

## **SOCIOECONOMIC CONDITION OF FISHERMEN AND ITS EFFECT ON ENVIRONMENT: A CASE STUDY OF GANJAM DISTRICT, ORISSA**

**Lakshman Nayak and Ajit Kumar Mishra\***

P.G. Department of Marine Sciences, Berhampur University, Berhampur-760 007, Orissa, India

\*Department of Agriculture Economics, Orissa University of Agriculture & Technology, Bhubaneswar -751 003, Orissa

### **ABSTRACT**

The Ganjam district is blessed with good potential of aquatic resources having a coastline of 60 km with 11,243 families living in 27 villages with a population of 37,715. Their livelihood is depend on the sea. Two types of fishermen found are Kaibarta and Nolia. A total of 19,504 male and female are married. Out of the total population, only 21.5 per cent have primary standard education, 15.9 per cent up to upper-primary level, whereas the illiterate constitute 57.8 per cent of total population. Their annual income varies from Rs. 18000-20000. The marine fishermen are fully engaged in capture fishery whereas inland fishermen are engaged in culture as well as capture fishery. Orissa Fishermen Cooperative Society provides nets and boats to fishermen. National Cooperative Development Corporation (NCDC) is also providing financial help to them.

### **INTRODUCTION**

Fish and fishery have been with us since time immemorial. World fish production has increased manifold in the last decade roughly crossing 168,429,000 million tonnes during 2005-06. India has witnessed a higher growth of fishery and ranks 7<sup>th</sup> among fish producing nations of the world. At present, fishery sector in India is providing gainful employment to 5.97 million people of which 2.40 million are full-time fishermen. Fishery plays an important role in Indian economy, but the economic conditions of the fishermen are very poor. Orissa ranks 6<sup>th</sup> in inland fish production, whereas its position is 8<sup>th</sup> in marine fish production in India. Due to lack of mechanized fishing, socioeconomic condition and technical illiteracy among the fishermen, Orissa is lagging behind as compared to other States.

The fishermen are separated into a different community. They are one of the backward communities in India. They spend their whole life in poverty due to uncertain prospects of income (Nandi & Parmanik 1994). The total community can be classified into two groups. One who depend on inland fishing called "Kaibartas" or "Keuta" and the other on marine fishing called "Nolia". The marine fishermen of Ganjam district are engaged in sea fishing throughout the year. Among the species landed are mackerel, pomfrets, sharks, sardines, anchovis and prawns, which are commercially important varieties.

Due to nonavailability of infrastructure facilities and sound marketing system, the fishermen are forced to dispose off their catch to middlemen at price dictated by them. The marine fishing activities and backwater aquaculture are practised in four coastal blocks of Ganjam, Chatrapur, Rangeilunda and Chikiti. Total 4,043.04 ha of brackish water area is available in Ganjam, of which 3,110.17 ha are suitable for prawn culture.

The fish catches are received at 16 centres i.e., Puruna Bandha, Nolianuagaon, Sana Aryapalli,

Bada Aryapalli, Revataru, Gopalpur, New Buxipalli, New Golabandha, Garampeta, Markandi, Ramayapatna, Sonapur and Patisonapur. Fishermen use different types of gears such as shore seine, drift net, gill net to catch sardine and prawns (Jhingran 1982).

## METHODOLOGY

The present study is made on the socioeconomic condition of fishermen of Ganjam district during 2004-05. This district lies between long. 84°-85°E and lat. 19°-27°N and is blessed with good potential of aquatic resources having a coastline of 60 km, with 11,243 fishermen families. The river Rushikulya meets the Bay of Bengal at Purunabandha village in north, and Bahuda at Patisonapur village in south.

The study was carried out depending on both primary and secondary data. The primary data were collected through a questionnaire envisaging marital status, educational status, monthly income, standard of living, types of houses, sources of drinking water, health facilities, etc. whereas secondary data were obtained from block and other offices during the year 2004-2005, and calculations were made for percentage of marital and educational status.

