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Part Three

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NATIONAL SYMPOSIUM ON RESEARCH AND DEVELOPMENT IN MARINE FISHERIES

MANDAPAM CAMP

16-18 September 1987

Papers Presented
Sessions V, VI & VII

CENTRAL MARINE FISHERIES RESEARCH INSTITUTE
(Indian Council of Agricultural Research)
P. B. No. 2704, E. R. G. Road, Cochin-682 031, India

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FISHERIES IN MAHARASHTRA STATE

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ABSTRACT

Maharashtra State, endowed with a coastline of 720 km, has a continental shelf of 87,000 sq. km. The shelf up to 40 fathoms with an area of 44,000 sq. km possesses rich fisheries potential and almost the entire present fishing activity is restricted to this zone. The harvestable potential of this zone is estimated at 3.74 lakh tonnes. The shelf between 40 and 100 fathoms, measuring 43,000 sq. km., has harvestable potential of 0.80 lakh tonnes. The paper deals with the potential fishery resources, status of traditional fishing, developmental activities in the areas of mechanisation, construction of fishing harbours and other infrastructural facilities, as well as fishermen welfare activities like the functioning of co-operative societies.

INTRODUCTION

Maharashtra State endowed with a coastline of 720 km. has a continental shelf of 87,000 sq.km. The shelf upto 40 fathoms admeasuring 44,000 sq. km.possesses rich fisheries potential and almost entire present fishing activity is restricted to this zone. The harvestable potential of this zone is estimated as 3.74 lakh tonnes. The shelf between 40 to 100 fathoms admeasuring 43,000 sq. km. has harvestable potential of 0.80 lakh tonnes. Marine fisheries activities of this state have been described.

MECHANISATION

Mechanisation of fishing crafts scheme was introduced in the first year plan, 1951-52, to augment the marine fish production in the State. Government encouraged the fishermen to a great

deal to respond favourably for mechanisation. Since the scheme was newly introduced and with the view to popularise substantial incentive were offered. Almost 100% capital cost was borne by the Government in the form of loan and subsidy. This resulted in increase in the fishing fleet of mechanised vessels considerably. At present there are 5638 mechanised vessels which carry out fishing within 0 - 40 fathom zone. Pecularity about mechanisation programme in Maharashtra, is that certain types of indigenous sail boats were quite suitable for mechanisation and also for conversion as trawlers with small modifications. Therefore, the indigenous designs of boats were adopted for mechanisation. Hence there was no necessity of introducing newly designed mechanised boats in Maharashtra as was done in other States. Such boats could be built at the fishing villages by traditional boat building carpenters.

The marine fish landing during the period 1975-76 to 1985-86 varied from 255 thousand tonnes to 377 thousand tonnes. Commercially important varieties are shrimps (25%), Ribbon fish (5%), Bombay duck (18%), Prawns (10%), Anchoviella (5%), *Otolithes* spp. (5%), Pomfrets (5%) each (Table 1). The other varieties such as *Hilsa ilisha*, mackerel, seer fish, lobsters, tunnies, cuttle fish, carangids, *Upenoides* sp. etc. are found in 0 - 40 fathom zone. The share of mechanised vessels to the total catch is 90%.

I) Status of traditional fishing

At present, Maharashtra has fishing fleet of 15059, of which 5638 are mechanised fishing vessels and 9421 are non-mechanised fishing boats. In Maharashtra, both mechanised and non mechanised boats use traditional gears like bagnet and gillnet, but gears used by mechanised fishing vessels are larger and are operated in comparatively deeper waters. The rampan - shore seine - is used by non-powered country crafts, while trawl net is used by mechanised fishing vessels. Out of the marine landing of 3,77,352 tonnes for the year 1985-86, landings of trawlers are 82,943

III) Harvestable Potential

Harvestable potential (tonnes) of Maharashtra upto the continental shelf is given below -

District	0-40 fathoms	40-100 fathoms	Beyond 100 fathoms
Thane	95,000	27,000	122,000
Gr. Bombay	57,000	11,000	68,000
Raigad	154,000	22,000	176,000
Ratnagiri	68,000	27,000	95,000
Total	374,000	87,000	461,000

It will be seen that harvestable potential upto 0 - 40 fathoms is reached in the State. It will be seen that the potential of one district is more exploited than the other. This is because migration of mechanised vessels take place from one district to another.

