



Success stories of Modal Sea-cage farm Sippikulam fisher village, Thoothukudi district

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Introduction

Sippikulam is a coastal village located in Thoothukudi district mainly occupation depends on marine capture fishery.

Due to the high operational cost and decline in marine capture fisheries, now fisher seeks alternative lively-hood options in their village.

Interested fisher groups from Sippikulam village approached ICAR-Tuticorin Research Centre of CMFRI for the technical guidance and support in sea net-cage farming technology (site selection, cage design and fabrication, seed quality assessment, stocking density, feed, disease management and cage maintenance aspects) to culture marine fin-fishes and shell fishes in participatory mode.

To set a model sea-cage farming fisher village in Thoothukudi district.

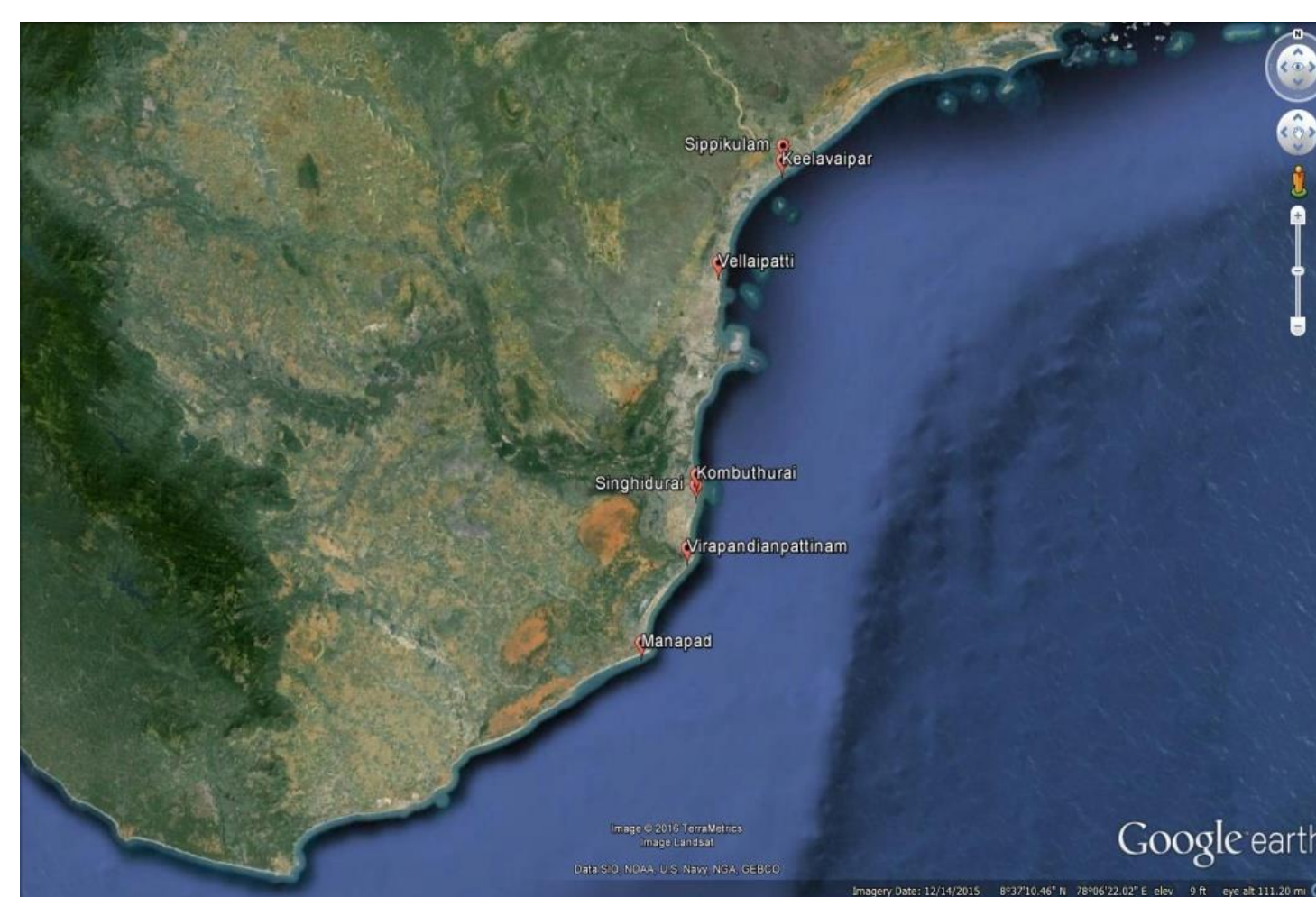
Materials and methods

Phase-I : Interested fishers for sea cage farming venture from the coastal fisher villages of Thoothukudi district were identified and divided in to five groups (each group consist of 4 members) and trained in the scientific sea cage farming aspects at ICAR-Tuticorin Research centre of CMFRI.