## RESULTS AND DISCUSSION

In Ganjam district there are 27 fishermen villages having about 6,243 families. The total fishermen population of Ganjam district was 37,715 during the year 2004-05 (Males = 14,411; Females = 13,410) (Table 1). Amongst them, 16,591 were full-time and 2,330 were part-time fishermen. Males are chief of families who earn for the family. The fisherwomen also play an active role in post fish harvest activities relating to marketing. The children numbering 9,894 do not play any role in fishing and without contributing anything they share from the single source income (Nayak et al. 2006).

**Monthly income and expenditure:** Almost all the fishermen families are under poverty line. The main source of their income depends on fishing, sale of dried fishes and trashes. The exploitation by the middlemen, mafias and government negligence towards the mechanised fishing operations and marketing of fish products have added to their problems. The average monthly income of the fishermen ranges between Rs. 1500 and 1700. Among dried fishes, prawns give them a good income. Very small fishes like shrimps are seen dried in whole). These dried fishes are supplied to merchants for sale in our country (Sujata 1999). The average number of members in a family has been considered three because two children of below 10 years age are equivalent to be one adult person so far as the food consumption is concerned.

The average per capita expenditure of fishermen in Ganjam district is represented in Table 2. The highest amount of expenditure was observed on food and the lowest was on education, maintenance or social customs, which is about 5 per cent each of the total expenditure. A major share is utilised on liquor, which is the habit of the fishermen.

**Marital status:** The fishermen community belongs to Hindu social system. In their society, marriage is treated as a sacred bond between males and females. They get married by traditional method. Out of the total population, 16,976 are unmarried, whereas 19,504 are married and 1,235 are widow as shown in Table 3. They still go for early marriage. Number of children per family shows that family planning is not successful in this part. No case of divorce has been noticed. Zero divorce indicates that the community believes in tradition and customs and divorce as a matter of fact is discouraged (Tripathy 1999).

Table 1: Fishermen population of Ganjam district during 2004-2005.

Name of the M.E. Unit	Name of the Block	Name of the Marine Fishermen Village	Total No. of family	Fishermen Population			
				Male	Female	Children	Total
Ganjam	Ganjam	Prayagi	239	265	212	103	580
		Kalarabedi	221	229	248	122	599
		Kantiagarh	495	529	451	409	1389
		Gokharkuda	325	364	310	127	801
		Purunabandha	393	539	380	236	1155
	Chhatrapur	Bada-Nolianuagam	389	440	384	136	960
		Sana-Nolianuagam	618	740	737	514	1991
		Bada Aryapalli	765	817	852	746	2415
		Sana Aryapalli	747	1109	1093	894	3096
		Total:	4023	5030	4667	3487	13184
Gopalpur	Chhatrapur	Bandar	340	383	331	208	922
		Rau Kattaru	391	337	274	109	720
	Rangailunda	Gopalpur NAC	735	1743	1572	888	4203
		New Baxipalli	520	542	518	560	1620
		Old Baxipalli	334	378	402	272	1052
		Golabandha	354	421	328	216	965
		New Golabandha	542	602	505	594	1701
		Garampetta	469	532	433	482	1447
		Venkatraipur	324	394	227	172	793
		Bigipur	317	392	343	293	1028
Total:	3857	5724	4933	3794	14451		
Sonepur	Rangailunda Chikiti	Markandi	451	670	651	486	1807
		Eksinghi	239	260	248	95	603
		Ramayapatna	410	375	456	225	1056
		Bayanidhipentha	227	239	298	154	691
		Kattaru	386	497	537	287	1321
		Sonepur	715	808	787	672	2267
		Anantaraipur	259	283	232	172	687
		Patisonapur	507	525	601	522	1648
Total:	3194	3657	3810	2613	10080		
Grand Total:			11,243	14,411	13,410	9,894	37,715

**Educational status:** Previously there was no scope for fishermen's education but at present, Government has taken various steps to impart education to children and also to adults. Government of Orissa has established Primary, Middle English (ME) and few High Schools to eradicate illiteracy among fishermen. Apart from Government, NGOs like United Artisan Association (UAA) and Peoples Rural Education Movement (PREM) have shown a lot of interest to literate the fishermen.