A study group was set up by Government of Maharashtra in September 1975 to report the financial viability of additional programme on mechanisation of fishing boats in the State. The study group concluded that it would be safer to restrict the number of small and medium sized mechanised boats which would be operative upto 40 fathom depth.

tonnes. The remaining 2,94,409 tonnes are by employing traditional fishing methods (Table 2).

II) Effect of mechanisation programme on traditional fishing

Prior to 1950-51 traditional gears such as gillnets, bagnets, shore seines, long liners were used by non-mechanised crafts. However, due to the motorisation of the crafts it was possible to increase number of hauls in case of bagnet, to increase number of pieces in case of gillnets with the view to exploit the area upto 40 fathoms and as such fishermen undertook motorisation. This has resulted in increased marine fish production, with increase in number of mechanised boats and their fishing activities in inshore waters. Traditional fishermen suffered a set back to a certain extent. There were frequent conflicts among the mechanised boat owners and traditional fishermen. In order to provide protection to the traditional fishermen the state Government enacted Maharashtra Marine Fishing Regulation Act, 1981 which brought into force from 4th August, 1982.

The present fishing fleet of the State is about 15059 out of these the number of mechanised vessels is about 5638. Thus there is no scope of mechanising the additional vessels in the State.

IV) The present scheme and future desirable schemes for the welfare of traditional fishermen

Under the present schemes related to mechanisation the financial assistance is extended to fishermen engaged in traditional fishing through fisheries co-operative societies under National Co-operative Development Corporation pattern and to the individual fishermen or their groups under individual subsidy scheme.

Table 1 Yearwise Marine Fish Production of Maharashtra State for the Year

(Fig in tonnes)

Year	Variety												
	Elasmo- branches 1	Eel 2	Cat- fishes 3	Sardine 4	Ancho- viella 5	Trisso- cles 6	Ribbon Fish 7	Otoli- thes 8	Pomfre- ts 9	Harpo- don 10	Prawns 11	Shrimp 12	Miscelle- neous 13
1975-76	9741	26070	12243	6383	25646	5673	28291	16485	16193	70561	45568	91815	47343
1976-77	8201	8483	9088	4701	23251	6400	23128	20005	16514	88504	29974	122935	30961
1977-78	10044	5868	10811	5015	18621	5009	15473	17872	9320	48958	30207	74452	40302
1978-79	8001	11190	9687	3474	21156	6101	18579	18611	12581	75809	37078	103035	60969
1979-80	8508	6421	10386	2860	16604	4996	18734	20182	13490	77310	26460	99204	23194
1980-81	11169	8940	13024	21182	17772	6492	20174	19592	20548	60747	30542	79556	64442
1981-82	7945	3805	11053	12045	11681	4895	18624	15852	20986	44383	24990	67674	46132
1982-83	7480	1611	11501	2325	129112	4526	13395	14211	12758	51221	28446	80588	41283
1983-84	8433	2283	10435	6702	13500	9119	15607	15551	29514	54093	28004	57830	59988
1984-85	7230	2714	7148	5993	19170	4968	17766	13750	12002	70070	37347	94881	67583
1985-86	7451	4928	7625	12577	14764	3590	15565	18955	8504	56020	29224	115895	82256

LBY/

Table 2 *Estimated Annual Marine Fish Landings of mechanised, sailing, Toney and Rampan vessels in the State*
(Figures in tonnes)

Sr. No.	Year	Type of vessel			
		Mechanised	Sailing	Toney	Rampan
1.	1975-76	354690	296564	10269	7399
2.	1976-77	336677	38490	11779	5199
3.	1977-78	260556	21198	7202	2996
4.	1978-79	344202	26455	10779	4835
5.	1979-80	311625	27999	13050	5675
6.	1980-81	320107	27651	13431	12971
7.	1981-82	251587	13486	13449	10343
8.	1982-83	262421	9104	8201	2530
9.	1983-84	287932	7564	8091	6472
10.	1984-85	340252	5851	7632	6529
11.	1985-86	343891	5852	6533	21076

LBY/

Under N.C.D.C. pattern 80% finance required for construction of mechanised boats comes from NCDC by way of reimbursed finance in the form of 60% loan and 20% subsidy. The fishermen co-operatives however receive financial assistance in the form of 25% special redeemable share capital, 55% loan and 20% subsidy from State Government.

