

OPERATIONAL RESEARCH PROJECT - A CASE STUDY OF INTEGRATED CAPTURE AND CULTURE FISHERIES

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Operational Research Project

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INTRODUCTION

The concept of Operational Research Project initiated by the Indian Council of Agricultural Research for transfer of agricultural and related technologies to the rural areas has led to the adoption of new or improved techniques for obtaining increased production by the rural farmers. An Operational Research Project on 'blending sea farming with traditional capture fisheries' was started in April 1978, at Kovalam, a fishing village 35 km south of Madras. This is the first of its kind in the marine fisheries sector, having as its objectives:

1. Establishing the possibilities of supplementing traditional fishing with sea farming (mariculture) in order to increase production and improve the socio-economic conditions of the fisherfolk.
2. Demonstrating the feasibility of culture of mussel and other cultivable organisms such as prawns, fish, sea-weeds etc. in large scale and its economic viability by transferring the technology available with Central Marine Fisheries Research Institute.
3. Creating a sense of involvement and participation among local fishermen in this project by associating them from the initial demonstration stage itself, so that this venture becomes self generating, equipping them to take to sea farming along with their traditional fishing.
4. Demonstrating the scope for overall improvement of the socio-economic conditions of the rural area where this project becomes operative through development of infrastructure for processing, marketing and better methods of utilization.
5. Assessing the direct and indirect impact of this project in the area where it is operative in comparison to the socio-economic conditions of the project area prior to the introduction of the project.

SOCIO-ECONOMIC SURVEY

The preliminary benchmark survey conducted

at Kovalam fishing village in July 1977 revealed the existence of 175 fishermen families, with a total population of 975 individuals. Out of this 75% are Hindus, and the rest Muslims. The average number of persons per household is 5.5. In the population 32% are adult males who are involved in fishing activity. Womenfolk belonging to 12% of the families are engaged in avocations such as basket weaving, teaching and marketing of fish. Among the 175 families, 66.3% own boats and nets while the rest are engaged as fishing labour. Catamarans (105) and masula boats (10) are the crafts, from which hooks and lines and nets of various types are operated.

Ninety-seven per cent of the fisherfolk have their own houses. Thatched houses account for 74%, tiled houses 21% and terraced houses 2%. The remaining 3% of the fishermen families dwell in rented premises. The Government of Tamil Nadu has recently distributed 168 independent houses, each costing about Rs.4500 to those fisherfolk who lived in thatched houses and for those who did not own a house.

A wide range of annual family income from 600 to Rs.8000 has been recorded. Sixty-one percent of the families are in the annual income group of below Rs. 2000. The average annual income per house is about Rs.2055 and per capita income Rs.369.

The literates form about 21.4% of the population. Two persons had college education while the rest had studied up to elementary school level.

The fishermen belong to two communities. Pattinave chettians are Hindus who form the main and influential group of fishermen owning large catamarans, Masula boats and nets of various types. The other smaller group are Muslims who own smaller catamarans and specialise in line fishing.

All the fish caught is disposed off in the fresh condition to local merchants who include 8 Hindu women and one Muslim business man, who buy the morning and evening landings.

Hawkers who come on cycles from other places buy the fish that is landed sometime in the noon. All the Muslim fishermen give their catch to the Muslim merchant who sustains them during the off season. The Hindu fisherwomen merchants, on the other hand give an advance of Rs. 50-100 to a few catamaran owners each, as a guarantee money and all the fish brought by these catamarans are given to these women on an agreed price. If the price is not agreeable, which is a rare case, the catamaran owner has a right to sell his fish to any other person who offers a better price. There is a fish transport van which makes normally one trip to the city of Madras in the morning and returns in the evening. The women merchants with their baskets of fish use this van paying Rs. 6 per basket of 100 kg and Rs. 4 as return fare per person. The van brings ice from the city on its return journey which is used by the fish merchants. At noon when the van is not available, cycle hawkers coming from places about 30 km away buy the available fish in auction. A very small quantity is sold by the fishermen themselves in the local market. Prawns and lobsters are sold to agents of freezing and processing plants who collect them regularly.

A study of the division of sale proceeds of the fish reveals that the line fishermen and boat seine fishermen divide the entire amount equally among themselves and the boat owner. That is each worker and the owner gets one share each. In the shore seine operation 1/3 share is given to the net owner and the balance 2/3 is divided among all the participants who helped in laying and hauling the net. The gill net catch is divided into two equal shares, one share for the owner and the other divided among the workers.

This village has a Panchayat with a headman and a group of elected representatives. All problems pertaining to the village are examined by this body in detail and decisions are given. The decision of the Panchayat is binding and the fisherfolk meticulously obey it. For maintaining the activities of this group, a fee of 25 paise per basket of fish purchased by the merchants is collected. Small amounts are also collected at weddings and social functions and fines imposed on persons who break Panchayat rulings.

Fishermen of this village get loans only when large sums of money are needed for marriage or other functions, for construction of houses and for purchase and repair of craft and gear. While a few persons take loans from money lenders at exorbitant interest rates, these expenses are

usually met from loans taken from relatives on promissory notes and also by resources mobilised through chit funds and mortgaging of jewels.

TRANSFER OF TECHNOLOGY

With these basic data, and the willingness of the fishermen to participate in this programme, one hundred youths of the village, chiefly in the age group of 15 to 25, have been enrolled and grouped in batches of ten with an elected leader for each group. Two of these leaders will hold office in the managing committee of the Operational Research Project as members by turn. A managing committee consisting of scientists, administrators and village elders including a lady member was formed. Meetings, group discussions and individual contacts have been maintained continuously.

The Institute's field laboratory established at Kovalam, two years ago has developed methods for culturing mussel, lobster and prawns. The scientists of this laboratory actively take part in the transfer of technology to the fishermen in the project.

In Phase- of the programme, it was decided to introduce mussel culture to the selected fisher youth. Steps were taken to select a farm area in the depth range of 4-6 metres in the Kovalam by north of the village and just outside the present fishing zone and also off the usual navigational route. The techniques of raft culture and pole culture of mussels will be adopted for the programme.

Experiments on rope culture at Vizhinjam (Kerala) for brown mussel, and at Culicut (Kerala) and Kovalam (Madras) for green mussel, have shown that the mussel grows to the marketable size of 70 to 80 mm within six months from spat size of 15 to 20 mm, with an average weight increase of 10 kg per metre length of rope. Pole culture is being started at Kovalam for the first time.

The training of young fishermen of Kovalam in pole culture of mussels is the beginning of a series of such trainings in other fields of mariculture. A batch of 10 fishermen of Kovalam and Karikkadu Kuppam were imparted training in the identification, collection and transport (by air and rail) of fish and prawn seeds. This sort of training will pave the way for taking up fish, prawn and molluscan seed collection and distribution as a village based industry. The fishermen are also to be trained in the cage culture of fish and lobsters. The project has made a good beginning and the support and participation of the village folk has been very impressive.