

Livelihood Activities among the Marine Fisherman Community in Odisha: Issues and Challenges

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Abstract: *This abstract summarizes the livelihood status and socio-economic baseline study undertaken in the Sandhakud area marine fisherman of Paradeep coastal area under Jagatsinghpur District. The study mainly focused the reasons behind their deprivation and poor conditions. Data was collected with the aid of both primary and secondary sources. The secondary information for study is collected from various journal, books, magazine and web-sources. The primary source includes data collection by applying anthropological tools and technique. Mainly the fishermen are depended on fishing as their only source. The real benefit enjoy by middle man caused by indebtedness. Changing in climate makes them seasonal unemployment. So they indebted mostly from relatives and merchant where the interest rate is high and this lead them poor. This is reflected in poor intake of food, poor health care, increased alcoholism, gambling and fight among men. The depleted marine resources forced the women to go for daily wage to maintain their family. The food security of the household get affected, alcoholism led to women beating and ill health of men. Single woman headed family is the most burden family in the village.*

Keywords: Fisherman, Livelihood, Deprivation, Unemployment and Nolia

1. Introduction

Struggle for existence is an innate need for each and every human being. People have to do various activities for survival. Right from the birth, a child slowly learns skills, acquires knowledge which helps in making a living as an adult. "Livelihood comprises the capacities, assets which include both material and social resources and activities necessary for acquiring means of living". The concept of livelihood emerged in the late 1980s as an alternative to the technocratic concept of 'employment' to better describe how people struggle to make a living (Scoones 2009). Among the 7 continents of the earth, Asia is the world's largest continent with 4.2 billion people or constituting 60 % of the world's population. Within Asia, India is second most populous country in the world with 1.21 billion people or 17.5% of the world's population. In India 65% of the people is still dependent on agriculture as their livelihood and employment source, which includes fisheries as one of its components. Fisheries also serve as the valuable and cheap source of protein of the country. Fisheries sector play a major role in nutrition, employment, foreign exchange earnings and the socio-economic development of India. Odisha is one of the state covers 480 kilometers coastline in six districts: Balasore (80 km), Bhadrak (50 km), and Kendrapara (68 km), Jagatsinghpur (67 km), Puri (155 km) and Ganjam (60 km), with Puri district covering more than a third of the coastline (DOF, 1998:61). According to the Fishery Survey in India (FSI), the fisheries potential of Odisha is 5, 13,667MT. About 4 percent population (16.96 lakh) depends upon fisheries for their livelihood. Of them, 8.90 lakh depend on inland fisheries and 8.06 lakhs on marine fisheries. The fisheries sub-sector contributed about 6 percent to the GSDP share of the Agriculture Sector for the year 2012-13. In the coastal area most of fishermen are migrants from neighboring state Andhra Pradesh and West Bengal. The

fishing villages are totally deprived of the basic infrastructure such as housing, educational institution, connectivity of road, street electrification, and good sanitation. Climate alterations have a multi-dimensional effect on human activities. When it suddenly undergoes into radical change, the productivity of fish is also affected. In this following, the impact of unpredictable climate change has emerged as a miserable condition of fisherman. Fisheries women play a significant role to improve economic status of their families. Majority percentage is participating in fishery activities where they exhibit fish handling preservation, processing and marketing, pricing, credit, borrowing, accounting, saving etc. In southern zone migrate fisherman community who comes from Andhra Pradesh, particularly in the Puri- Paradeep are called the Nolias, and they belong to two different castes- Jalaris and Wadabaljis engaged marine fishing activities where as Khandayats are the non-traditional fishing caste.

2. Rationale of the Study

The present study clearly states that the fishermen are in the domain of the economically and socially backward sector of the society. Education improvement and financial development are essential for this community. Study can take into consideration the development challenges that have evolved overtime, there is a serious need to assess the study the challenges faced by Odisha in general and particularly Paradeep of Jagatsinghpur in the context of livelihood issues and enhancement strategies for fisheries sub-sector.

3. Main Objectives of the Study

To study various socio- economic factors that affects the livelihood of fishermen community.

