

SOCIO - ECONOMIC STATUS OF INLAND FISHING COMMUNITY IN MAHABUBNAGAR DISTRICT OF TELANGANA STATE

Vangapally Sreenivas

Department of Sociology, Osmania University, Hyderabad, Telangana.

Sunanda Pande PhD

Department of Sociology, Osmania University, Hyderabad, Telangana.

ABSTRACT

Telangana State's fishing communities struggle to maintain their way of life in the face of several obstacles, such as diminishing availability and access to fish resources, a lack of fishing and harvesting methods, and quickly changing socioeconomic situations. In an attempt to close this knowledge gap, the study examines socioeconomic status, community cultural aspects, family dynamics, family size and composition, education and are just a few of the issues that the study highlights. In this regards, a total, 320 samples households, representing 8 villages spread throughout 4 Mandals (Mahabubnagar Rural, Moosapet, and Boothpur, Jadcherla) from Mahabubnagar district in Telangana. The study concluded that, the majority of respondents are owners, while the remaining few live in rental or temporary housing. All fisherman households are below the below poverty level (BPL). Surprisingly, only overwhelming participants disclosed that there are no WASH related and medical issues in the study villages. The study found that, in the fishing communities, traditional marriage systems are still in existence and have not changed much. The study finds that, fishing is a relatively small percentage of the workforce (below 3 percent) for a variety of reasons such as- poor rainfall, seasonal job, poor salary, and fewer workdays than other occupations. For these reasons, the primary source of income for the fishermen is agriculture.

Keywords: Fishermen, Inland Fishing, Occupation, Socio-Economic.

1. Introduction

Small-scale traditional inland fisheries have a significant role in livelihoods and food security. Additionally, their ecosystem services offer several development benefits and directly support the Sustainable Development Goals (Simon Funge-Smith, 2018). More than 15 million people in India's rural and urban areas make their living entirely or in part from the fishing industry. The handbook of Fisheries (2020) estimates that 14 million people work in fishing and related industries in India. In 2017–18, the inland sector accounted for about 70% of the overall fish production, which came to about 12.60 million metric tons. India is rated second in the world after China and produces a significant amount of fish through aquaculture. With a global catch of 11.47 million tons, inland fisheries account for 12.2% of all catch fisheries produced worldwide. It is expected to be worth USD 26 billion economically. India is ranked second (1.462 MT) in terms of total inland capture fish production, behind China and above Bangladesh, making it one of the seven major fish producers in the world (FAO, 2018).

Overall, fishing sector provides

inexpensive animal protein and encourages the expansion of several related sectors, this sector has been acknowledged as a significant source of money and jobs. Concerned to Telangana, fisheries is one of the fast-growing sectors generating income and employment. There are two types of fishing sites in the location. They are fishing, both Indore and offshore. Aquaculture, or fish farming, is used in both freshwater and saltwater environments. Marine fishing is dependent on the sea, its continuity, and the use of powered, mechanized fishing vessels.

Status of Inland Fishing and its Community

India was historically home to abundant local fisheries with remarkable biodiversity, and it is well-known for its inland fishing resources. An inland fishery is any operation that includes removing fish and other aquatic life from "inland waters". The nation's inland fishing resources include backwaters, floodplain lakes or oxbow lakes, estuaries, brackish water lakes, reservoirs, tanks, and ponds. Inland water bodies are extensively utilized for both culture and capture fisheries, whilst marine water bodies are primarily utilized for both purposes.

The Ganges, Brahmaputra, Narmada, Tapti, Godavari, Krishna, and Kavery are the nation's principal river basins. Four union territories and nine coastal states in India are home to the fishing industry. Together, these states— which include West Bengal, Odisha, Andhra Pradesh, Tamil Nadu, Kerala, Karnataka, Goa, Maharashtra, and Gujarat—cover an area of about 7516 km. Over 14 million fisherman fished in India in 2003; by 2022, that number had increased to 28 million, according to the Livestock Census. A total 28 million, 2.78 million fishermen are actively employed full-time in the fishing sector.

Telangana has the third largest inland water resource base in India for fisheries with 77 large, medium and minor reservoirs and about 24,189 tanks with 5.7 lakh ha water

spread area suitable for fisheries. A rich human resource pool of 2.8 million populations comprising of fishermen communities who are organized into about 4000 fishermen societies with about 3 lakh members is spread over the entire state (Fisheries Department, Telangana).The communities of fishermen Betsa, Mudhiraj, and Muttaraasi in the state of Telangana are primarily located in former districts like Mahabubnagar, Nalgonda, Rangareddy, and Medak. The Agnikulakshatriya and Vadabaliya communities are mostly located in the districts of Nizambad and Adilabad, while the Gangavar, Gangaputra, Goondla, and Vanyakulakshatriya communities are found in the districts of Warangal and Khammam.

