CHAPTER - VI

MECHANISED FISHING : PROBLEMS AND PROSPECTS

Having examined the economics of mechanised fishing and having discussed the multiple effects of mechanisation on economic variables, it is essential to identify the factors which have been inhibiting the growth of mechanised fishing in the state of Orissa and to suggest measures to overcome them. The second part of the chapter throws light on the future prospects of mechanised fishing.

6.1 PROBLEMS OF MECHANISED FISHING :

6.1.1 Lack of Institutional Support

The institutional support which was extended to the private entrepreneurs at the initial stage of mechanisation has been withdrawn and the funding agencies have become quite apathetic to the needs of mechanised fishing. Government of Orissa introduced mechanised vessels for the first time in the Orissa Coast during 1957-58. But in the absence of proper landing, communication and icing facilities mechanised fishing could not make any progress in the State. By the end of 1960-61 the number of mechanised boats were only six and all of them were operated from the mouth of the Mahanadi. After the introduction of "Pilot Power Fishing in Sea" the number of mechanised boats rose to 23 and the mouth of the river Budhabalanga in the district of Balasore was used to operate mechanised boats. As private enterprise was not forth-coming, Govt. of Orissa set up the Orissa Fisheries Development Corporation in 1962 to undertake marine fishing. But this endeavour of the State also failed and the government decided to encourage private

entrepreneurs for mechanised fishing by giving subsidy to the extent of 25 per cent on boats and 50 per cent on gears. This policy of Government proved to be a success and attracted a number of private entrepreneurs to take up mechanised marine fishing. In 1975-76 as many as 18 mechanised vessels were acquired and operated by the private sector. Since then the number of private entrepreneurs started rising and the number of mechanised boat increased to 128 during 1976-77. But this bullish trend did not continue for long and mechanised fishing could not make much headway in the State.

6.1.2 OSFC - The Principal Funding Agency :

The Orissa State Financial Corporation (OSFC) played a pioneering role in financing mechanised fishing in the State. It financed more than three hundred trawlers during the period between 1971-72 and 1979-80. But this endeavour of the OSFC received a rude shock when the beneficiaries tried to get rid of their liabilities of repayment by taking recource to various fraudulent practices. The following table will explain the magnitude of the mounting default suffered by the OSFC.

Table 6.1
The term loan sanctioned by OSFC and the position of default, outstanding, collection and recovery as on 31.10.81 (Rs. in crore)

Term loan sanc-tioned	Term loan disbursed	Percentage of loan dis-bursed to loan sanctioned	Default				Percentage of default to loan disbursed
			Principal	Interest	Others	Total	
Rs.6.62	Rs.5.66	85.5	Rs.2.25	Rs.2.35	Rs.0.14	Rs.4.74	83.7

Source : Position paper on Trawlers - OSFC, Cuttack.

Looking at the magnitude of default (83.7 percent of total loan) one can easily imagine the course of action, which OSFC would have adopted in financing trawlers. As a result OSFC tried to recover the loans by seizing the fishing vessels under section 29 of State Financial Corporation Act, 1951. But attempts to seize the boats were not successful and at last the OSFC decided to discontinue financing trawlers. The State Bank of India also made an attempt to finance trawlers, but it was met with the same fate as in case of OSFC and the SBI was constrained to discontinue financing of trawlers after 1982.

6.1.3 Is this Default wilful ?

An attempt has been made to answer this question on the basis of empirical study. The main reasons for unwilful default may be :

i. the high variability and unpredictability of incomes in marine fishing and

ii. the equally large unpredictability of emergency expenditures which fishermen have to meet.

There is no denying the fact that owing to the large instability of their current incomes, borrowers are sometimes unable to repay instalments but it is not clear why they fail to repay even when they have sufficient catch. Moreover, it is not also evident why do the borrowers default in respect of institutional loans only.

The OSFC had taken due cognizance of the specific features of production conditions in marine fishing. For example, in the years 1979-80 and 1980-81 there was bad harvest and the Board of Directors of OSFC decided to (i) postpone recovery of the principal and the interest that fell due during the years 1979-80 and 1980-81 from defaulting entrepreneurs to

subsequent years when the catch would improve, and (ii) to allow repayment of the current principal and interest dues for payment from the next fishing season starting from 1.9.80. In spite these relaxations made by OSFC in respect of loan recovery, the defaulters did not choose to repay their dues in the subsequent year, particularly in the years of good harvest. Many of defaulters had either removed or dismantled the engines of their boats before the OSFC could seize them. More than seventy percent of boats financed by OSFC were not insured. All this was deliberately done to avoid the liability of repayment. The improvement in the economic conditions of the borrowers and the improvements in their assets holding do not suggest that they were unable to repay the loan. The scheme for financing trawlers was primarily for unemployed graduates. The graduate loanees were neither tested nor trained. Most of them turned middlemen leaving the trawlers to crews and some of them have reported to have invested their earnings from fishing on some other trades in urban areas. In such view of the matter it can be inferred that the large-scale default in repayment of OSFC loan was mostly wilful. The loanees in many cases choose to become defaulters in spite of their repaying capability because they got the impression that they can get away with it.