4. Methodology

Area of Study

The study of livelihood issues among the marine fisherman community was conducted in Sandhakud slum of Paradeep municipality in Jagatsinghpur district, Odisha, India. 160 household taken for the study, and the respondents were 680. It is situated on the coast of the Bay of Bengal. Sandhakud slum sub divided into two wards namely: 17, 18 & 19. Ward number 17 have consists of 3 *Padas*: Sandhakud, Radipada and Noliyasi where study being conducted.

Source of Data Collection: The present paper is both qualitative and descriptive in nature. The researcher used anthropological tools and technique to collect both primary and secondary sources of data. The primary data is based on observation method, interview method, sampling, census survey and audio-visual documentation. The secondary data was collected from existing literature like books, journals and e-sources.

5. Result and Discussion

For the purpose of analysis altogether 160 households were inquired and the results were compiled for discussion.

Table 1: Age and gender wise population distribution of the study area

Age code	0-5	6-10	11-15	16-20	21-25	26-30	31-35	36-40	41-45	46-50	51-55	56-60	60+	Total	
Sex	M	31	30	34	58	55	49	27	16	22	17	12	5	2	358
	F	41	38	31	41	46	32	15	27	18	22	8	2	1	322
Total		72	68	65	99	101	81	42	43	40	39	20	7	3	680
%		10.59	10.0	9.56	14.56	14.86	11.91	6.18	6.32	5.89	5.73	2.94	1.02	0.44	100

The above table shows age and gender wise population distribution. The age group 21-25 is 101(14.86%) highest in which male is 55 and female is 46, whereas the age group 60above people is 3(04%) lowest, in which male is 2 and female is 1.

male and 23.7% female. Graduate population consist lowest percentage of 1.8%, 1.6% male and 0.1% female.

Table 2: Distribution of marital status of the respondent

Marital Status	Sex		Total	Percentage
	Male	Female		
Married	158	158	316	46.47
Unmarried	196	138	334	49.12
Widow	0	26	26	3.82
Widower	4	0	4	0.59
Total	358	322	680	100

Different fishing activities of fisherman community

Results in table 2 revealed that, total population of studied area is 680(100%), in which married are 316 (46.47%), unmarried are 334 (49.12%), widows are 26 (3.82%) and widowers are 4(0.59%). It also shows that the unmarried status is comparatively high in which male is 196 and female is 138.

Division of labour among traditional fisherman (Nolia):

The division of labour in fishing among the Nolia is simple and gender plays a very important factor for them. Only male are allowed for fishing, repairing net, and worship all ritual activities related to fishing. Mostly women are engaged domestic work, post harvesting fish processes and wage labour. Women have good knowledge to maintain the fish; they purchase fish from the retailers at the auction and store it at their home. After processing it, they carry it to the nearby village or weekly market for selling. They preserve the fish in thermocol boxes or metal containers with ice. They purchase surplus unsold fish and make it dried to sell it later. Children do help to the parents in fishing activities. They allowed to sorting fishes; provide mutual help during dry fish making. After the age of 15 the fisherman provide training for related fishing activity like in deep sea fishing, net weaving, dry fish making and selling the fish in the local market.

Table 3: Distribution of Educational Status of the Respondent Gender Wise

Education	Sex				Total	Percentage
	Male		Female			
	Number	% of Males	Number	% of Females		
Non literate	169	24.9	161	23.7	330	48.5
Pre primary	28	4.1	36	5.3	64	9.4
Primary	84	12.4	74	10.9	158	23.2
Upper primary	24	3.5	22	3.2	46	6.8
High school	23	3.4	22	3.2	45	6.6
Higher secondary	19	2.8	6	0.9	25	3.7
Graduation	11	1.6	1	0.1	12	1.8
Total	358	52.6	322	47.4	680	100

Results in table 3 revealed that, gender wise educational status of study village. It consist highest percentage of non literate which is 48.5% in general and in gender specification 24.9%