Phase-II : GI sea cages were fabricated, HPDE holding net inner and outer net were fabricated, floating HDPE drums and net-bags were attached, deployed with iron anchor 2 nos. of 50kg each in selected sites of Sippikulam sea. The under sized baby lobsters were procured and transported from landing centers of Periyathalai, Idinthakarai and Kanyakumari, were stocked in sea cages with standard stocking density.

Phase-III : Monitoring and management of lobsters grow-out culture and final harvest / marketing was done.

Study area :



II. Lobsters culture in GI cage

Under sized lobsters of 60 grams average weight were collected from landing centres of Idinthakarai and stocked in the installed GI net-cages (6 mts dia. and 2.5 mts depth). HDPE knotted mesh size with 30 mm (inner net) and 60 mm (outer net). The cage top was covered by the bird net of 80 mm mesh size.

Plastic round pipes (30 cm length / 7.5 cm dia) were provided randomly as hideouts and stocked at the rate 46 nos per m². Lobsters were fed ad libitum with trimmed cuttlefish waste and clam meat twice daily.

Net-cages were changed based on the subjective assessment of fouling of the net in order to have sufficient water exchange. Random sampling for growth measurement was carried out at monthly intervals with the sample size of 30 nos. from the cage.

Grow-out culture was carried out for a period of 5 months. The final average weight of the grown lobsters were 211 grams with 95 % survival at the time of harvest.



Lobsters harvested in sea cage



Grading of lobsters for marketing



Procurement of grown lobsters from sea cages



Part of harvested lobster

Results and Discussion

I. Iron Frame Net-cage

Undersized lobsters (*Panulirus homarus*) with individual weight ranged from 40 to 60g were stocked in four Iron frame net-cages (2 m x 1.5 m x 1.5 m). Cost of the cage : Rs.10,000 per unit.

Stocking densities maintained were 46 nos per m². Undersized lobster price Rs.650 per kg

Lobsters were fed *ad libitum* with trimmed cuttle , low value fishes and clam meat twice daily. A total of 89 kg lobsters were harvested with 25.6 kg of grade-I and 63.5kg of grade-II .



Average final weight of the grown lobsters were 226.86 g, with an average Daily Growth (ADG) of 1.08 g/day and 90 % survival were observed.

Farm gate price for lobsters grade-I & Grade-II were Rs.1650 and Rs. 1750. A revenue of Rs.1, 75,972.00 was achieved in a culture period of 150 days from four Iron frame net-cages. (Rs. 43,000 per iron frame cage)

III. Crab culture in sea cages

Sea cage fabrication	FRP Rectangular floating cage Design-I	FRP Rectangular floating cage Design-II
Cage size (lxbxh)	4m x 3m x 0.75m	2m x 2m x 0.80m
Single cell size(lxbxh)	50 cm X 50cm X 50cm	30 cm X 30cm X 75cm
Stocking density	1 nos / cell	1 nos / cell
Total cell	5 x 4 nos (20 nos)	6 x 6 nos (36 nos)
Holding duration	14 – 28 days	14 – 28 days
Feeding	Low value fishes @ 3 % BW	Low value fishes @ 3 % BW per day
Cage cost	Rs.27, 000.00	Rs.20, 000.00
Soft shell crabs purchase price	Rs.300-400 / kg	Rs.300-400 / kg
Farm gate price	Rs.1300-1500 / kg	Rs.1300-1500 / kg
Net profit	Rs. 30,000 / harvest	Rs. 54,000/harvest



Fabrication of FRP crab cage : Model -I



Fabrication of FRP crab cage : Model-II



Conclusion

Success of the highly productive farming method proved to be an attestation of the proper liaison of fisher-folk and research institute for successful adoption of technologies developed. It also proved the skill, ability, and interest of the fisher folk in adoption of cage farming in their village.