Under Individual schemes 25% of the cost of mechanised fishing vessel is given as subsidy to individual fishermen or their group who have raised funds from financial institutions for the construction of mechanised vessels.

In addition to these schemes subsidy is given under Integrated Rural Development Programme scheme for the construction of boats and also mechanisation. For this purpose fishermen should be small fishermen and limit of subsidy is Rs. 3,000/- per fisherman and Rs. 5,000/- if he is from Scheduled tribe.

FISHING HARBOURS

Due to the rapid pace of mechanisation programme there is considerable increase in fish production. It is imperative to provide landing and harbour facilities along the coast for quick unloading of fish which is highly perishable. Keeping this in view, Department has formulated the scheme viz. "Improvement of Fishing Harbour". Under this scheme construction of fullfledged fishing harbour and other works such as removal of rocks in navigational channels, provision of lights, construction of jetties etc. are undertaken. This scheme is implemented through Port Department. Besides this, crash programme for basic amenities such as fish drying platforms, open sheds, guide poles, approach roads etc. at minor ports is implemented through Port Department.

There are 184 landing centres in the State. Sasson Dock harbour in Bombay is only the existing fishing harbour in the State. Construction of Mirkarwada fishing harbour in Ratnagiri district is in progress. Besides this construction of other four harbours namely Agardanda, Rewas in Raigad, Satpati in Thane district and Deogad and Vengurla in Sindhudurg district is proposed.

PRESERVATION AND TRANSPORT FACILITIES

Increase in production due to increase in mechanisation has necessitated the creation of

infrastructural facilities for preservation, transport and marketing. This requirement of the trade has been recognised all along and the programme of introduction of ice factories, cold storage, transport facilities and construction of hygienic fish markets has been implemented. Financial assistance to fisheries co-operatives and local bodies is extended for this purpose. There are 135 ice factories/cold storage plants with a cold storage capacity of 2700 tons/day out of which 25 ice plants are in co-operative sector. Seventy eight transport vehicles are engaged in transport of fish. To cope up with the requirement it is proposed to provide financial assistance for setting up more ice/cold storage plants, and purchase of transport vehicles. For this a provision of Rs. 40 lakhs has been provided in the VIIIth five Year Plan. In addition, Rs. 130 lakhs will be availed from the NCDC.

FISHERIES CO-OPERATIVES

The structure of fisheries co-operative societies is of three-tier with primary societies at the village level (base), their federations at the district or regional level and Maharashtra Rajya Machhimar Sahakari Sangh Ltd., Bombay at the State (apex) level. The Department's policy of giving the benefit of most of its developmental schemes to the co-operatives continued. At the same time for the working capital as well as other financial needs, the Department continued to encourage institutional finance and in case of the difficulties expressed by society in getting institutional finance, efforts were made at the district level to sort out those difficulties and to help the society in getting institutional finance. The progress made by the fishery co-operatives during 1984-85 and the position obtaining as on 30th June, 1985 for the different years is as follows :

Primary societies

1. Number of primary societies increased by 118 so as to reach 1085 as on 30-6-1985.
2. The total membership increased by 9546 to reach 136472.
3. Share capital of primary societies stood at Rs.360.22 lakhs as on 30-6-1985
4. Reserve and other fund increased by Rs. 91.82 lakhs and stood at Rs. 280.68 lakhs at the close of the year 1984-85.
5. Working capital increased by Rs. 43.64 lakhs and stood at Rs. 1790.44 lakhs at the close of the year 1984-85.

6. The total value of fish sale by primary societies Rs. 739.32 lakhs as on 30-6-1985.

Out of 1085 primary societies, 446 made a total profit of Rs. 69.11 lakhs as against a loss of Rs. 26.17 lakhs sustained by 514 primary societies, during the reported year.