Net and boat Repairing: Net making and repairing is the job of male members. Traditionally they used bamboo made *salinga*, brass made *salinga*, and knife for net setting and repairing. Now days they are using machine made equipment such as white and blue plastic, Nylon threads made net. It is available in the local market. The net is repaired in case of big damage the affected part is replaced with another piece of net and stitched together with needle or *salinga*. The traditional or the old boats were made up of sal wood but now Arjuna and Kirishi wood is used in its place. However, with further modernization, motorized boats are used in massive scale. The job of repairing the boat takes place during the banned period, between the months of March to June, when the fishermen cannot venture out to the sea. They employ the carpenters for repairing the damage of their boats during this period. The

boats are painted with new color which covers up the rust and readies the boat for the catching season again.

Selection of fisherman for a boat: A boat owner first select group of 5 to 10 fishermen, and hires the group for a year on a contract basis particularly in the month of March. If there is an accident, the boat owner cannot be held responsible. As per the contract 50,000 to 1 lakhs rupees is being paid in advance to each member and no fisherman can back out of the contract without its maturity. After the maturity of one year, the fisherman is allowed to shift to be in another boat as per his choice. Before switching under another boat owner, the fisherman is liable to pay back the rest of the amount paid to him as an advance.

Different activities during fishing of the fisherman: Boat using by fishermen are of three types: (i) traditional boats (ii) motorized boats and (iii) mechanized boats. Approximately 5-10 people go together for fishing mainly during early morning. Fishing is practiced for an average of 6 days in a week and nine months in a year. In my study area mostly Telugu Christian people do not go on Sundays for fishing whereas, on Thursday Hindu Telugu people do not go for fishing to do their ritual. During fishing each individual hold different responsibility. Most of the Nolias have both Dhingy or Teppas and small boats in which comparatively less people go rather than big boat for fishing. There is one driver, few are manage the net, some are catches the fish and store the fish in the ice box as per the work distribution.

Arrival of the boats after fishing on the shore: The fishermen have very sharp eyes. From a very long distance they can identify their boats. The show of their boats returning cheers them up. It occurs both in the daily fishing or two to three days fishing. In the daily fishing when the boat comes, all the fisherman gather there and pull the net by using slang language, because they think this will make them happy. When the caught fish arrive at the shores they collect all those with bamboo basket also known as *khepa* or plastic bucket also known as tray, they are washed in the sea water and carried from *Jethi* generally in hanging position with a hanger on the shoulder of two persons and stacked over a bamboo or polythene mat spread in the place allotted for sorting the fish to the ware house.

Marketing System: The brought fishes from sea are kept in godowns, sorting starts by crew members or women. There are two types of fishes in the market for exportable and local market. Prices are decided on auction by group of people and fishes are sold to whole seller, who pays higher price. Out of the price of the fish, 2% is paid to the auction group, 5% is paid as the house ware charge and the remaining amount is given to the fisherman or boat owner. Half of the earning of the fish is given to the boat owner and the rest of amount is divided among the group of fisherman. The main marketing system started for benefit the whole seller and retailer who sell it in high prices to the costumers. Generally income is low rather than labour among the group of fisherman but whole seller and retailer are the real benefiter rather than fisherman.

Table 4: Marine product availability in during year

Marine product	Availability
White prawn	Throughout the year
Tiger prawn	November to May
Flower prawn	October to February
Pink shrimp	July to October
Brown shrimp	November to May
King prawn	November to May
Red shrimp	September to November
Sand lobster	December to January
Sea crab	July to December
Koni fish	Throughout the year
Black pomfret	August to December
Silver pomfret	August to November
Chinese pomfret	August to December or March
Hilsa	August to December
Little tunny	October to May
Telia	July to September
Indian mackerel	August to November