The total number of educated male fishermen in the district is 11,778 (Table 4). Among them 5,594 have studied up to primary standard, 4,948 up to upper primary standard, and only 9% are intermediate. Only 20% of females have seen door of schools. Due to lack of communication in these villages, they are unable to pursue higher studies. Total number of high schools in these villages is 8, and of ME schools 15. The schools situated in the villages are Gopalpur, Konomona, Golabandha, Chatrapur, Ganjam, Kanisi and Keluapalli. Due to lack of education, females have not been able to contribute much to the income (Rao 1998).

**Housing Condition:** A *pucca* house is a daydream for the fishermen. 90% of total population spent their lives in mud-built huts thatched with leaves, which are prone to rain, sun and the chilling

Table 2: Per capita expenditure of fishermen in Ganjam district during 2005 (in Rupees).

Sl. No.	Item of Expenditure	Amount in Rs.	Percent
1.	Food	1738	33
2.	Health	838	15
3.	Education	285	5
4.	Maintenance	290	5
5.	Social Customs	297	5
6.	Liquor	1280	23
7.	Repair of Boat and Net	662	12
8.	Others	109	2
	Total:	5499	100

Table 3: Marital status of fishermen of Ganjam district during 2004-05.

Sl. No.	Marital Status	Male	Female	Total	Percent
1.	Unmarried	8950	8026	16,976	45.02
2.	Married	10,282	9222	19,504	51.72
3.	Widow	-	1235	1235	3.26
4.	Divorced	-	-	-	-
	Total:	19,232	18,483	37,715	

Table 4: Educational status of fishermen of Ganjam district during 2004-05.

Sl. No.	Educational Level	Male		Female		Total	
		No.	%	No.	%	No.	%
1.	Pre-Primary and Primary	5594	29.08	2075	11.23	8269	21.5
2.	Upper Primary and Secondary	4448	23.13	1554	8.41	6007	15.9
3.	Intermediate	1736	9.03	96	.52	1832	4.8
4.	Higher Education	-	-	-	-	-	-
5.	Others	-	-	-	-	-	-
6.	Illiterate	7454	38.75	14,758	79.85	22,212	57.8
	Total:	19,232		18,483		37,715	

Table 5: Credit flow by different financial institutions in Ganjam district during 2003-2006 (Rupees in lakhs).

Sl. No.	Name of the Financial Institution	2003-04		2004-05		2005-06	
		Total finance	%	Total finance	%	Total finance	%
1.	Commercial Banks	86	59	166	59	100	50
2.	Regional Rural Banks	57	39	94	33	93	42
3.	Cooperative Banks	4	2	22	8	18	8
	Total:	147	100	282	100	221	100

winter. Only very few of them have 'semi-pucca' houses. Due to lack of finance they have to live in 'kutcha' constructions or huts. They suffer a lot during rainy season. Recently, Government has constructed cyclone shelter centres in Orissa, in general, and Ganjam district in particular for the benefit of the fishermen society.

**Sources of drinking water:** Ganjam district is a coastal area situated near the Bay of Bengal. So there is no problem of water but clean drinking water scarcity is found here. The provision of drinking water in the villages of the district seems to be a perennial problem. To provide safe drinking water,

Government has taken adequate steps to install tube-wells in the villages. Apart from this some NGOs have also made available some facilities to such villages.

**Credit flow:** The fishermen are getting financial assistance from different banks for purchasing boats, nets, repairing and to perform other functions. The maximum loan was sanctioned by commercial banks while the cooperative banks sanctioned less loan during 2003 to 2006 (Table 5). The number of defaulters are increasing year after year though the income flow is better due to introduction of motorised boats. The expenditure towards food and other necessary items remains almost same but expenditure on luxuries like liquor, cinema visit, etc. have increased.

**Standard of living:** Almost all the fishermen families are below poverty line since fishing and sale of dried fishes is the only source of income. The exploitation by middlemen and mafias has added to their problems. Due to illiteracy very few i.e., approximately 0.2% are placed in government sector and 2% are in private hatcheries.

