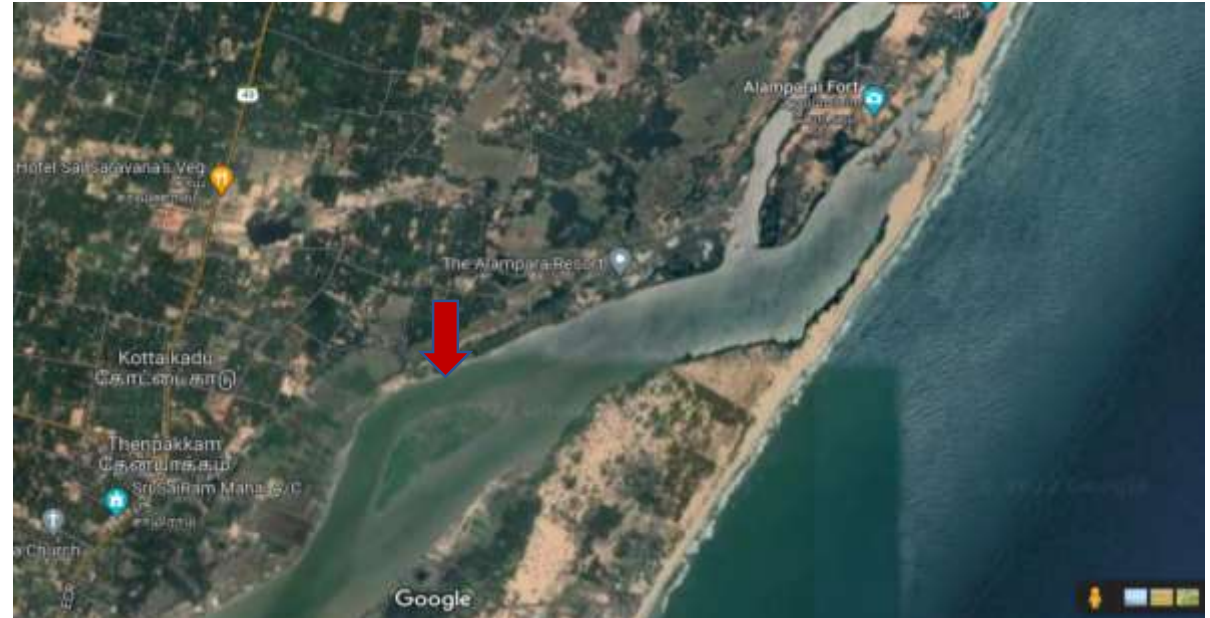
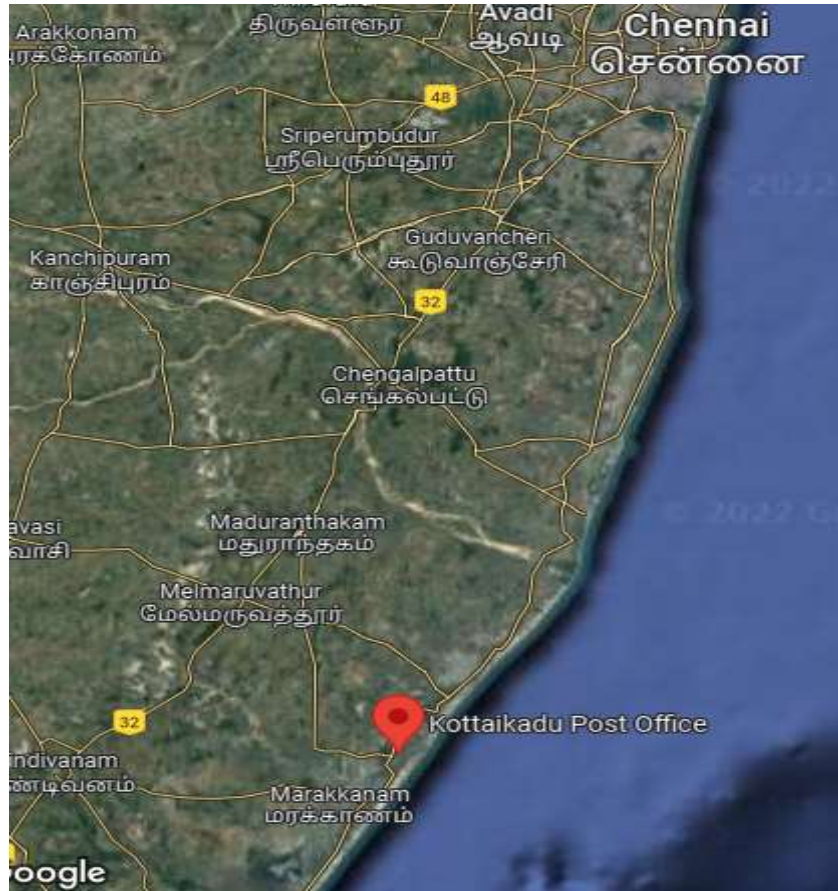
# Introduction