Methods of drying fish: Fishing and drying it made by different group. They dry different fishes in different ways as per size of fish. Among small varieties of fishes are *patia*, *kokal*, *chanda*, *chauli*, *chingudi* etc. are dried on sea beach or in front of the house direct under the sunlight. Drying of the fishes is mainly done by women. But the drying method of big fishes is different like *elishi*, *borei*, *khuranta*, *khanga*, *koni* etc. In the beginning of drying of big fish, first they wash the fishes in normal water, and then they use different knife for cutting variety designs. They cut these fish through the lower portion of the backbone, put out its inner intestine part and daub salt and turmeric powder. Fishermen folks use several types of curing tubs and it varies depending on the practice in the village. Some fisher folks use rectangular constructed cement concrete structure for curing fish. Some fisher folks prefer cylindrical cement concrete tubs. Several people cure fish in bucket with salt water, old plastic drums for two days. Then dried in the heavy sunlight in ground yard over net mat or hanging in bamboo stick. Poor economic conditions of the fisher folk have led to the use of locally available tubs and containers to cure fish, which are most often unhygienic.

Indebtedness: The fisherman as a wage earner, for getting a loan has to enter into a contract with the boat owner that he should work only in the boat of the owner from whom he has received the loan till the loan is repaid. There is no interest in cash or kind, but only thing is that he has to work for that particular boat owner. Workers, who do not have any fishing equipment, in their desperate need of money, either to tide over a lean season or to meet some unforeseen domestic expenditure, borrow by pledging their man power to some boat owners. Maximum amount is spent for construction or repairing of the house buildings followed by household expenditure during lean season and social functions such as marriage, birth, death etc. The debt is utilized for non productive purposes and the rate of interest is very high, for most families it is particularly impossible to clear off the debts in the near future. Addiction to alcohol is a social evil which ruins the economic position of many of the fishermen families. Some of the debts are inherited and the ancestral debt is

honored by the fishermen community. The boat owner also debt money from the godown owner or merchant for purpose of repairing boat, buying fishing material and pay advanced to crew member but low production of fishing is a biggest challenge to repay the loan.

Consequences of Climate change on the fishermen livelihood: Fishing is the most important livelihood option for the inhabitants of the coastal area since times immemorial. The impact of climate change on human life has been continuing since the origin of human beings on this planet. However the dimension of the climate change on human life varies over time. At present it is one of the most significant challenges in global economic development as well as village livelihood development. Fishing is looked upon by the anthropologists as a kind of hunting activity and many fishermen believes that fishing is a fortune and they could not predict their income per day. Because they could not guess sudden change of water current due to the climate change and how much fishes can be caught on a day. Many fishermen usually come to the seashore at the dawn time. When the sea seems very rough, they cannot catch fish in the sea in order to so, that day they sits with no work involve in playing cards. In this regards, their occupation is also considered as an uncertainty. Uncertainty of fishing affects life of the family members, particularly those who are the daily labourers involved in fishing and who goes to work with other boat

members easily gets trapped into multidimensional poverty. In particular stress, depression, anxiety, unnecessary annoyance and tension are generally correlated with occupational uncertainty, income disorganization and losing their property. Thus, unpredictable climate change contributes to new psycho-social problems among the fishermen community.

But now-a-days, people are aware of the natural hazard beforehand which is possible due to the advancement of technology. Accordingly, the people take precautionary measures as per their convenience. Some people take resort to the nearby cyclone shelters and some stay at home. Later on they also go to the shelter place looking at the situation. During natural hazard, people loss their valuable fishing implements like boats, nets etc. During the 1999 cyclone, people reported to an interview that they lost their everything and huge number of people died. People have faced so many cyclones such as Failine of 2012, Hudhud in 2013, Titili in 2018 and Fani in 2019 whose affects were very severe. During these cyclones people who have thatch houses they take resort to the shelter place. As result their lives were saved. The damages of their houses and fishing implements could be repaired with government aids later on. But the cyclone affects the livelihood pattern of poor fisherman community adversely, economically and socially also. It becomes difficult for the poor to come out of the vicious circle of poverty.

