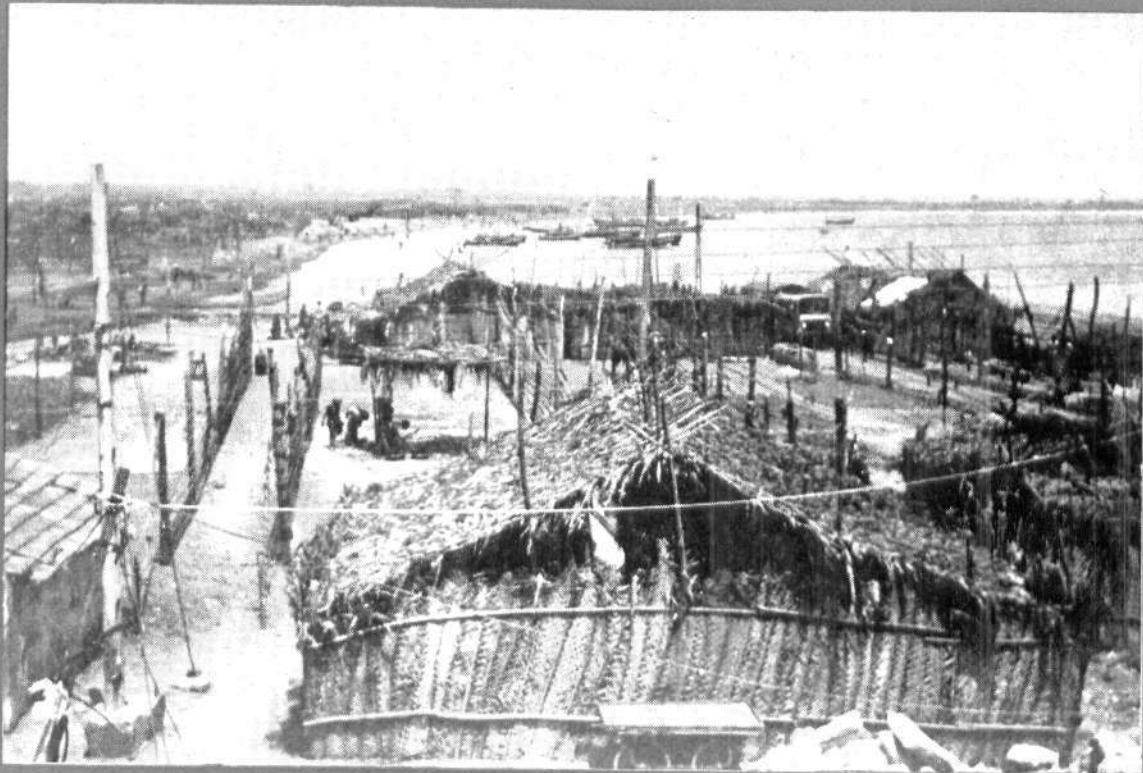




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A STUDY ON THE SOCIO-ECONOMIC CONDITIONS OF FISHERMEN IN SOME SELECTED VILLAGES OF MAHARASHTRA AND GUJARAT COASTS

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Introduction

Maharashtra and Gujarat states together have a coastal length of about 2,300 km which is about 1/3rd of India's coastal line. As many as 500 marine fishing villages with almost same number of marine fish landing centres are located in this region. About 4 lakhs of fishermen population are dependent on fishing, wholly or partially, all along this coast. As much as 30% of marine fish catch in the country is contributed by these two states. About 70% of marine fish catch in Gujarat and 85% in Maharashtra are contributed by mechanised boats which operate mainly trawl-nets, gill-nets and bag-nets. Bombay duck, sciaenids, pomfret, penaeid and non-penaeid prawns, clupeoids, perches, silverbar, seerfish, polynemids, ribbonfish, catfish, sharks and tunnies form major catch in this region.

The recent technological innovations in marine fishing have not shown much impact on the living conditions of fishermen and they are still socially and economically backward. Economic uplift of the fishermen mainly depends on the growth and development of fisheries sector. Hence, location oriented and resource based developmental schemes are required to be implemented for each region which would help in area planning for socio-economic improvement of fishermen. To assess the socio-economic status of fishermen, the Central Marine Fisheries Research Institute, Cochin, carried out a study on the income, consumption and employment pattern and the credit facilities available to them in some of the fishing villages of Maharashtra and Gujarat.

Work programme

General village information in first stage, were collected from 14 fishing villages of Maharashtra and 18 fishing villages of Gujarat covering three coastal districts in each state. Subsequently in the second stage, three villages of Maharashtra namely, Ekdara,

Alibag Koliwada (both in Raigad District) and Mahim Koliwada (Greater Bombay District) and four villages of Gujarat namely, Umbergaon (Valsad District), Bhimpore (Surat District), Sutrapada Bunder and Mangrol Bunder (both in Junagadh District) were selected for indepth study taking into consideration the size of village, type of craft and gear used, socio-economic status and other factors of fishery (Fig. 1). Information regarding catch, income, craft and gear, indebtedness, employment etc. relating to all the fishermen families in each village were collected by interviewing heads of families through a schedule specially designed for this study. Enumerators were selected from the same

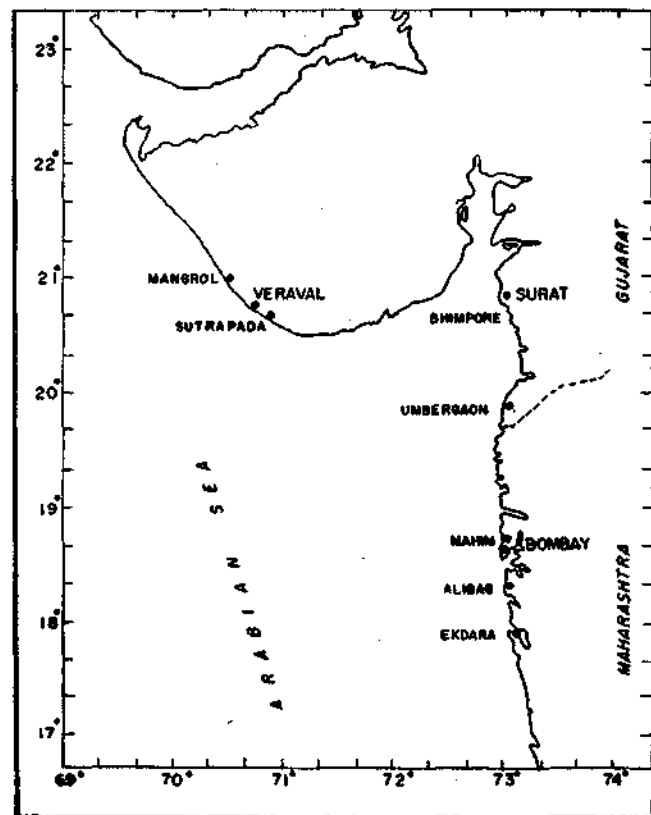


Fig. 1. Villages selected in Maharashtra and Gujarat for the study.

villages and properly trained to ensure accuracy in data collection. Scientific and technical staff of the Institute associated with the project supervised the work of enumerators during the course of data collection.

The definitions of terminologies used in collection and interpretation of data are given below:

1. *Fishermen family*: Family having atleast one member engaged in fishing or fishery allied activities
2. *Family*: Members sharing meals from one kitchen
3. *Children*: All males and females below 12 years of age
4. *Main occupation*: An occupation contributing 50% or more of the income of an individual/family
5. *Subsidiary occupation*: An occupation contributing less than 50% income of an individual/family
6. *Fishery allied activities*: Activities include fish trading, processing/curing, transporting, loading/unloading, net splicing/repairing, boat building/repairing and other activities related to fishery
7. *Catch share*: Share of a family in fish catch obtained from operating owned/partially owned/leased-in boat/gear or from operating others boat/gear
8. *Net fishery income*: Income of a family earned by its members from fishing and fishery allied activities after deducting operational cost
9. *Types of houses*:
 - a) *Hut*: A dwelling with mud walls or an enclosure made of 'thattis' and having thatched roof
 - b) *Kutchra house*: A dwelling with brick/stone walls and having thatched roof
 - c) *Pucca house*: A dwelling with brick/stone walls and having tiled roof
 - d) *Concrete house*: A dwelling with brick/stone walls and having concrete roof

10. *Education*:

- a) *Primary*: 5th standard pass
- b) *Middle*: 8th standard pass
- c) *Higher secondary*: 12th standard pass
- d) *Graduate and above*: Degree holder

11. *OBM boat*: Boat fitted with outboard motor

12. *G. F. C. C. A*: Gujarat Fisheries Central Co-operative Association Ltd.

Details of socio-economic survey

For comparative analysis within the village, all the fishermen families were stratified on the basis of ownership of means of production. One year period starting from July '81 to June '82 was taken as reference period for the study. Results based on the analysis of data collected at the household and village levels are presented below.