- Fisherwomen of Kottaikadu village were involved in **meat collection from the oyster beds** in the backwaters of Chengalpattu district of Tamil Nadu.
- Dive up to 1.5 meter depth under the water and stay for about **four to five hours in the rough beds with bare hands and foot.**
- Collect one or two kilograms of oyster meat per day
- Income of fisherwoman was about Rs. 4,000 to 5,000/month – **not sufficient for their livelihood**
- Occupational health risk and hazards like **skin cuts and abrasions in hands and feet, eye irritation, cold, skin burn, musculoskeletal weakness**
- Accidental death due to heart attack at young age

Oyster meat collection by fisherwomen



# Kottaikadu village ( $12^{\circ}15'07.4''N$ $79^{\circ}59'15.4''E$ ), Chengalpattu District of Tamil Nadu



About 100 kms from Chennai

## ICAR-CIBA intervention for additional livelihood

- Asian seabass *Lates calcarifer* is a economically important food fish in India and being reared in ponds and cages in brackish water and open sea.
- Generally, the farmers prefer to stock the fingerlings **above 10 cm size** to minimize the cannibalism and better survival. Availability of stockable size fingerlings is a constraint for expansion of its farming.
- **Nursery rearing program** of hatchery produced fingerlings to marketable size for aquaculture as an additional income generating activity of coastal fisherwomen was supported under the **Scheduled Caste Sub Plan (SCSP)** of ICAR – CIBA, Chennai.
- Fisherwomen of Kottaikadu were organized as **Self Help Groups** (3 groups each consisting 12 members) to **train on scientific nursery rearing** method for Asian seabass fingerlings in a backwater with **formulated feed**

# Motivation and Holistic Guidance, Training on nursery rearing



**Motivational session**



**Women's day awareness camp**



**Medical and dental check-up**



**Exposure visit and training at ICAR-CIBA**



**On- Site training**



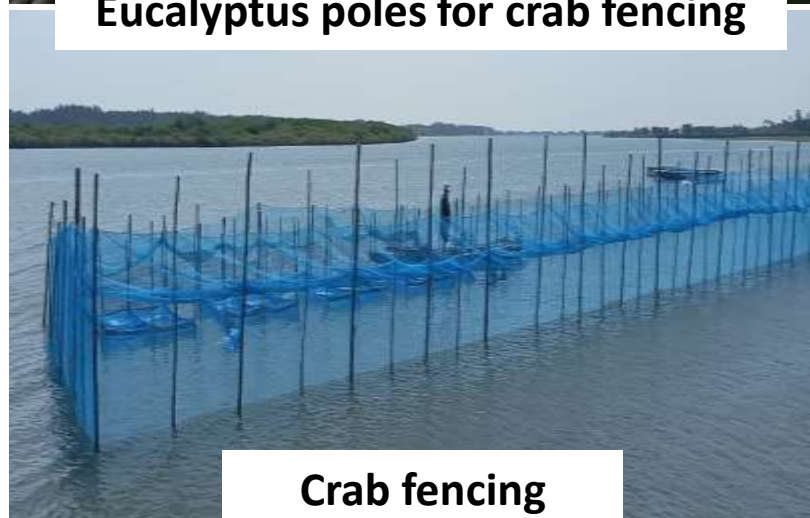
**Training on Happa installation**

## Installation of Crab fencing, Happas and PVC cages

- A **crab fencing** of 20 m width x 60 m length (mesh size 25mm) was installed
- Happas of 2m length x 1.5m height x 1m width were installed inside fencing