Table 5: Distribution of Primary Occupation of the Respondent Gender Wise

Primary Occupation	Sex				Total	Percentage
	Male	%	Female	%		
Fishing	195	100	0	0	195	28.68
Wage labor	25	44.64	31	55.35	56	8.24
domestic work	0	0	151	100	151	22.21
Study	110	49.77	111	50.22	221	32.50
net weaver	15	100	0	0	15	2.21
Dry fish making	3	23.07	10	76.92	13	1.91
fish sorter	1	7.69	12	92.30	13	1.91
fish seller	9	56.25	7	43.75	16	2.35
Total	358	52.64	322	47.35	680	100

The table no.5 indicates that the primary occupational status of population gender wise. Among them students number is highest percentage 32.5% which is very closest to both male and female, 49.7% and 50.2%. Very less number of population doing dry fish making and sorting of fish contain equal percentage. But male female distribution varies from each other which 23%, 77% and 7.69%, 92.30% respectively in drying fish and sorting fish. Cent percent female’s primary occupation is domestic work whereas same among the male in fishing and net weaving.

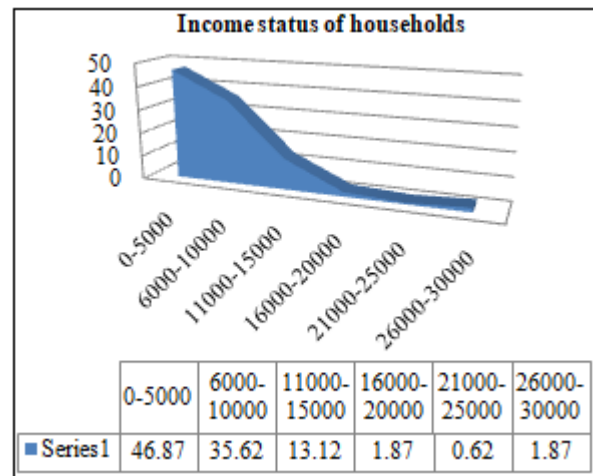


Figure 1: Income status of household

The above figure shows the income status of household 0-5000 are 75(46.87%), 6000-10000 are 57(35.62%), 11000-15000 are 21(13.12%), 16000-20000 are 3(1.87%), 21000-25000 is 1(0.62%), and 26000-30000 are 3 (1.87%). It’s clearly shows very less number of household have a well package of income of 26000-30000, maximum household’s income package lays between 5000 which 75(46.87%).

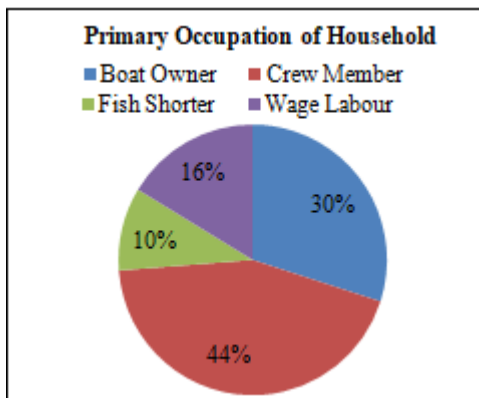


Figure 2: Income status of household

The above figure shows the primary family occupation of the household. In my census explained 48(30%) household has small boat, 70(43.75%) household have engaged in crewmember activities, 16(10%) household has fish shorter, 26(16.25%) household has wage laboring activities. It's clearly shows that many populations have engaged as crewmember.

Conclusion

The study analyses the livelihoods of marine fishing communities in the Sandhakud slum of Paradeep in Jagatsinghpur district of Odisha, mainly the fishermen are depended on fishing as only source. The artisan fishermen works hard, invest money for fish gears, and they product more but get less benefit because of indebtedness. Non literate and social bonding is the cause of increasing their family size which leads them poorer. The source of the credit is mainly relatives and merchant with high interest rate. The boat owner is always indebted from the trader and often he is forced to sell his catch at the rate demanded by the trader, contrarily fisherman indebted from boat owner. Information gap on price and market has reduced the bargaining power of the fisherman, so they depend on the middleman (auction group people) to fix the price of the catch. The fishers lacked cold storage, processing and packaging facilities as well as transportation to reach other markets. The merchants and middlemen manipulate and deprive the fisher people to get benefit of loans and subsidies provided by the government to the traditional fisher people. So the real hard worker cannot enjoy the fruit of their work and the middle man (whole seller and retailer) becomes the real beneficiary. Fishing activities are affected by seasonal lows. This is reflected in poor intake of food, poor health care, increased alcoholism, gambling and fights among men, dependence on credit at exorbitant rates of interest. The depleted marine resources forced the marine fisher women to go for daily wage to maintain their family, as they do not have other options of living and maintaining their families. The food security of the households gets affected, alcoholism led to wife beating and ill health among men. Single-woman-headed families are among the most burdened families in fishing villages. This is particularly so during lean periods. In households headed by single women, women's earnings through manual wage labour to meet the family's