1. *Ekdara (Maharashtra)*

This village is about half-a-km away from Murud town (taluk headquarter) and is mainly inhabited by 'Mahadev Koli', a tribal community. There is no *pucca* road inside the village. Infrastructural facilities related to fishery such as cold storage, ice plant and curing yards are available in Murud only. Jetty facility is not available at this centre. A fishermen co-operative society is functioning satisfactorily. It provides fishing implements, and helps fishermen in getting loan from banks and government agencies. The main occupation of the villagers is fishing and fishery related activities and number of carpenters, tailors, labourers and businessmen are limited. About twenty persons are employed in private or public sector. Rice and fish are staple food items in this village. The percentages of hut, *kutchra* and *pucca* houses are 39, 24 and 37 respectively (Fig. 2). There is no concrete house in this village. The percentage of *pucca* houses is more among boat owners.

Fishermen population of this village during 1981-'82 was 1,119 which comprised 328 adult males, 330 adult females and 461 children (Table 1). Average number of persons per family was 8.0. The families with less than 5, 5-9 and 10 or more members were 24%, 62% and 14% respectively. Further analysis showed that percentage of working population was 49.7%. Among the working population, 41.6% was found as active fishermen, 51.6% engaged in fishery

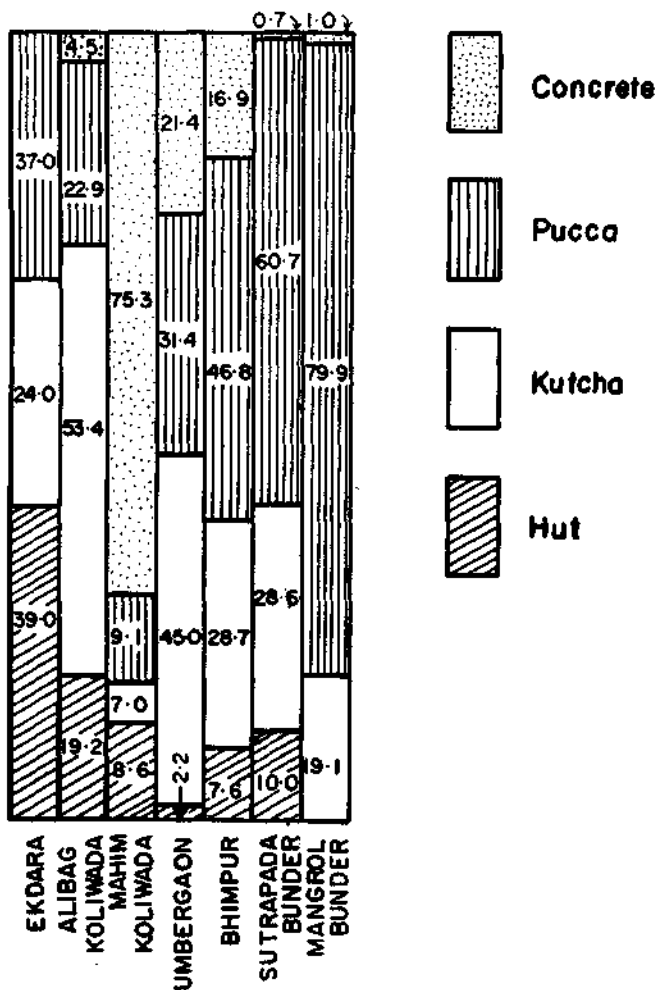


Fig. 2. Type of houses (%).

allied activities and 6.8% employed in non-fishery activities. Occupation-wise breakup, as given in Table 2, showed that 81% of respondents has fishery as the only occupation, 13% fishery as main and non-fishery as subsidiary occupation and remaining 6% non-fishery as main occupation. Literacy among the respondents showed that majority was constituted of illiterates (60%). Persons with primary, middle, higher secondary and graduate and above qualifications were 31%, 4%, 4% and 1% respectively. About 80% of the heads of families were members of fishermen co-operative society in Ekdara (Fig. 3).

About 20 mechanised and 15 non-mechanised boats are operating at this centre in addition to few boats under construction. Mechanised boats are generally fitted with Ruston, Kirloskar or Ashok Leyland inboard engines of 2-4 cylinders. Few small boats, locally known as 'tonny' assist big boats in loading/unloading of catch and transportation of goods. Surface and bottom-set gill-nets (locally called 'tarti' and

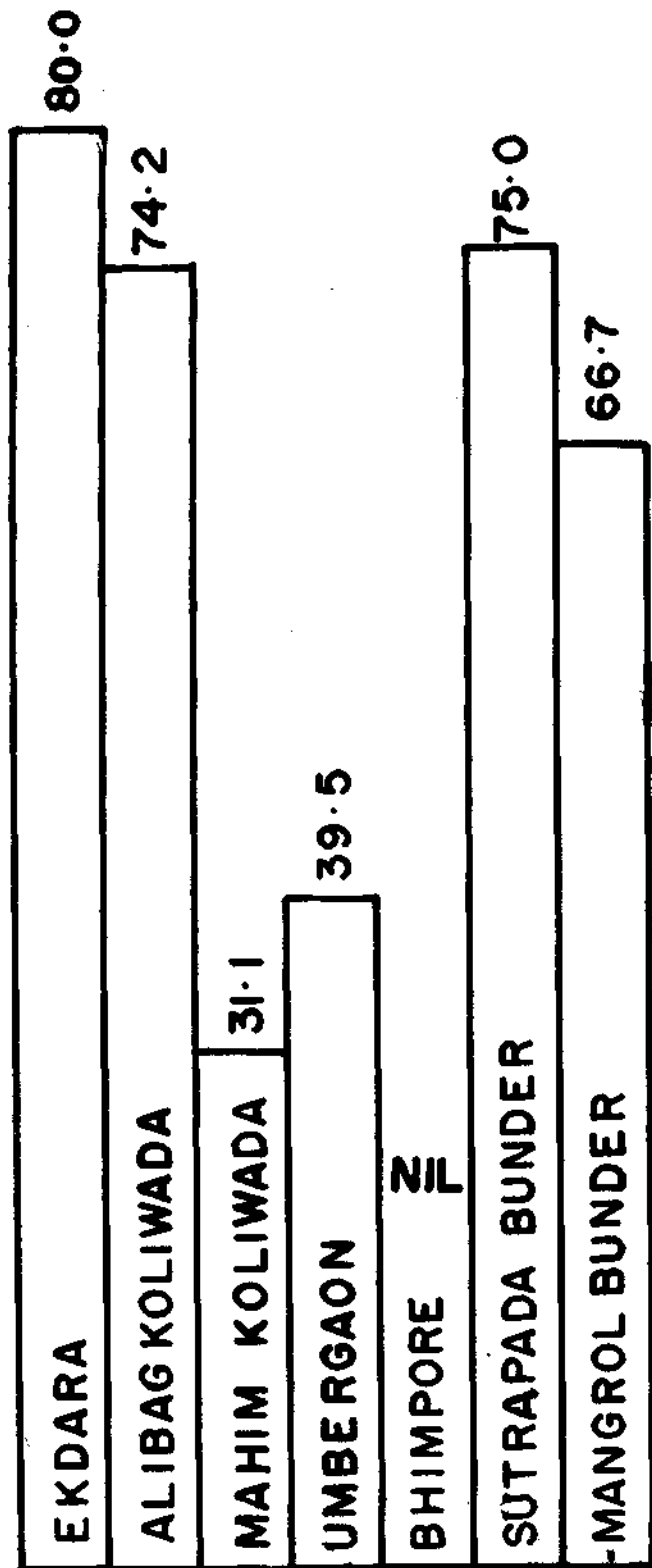


Fig. 3. Membership in fishermen co-operative societies (%).

'budi' respectively) and bag-nets, known as 'dol', are the main gears operated at this centre. Fishing grounds being rocky, there are frequent cases of engine and net

Table 1. Fishermen population and occupational status in selected villages of Maharashtra and Gujarat coasts 1981-'82

Villages	Population				Average family size	Working population (%)	Distribution of working population (%)		
	Males	Females	Children	Total			Active fishermen	Fish. allied activities	Non-fishery occupations
Maharashtra									
Ekdara	328	330	461	1,119	8.0	49.7	41.6	51.6	6.8
Alibag Koliwada	630	636	892	2,158	8.1	56.1	38.0	55.7	6.3
Mahim Koliwada	1,042	1,034	1,388	3,464	6.9	52.8	21.2	58.1	20.7
Gujarat									
Umbergaon	590	583	866	2,039	7.3	54.0	31.7	54.6	13.7
Bhimpore	545	541	693	1,779	7.5	58.0	28.5	51.7	19.8
Sutrapada Bunder	580	579	935	2,094	7.7	46.7	51.5	45.1	3.4
Mangrol Bunder	1,433	1,416	1,814	4,663	7.4	48.4	47.8	51.6	0.6