District/Regional level federations

There are 14 federations at the district and regional level of which 3 district federations are functioning for maritime districts and of the remaining eleven, four regional federations are functioning in Vidarbha, Marathwada, Solapur and Khandesh; 7 districts federations are functioning at Chandrapur, Yeotmal, Nasik, Bhandara, Jalgaon, Amravati and Vardha. Those federations have a total membership of 10132. Their members paid up share capital is Rs. 67.13 lakhs and Government's share capital contribution Rs. 60.36 lakhs. The reserve and other funds of these federations amounted to Rs. 59.21 lakhs. Their total borrowing were at Rs. 138.12 lakhs of which Rs. 92.97 lakhs were from Government and Rs. 41.43 lakhs from banks. These federations have marketed fish to the extent of Rs. 454.42 lakhs.

Apex level co-operative federation

The Maharashtra Rajya Machhimar Sahakari Sangh Ltd., Bombay has been functioning as the apex institution of co-operative fisheries in the State. It has been revitalised under a programme sanctioned by the Government in Agriculture and Co-operation Department with effect from 1-11-1973. Though the sangh was earning profit during the last 6 years, it suffered heavy loss during 1982-83 owing chiefly to its ice factories, cold storages, freezing complex and fish meal plant, together known as Sassoon Dock complex. Its accumulated loss increased from 17.36 lakhs to 32.91 lakhs as on 30-6-1985; 212 societies including district and divisional federations and 2156 individuals are members of the apex federation. During the year it sold fresh fish on commission basis for Rs. 1.45 crores. Fishery and other requisities were sold to the extent of Rs. 13.25 lakhs and fish seed (carp fry) were sold to the extent of Rs. 32.61 lakhs.

MAHARASHTRA MARINE FISHING REGULATION ACT

With the view to safeguard the interest of traditional fishermen, this State has enacted Maharashtra Marine Fishing Regulation Act, 1981 which came into force from 4th August 1982. As

per the provisions of this Act fishing vessels are to be registered with the Port Department. Registration fee for registration of mechanised fishing vessel is ten rupees whereas for non-mechanised fishing vessel fee is five rupees. After registration fishing vessels are entitled for fishing licence which is issued by the Department of Fisheries. This fishing licence is renewed every three years for which licence fee is as under :

a) Mechanised fishing vessel fitted with an engine having the horse power exceeding 50 H.P.	Rs. 100/-
b) Mechanised fishing vessel fitted with an engine having the horse-power not exceeding 50 H.P.	Rs. 50/-
c) Non-mechanised fishing vessel having gross registered tonnage exceeding 3 tons	Rs. 20/-
d) Non-mechanised fishing vessel having gross registered tonnage not exceeding 3 tons.	Rs. 10/-

1) Constitution of Dist. Advisory Committee

State Government has constituted a District Advisory Committee for each coastal district. As there are five coastal districts, five District Advisory Committees are formed in the State. District Magistrate being the Chairman and Assistant Director of Fisheries of the District as a member Secretary, with representatives of State Port Department and Police Department as members. Besides these members, the Chairman of the Committee is empowered to co-opt. representatives of other Government Departments and fishermen. This committee gives advise to the State Government while making the regulations to be enforced under the Act regarding -

i) reservation of specified areas of the sea for fishing by vessels of specified type.

ii) prohibition of vessels of specified type or specified types from fishing in any specified area.

iii) laying down maximum number of fishing vessels of specified type to be allowed for fishing in specified area.

iv) laying down the maximum number of fishing vessels of specified types to be registered in each of the ports in the District.

v) regulation or prohibition to catch specified species of fish in any specified area.

vi) regulation or prohibition of specified fishing gear in specified areas.

vii) prescribe timing for fishing operations where it is necessary to do so.

viii) any other matter which would facilitate effective enforcement of the provisions of the Act.

2) Regulation of Fishing

The State Government after consultation with Advisory Committee, by order notified in the official Gazette, regulate, restrict or prohibit -

a) the fishing in any specified area by such class or classes of fishing vessels as may be specified; or,

b) number of fishing vessels which may be used for fishing in any specified area; or

c) the catching in any specified area of such species of fish and for such period as may be specified in the orders; or,

d) the use of such fishing gear in any specified area as may be prescribed.