**Eucalyptus poles for crab fencing**



**Crab fencing**



**Happas & PVC cages inside crab fencing**



**PVC frame cages for holding harvest size fingerlings**



**Making Float for feed broadcasting**



**Training on fish seed packaging for transport**

# Transportation from hatchery and Stocking of seabass fingerlings

- Seabass fingerlings 6,000 numbers of 4.4 cm average length and 1.8 grams weight were stocked@300nos/happa
- Commercially available formulated feed ranging from slow sinking to floating pellet (0.3mm to 1.8mm size) was fed *ad libitum* twice a day (7-8 am & 4-5 pm)





# Grading of seabass fingerlings

- Grading of the seabass fingerlings was done **on weekly basis**.
- After rearing for **48 days** - marketable size of 10.52 cm length and 13.50 grams weight.
- The survival rate was **93.30%** and average daily growth was 0.24 grams.



Transfer of fish from happas



Transfer of fish from happas



Grading in progress



Differential growth of seabass

# Sale of seabass fingerlings

- The marketable seabass fingerlings were sold @ Rs. 40/piece



Sales of fingerlings to farmers for pond/cage culturing



Receiving the appreciation during farmers meet from Honourable Minister **Shri. L. Murugan**, Minister of State in the Ministry of Fisheries, Animal Husbandry and Dairying and Ministry of Information and Broadcasting on 31.05.2022

## Cost estimate of one unit

Sl. No	Particulars	Cost in Rs. Lakhs
	<b>Capital cost</b>	
1	Cost of Crab fencing 20 meter x 60 meters including net, casuarina poles and installation	1.50
2	Cost of Happas 2m x 1.5m x 1.0 m – 50 Nos. including materials and installation expenses	1.50
3	AC/DC Air Pump	0.20
4	Grading accessories	0.20
5.	Miscellaneous items	0.10
	<b>Sub Total</b>	<b>3.50</b>
	<b>Recurring cost</b>	
1	Cost of Asian Seabass fingerlings @8/seed (15,000 seeds/cycle x 5 cycles)	6.00
2	Cost of nursery rearing floating pellet feed	3.00
3.	Labour Charges for grading, happa cleaning etc.,	1.00
4.	Seed Packing & transportation expenses	0.40
5.	Feed supplements, management chemicals etc	0.10
	<b>Sub Total</b>	<b>10.50</b>
	<b>Grand Total</b>	<b>14.00</b>

## Production Estimates

- Stocking of seabass fingerlings @ 15,000/cycle x 5 cycles (maximum 60 days/cycle) = 75,000
- Survival @ 80% (4-5 inch size fingerlings) = 60,000
- Sale Price @ Rs.40/fingerling
- **Gross Revenue = Rs. 24.0 Lakhs**
- Gross Revenue – expenditure : **Rs.11.38 Lakhs** (25% repayment of capital + 100% of operational expenses)

**Net Profit/year = Rs. 12.62 Lakhs**

**Net Monthly income = Rs.1.05 Lakhs**

# Outcome

- Nursery rearing in hapas is a low investment operation which can be taken up by small farmers/ farm women / women labourers. This entrepreneurship is gaining importance as livelihood operations.
- The 3 fisherwomen SHGs produced seabass fingerlings for about **Rs.4.20 Lakhs** (in 4 months period).
- **Created confidence** among women SHGs due to additional income generation avenues.
- More such nursery rearing units would help to **create as seed village**.
- Subsidy assistance under the **PMMSY** for establishing such nursery units will be worked soon.

# Future entrepreneurs in fisheries and aquaculture





**Thank you**