Table 2. Education and occupation of heads of the families

Villages	Education %					Occupation %			No. of families
	Primary	Middle	Higher secondary	Graduates & above	Nil	Only fishery	Fishery main others subsidiary	Non-fishery main fishery subsidiary	
Maharashtra									
Ekdara	31.0	4.0	4.0	1.0	60.0	81.0	13.0	6.0	140
Alibag Koliwada	32.3	6.4	4.9	0.8	55.6	69.6	21.3	9.1	266
Mahim Koliwada	35.2	21.2	12.0	0.6	31.1	32.8	29.3	37.9	503
Total/Average	33.7	14.2	8.7	0.7	42.7	51.0	24.4	24.6	909 (100)
Gujarat									
Umbergaon	29.2	20.1	11.3	1.5	37.9	62.1	20.4	17.5	280
Bhimpore	37.3	22.8	8.0	0.4	31.5	46.5	28.7	24.8	237
Sutrapada Bunder	31.2	6.2	0.8	0.4	61.4	90.5	5.4	4.1	272
Mangrol Bunder	34.1	6.0	1.6	0.2	58.1	91.3	3.7	5.0	633
Total/Average	33.1	11.1	4.9	0.5	50.4	77.9	11.5	10.6	1,422 (100)

damages. During monsoon season there is hardly any fish landing. Dol-net operation is not carried out during neap tides (from 6th to 9th lunar-day), locally known as 'bhang'. Ice is used only on mechanised boats which go on fishing trips of four to five days. The strength of the crew on mechanised boats ranges from six to nine, whereas on non-mechanised boats it ranges from two to four. Mechanised boats with gill nets operate upto 10m in the sea. Total number of families (140) were divided into five groups viz. families owning/sharing mechanised boats (35), both

mechanised and non-mechanised boats (6), non-mechanised boats alone (13), only gears (68) and those engaged in fishery allied activities (18). As can be seen from Figure 4, 37% of families has full ownership and 63% partial ownership of boats. In case of gears, 81% of families has full ownership, 13% partial ownership and 6% leased-in.

Major catch of this centre constitutes pomfret, perches, croakers, penaeid and non-penaeid prawns, silverbar, catfish, sharks, clupeoids and seer fish. The

catch is sold to the private traders through Fishermen Co-operative Society which in turn charges 5% commission from the traders and 1% from the fishermen. Some of the mechanised boats take the catch to Bombay for sale. As shown in Table 3A, the annual fish catch shares of families owning/sharing mechanised boats, both mechanised and non-mechanised boats, non-mechanised boats alone and only gears were found to be 25,067, 29,303, 8,936 and 4,694 kg respectively. Among these categories, the average annual fishing days were found minimum in case of non-mechanised group (198 days) and maximum in case of the group owning only gears (206 days). There was not much variation in fishing days among different categories. The average annual net fishery income per fishermen family was calculated at Rs. 5,313 in this village. Maximum fishery income (Rs. 11,873/annum) was found for the families owing/sharing both mechanised and non-mechanised boats and minimum (Rs. 3,362/annum) for families engaged in fishery allied activities. Analysis of indebtedness showed that for those availed loan (79%), average outstanding loan was Rs. 2,868 per family during the reference year. Families engaged in fishery allied activities availed minimum amount of loan (Rs. 484) among the five categories. Maximum outstanding loan was found for the families owning/sharing both mechanised and non-mechanised boats (Rs. 8,560) followed by those owning/sharing only mechanised boats (Rs. 5,420). Further analysis showed that about 21% of fishermen families did not avail loan from any source (Table 4) and the rest had availed loan from Fishermen Co-operative Society (40.4%), government (10.4%), banks (10.0%) and private agencies (21.8%).

2. Alibag Koliwada (Maharashtra)

This fishing village is located at southwest end of Alibag town and dominated by 'Mahadev Koli,' a tribal community. The village has got electric and water connections. The distance of landing centre from the village is about a km whereas fish market is located inside the village. Fish drying yards are provided by Customs Department on rent/lease of Rs. 10-15 per year to the fishermen. Neither jetty facility nor boat building yard is available at this centre. Ice plant and cold storage facilities are available at about 2 km in the town. Diesel and kerosene oil are provided through Fishermen Co-operative Society. About 10 families have marginal land holding for farming. There are 10 carpenters, one barber and four tailors. Baskets, ropes and mats are made in more than 20% of the houses. Couple of provision shops, hotels and tea stalls are also available in the village. More than 100 persons are

employed in government, semi-government and private organisations. Rice and coconut are the major crops grown in this area and rice and fish are main food items of villagers. The analysis of type of houses showed that the percentages of hut, *kutchha*, *pucca* and concrete houses were 19.2%, 53.4%, 22.9% and 4.5% respectively (Fig. 2).

Fishermen population (2,158) of the village consists of 630 adult males, 636 adult females and 892 children (Table 1). The average size of family was 8.1 in Alibag Koliwada during the reference year. Further analysis of family strength showed that 15.8% of families had less than five members, 52.6% between five and nine and 31.6% had 10 or more members per family. Working population was found to be 56.1%, of which 38% was found as active fishermen, 55.7% engaged in fishery allied activities and 6.3% in non-fishery activities. Of total respondents, 69.6% reported fishery as their only occupation, 21.3% fishery main and non-fishery as subsidiary occupation and 9.1% non-fishery main and fishery as subsidiary occupation. Literacy among the respondents was 32.3% primary, 6.4% middle, 4.9% higher secondary and 0.8% graduates (Table 2). Of the 266 heads of fishermen families interviewed, 74.2% was found members of Fishermen Co-operative Society (Fig. 3).

About 70 mechanised and 20 non-mechanised boats are operating at this centre. Bag-nets, surface and bottom set gill-nets and few trawl-nets are used for fishing. Dol-nets are operated in 3-5 m of water while gill-nets and trawl-nets operated in 6-12 m. Labour for crew is generally arranged from outside the village and contracted for entire fishing season of eight to nine months a year. Annual wage ranges from Rs. 4,000-6,000 per labourer excluding meals, bidi, pan etc. Bag-net is the main gear of this centre operated by five to six persons. Total number of fishermen families (266) were divided into five categories viz. families owning/sharing mechanised boats (76), both mechanised and non-mechanised boats (11), non-mechanised boats alone (22), only gears (73) and those engaged in fishery allied activities (84). Ownership of means of production showed that 26.2% of boat operating families had full ownership, 69.8% partial ownership and 4.0% leased-in of boats whereas most of the gears (99%) were found either with single family ownership or partial ownership (Fig. 4).

About 70% of catch at this centre comprises non-penaeid prawns (locally called 'Jawla') and remaining (30%) includes penaeid prawns, croakers, ribbon fish, cat fish, Indian-cod and clupeoids. Non-penaeid prawns caught is sun dried and sold through Fishermen

Co-operative Society to the private companies located at Bombay, Mahad, Dasgaon, Belgam and Ratnagiri on contract basis. The society works as commission agent between companies and the fishermen, and charges 5% and 3% commission respectively from them. The society issues advances from time to time to fishermen upto 50% of value of the catch sold through it. About 85% of boat/net operating families sells their catch through the society.

The Fishermen Co-operative Society is helping fishermen in getting loan from government and banks, providing diesel/kerosene and fishing implements and working as agent between fishermen and fish traders.

3. Mahim Koliwada (Maharashtra)

Mahim Koliwada belongs to Greater-Bombay District of Maharashtra and is about 10 km from main city (Bombay). Fish market, bus stand and railway station are within the radius of 2 km from landing centre. The village is electrified and has many facilities of township. Regarding fishery infrastructure, it is observed that no jetty, boat building yard, curing yard or cold storage/freezing plant is available. A Fishermen Co-operative Society is functioning in the village which provides diesel, kerosene oil and fishing implements to the member fishermen at subsidised rate. About 500 persons are employed in public and private sector and the number of self employed persons like doctors, engineers, carpenters and tailors are about 50. Rice and fish are among major items of food. Of the total of 503 fishermen families, 75.3% occupies small concrete houses constructed by Maharashtra Housing Board and allotted to the fishermen whereas the remaining occupies huts (8.6%), *kutchha* (7.0%) and *pucca* (9.1%) houses (Fig. 2).

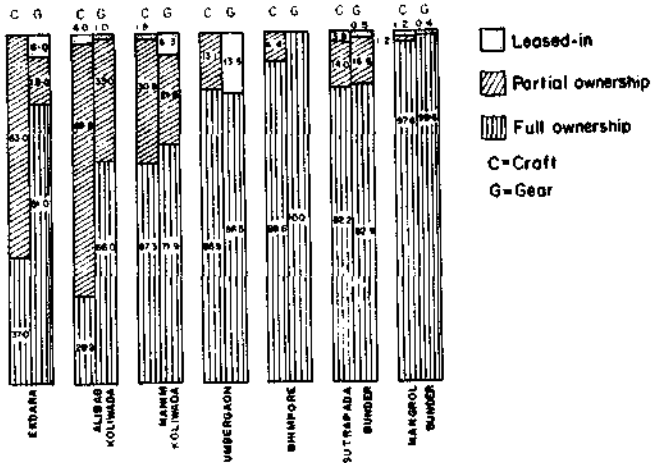


Fig. 4. Ownership of means of production (%).