Lack of minimum finance compels them to fall prey to middlemen and local mahajans, who provide them crafts and gears. They still fight hard to earn two square meals a day. Education and entertainment are like daydream to them.

**Health:** Health status is the basic factor to judge one's status in a family or in the community. In order to extend healthcare to the people in the fishermen villages, health centres such as Primary Health Centres (PHC), Additional Health Centres and dispensaries are established by Government in Keluapalli, Gopalpur, Potlampur, Chatrapur and Huma areas. In addition, health aid is also provided from time to time by paramedical staff and other social organisations. Saha and Banerjee (1991) have studied the health status of rural fishermen and recommended for extending better facilities to them.

**Communication:** Almost all the villages in the district are connected with road. Though the condition of roads is not too good, vehicles are available to reach different places. Though there is no communication problem, still the condition of the roads has to be improved for transportation of fish and fish products to the nearby markets.

**Marketing:** Fish and allied fish products are the only source of income for the fishermen. But there is lack of marketing facilities. Some of them sell their products, moving from villages to villages or at the best at local market.

Some of the fishermen, after landing, sell their catches to the merchants. These merchants collect a large amount of fishes of different species from various landing centres, preserve them in ice and supply them to distant places for higher profit. In spite of inadequate refrigeration facilities the merchants usually earn good profit. Three economic strata are noticeable. The fishermen who operate inside the sea are the poorest. The carrier agents collecting fishes from various centres are more prosperous. The export merchants lead the highest level of life among these three, and many of them have their own wholesale auction depots where they sell their collection. Due to lack of adequate facilities of export, the traders face lot of problems in exporting marine fishes to foreign countries.

**Effect on environment:** The fishermen are below poverty line. They do not have the capacity to construct a low-cost latrine. So they use the open field as their toilet. There is every possibility of vulnerable to skin diseases, bacterial infections, viral infections and protozoal infections due to open discharge of night soil. The main risks to human health arise from the breeding of disease vectors, primarily flies and rats. A common transmission route of bacillary dysentery, amoebic dysentery and diarrhoeal diseases in India is from human faeces by flies to food and water, and thence to humans. It has been estimated that in warm climates, faeces produced by the local

community produces as many as 70,000 flies per 0.03 m<sup>3</sup> in a week. Uncontrolled scattered night soil destroys beauty of countryside, and there is danger of water pollution when leachate from the human faeces enters surface or ground water resources. During summer season it also causes air pollution.

The research work carried out by scientists have shown that higher incidence of intestinal parasites have been observed in the coastal fishermen than in any other population as a whole. It has also been observed that the fishermen who are using open field as toilet were found to be astonishingly less immune against infectious diseases and fall ill with toxoplasmosis. Another disease to which the fishermen exposed is cutaneous larva migrans, a form of dermatitis characterised by linear lesions making the migratory paths of larval parasites. Due to this problem they fall sick and spend lot of money in hospitals to become cure from these diseases. Therefore, the Government and NGOs should supply low cost latrine pans on subsidy basis, which will bring the economic condition of the fishermen to higher level and the environmental pollution can be checked by some extent.

## CONCLUSION

The present study provides us a vast knowledge about the status of marine fishermen and aquaculture development in Ganjam district. The fishing sector plays a crucial role in development of economy of the country by way of providing proteinaceous food to people, providing employment opportunity to the larger section of the society and contributing to the foreign exchange.

Due to illiteracy and non-mechanisation of crafts and gears, the fishermen in this State are lying behind in fish production. Fishermen are also not having technical knowledge of operating of boats. Due to lack of implementation of pisciculture and capture by scientific methods and utilisation of modern equipment in the field, fish production is lagging behind as compared to other states.

Now Government and some NGOs have taken different steps to literate the fishermen. The State government has various schemes for development of marine fisheries. Brackish Water Fisheries Development Agency (BFDA) is an organisation to impart training in scientific way having modern technical inputs, guide the fishermen to improved techniques of capture fisheries. Fish Farmers Development Agency (FFDA) is also providing training to fishermen.

Proper steps should be taken to provide alternative income sources to fishermen during closed season of fishing so that their economic standard and way of living will be improved.

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