In making an order, State Government have regard to the following matters -

a) The need to protect the interests of different sections of persons engaged in fishing, particularly those engaged in fishing using traditional fishing.

b) The need to conserve fish and to regulate fishing on scientific basis;

c) The need to maintain law and order in the sea.

d) Any other matter that may be prescribed.

After consultation with the District Advisory Committee, Government of Maharashtra has imposed the restriction on fishing operation as follows -

1) Operation of trawl gear by mechanised fishing vessels is prohibited from sea shore to 5 fathoms and 10 fathoms depth zone.

2) Fishing by mechanised fishing vessel is banned from 1st June to the Narali Purnima.

3) Operation of trawl gear by mechanised fishing vessels is prohibited between 6 p.m. and 6 a.m.

4) Fishing by mechanised fishing vessels of any type with more than six cylinder engines is prohibited within territorial waters of Maharashtra i.e. upto 12 nautical miles.

3) Enforcement

For enforcement of the restrictions which are imposed under the Maharashtra Marine Fishing Regulation Act 1981, there are 22 licencing officers - one each in marine Taluka. Besides this

there are eight enforcement officers in four marine districts. For this purpose 4 patrol boats are in operation. Enforcement Officer is responsible officer on this boat under whose direction patrol boat is operated by subordinate staff. Responsibilities of the Enforcement Officer is to maintain law and order on the sea. Enforcement Officer has powers to enter and search fishing vessel if he feels fishing vessel is used or has been used in contravention of any of the provisions of the Act.

4) Penalties & Adjudication

Enforcement Officer is supposed to make a report to the adjudicating officer i.e. Tahsildar, if he believes that any fishing vessel is being used or has been used in contravention of any of the provisions of this Act. Adjudicating Officer after holding an enquiry decided whether any person has used any fishing vessel in contravention of any of the provisions of Act. When such person is found guilty by Adjudicating Officer, he may impose a penalty not exceeding -

(a) five thousand rupees if the value of the fish involved is one thousand rupees or less.

(b) five times the value of fish, if the value of fish involved is more than one thousand rupees.

(c) five thousand rupees, in any other case, including a case where there has been no catch of fish, as may be adjusted by Adjudicating Officer. This amount of the penalty is recoverable as an arrear of land revenue.

5) Constitution of Appellate Board

In each district, District Magistrate shall constitute the Appellate Board for the whole district. Any person aggrieved by an order of the Adjudicating Officer may within thirty days from date on which the order is made prefer an appeal to the Appellate Board. On receipt of an appeal, the Appellate Board may after holding such inquiry as it deems fit, and after giving the parties concerned a reasonable opportunity of being heard, confirm, modify or set aside the order appealed against and decision of the Appellate Board shall be final.

MISCELLANEOUS

1) Deep Sea Fishing

There is little knowledge about deep sea fishing resources beyond 40 fathoms. Fishery Survey of India has conducted survey beyond 40 fathoms, but the survey so far made does not give any indication about the economic aspects

of the survey. In absence of the adequate knowledge regarding the fishery resources of the deep sea area it has not been possible to identify the type and size of the vessel most suitable for economic exploitation of fisheries in deep sea. This department has requested the Fishery Survey of India to conduct the survey of deep sea fishing recently.

2) Accident Group Insurance Scheme

This is the scheme for grant of subsidy towards premium on personal Accident policy. This is a centrally sponsored scheme. Implementation of this scheme started from 1982-83. However, this scheme is modified from 1st December, 1985. The period of insurance policy is one year and insurance premium for the year is Rs.9/- only. Out of which fishermen's share is Rs.1.50, Govt. of India's share is Rs.4.50 and State Govt. share

is Rs.3/- per fisherman. The share contributed by Central Government and State Government for the year from 1984-85 is as under.

Year	Central Govt.	State Govt.
1) 1984-85	Rs. 61,632	Rs. 30,816
2) 1985-86	Rs. 1,48,710	Rs. 74,355

3) National Welfare Fund For Fishermen

This is centrally sponsored scheme sharable 50:50 basis between Central and State Government. This scheme envisages to provide basic civil amenities to the fishermen such as housing, community hall, drinking water supply & credit societies. Under this scheme three-tier developed fishermen villages are to be selected. For this purpose three fishermen Villages - two from marine districts and one from inland district are being selected.