As shown in Table 3A, the average annual share in fish catch for the families owning/sharing mechanised boats, both mechanised and non-mechanised boats, non-mechanised boats alone and only gears was 37,584, 41,380, 11,990 and 6,255 kg per family for 216, 203, 200 and 192 fishing days respectively per annum. Minimum fish catch was observed in July-September quarter and maximum in October-December quarter for all the categories. On analysis of income per family for different categories it was found that families owning/sharing both mechanised and non-mechanised boats had maximum net fishery income (Rs. 13,016/annum) and those engaged in fishery allied activities had minimum income (Rs. 3,443/annum). The average annual net fishery income per family in Alibag Koliwada was calculated at Rs. 6,118. Among all the categories, maximum outstanding loan was found for the families owning/sharing both mechanised and non-mechanised boats (Rs. 12,182) and minimum for those engaged in fishery allied activities (Rs. 512). Average debt was worked out to be Rs. 4,057 per indebted family. Only 15% of the families did not avail loan during the study year, whereas 45.3% availed loan from Fishermen Co-operative Society, 16.0% from government agencies, 7.0% from banks and 16.7% from private agencies like fish merchants, boat owners, friends, relatives etc.

Total fishermen population was 3,464 including 1,042 adult males, 1,034 adult females and 1,388 children (Table 1). Average number of persons per family was 6.9. Further analysis showed that percentages of families having less than 5, 5-9 and 10 or more members per family were 17.1, 68.6 and 14.3 respectively. Working class constituted about 53% of the population. Among the working population, 21.2% were active fishermen, 58.1% engaged in fishery allied activities and 20.7% in non-fishery activities. As given in Table 2, 32.8% of respondents had fishery as the only occupation, 29.3% fishery main and non-fishery as subsidiary occupation and 37.9% non-fishery main and fishery as subsidiary occupation. About 62% of heads of families engaged in fishery allied activities reported non-fishery as the main occupation whereas 92% of heads of families owning/sharing boats reported fishery as their main occupation. Literacy among the respondents was 35.2% primary, 21.1% middle, 12.0% higher secondary and 0.6% graduates and above. The literacy was comparatively more among the respondents engaged in fishery allied activities and it was justified by the fact that most of them were employed in government, semi-government or private organisations

Table 3a. Annual fishing days, share in fish catch, income and indebtedness per family in the fishing villages of Maharashtra coast 1981-'82

Villages & Categories	No. of fishing days	Catch		Fishery income (Rs.)	Indebtedness (Rs.)	Families availed loan (%)	No. of families
		Quantity (kg)	Value (Rs.)				
Ekdara							
Families owning/sharing:							
a) Mechanised boats	203	25,067	52,642	8,588	5,420	77	35
b) Mech. & non-mech. boats	198	29,303	59,363	11,873	8,560	100	6
c) Non-mech. boats	198	8,936	18,996	4,397	3,154	85	13
d) Gears	206	4,694	9,876	3,741	1,228	79	68
Families engaged in fishery allied activities	—	—	—	3,362	484	67	18
Total/Average				5,313	2,768	79	140
Alibag Koliwada							
Families owning/sharing:							
a) Mechanised boats	216	37,584	58,141	10,610	7,844	95	76
b) Mech. & non-mech. boats	203	41,380	65,079	13,016	12,182	91	11
c) Non-mechanised boats	200	11,990	19,424	4,655	3,042	91	22
d) Gears	192	6,255	10,175	3,923	2,141	89	73
Families engaged in fishery allied activities	—	—	—	3,443	512	70	84
Total/Average				6,118	4,057	85	266
Mahim Koliwada							
Families owning/sharing:							
a) Mechanised boats	208	21,086	61,150	9,976	6,630	93	46
b) Mech. & non-mech. boats	208	23,357	66,336	11,667	11,500	100	12
c) Non-mechanised boats	206	7,172	19,082	5,125	2,250	64	28
d) Gears	216	3,403	9,369	4,240	742	45	44
Families engaged in fishery allied activities	—	—	—	3,674	216	33	373
Total/Average				4,572	2,338	43	503

whereas ladies and old persons in the family were engaged in fish trading, net splicing/repairing *etc.* About 31% of the respondents was found members of Fishermen Co-operative Society (Fig. 3). Percentage of the society's membership was comparatively more in case of boat owners (80%).

About 50 mechanised boats including few trawlers and 30 non-mechanised boats operate at this centre. Suface and bottom-set gill-net, stake-net, trawl-net and cast-net are commonly used for fishing. Boats varying from 7-12 m in length, 1.5-2.5 m in width

and 0.75-1.75 m in depth are fitted with 2-4 cylinder Kirloskar or Ruston engines. In mechanised boats, 5-8 persons go as crew for gill-net operation. Small non-mechanised boats are operated by 2-3 persons. The number of families owning/sharing only mechanised boats, both mechanised and non-mechanised boats, non-mechanised boats alone and only gears were 46, 12, 28 and 44 respectively whereas 373 families were found engaged in fishery allied activities (Table 3A). Ownership of craft and gear (Fig. 4) showed that majority of boats (67.3%) was found with single family ownership followed by partial ownership (30.8%)

Table 3b. Annual fishing days, share in fish catch, income and indebtedness per family in the fishing villages of Gujarat coast 1981-'82

Villages & Categories	No. of fishing days	Catch		Fishery income (Rs.)	Indebtedness (Rs.)	Families availed loan (%)	No. of families
		Quantity (kg)	Value (Rs.)				
Umbergaon							
Families owning/sharing:							
a) Mechanised boats	205	24,024	88,802	12,690	9,953	87	68
b) Mech. & non-mech. boats	210	27,631	97,534	15,240	13,655	88	8
c) Non-mech. boats	232	6,960	18,263	7,632	3,429	88	42
d) Gears	219	3,285	8,872	4,862	1,423	66	72
Families engaged in fishery allied activities	—	—	—	3,800	495	83	90
Total/Average				7,134	4,061	80	280
Bhimpore							
Families owning/sharing:							
a) Non-mech. boats	247	11,068	27,027	7,084	1,061	49	35
b) Gears	244	5,114	9,869	4,336	497	45	153
Families engaged in fishery allied activities	—	—	—	3,482	388	71	49
Total/Average				4,565	544	51	237
Sutrapada Bunder							
Families owning/sharing:							
a) OBM boats	214	13,640	35,962	9,204	3,432	83	132
b) Non-mech. boats	218	6,460	17,975	5,038	2,976	75	24
c) Gears	210	2,940	7,702	3,914	1,136	80	25
Families engaged in fishery allied activities	—	—	—	3,378	574	55	91
Total/Average				6,401	2,436	73	272
Mangrol Bunder							
Families owning/sharing:							
a) Trawlers	210	29,108	1,15,020	16,332	13,031	97	150
b) IBM boats	231	21,346	74,002	11,057	9,660	80	5
c) OBM boats	226	12,052	37,436	9,293	4,864	80	95
d) Mech. & non-mech. boats	227	23,972	76,109	12,276	10,784	81	16
e) Non-mech. boats	228	6,961	18,794	5,266	2,975	86	7
f) Gears	217	4,340	11,718	4,621	1,233	86	215
Families engaged in fishery allied activities	—	—	—	3,904	462	47	145
Total/Average				8,184	5,479	79	633

and leased-in (1.9%). In case of gears, full ownership, partial ownership and leased-in was 71.9%, 21.9% and 6.2% respectively. Full ownership was more for non-mechanised boats (85.7%) than mechanised boats (61.1%) because of lesser capital investment in former.

Pomfret, seer fish, ghol, *Hilsa*, ribbonfish, silverbar, catfish, sharks and clupeoids form major catch at this centre. Bulk of the catch is sold in Crauford and Malad (both in Bombay) markets to the private fish traders and the rest in local market generally by fisherwomen. A portion of catch is sun dried/salted. Trucks, autorikshaws and headloads are common mode of fish transportation.

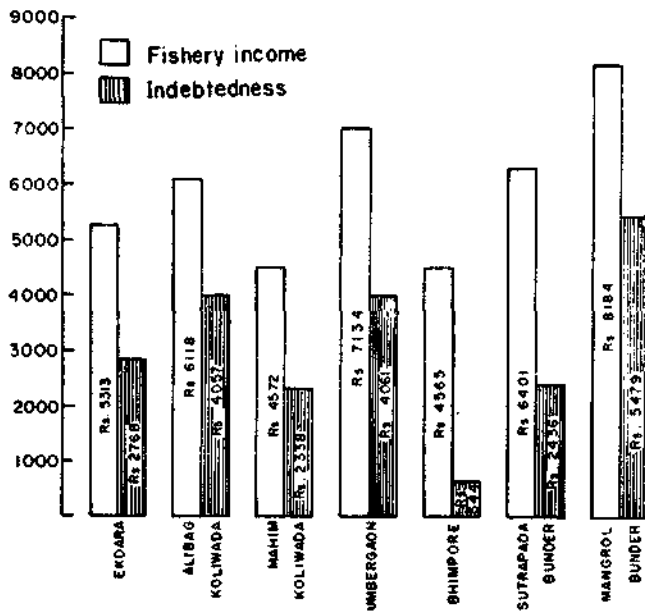


Fig. 5. Fishery income and indebtedness (Rs.).