Table 1. Details of Fishery Population at National and State Level

State/UT's	Number of Districts	Fishermen Population	Total Population	Fishermen Population per District
Telangana	33	862221	39362732	26128
All India	735	28063538	1364892691	956669

Source: Department of Fisheries, States Government / UTs Administration 2021.

Importance of the Study

Telangana State's fishing communities face several challenges, such as diminishing availability and access to fish resources, a lack of fishing and harvesting methods, and quickly changing macroeconomic circumstances that often involve undermining the customary fishery mechanisms that protect and sustain their livelihoods. Few studies examined the situation of traditional fisherman in the poorest and most drought- prone areas; most concentrated on urban and some rural fishermen. In light of this, the study looks into social mobility in relation to changes in livelihood and the factors influencing them among traditional fishermen in the Mahabubnagar area in an effort to fill the knowledge gap.

2. Review of Literature

According to Rohit Khatua (2022), insufficient education and low-income backgrounds are common among fishers. A large number of families are compelled to take out loans in order to pay for their basic needs because fishing produces such low profits. Mukesh P. Bhendarkar et al. (2017) said the

fishing community house was Katcha, they used pit toilets, and the most of them were illiterate. As per Pintu Paul et al (2016), inland fishing is important for emerging countries' socioeconomic development and small-scale fishing contributes to the economic viability of rural communities. Sarah M. Martin et al. (2013) said that, there is a connection between poverty, diversification of income sources. According to a 2011 survey by Basava Kumar, K. V. et al., just 13.8 percent of people were found to be literate, but 56.6 percent of people in the population made a living. Males predominate in all the categories, suggesting that fishing and related activities are exclusively done by men.

Objectives

To understanding the state of fishing at both the national and state levels.

To know the socioeconomic status of the fishermen in this study area.

To analyse the issues facing the fishing community in this study area.

Location of the Study Area

The Mahabubnagar district is located in the southern part of Telangana State. Basic infrastructure and marketing tools, many well-known temples existed in the Mahabubnagar

district. Numerous medium-sized to important tourist and religious sites exist in and around Mahabubnagar. In Mahabubnagar district total of 464 registered fishery tanks are there and actual membership holders are 11411 members for the entire district. Based on the fishermen's cooperative activities, a total water spread area in acres for perennial tanks is water spread area in acres 5679 and 27421 acres of seasonal tanks water spread is reported for the year 2023.

from a perpetual tank and the other from a seasonal tank the two sample villages were chosen. Selected samples four mandals based on rural and urban criteria, for rural areas - Mahabubnagar Rural, Moosapet and for urban Boothpur, Jadcherla representing. From this, a total 3193 number of members actively participation in fishing activity. There are 320 samples in all, which correspond to 8 villages spread across 4 Mandals (see table 1).

3. Methodology and Used Tools

Based on the features of the tanks one

Table 2. Details of Sample Size and used Tools for the Study

S.No	Name of the Mandal	Name of the Village	Type of Tanks	Ville-wise Society Members	FCSample of HH	No. of FGD's
1	Mahabubnagar Rural	Kodur	Perennial	127	40	1
		Gajulapeta	Seasonal	180	40	1
2	Boothpur	Tatikonda	Perennial	107	40	1
		Amistapur	Seasonal	119	40	1
3	Moosapet	Vemula	Perennial	114	40	1
		Janampet	Seasonal	132	40	1
4	Jadcherla	Nasurllabad	Perennial	102	40	1
		Aloor	Seasonal	75	40	1
Total				956	320	8

The following instruments are utilized to gather primary data: case studies, focus group discussions, and structured questionnaires. The data collected based on the basic random sample procedure during the October to November, 2023. The secondary data was gathered from academic publications, and unpublished information found on the internet, at research institutions, etc.

Study Outcomes

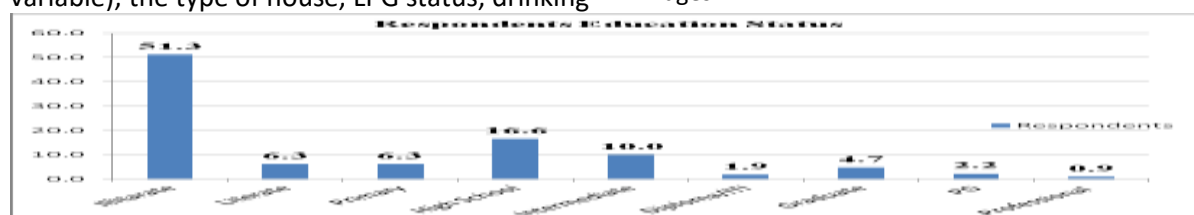
There are a few additional communities involved in addition to this group, but only the Mudiraj/Telugu community (BC-D) is carrying out this activity in the research villages. Many factors are analyzed in the study, including the age, education, marital status, number of children, and nature of the family (a sociological variable); the type of house, LPG status, drinking

water, toilets, and household amenities; the income, expenses, debt, savings, investments, and health issues (an economic variable); and the religion, festivals, marriages, and dowry (cultural related) systems.