6.1.4 Inadequate Infrastructure :

The operation of mechanised craft requires berthing and landing centres where the fishing vessels can berth and land fish and avail such other facilities like fuel, drinking water, ice, food materials etc. During the initial days of mechanisation, the Paradeep Port authorities constructed a wooden jetty close to the iron-ore berth to provide temporary berthing facilities for mechanised boats. Govt. of Orissa started construction of fishing bases in a phased manner

in the year 1957-58. Now there are four fishery harbours and ten fishery jetties in Orissa. Among the berthing centres the fishery harbour at Paradeep in the most important one where from almost fifty per cent of the mechanised crafts operate. This high concentration of mechanised boats at Paradeep has resulted in over fishing in the area leading to low productivity. There are sixty two landing centres in Orissa. But berthing facilities for mechanised boats are available only at fourteen centres.

Provision of berthing for mechanised craft has not received due attention of the planners. The development of Dhamara harbour in recent years has attracted multinational firms and a good number of larger vessels with modern facilities are being used for fishing at Dhamara Port. Therefore, development of other landing centres will not only attract new entrepreneurs into the mechanised fishing sector but also result in introduction of sophisticated and improved fishing vessels.

6.1.5 Excess capacity in Processing Industry :

The faulty strategy adopted in the area of fishery development is well evidenced from the gap between the installed capacity and utilised capacity of ice plants, processing and freezing plants. A number of such plants were established during a very short period without proper assessment of the demand for the service rendered by them. Utilisation of the capacities of these plants primarily depends upon the supply of prawns and shrimps. But supplies of prawns, shrimps or any other exportable varieties of fish are subject to violent seasonal fluctuations. Therefore, many of the units engaged in sea-food processing do not get adequate raw materials for a considerable number

of days during a year. So far no corrective steps have been taken to co-ordinate the activities of the plants rendering various services for sea-food processing. Rather, under the pressure of market forces there is an increasing trend towards integration of different activities right from fishing in the sea to the export of processed fish. Decentralisation of such activities has proved to be economically not viable. Fishing activities must be organised on a large-scale and it is only the corporate sector, which can provide necessary capital for sustainable development of mechanised fishing in the state.

6.1.6 Absence of Organised Market for Marine Fish :

Although the number of mechanised boats has increased over the years, corresponding development in the realm of marketing of their produce has not taken place so as to make fishing operations economically viable. Till recently the marketing of marine fish was under the control of private traders who were in no way connected with fishing. These fish merchants used to supply capital for meeting the recurring expense of the mechanised boat owners who were under the obligation to sell their catch at a predetermined rate. But in the recent years the importance of these traders have declined to a considerable extent due to the active participation of the export and processing units in fishing operations. The boat owners are now tied up with the export houses. Although the boat owners are obliged to sell their catches to these houses they are under no obligation to do so at a pre-determined price. The price offered by the financiers is about ten per cent less than the prevailing market price. Therefore, under the present arrangement, the degree of exploitation is certainly less than what it was when the export houses and processing industries were not financing mechanised fishing in the state. But

in spite of this change, the situation has not improved much. The fishermen still depend on the private traders for disposing of the non-exportable varieties of catches. Taking advantage of the low demand for such catches, the traders offer the lowest possible price for trash and other fish rejected by the export houses. The non-exportable varieties are sold on auction right on the landing centre. But the private traders who also meet a part of capital needs of the boat owners, do not allow free auction in case of quality fish like Hilsa, Shrimp, Pomfret etc. and the owners have to hand over the catches to them at prices unilaterally determined by the traders. The left-out trash fish are sold on auction at throw - away prices.