Table 3A shows that for 208, 208, 206 and 216 annual fishing days, fish catch share for the families owning/sharing only mechanised boats, both mechanised and non-mechanised boats, non-mechanised boats alone and only gears was calculated at 21,086, 23,357, 7,172 and 3,403 kg per family respectively. Annual net fishery income varied from Rs. 3,674 for the families engaged in fishery allied activities to Rs. 11,667 for the families owning/sharing both mechanised and non-mechanised boats. The average annual fishery income in Mahim Koliwada was calculated at Rs. 4,572 per family. Like fishery income, maximum outstanding loan of Rs. 11,500 per family was found for the families owning/sharing both mechanised and non-mechanised boats and minimum of Rs. 216 per family for those engaged in fishery allied activities. The outstanding loan per indebted family in Mahim Koliwada

was noted as Rs. 2,338 during the study year. Fishermen families availed loan from different agencies like Fishermen Co-operative Society (7.0%), government (5.4%), banks (5.6%) and fish traders/friends/relatives (35.0%) whereas remaining families (47.0%) did not avail any loan.

Fishermen reported increasing pollution in the coastal water due to release of effluents from industrial units which affect the fish catch of this region.

4. Umbergaon (Gujarat)

Fishing is the main occupation of 'Machhi', a Hindu backward community in this village. It is one of the advanced fishing villages of Gujarat based on infrastructure available. It is a medium size fishing village and tahsil headquarter, spreading over an area of about 2 km². The village is electrified and has a small fish market. Water connection and jetty facilities are not available whereas boat building yard, service station, ice plant, cold storage, diesel bunk and kerosene oil agency are available inside the village. Fishermen have a well functioning co-operative society which provides fishing implements and diesel at subsidised rates. Ice factory and boat building yard are working under the management of the society. About 15% of total families (280) have small land holdings for cultivation whereas 20 families have trade and 40 families are engaged in artisanal activities. As many as 300 persons are employed in public and private organisations and 15 self employed as engineers, doctors etc. Rice and fish are the main food items of consumption. As shown in Figure 2, fishermen dwellings constitute huts (2.2%) *kuicha* (45%), *Pucca* (31.4%) and concrete houses (21.4%). No family owning mechanised boat was found to occupy hut.

Total population of fishermen in this village was 2,039 (Table 1) including adult males (590) adult females (583) and children (866). About 20% of families has 10 or more members per family. Families having less than 5 and 5-9 members per family were 15.4% and 65% respectively. Average family size was 7.3 during the reference period. Working population was found to be 54%. Percentage of working population was observed maximum among the families owning/sharing only gears (58.6%) and minimum among those owning/sharing mechanised boats alone (46.6%). Among the working population 31.7% was found as active fishermen, 54.6% engaged in fishery allied activities and 13.7% in non-fishery activities. Occupation analysis further showed that 62.1% of the respondents had

fishery as the only occupation, 20.4% fishery main and non-fishery as subsidiary occupation and 17.5% fishery subsidiary and non-fishery as main occupation (Table 2). Literacy among respondents was 29.2% primary, 20.1% middle, 11.3% higher secondary and 1.5% graduates and above. About 40% of the respondents were members of Fishermen Co-operative Society (Fig. 3). As many as 90% of heads of families under mechanised group were members of the society.

About 75 mechanised boats and 40 non-mechanised boats operate at this centre. Gill-nets, trawl-nets and bag-nets are main gears used for fishing. Big gill-netters go on trips of 15-20 days for 'ghol', 'dara' and shark fishing, whereas trawlers go for 4-6 days mainly for prawn and cephalopod fishing. Generally, from October to January there is bag-net operation (locally known as 'dol') in 3-6 m of water and the same boats are used as gill-netters during other months. Trawlers operating from Bombay base, land at New Ferry Wharf. In monsoon, fishing is carried out in creek with dragnets, cast-nets and stake-nets. Crew consisting of 6-9 persons operate trawl-nets and gill-nets but stake-net ('gholwa') is operated by 1-2 persons. Wage of crew ranges from Rs. 3,000 to Rs. 5,000 per labourer per annum excluding meals, pan, beedi etc. As shown in Table 3b, number of families owning/sharing only mechanised boats, both mechanised and non-mechanised boats, non-mechanised boats alone and only gears were 68, 8, 42 and 72 respectively whereas 90 families were found engaged in fishery allied activities. Figure 4 shows that boats were either with single family owner-

ship (86.9%) or partial ownership (13.1%) and no boat was leased-in/out in this village. Percentage of single family ownership in case of non-mechanised boats was comparatively more. Similarly, there was no leased-in/out of gears and all were either fully owned (86.5%) or partially owned (13.5%). The sharing system of means of production which was prevalent earlier is being discouraged these days. New boats under construction were reported with single family ownership.

Fish catch at this centre mainly comprises prawns, cephalopods, sharks, pomfret, seer fish, bombay duck, threadfin, croakers, polynemids, cat fish, and ribbon fish. Quality fish are sold to private fish traders of Nargol, Maroli and Umbargaon and no catch is sold through Fishermen Co-operative Society. Sun-dried and salted fish are taken to Bombay for sale. A portion of the catch is sold in local retail market and nearby localities by fisherwomen.

As shown in Table 3B, among all the categories, the maximum fishing days were found for non-mechanised group (232 days/annum) and minimum for mechanised group (205 days/annum). Unlike this, share in fish catch per family was maximum for the families owning/sharing both mechanised and non-mechanised boats (27,631 kg/annum) and minimum for those owning/sharing only gears (3,285 kg/annum). Further, net fishery income per family was maximum for the families owning/sharing both mechanised and non-mechanised boats (Rs. 15,240/annum) and minimum for those engaged in fishery allied activities (Rs. 3,800/ annum).

Table 4. Percentage of the families availed loan from different agencies in selected villages of Maharashtra and Gujarat 1981-'82

Villages	Percentage of families availed loan from:				Percentage of families not availed loan
	Fish. Co-op. Society	Govern-ment	Bank	Private agencies	
Maharashtra					
Ekdara	40.4	10.4	10.0	21.8	21.4
Alibag Koliwada	45.3	16.0	7.0	16.7	15.0
Mahim Koliwada	7.0	5.4	5.6	35.0	47.0
Gujarat					
Umbergaon	4.3	6.0	13.5	56.6	19.6
Bhimpore	—	—	—	51.1	48.9
Sutrapada Bunder	20.6*	—	12.0	40.2	27.2
Mangrol Bunder	—	8.6	10.7	59.4	21.3

*GFCCA provides loan to fishermen in the form of advances through fishermen co-operative society.

Average net fishery income per family was calculated at Rs. 7,134/annum in this village during the reference period. Like income, maximum indebtedness was found for the families owning/sharing both mechanised and non-mechanised boats (Rs. 13,655/family) and minimum for those engaged in fishery allied activities (Rs. 495/family). Average outstanding loan per indebted family was Rs. 4,061 (Table 3B). About 80% of the fishermen families are indebted in this village. Percentages of families who availed loan from Fishermen Co-operative Society, government, banks and private agencies were 4.3, 6.0, 13.5 and 56.6 respectively (Table 4). About 20% of families did not avail loan from any of the agencies.

5. Bhimpore (Gujarat)

Bhimpore is 18 km from Surat and is a backward fishing village. It is situated between Mindhola and Tapi rivers at joining point. The fishing is carried by 'Machhi' / 'Khalasi' who come under economically backward communities in Gujarat according to Bakshi Commission. The village is electrified but water connection is still not provided. A small fish market exists in the village. Jetty facility is available but no boat building yard/service station, curing yard, ice plant, cold storage or petrol/diesel bunk are available. There are 237 fishermen families in the village. About 5% of the families owns small land holdings for farming. About 15 families have provision shops excluding one textile shop. Artisans include tailors (10), carpenters (5) and barbers (5). More than 200 persons from fishermen families are working in public or private owned shipping companies, mills and factories. Rice and fish are main food items of consumption. The percentages of fishermen families residing in huts, *kutchha*, *pucca* and concrete houses are 7.6, 28.7, 46.8 and 16.9 respectively (Fig. 2).

The total fishermen population during the reference year was 1,779 (Table 1) including adult males (545), adult females (541) and children (693). The average size of fishermen family was 7.5. Percentages of families with less than 5, 5-9 and 10 or more members per family are 8, 70 and 22 respectively. Working population is 58%, the highest being 60.6% in case of the families owning/sharing only gears and lowest 56.8% for those engaged in fishery allied activities. Active fishermen formed 28.5% of working population whereas 51.7% engaged in fishery allied activities. About 20% of working population is employed in non-fishery occupations in this village. Among the total of 237 heads of families interviewed, the literacy level

was 37.3% (primary), 22.8% (middle), 8.0% (higher secondary) and 0.4% (graduate and above) (Table 2). A Fishermen Co-operative Society which registered 168 members is disfunc now.