needs regularly or seasonally. A family's economic health can be damaged by the chronic ill health of the main wage earner, disproportionately high expenditures on health care for the family, and poor access to affordable and effective health care. Marginalization occurs among people when traditional livelihoods are threatened by competition from more efficient systems of production and trade. Another alluring thing is that the policy of Govt., which says the non-fisher people who have accepted fishing as occupation, will get benefit from development schemes meant for traditional fisher people. The number of boats lying idle on the beach is also an indicator of seasonal unemployment. This has deprived the traditional fishers from their rights over the natural resources and they are agitating against the faulty policy of government. The fishermen should be provided with major facilities like cold storage, motorized boat and education programs too should be implemented so that it would help them in understanding the modern technologies of fishing and will help them to develop fishing.

References

- [1] Devinongmaithem, B., & Ngangbam, A. K. (2014). *Socioeconomic conditions and cultural profile of the fishers in India- a review*. 7(9), 42–48.
- [2] Fisheries, F. A. O., & Paper, T. (n.d.). *Trends in poverty and livelihoods in coastal fishing communities of Orissa State, India*.
- [3] Islam, M., & Sallu, S. (2014). *Vulnerability of fishery-based livelihoods to the impacts of climate variability and change: insights from coastal Bangladesh*. 281–294. <https://doi.org/10.1007/s10113-013-0487-6>
- [4] Kumar, D., Mehta, R., Yadav, R., Kumar, S., & Kumar, M. (2018). *Studies on fisheries status and socio-economic conditions of fisher community in Dholi region* ., 6(3), 76–80.
- [5] Naskar, P. (2018). *A Study Of Changing Livelihoods Of Odisha 's Coastal Fishing Communities: Reasons And Effects*. 7(06), 14–17.
- [6] Panda, G. (2018). *Socio-Economic Inclusion of Fishermen*. 7(6), 2016–2019. <https://doi.org/10.21275/ART20183299>
- [7] Prabhavathi, K., & Krishna, P. V. (2017). *Socio-economic conditions of fishermen community in some selected areas of Nizampatnam area, Guntur district, Andhra Pradesh, India*. 2(5), 212–215.
- [8] Publications, S., Scholar, M. P., & Studies, D. (2016). *Socio-Economic Conditions of Fisherman of Bali Nolia Sahi, Puri, Orissa Monalisha Chakraborty*. 6959(283), 283–290.
- [9] Ray, S. (2015). *Livelihood assessment of the fishermen community in the south west region of Journal of Experimental Biology and Agricultural Sciences* LIVELIHOOD ASSESSMENT OF THE FISHERMEN COMMUNITY IN THE SOUTH WEST REGION OF BANGLADESH. 3(August). [https://doi.org/10.18006/2015.3\(4\).353.361](https://doi.org/10.18006/2015.3(4).353.361)
- [10] Scoones, I. (2009). *Livelihoods perspectives and rural development Livelihoods perspectives and rural*

development. 6150(May).

<https://doi.org/10.1080/03066150902820503>

[11] Srikanthan, S. (2013). *Impact of Climate Change on the Fishermen ' s Livelihood Development : a case study of village in Coromandel Coast*. 12(6), 49–54.

[12] By, S. (n.d.). *STUDY ON COASTAL LIVELIHOOD SECURITY OF MARINE FISHING COMMUNITIES IN GANJAM DISTRICT OF ODISHA : ISSUES AND CHALLENGES*.

[13] https://en.m.wikipedia.org/wiki/Jagatsinghpur_district.

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