6.1.7 Unorganised market for Non-Exportable Fish :

During the last few years the demand for sea-fish has been gradually rising. People suffering from cardiac problems and hypertension are advised to take sea fish, the fat content of which is much less than that of fresh water fish. Consumption of sea-fish is no longer confined to the coastal towns. While the big and medium sized prawns are exported to foreign countries, class fish are sent to metropolis. Fish like Hilsa, Promfret, etc. are sold at very high price in big towns. While the middlemen and traders engaged in procuring the catch from the landing centres are highly rewarded, the fishermen are unable to get fair price even for the class fish. In the absence of an organised market non-exportable varieties of fish, the boat owners are obliged to sell their catches to the middlemen engaged by the traders at the landing centers. No in-depth study has been made to give a cross sectional view of the structure and the pattern of distribution of marine fish in Orissa. Information regarding fish marketing is not available from secondary sources, because most of the

transactions are oral and highly unorganised. There is no mandatory system for maintaining records of fish arrival and turnover. The Department of Fishery under the State Govt. has not made any attempt to prepare a systematic record of fish marketing in Orissa. The boat owners are not supplied with the data relating to demand and utilisation pattern of their catches. No attempt has also been made to identify the species which are in high demand in metropolis and to fix minimum prices for them. The intra-state as well as the inter-state transaction in non-exportable marine fish needs to be organised through co-operative marketing. A federation of fishermen has to be set up for marketing of marine fish which will not only ensure good remunerative prices for these but also formulate strategies for making developments including processing, transport and distribution facilities corresponding to the projected supplies.

6.1.8 Entry of Neo-Fishermen into the Marine Sector :

The entry of people from outside the traditional fishing communities into native fishing sector is the consequence of mechanisation. Two factors have facilitated entry of these people into the fishing avocation. One is the opportunity to secure substantial gains through the catching of shrimps and there is the inability of majority of fishermen to take advantage of the situation because of the very high cost of mechanised boats. Modernisation in fishing and the involvement of neo-fishermen from non-fishermen communities in this occupation are forging ahead with almost equal pace. The mechanised sector, presently monopolised by non-fishermen, is not only taking the best out but also is forcing out a set of people who for centuries were solely subsisting on this as their traditional occupation. Therefore concerns have been expressed from various quarters to take recourse to some corrective measures to curb

the growing influence of the neo-fishermen in marine fishing. But the entry of neo-fishermen can not be prevented because of the capital-intensive nature of mechanisation. The process of mechanisation involves capital intensive structure and a type of infrastructure, which would evolve in favour of those having advantageous economic standing. Therefore, entry of people from outside fishermen's communities into the occupation has to be endured. In fact as such fishermen do not have any resentment against the entry of people from outside their communities into the marine fishing. Because investment made by these people has created employment opportunities for the fishermen. The crewmembers of the mechanised crafts mostly belong to fisherman communities. Since the fishermen know it very well that investment on mechanised boats is beyond their capacity, they never oppose the entry of neo-fishermen. The programme of mechanisation has helped the upper income strata and the fruits of mechanisation have not percolated down to the lower strata of the fishing units. Some attempts have been made by the State Govt. to bring the traditional fishermen into the mainstream of development through the programme of motorisation of country craft, but the programme has not succeeded due to the poverty, ignorance and illiteracy of the traditional fishermen. Poverty of traditional fishermen is the single most important factor which prevents the traditional fishermen to adopt new technology. The factors responsible for the low level of living and extreme poverty of the fishermen households are : (1) their inability to adopt new technology, (2) unorganised marketing of marine fish and (3) nature of employment. These factors have been elaborately discussed in the preceding chapters. Their low level of living manifest specific deficiencies such as insufficient food, bad housing, poor

hygiene and medical care. Their irrational outlook and superstitious belief act as impediments for their progress. They are unable to respond to the opportunities made available to them for betterment of their status.

In face of the deficiencies discussed above, there is no organised effort, either by the fishermen themselves or at any institutional level, to prevent the entry of outsiders into the fishing avocation

6.2 Future of Mechanised Fishing :

This study apparently brings forth the fact that the cost of mechanised boat is so high that they are not within the reach of an average fisherman. Moreover, mechanised fishing is gradually getting more and more capital intensive. Fishing, processing, transportation, export and other related activities need to be integrated in a planned manner for achieving economic viability. This necessitates entry of corporate sector into the arena of mechanised fishing. But this is a sector where, like agriculture nature predominates. Fishing operations are shrouded with great uncertainties. Therefore, a very few companies have so far ventured to invest in this sector.

The launching of mechanised boats depends largely on the availability of prawn and shrimps catch in huge quantities. Shrimps constitute the major portion of our exports. But, there has been a continuous decline of shrimp catches along the west and east coasts. The catch is not sufficient to keep the processing industries engaged throughout the year. Hence, there is a pressing search for activities which can be taken up along with fishing, processing etc. to make mechanised fishing more viable and profitable.

