Integrated farming of mussel and edible oyster by self help groups in Sathar Island, Ernakulam District, Kerala

T. S. Velayudhan, B. Jenni Sharma, Mathew Joseph, P. S. Alloycious, V. Kripa and K. S. Mohamed
Central Marine Fisheries Research Institute, Kochi

The Central Marine Fisheries Research Institute (CMFRI), Kochi had successfully demonstrated mussel farming in the estuarine areas of Kerala, especially north Malabar. This resulted in a positive socio-economic impact on the coastal fishers especially among women. In the same way CMFRI had conducted a preliminary survey in the estuarine areas around Sathar Island (Fig. 1) adjacent to Munambam Fishing Harbour in the northern part of Ernakulam District, during 2003.

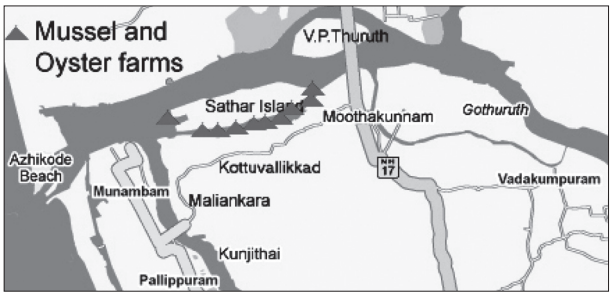

Fig. 1. Map of Sathar Island showing areas with mussel and edible oyster farms

The nearby areas were also surveyed towards downstream to find out, to what extend the salinity profile is suited for mussel and oyster farming. After the survey, a training programme was organized by Molluscan Fisheries Division of CMFRI at Govt. L.P. School, Kottuvallikkad on 3rd August 2003. In the training programme, 150 people participated and they were given training in oyster culture techniques (Fig. 2).

Fig. 2. Farmers attending the training programme at Kottuvallikkad L. P. School

As a follow up of this, the CMFRI constructed a demonstration farm in the brackishwater area of Sathar Island and suspended 500 rens. Parallel to CMFRI farms, 6 self help groups (SHG's) also started oyster farming with the financial help (25% subsidy) from Brackishwater Fish Farmers Development Agency (BFFDA).

The farmers were satisfied seeing the spat settled on the oyster shell rens and the weight of each ren increased to 3.5 - 5 kg. Within a period of 7 months, the oysters were harvested and they could obtain 10% meat weight. To popularize the programme, BFFDA organized a public function and the total production amounted to 2.2 t of oysters in 2004. From the next year onwards, the number of farms and farmers increased (Table 1). In the light of the initial success, several training programmes were organized by the state development agencies, (Table 2). The technical classes for these training programmes were given by CMFRI (Fig. 3). From the year 2005 onwards SHG's started adopting mussel farming using the same oyster rack and now most of the farmers are doing integrated farming with mussel and oysters (Fig. 4, 5, 6). The present annual production amounts to 8.6 t of oysters and 28 t of mussels (Fig. 7).

Some of the farmers were trained by NIFPHATT (National Institute of Fisheries Post Harvest Technology and Training) for producing value added products like frozen meat and pickles from both

Table 1. Trend in mussel and edible oyster farming in Sathar Island

Year	No. of farms	No. of SHG's involved		No. of beneficiaries	Production (t)	
		Women	Men		Oyster	Mussel
2003	6	3	-	26	*FS	
2004	9	8	-	45	2.2	*FS
2005	11	14	-	52	4.2	4.172
2006	23	15	-	68	13.3	6.0
2007	30	17	2	102	11.23	18.28
2008	32	21	3	153	8.6	28

*Farming started

Table 2. Training programmes on bivalve farming organized by different organizations in Sathar Island

Year	No. of training	No. of participants	Name of Organizing agency
2003	1	150	CMFRI/MFD
2004	1	45	BFFDA
2005	3	265	BFFDA
2006	3	260	BFFDA/ADAK/TEAP
2007	1	53	TEAP/ADAK
2008	1	32	ADAK

BFFDA : Brackishwater Fish Farmers Development Agency
ADAK : Agency for Development Aquaculture of Kerala
TEAP : Tsunami Emergency Assistance Programme

Fig. 3. Women seeding mussels using PVC pipe covered with mosquito net

Fig. 4. Panchayath president visiting a women SHG's farm

Fig. 5. SHG member examining the mussel grown on rope

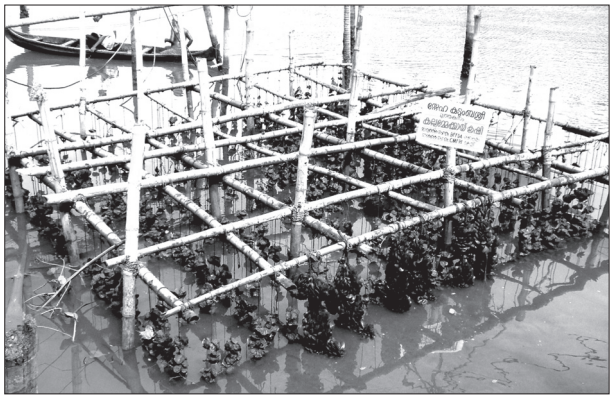

Fig. 6. Edible oyster and mussels farmed on the same rack

Fig. 7. Harvested oysters along with ren in canoes

Fig. 8. Training at NIFPHATT on value added products from mussels and oysters

mussels and oysters (Fig. 8). High income was obtained within 5-7 months. In addition, many people are getting additional income through ancillary works related to farming process, harvest, post-harvest, shucking and marketing (Table 3).

Table 3. Details of revenue generated for a model integrated farm of mussel and edible oyster (5 x 5 m)

Activity	Rate	Income as wage/ labour (Rs.)	
		Mussel	Oyster
Shell ren making	@ Rs.1 per ren		100
Farming	@ Rs.300 /day	300	300
Seeding	@ Rs.200/day	1600	
Harvest	@ Rs.200 /day	200	200
Post-harvest	@ Rs. 2 / Kg	200	300
Canoe hire charge	@ Rs. 100/trip	100	200
Shucking	@ Rs. 10 / Kg	2,500	400
Marketing	@ Rs. 5 / kg	1,250	200
Byproducts (pickle)	@ Rs.200/day	800	200
	Total	7,250	1,600
Total Revenue generated by sale of heat shucked meat	@ Rs.80/ kg	20,000	3,200

Number of ropes : 100

Number of ren : 100