About 30 non-mechanised boats, locally known as 'Sidwala' are in operation at this centre. Drag-net, bag-net, wall-net, stake-net ('gholwa'), gill-net, hooks and line and traps are common gears used for fishing in this village. Fishing by operating small drag-nets in shallow water without boat, locally known as 'Pagadia' fishing, is very common at this centre. Since, no mechanised boat is operating at this centre, the fishermen families (237) were grouped into three categories viz. families owning/sharing non-mechanised boats (35), only gears (153) and those engaged in fishery allied activities (49). Results regarding the ownership of means of production revealed that 88.6% of boats was with single family ownership and 11.4% with partial ownership (Fig. 4). No leased-in/out of boat was found in Bhimpore. Similarly, all the gears were found with single family ownership and no gear was with partial ownership or leased-in/out.

At this centre, bombay-duck, prawns, mullet, mud-skipper, cat fish, *Hilsa* and croakers form the major catch. Most of the catch is taken to Surat by bus or autorikshaw and sold to private fish traders. Small portion of catch is sold in local retail market and nearby localities by fisherwomen.

Annual share in fish catch (Table 3B) for families owning/sharing non-mechanised boats and only gears was worked out to be 11,068 kg and 5,114 kg per family for 247 and 244 fishing days respectively. Unlike other centres, there is substantial *Hilsa* landing in monsoon season. Mud-skipper (Gobiidae) fishing by means of noose-loop traps locally called 'Phans' or 'Pahi' is a unique method of this centre. Income analysis showed that among the three categories, maximum net fishery income per family was found for the families owning/sharing boats (Rs. 7,084/annum) and minimum for those engaged in fishery allied activities (Rs. 3,482/annum). Average outstanding loan per indebted family was Rs. 544 with maximum of Rs. 1,061 for families owning/sharing boats and minimum of Rs. 388 for those engaged in fishery allied activities. About 51% of total families availed loan from private agencies like money lenders, fish traders, friends, relatives *etc.* whereas 48.9% did not avail any loan (Table 4). Moreover, fishermen are not interested to avail loan either from government or banks for investment on mechanisation because the fish catch was badly affected

due to construction of Ukai dam on Tapi river and increasing pollution in Mindhola river by discharge of effluents from chemical and fertilizer plants and textile mills located in this region.

6. Sutrapada Bunder (Gujarat)

Sutrapada Bunder is about 19 km from Veraval and is connected with coastal highway. The fishing is the occupation of 'Koli Kharwa', a backward Hindu community. All the fishermen have settled near landing centre and the village is known as Sutrapada Bunder which is about 1 km away from main Sutrapada village. About 272 families are engaged in fishing and fishery allied activities. The village is electrified but water connection is not available. It has limited infrastructure facilities. Fish market, boat building yard, curing/processing yards, ice factory, petrol/diesel bunk, cold storage etc. are available only at Veraval. Kerosene is supplied through the Fishermen Co-operative Society. This village is covered under World Bank Project for development of fishery infrastructure like link road, jetty, auction hall, water supply, ice factory etc. There are five petty shops and four hotels including tea stalls. Besides three weavers and one carpenter, about 20 persons are employed in government, semi-government and private organisations and two persons are self employed. Rice, fish, wheat and *bajra* are main food items of the villagers. The percentages of huts, *kutchha*, *pucca* and concrete houses are 10.0, 38.6, 50.7 and 0.7 respectively (Fig. 2).

Fishermen population totalled 2,094 (Table 1) comprising 580 adult males, 579 adult females and 935 children. Members per family averaged 7.7. Percentages of families with less than 5, 5-9 and 10 or more members were 21.7, 57 and 21.3 respectively. About 47% was working population. Among the working population, 51.5% was active fishermen, 45.1% engaged in fishery allied activities and 3.4% in non-fishery activities. Of active fishermen, 87.8% was found operating OBM boats and 12.2% non-mechanised boats. Occupation analysis showed that 90.5% of the respondents had fishery as the only occupation, 5.4% fishery main and non-fishery as subsidiary occupation and 4.1% non-fishery main and fishery as subsidiary occupation (Table 2). Majority of respondents was illiterate (61.4%). The respondents with primary, middle higher secondary and graduate qualifications were 31.2%, 6.2%, 0.8% and 0.4% respectively. As many as 400 fishermen are members of Fishermen Co-operative Society which provides fishing implements to the fishermen.

About 100 OBM boats, excluding 5 FRP (Ferro-cement/fibreglass reinforced plastic) boats and 20 non-mechanised boats operate at this centre. Most of the boats are fitted with 6-9 H.P. OBM and run on kerosene oil. Gears used at this centre include surface and bottom-set gill-nets, cast-net, hooks and line and drag-net. Fishermen families were divided into four groups viz, families owning/sharing OBM boats (132), non-mechanised boats (24), only gears (25) and those engaged in fishery allied activities (91). There was no IBM (inboard motor) boat in this village. Ownership of means of production showed that 82.2% of boats was with single family ownership, 14.0% partial ownership and 3.8% leased-in (Figure 4). Regarding ownership of gears it was found that 82.9% of gears was with full ownership, 16.6% partial ownership and 0.5% leased-in.

Main catch of this centre constitutes pomfret, seerfish, croakers, *Hilsa* and other clupeoids, catfish, ribbonfish, perches and silverbar. About 22% families sell the fish catch to GFCCA through Fishermen Co-operative Society at the rate fixed/contracted for 15 days to one month by GFCCA with the concurrence of fishermen's representatives. Few families (15-20 boats owners) sell their catch at Veraval to private fish traders and remaining boats sell to private traders in the village. Autorikshaw is the main mode of fish transportation. Most of the catch is sold in fresh form. A small portion of salted and sun dried shark and cat fish is purchased by traders coming from Bombay.

Annual catch share with number of fishing days for different categories is presented in Table 3B. Maximum annual share in fish catch among these categories was found for the families owning/sharing OBM boats (13,640 kg per family) and minimum for those owning/sharing only gears (2,940 kg per family). Annual fishing days were maximum for the families owning non-mechanised boats (218 days) and minimum for those operating only gears (210 days). Further, net fishery income among these categories was also found maximum for the families owning/sharing OBM boats (Rs. 9,204/annum) and minimum for those engaged in fishery allied activities (Rs. 3,378/annum). Average annual fishery income was calculated at Rs. 6,401 per family. Average outstanding loan for the families owning/sharing OBM boats, non-mechanised boats, only gears and those engaged in fishery allied activities was Rs. 3,432, 2,976, 1,136 and 574 respectively. Outstanding loan for indebted families averaged to Rs. 2,436. About 27% of the families did not avail loan from any

source. Percentages of families who availed loan from Fishermen Co-operative Society (from GFCCA advance), banks and private agencies were 20.6, 12.0 and 40.2 respectively (Table 4).

7. Mangrol Bunder (Gujarat)

Mangrol Bunder is an advanced fishing village of Junagadh District. 'Kharwa', a dominating community in the village, is engaged in fishing and fishery allied activities. Mangrol Bunder, which is 3 km from main Mangrol town, is connected by *pucca* road. It has got electric and water connections. Facilities connected with fishery like jetty, boat building yard (under Gujarat Fisheries Development Corporation), service station, curing yards, ice plant, cold storage, petrol/diesel bunk etc. are available within the radius of 3 km from landing centre. Fishermen Co-operative Society provides fishing implements. This village is covered under World Bank Project for providing infrastructure for fishery development. There are 10 retail shops and seven hotels including tea stalls. Most of the artisanal activities are carried out by persons coming from nearby town. A few persons from the village work in government or private organisations. *Bajra*, rice and fish form staple food of the villagers. At Mangrol Bunder, there is no hut and the percentages of *kutchha*, *pucca* and concrete houses are 19.1, 79.9 and 1.0 respectively (Fig. 2).

Total population (4,663) of this village consists of adult males (1,433), adult females (1,416) and children (1,814). Average family size was 7.4 (Table 1). Families with less than 5, 5-9 and 10 or more members were 22.8%, 67.1% and 10.1% respectively. Working population was 48.4% in this village. Among the working population, 47.8% was active fishermen, 51.6% engaged in fishery allied activities and 0.6% employed in non-fishery occupations. Among the active fishermen, 69.5% was found going on trawlers, 28.5% on OBM boats and 2% on non-mechanised boats. Occupation analysis showed that 91.3% respondents had fishery as the only occupation, 3.7% fishery main and non-fishery as subsidiary occupation and 5.0% non-fishery main and fishery as subsidiary occupation (Table 2). Education level of respondents was of the order of 34.1% (primary), 6.0% (middle) and 1.8% (higher secondary and above). About 67% of the respondents was members of Fishermen Co-operative Society at Mangrol Bunder (Fig. 3).

About 280 boats including 150 trawlers and 95 OBM boats operate at this centre. Trawl-nets and

gill-nets are main gears used for fishing. Gill-nets are operated in 8-11m of water whereas trawl-nets operate upto 8 m. In monsoon old gill-nets are used to trap lobsters. Trawlers make fishing trips of 4-6 days and gill-netters 3-4 days, whereas OBM boats go on daily trips. A crew consisting of 6-9 persons operate trawlers and gill-netters whereas OBM boats are operated by 3-4 persons. Most of the gill-netters and trawlers are 40 footers fitted with 4-6 cylinder Ruston or Ashok Leyland engines. Crew members are contracted for fishing season of 8-9 months a year and wage ranges from Rs. 3,000-4,000 per labourer, excluding personal expenditure. Number of families owning/sharing trawlers, IBM boats, OBM boats, both mechanised and non-mechanised boats, non-mechanised boats alone and only gears were 150, 5, 95, 16, 7 and 215 respectively whereas number of families engaged in fishery allied activities was 145. Ownership of means of production showed that 97.6% of boats was with single family ownership and 1.2% each with partial ownership and leased-in/out (Fig. 4). Almost all the gears (99.6%) were found with single family ownership.