6.2.1 Brackish water Shrimp and Fish Culture:

The production of exportable prawn and shrimps has been augmented through the development of brackish water shrimp culture. Firms engaged in mechanised fishing can simultaneously take up prawn and shrimp culture in order to diversify their activities with a view to maximize profits and minimize losses. The return from brackish water fish culture is far more certain than those from mechanised fishing. Therefore, the profits from culture fishery can make up the losses arising from the uncertainties associated with capture fishery. Moreover the cropping pattern should be so designed as to provide a continuous supply of raw materials to sea-food industries.

India has around 11.91 lakhs hectare of brackish water area suitable for shrimp farming, out of which only 65,000 hectares were under culture with an average production of 0.5 tonnes per hectare.

The following table depicts the state wise break up of brackish water area available in the country.

TABLE 6.2
STATEWISE BREAK UP OF BRACKISH WATER AREA

Sl.No.	State	Estimated Brackish water Area(hectare)	Area under cultivation(hectare)
1	West Bengal	405000	33815 (8.35)
2	Orissa	31600	7075 (22.39)
3	Andhra Pradesh	150000	6000 (4.00)
4	Tamil Nadu	56000	250 (0.45)
5	Pondicherry	800	10 (1.25)
6	Kerala	65000	13000 (20.00)
7	Karnataka	8000	2500 (31.25)
8	Goa	18500	525 (2.84)
9.	Maharastra	80000	1800(2.25)
10.	Gujarat	376000	125 (0.03)
Total		1190900	65100 (5.47)

Source : EXPO-ORISSA: Vol. I No.-7, Sept-1995, Bhubaneswar.

Note : Figures in parentheses indicate percentage of area under cultivation to the total area available.

Orissa with a 31,600 hectare land ideal for brackish water shrimp farming has immense potential. The area under the culture is about 22 per cent of the total area. Balasore, Cuttack, Kendrapara, Puri and Ganjam districts are having potential for brackish water shrimp culture. The quantity of shrimp produced by the farms is almost equal to the amount obtained from capture marine fishery. With the increase in area under cultivation the quantity can be increased in future.

So far, the State has not taken a very active and encouraging role for rapid development of aqua-culture. Issues like land allotment, financial support, infrastructural development, administrative support are not managed at optimum level.

6.2.2 Marine Biotechnology :

Another area where the fishing companies can venture in their attempt to diversify their activities is marine biotechnology. Marine biotechnology uses living marine organisms (or their parts) to make or modify products to improve plants and animals or to develop marine organisms for specific uses. The products developed could be medicines, nutritional supplements, cosmetics, industrial products etc. Marine biotechnology applications will lead to better understanding and management of marine resources, resulting in the emergence of newer unexpected products.

India has failed to capitalize on marine biotechnology despite its rich marine biodiversity. The following table gives an account of the utility of various marine organisms:

TABLE 6.3

Utility of Marine Organisms

	Marine Organisms	Products
1	Sea Squirts	(A) Medicines (i) for tumors, viruses, suppression of immune response
2	Encrusting invertebrates	(ii) for ovarian cancer
3	Sea Sponges	(iii) for herpes simplex, cancer, pain and inflammation
4	Jelly Fish	(iv) for neurological disorders, cancer, inflammation, anaesthesia
5	Chitosan	(v) for burns
6	Ocean Floor gungii	(vi) for human colon cancer
7	Micro algae	(B) Nutrition (i) Vitamins and anti oxidants
8	Cyanobacteria	(ii) Fluorescent tags and tracers
9	Micro algae and fungii	(iii) Vital amino acids
10	Krill(living in water column)	(iv) Proteins
11	Micro algae	(v) Geletine
12	Algae, Cyanobacteria	(v) Food colours
13	Carragenan from seaweed	(C) Cosmetics (i) Tooth paste, gets
14	Betacarolene from microalgae	(ii) U V block
15	Pigments from cyanobacteria	(iii) Lipsticks/lotions
16	Sponges	(D) Industrial Products (i) Paper and pulp enzymes
17	Chitosan from crustaceans	(ii) Filteration/blocculation
18	Fluorotannins from fungii	(iii) Anti biobruling agents
19	Molluscans	(iv) Adhesives

Source: The Economic Times, 13th May, 2001

The Indian companies currently engaged in mechanised fishing can take up both culture and capture of the marine organisms which have biochemical or commercial applications.

