



IMTA

A leap towards self-sufficiency



ICAR-Central Marine Fisheries Research Institute (CMFRI)

Post Box No. 1603, Ernakulam North P.O., Kochi-682 018
Kerala, India

Economic benefits

The integration of the cage with seaweed generates favourable returns and increased yields for the farmers. The total seaweed production of the integrated rafts for (16 rafts / one cage / 4 cycles) turns out to be a good additional yield and added with increased profit margin as follows in 1 cage with 16 seaweed rafts each practically done in the field.

- Seaweed yield: 390 kg/raft/cycle (39 kg dry wt)
- Price of seaweed: Rs 96/kg (dry weight)
- Annual gross revenue: Rs 2.4 lakhs (from 16 rafts)
- Cost of Production = Rs 2000/raft X 16 = Rs 0.32 Lakhs
- Annual net revenue: Rs 4.15 lakhs (from 32 rafts)
- Initial income before seaweed integration: Rs 7.0 lakhs (from 2 cages)
- Net income after IMTA adoption: Rs 11.15 lakhs (from 32 rafts)
- Net increase in income with IMTA: Rs 4.15 lakhs (60% approx.)

Prepared by

Vipinkumar V.P, Bobby Ignatius, Johnson B, Reshma Gills, Swathilekshmi P.S, Rajesh N., Ramachandran C., Jayasankar J, Aswathy N., Anuja A.R., Athira P.V., Sary P.S., Binitha K.V, Ambrose T.V, Smitha R.X., 2024.

Guided by:

Dr. A. Gopalakrishnan, Director, CMFRI
Dr. Shyam Viswanath, Expert member of DST

Design & Lay out: Abhilash P.R.



ICAR-Central Marine Fisheries Research Institute (CMFRI) has thrived in creating milestones and breakthroughs during the past many years in developing various technologies in marine fisheries sector. Integration of various technologies in different interventions for the beneficiaries of fisherfolk is one of the greatest achievements of ICAR-CMFRI and here comes the significance of IMTA or Integrated Multi- Trophic Aquaculture. IMTA is the practice that combines the cultivation of fed aquaculture species with organic extractive aquaculture species and inorganic extractive aquaculture species in appropriate proportions to create balanced systems for environmental stability, economic stability and social acceptability.

It was introduced to achieve bio-mitigation along with increased biomass production by integrating different groups of commercially important species with varied feeding habits. The implementation of IMTA technology, combining cobia and seaweed cultivation resulted in a remarkable 56% increase in seaweed yield. This judicious combination of seaweed with cobia cages generates additional revenue through increased yields of both cobia & seaweed evident from the increased profit percentages in either case. Presently, many fishers in Ramanathapuram district of Tamil Nadu are adopting this IMTA technology.

IMTA Design

A total of 16 bamboo rafts (12x12 feet) with 75 kg of seaweed per raft can be

integrated for a span of 4 cycles along with one of the cages. For example, a GI cage of 6 m diameter and 3.5 m depth with 750 Cobia fingerlings can be integrated with the above seaweed raft system. A complete cycle of seaweed farming extends for an average of 45 days duration and four such cycles can be performed in a row. Generally, a battery of 2 cages with 32 seaweed rafts were used for such culture practice. As the bamboo raft method is sometimes not suitable for rough sea conditions, tube net method could be a better farming method for the integration of seaweeds with cobia.

Environmental benefits

The organic waste mitigation of IMTA is more efficient and beneficial in the integrated aquaculture system. Mandapam Regional Centre of CMFRI has done ample practical demonstrations to prove the economic benefits of IMTA. This is an efficient system that helps in controlling both organic and inorganic pollution in the natural open waters and thereby ensuring ecological balance. It is also an eco-friendly and sustainable option that ensures a steady income for coastal fishers. IMTA could also emerge as one of the significant mitigating measures for the adverse impact of climate change and to earn valuable carbon credit for our country. In a broader perspective, IMTA is a venture/leap towards productivity, equitability, stability and sustainability in the fisheries sector.