Catch at Mangrol centre comprises pomfret, croakers, cephalopods, *Hilsa* and other clupeoids, seer fish, shark, catfish, silverbar, prawns, lobster and sciaenids. Most of the catch is sold to private fish traders. Small portion of catch is sold in retail market by fisherwomen. Head load and autorikshaw are main mode of fish transportation.

Catch particulars (Table 3B) showed that among the six categories, highest share in annual fish catch per family was observed for the families owning/sharing trawlers (29,108 kg) for 210 fishing days followed by those owning/sharing both mechanised and non-mechanised boats (23,972 kg) for 227 fishing days. Quantity of catch share per family was observed minimum for the families owning/sharing only gears (4,340 kgs/annum) for 217 annual fishing days. Annual fishing days ranged from 210 to 231 among different categories. Net fishery income was found maximum for the families owning/sharing trawlers (Rs. 16,332/annum) followed by those owning/sharing both mechanised and non-mechanised boats (Rs. 12,276/annum). Among all the categories, minimum fishery income was observed for the families engaged in fishery allied activities (Rs. 3,904/annum). The average income per family at Mangrol Bunder was calculated at Rs. 8,184/annum. Income and indebtedness have got similar pattern for fishermen families under different categories. Maximum outstanding loan was found for the families



Fig. 6. Unloading of catch at Navabunder.



Fig. 7. Sorting out of catch at Navabunder.

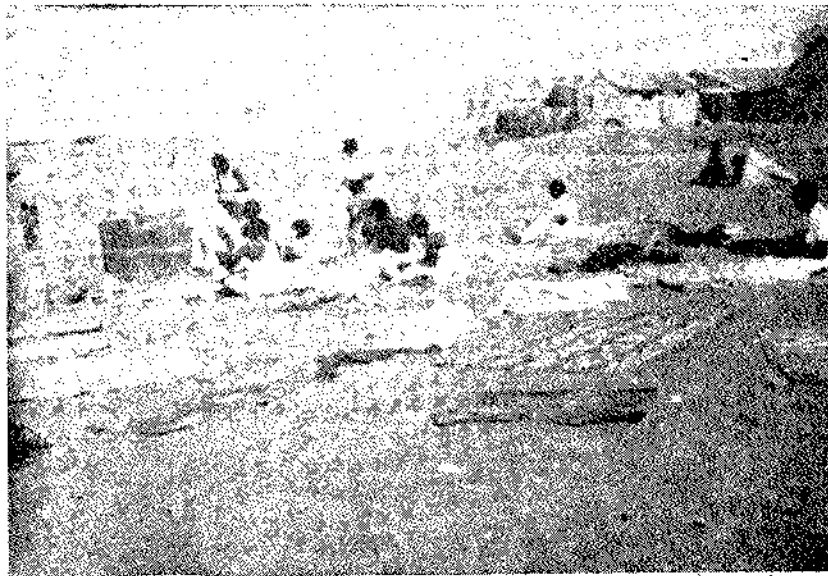


Fig. 8. Net repairing at Sutrapada.



Fig. 9. Net repairing at Madh. In the background are the fish drying stands.

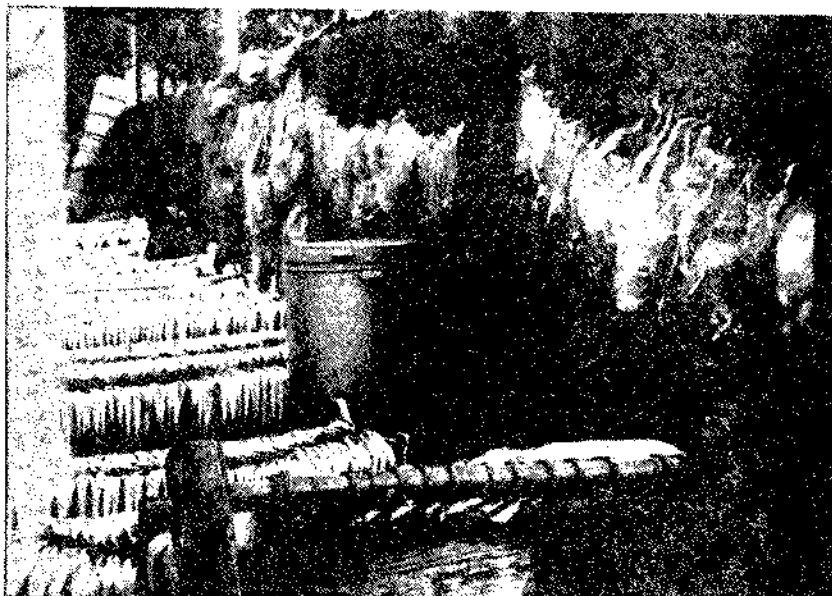


Fig. 10. Fish maws of cat fish, wam, ghol etc. are being sundried on the raised platform at umbergaon.

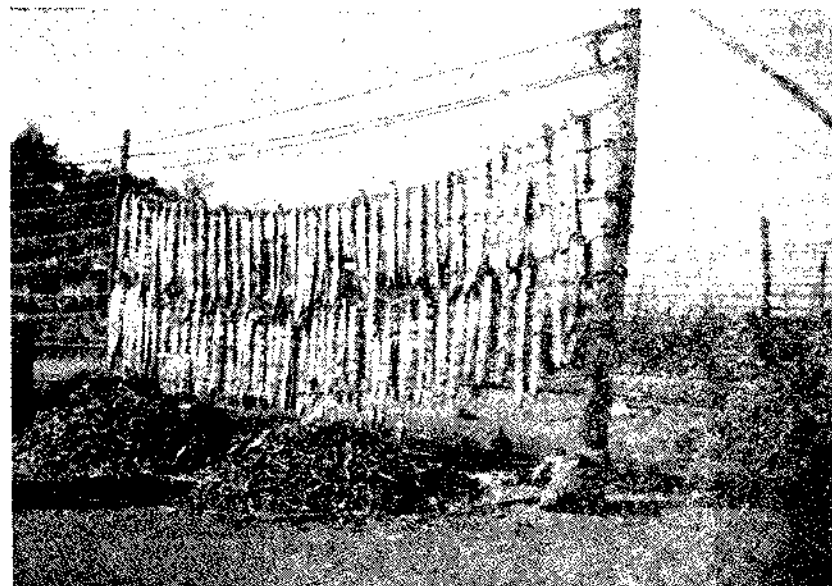


Fig. 11. Sundrying of ribbon fish at Navabunder.

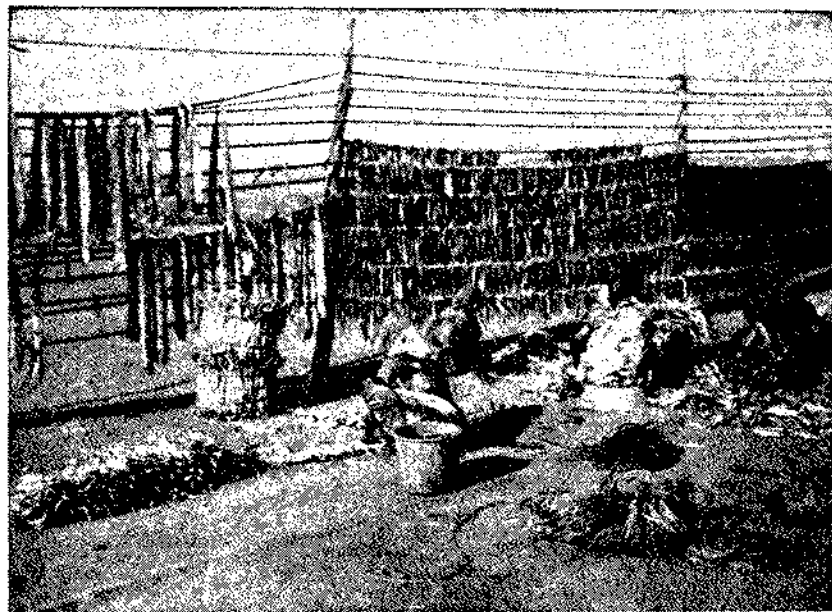


Fig. 12. Fishermen arranging dry fish in bundles at Navabunder.



Fig. 13. Sorting of dry fish at Navabunder.



Fig. 14. Fisherwomen with dry fish bundles on head are going to fetch water. A scene at Navabunder.



Fig. 15. Fisherwomen with fish baskets on head enter the state transport bus at Bhimpore.