The traditional fishermen can be provided with alternative employment opportunities through culture of marine organisms. People of Ramnad district of coastal Tamil Nadu collect seaweeds for living. About 200 persons get employment during August - January for seaweed collection with an assured

income of Rs.30-50 per day. A number of persons are also employed for drying and packing of seaweeds. Sea weeds are used in India mainly for extraction of two poly saccharids, namely agar and algin. The agar and algin are extensively used in various industries like food, confectionary, textile, pharmaceutical, dairy and paper, mostly as jellying, stabilizing, and thickening agents. India imports agar every year spending a considerable amount of foreign exchange. Hence coastal people can take up sea weed cultivation to augment the supply of raw material to sea weed based industries, while at the same time save on some valuable foreign exchange. Sea weed culture with fishing will improve the commercial prospects of mechanised fishing.

6.2.3 Marine Mineral Resources:

Oceans are rich sources of important and strategic minerals. The sea floor is covered by a wide variety of biogenous, chemogenous and terrigenous mineral deposits. Sea floor is also a source of calerous sand or limestone and dolomite. The present supply of limestone and dolomite is far less than its demand. Hence in future mining of such resources from oceans might become lucrative. A major area of substantial economic interest in this category is polymetallic nodules. An average such nodule is composed of metals such as manganese, iron, nickel, copper, cobalt and a combination of nickel and copper. Most of these metals are used in steel alloys of special quality, coinage, and other related industries. Out of these metals nickel and cobalt are being imported and at current rate of consumption, the land based resources are likely to be exhausted within a short period of time. Such polymetallic nodules

are available in plenty in the bed of Indian Ocean. Terrigenous heavy mineral placers containing ilmenite, magnetile, monaxite, zireon and rutile are reported from many beaches of India. Some of these minerals are exported or used in the production of exportable commodities. The companies engaged in mechanised fishing and related activities may undertake exploration and extraction of these mineral resources. In near future this will be the major thrust area in exploration of marine resources.

6.2.4 Ornamental Fish: New Export Opportunities :

The ornamental fish industry has been growing steadily over the years. The demand for such type of fishes has been rising mostly in countries such as U.S.A., Japan, Australia and South Africa. Indian sea waters are a gold mine of ornamental fishes with more than a hundred varieties of indigenous origin. In fact paradise islands like Lakhadeep and the Andamans and the Bay of Bengal are virgin grounds for marine ornamental fishes. But the country's share in the world trade of ornamental fishes is negligible and we are yet to make a beginning in this direction. The business of ornamental fish export will be highly lucrative provided the activity is taken up on scientific lines with appropriate market strategies. The organizations like Marine Products Export Development Authority (MPEDA) and several agricultural Universities and research organizations offer short term training programmes on production of these varieties of fishes to the prospective entrepreneurs. The sea food exporting companies should come forward to venture into this unexplored and unconventional economic activity as a source of foreign exchange.

The foregoing discussion brings forth the fact that proper strategies need to be evolved to integrate fishing with other related activities to make mechanised fishing economically viable and to achieve a sustainable growth of the marine fishery sector. Combination of capture and culture fisheries will be a long term solution to overcome the uncertainties and volatility of returns from mechanised fishing.

Summary :

Introduction of mechanised fishing in the state would not have been possible without the institutional support of the state government. The Orissa State Financial Corporation (OSFC) facilitated entry of private entrepreneurs into the arena of mechanised fishing by providing liberal finance. The State sponsored infrastructure, though inadequate, laid the foundation of mechanised fishing in the state. But the fishermen, in spite of the best efforts of the state, misutilised the facilities and failed to achieve a sustainable growth of the mechanised sector. Without having any past experience and commitment for the avocation, a group of the so called unemployed persons came forward to invest in mechanised fishing just because of their easy access to liberal institutional support. This led to an unplanned growth of the sector resulting in creating various imbalances. The initial high rate of return and high export earning encouraged an indiscriminate increase in the number of fishing vessels and processing industries leading to creation of excess and unutilized capacities. In the absence of an organized market for marine fish within the country profitability of mechanised fishing became dependant on the availability of exportable varieties of fish. Besides, the cut throat competition in the

international market for marine products has resulted in rendering mechanised fishing increasingly capital intensive. And thereby debarring the small entrepreneurs from the arena and making way for the entry of the corporate sector.

The present trend in the growth of mechanised sector indicates that a sustainable growth of the sector will depend upon evolving a proper strategy of development wherein marine fishing is to be combined with related allied activities. Such diversification will not only make mechanised fishing economically more viable, but also avert the risk and the uncertainties which shroud fishing activities.

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