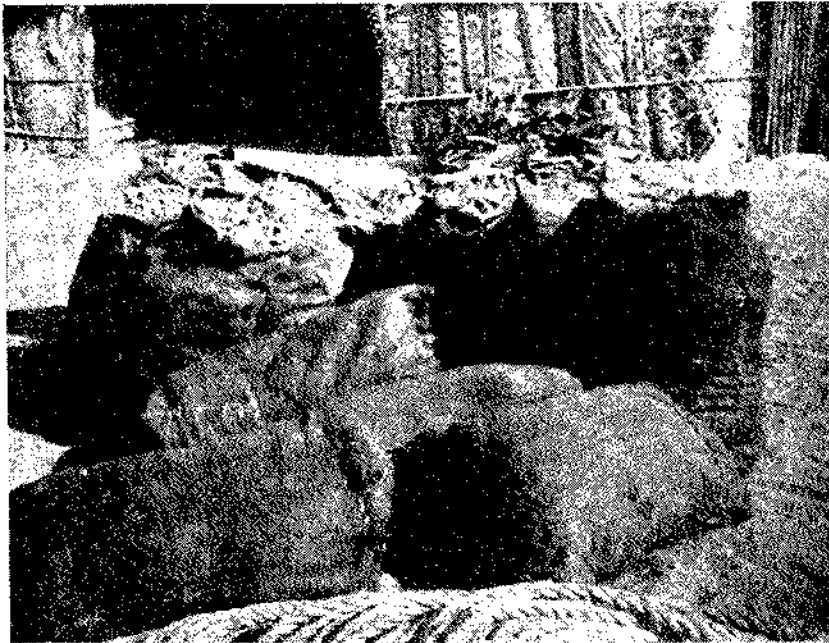


Fig. 16. Dry fish ready for disposal at Navabunder.

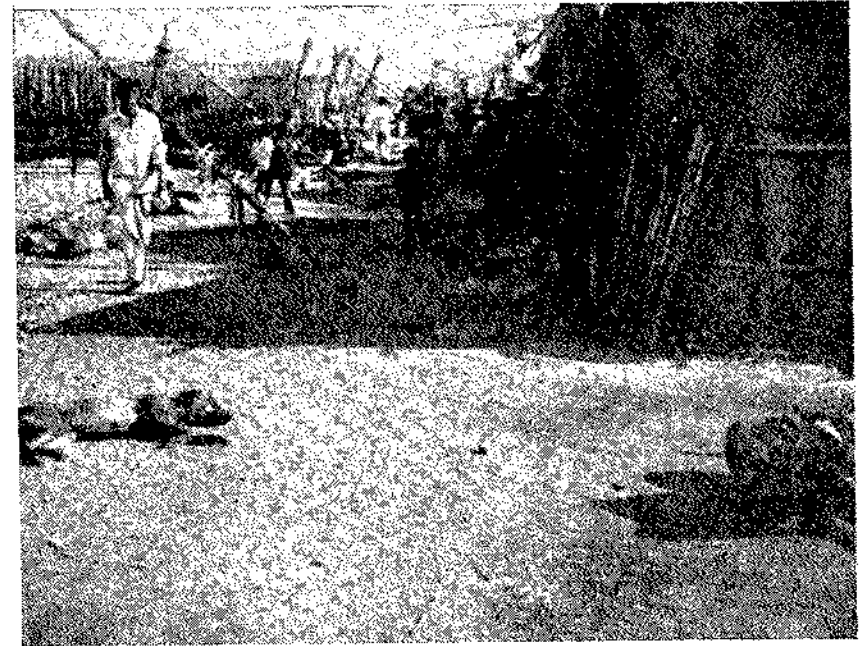


Fig. 17. Temporary dwelling of labourers near fish drying yards at Navabunder.

owning/sharing trawlers (Rs. 13,031) and minimum for those engaged in fishery allied activities (Rs. 462). The average debt was worked out to be Rs. 5,479 per indebted family. As shown in Table 4, about 21% of families did not avail loan whereas majority availed loan from private agencies (59.4%). The percentages of families who availed loan from banks and government were 10.7% and 8.6% respectively. Fishermen Co-operative Society does not provide loan but helps fishermen in getting loan from government and banks.

Comparison within the state and between the states

Maharashtra villages: Looking at the general condition of the villages and the fishery infrastructure available, Alibag Koliwada ranks first among the selected villages of Maharashtra. Family size is comparatively smaller in Mahim Koliwada. Percentage of working population is highest in Alibag Koliwada whereas percentage of those employed in non-fishery occupations and literacy level is highest in Mahim Koliwada. Dependence on fishing, as main occupation, is found more in Ekdara. Mechanised fishing is more prevalent at Alibag Koliwada than other centres which is specialised in seining for non-penaeid prawns (*Jawla*) by bagnet ('dol'). Non-penaeid prawns in bag-net and silverbar in gill-net at Ekdara centre and pomfret and seer fish by gill-net in Mahim Koliwada are among the important catches. Not much difference was observed in ownership status of means of production in these villages. Maximum variation in annual fishing days is observed among different categories in Alibag Koliwada. Fish catch and income of families under different categories are also higher in Alibag Koliwada. The average indebtedness as well as percentage of indebted families are comparatively low in Mahim Koliwada. Percentage of families availing loan from fishermen co-operative societies is the highest in Alibag Koliwada whereas percentage of those availed loan from private agencies is more in Mahim Koliwada.

Gujarat villages: Based on the mechanisation level and fishery infrastructure available, Umbergaon and Mangrol Bunder are categorised as advanced, Sutrapada Bunder as medium and Bhimpore as backward fishing villages. There is hardly any difference in family size among these villages. Percentage of workers in the total population is the highest in Bhimpore and lowest in Sutrapada Bunder whereas percentage of population employed in non-fishery occupations is the lowest in Mangrol Bunder and the highest in Bhimpore. Percentage of active fishermen in working population is the highest in Sutrapada

Bunder followed by Mangrol Bunder and the lowest in Bhimpore. Highest level of literacy is observed in Bhimpore followed by Umbergaon and lowest in Sutrapada Bunder. Highest dependence on fishery is noted in Mangrol Bunder and Sutrapada Bunder and lowest in Bhimpore. Mangrol Bunder has several mechanised fishing boats whereas Bhimpore has no mechanised boat. Main craft at Sutrapada Bunder is OBM boat operating gill-nets. In Umbergaon, gill-nets, trawl-nets and bag-nets are main gears used for fishing. Prawn, bombay duck, pomfret and shark are important catch components at Umbergaon centre. Pomfret and seer fish at Sutrapada Bunder; prawn, seer fish and pomfret at Mangrol and bombay duck and *Hilsa* at Bhimpore form major catch in general. The ownership of means of production shows almost similar trend in all the selected villages of Gujarat. Number of annual fishing days on mechanised boats are comparatively more at Mangrol Bunder. For non-mechanised boats, fishing days are maximum in Bhimpore because there is substantial landing of *Hilsa* in monsoon season. In Umbergaon, bag-net ('dol') is generally operated during October-January and the same boats are used as gill-netters in rest of the fishing season. Between Mangrol Bunder and Sutrapada Bunder, no significant variation is observed in fish catch and income for the families owning/sharing OBM boats. Among the four selected villages, the highest income is found for the families owning/sharing trawlers in Mangrol Bunder followed by those operating both mechanised and non-mechanised boats at Umbergaon. The weighted average fishery income and indebtedness are found highest in Mangrol Bunder and lowest in Bhimpore. Percentage of families availing loan is comparatively more in Umbergaon. Among all the four villages, percentage of families availing loan through fishermen co-operative societies is the highest in Sutrapada Bunder. Majority of the families in Mangrol Bunder and Umbergaon are getting loan from private agencies.

Maharashtra vs Gujarat villages

Socio-economic conditions of Gujarat fishermen are comparatively better than those of Maharashtra. Fishing is mostly carried out by tribal communities in Maharashtra whereas in Gujarat it is an occupation of 'Kharwa'/'Machhi' communities which come under OBC. No significant difference between the states, is observed regarding family size, literacy and dependence on fishing. Standard of fishermen's dwellings in Gujarat is better than Maharashtra. Contrary to

this, functioning and coverage of activities of fishermen co-operative societies in Maharashtra is better than Gujarat in general. There is not much difference in the level of mechanisation in the villages of both the states. There is no mechanised boat in Bhimpore and no IBM (inboard motor) boat in Sutrapada Bunder. Further, it is observed that OBM boats are more popular in Gujarat. There is similarity in trawl-net and gill-net operations but method of bag-net ('dol') operation differs in both the states. Owing to the availability of fish resources the non-penaeid prawns in Maharashtra and bombay-duck in Gujarat are the mainstay of bagnet ('dol') catches. Single family ownership of means of production is more in Gujarat than Maharashtra. Category-wise annual fishery income and fishing days in the villages of Gujarat is more than those of Maharashtra. Indebtedness pattern in both the states shows that heavier the investment in means of production, more the amount of loan availed. Except Mahim Koliwada in Maharashtra and Bhimpore in

Gujarat where number of indebted families and amount of out-standing loan are comparatively low, all other villages have majority of families (73-85 per cent) under debt. Further, percentage of families availing loan from fishermen co-operative societies is comparatively more in the villages of Maharashtra and those availing loan from private agencies (mainly fish traders) is more in Gujarat.

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