Sociological Variable

According to the primary data, the age group of respondents under 25 years old represents the lowest percentage (2.8), while the age group of respondents over 65 represents the biggest proportion (7.5 percent). The respondents who are between the ages of 36 and 45 make up the highest number (28.1%), followed by those who are between the ages of 46 and 55 (21.5%), 56 and 65 (20.6%), and 26 and 35 (19.0%).

Figure 1: Details of Levels of Education in the study villages



Source: Primary data

Levels of Education

According to the study's statistics, 51.3 percent of the respondents are illiterate, remaining are literate and the children from the fishing community attend schools where English is the primary language. Of the three 320 responders, 16 percent had finished high school, 12 percent had dropped out of primary school, ten percent had finished their intermediate education, and two percent had finished their diploma or ITI. On the other hand, only 7 percent of participants have earned a degree or higher. Among them, five percent hold degrees and two percent are postgraduate students. It's noteworthy that one percent finished their professional degrees. Most of the fishermen here are old and ignorant.

Based on primary data, out of 320 respondents, around 60% of parents or respondents stated that ZP High Schools are the best option for their children, while 27% said they preferred private schools. Just 5.4% of respondents said they were willing to send their kids to social welfare schools, BC welfare residential schools, or Gurukulams for their education, compared to 8.4% who said they

would choose colleges and universities. Interestingly, the primary data shows that 35.3 percent of parents choose Telugu-medium schools and 64.7 percent of parents prefer English-medium schools, which is sufficient for their children.

Family Nature and Size

According to the study's data, 92.8 percent of the fishermen's families live individually, while 7.2 percent of the community's families live together. Additionally, it is evident from the statistics that 308 respondents (96.2%) are married, while the remaining 12 respondents (3.7%) are single. Based on the available data, 92.8 percent of the fishermen who responded to the survey are living with their nuclear family, while 7.2 percent are residing with a joint family. Because the fishing sector wages so little, most people in the fishing community live in nuclear families. All respondents of Janampet are married and having nuclear families.

Table 3: Details of type of Family and Marital Status in the Study Villages

Name of Village	Total HH	Nature of the Family		Marital Status	
		Nuclear family	Joint family	Married	Un-Married
Kodur	40	75.0	25.0	95.0	5.0
Gajulapeta	40	90.0	10.0	92.5	7.5
Tatikonda	40	97.5	2.5	97.5	2.5
Amistapur	40	90.0	10.0	95.0	5.0
Vemula	40	97.5	2.5	97.5	2.5
Janampeta	40	100.0	0.0	100.0	0.0
Nasurllabad	40	95.0	5.0	97.5	2.5
Aoolur	40	97.5	2.5	95.0	5.0
Total	320	92.8	7.2	96.2	3.7

Source: Primary data

The family sizes of the respondents are explained by the main data. The largest majority of respondents (62 percent) have families with four to six members, followed by families with one to three members (28 percent) and families with seven to nine members (9 percent). At least 9 percent of respondents in the sample villages have a family size of ten or more individuals.

Basic Household Amenities

According to the data, only 63% of community families live in pucca houses; the other 10 percent live in Kaccha houses, and the

other 27 percent live in semi-pucca dwellings. 97 percent of fisherman live in immaculate homes that they own, compared to two percent who rent and three percent who are temporarily housed. 90 percent of the households are satisfied with the layout and other aspects of their residence. Households in Aloor village have the highest percentage of pucca houses out of all eight villages, while households in Gajulapeta village's fishing community have the lowest percentage of pucca houses. The study found that all of the studied villages—aside from Gajulapeta village—had 100 percent

coverage with LPG connections. Among the 320 sample homes, 314 (98.1%) had BPL cards, 0.3 percent had Anthyodaya cards, and the remaining 1.6 percent were still awaiting their ration card. Additionally, it displays the effect on

the health cards—which are linked to the BPL cards—as reported by the household members.

Table 4: Details of House Type and Ownership in Sample Villages

Name of the villages	Total HH	Type of House			Type of Ownership		
		Pacca	Semi Pacca	Kaccha	Own	Rented	Temporary
Kodur	40	55.0	37.5	7.5	95.0	2.5	2.5
Gajulapeta	40	40.0	42.5	17.5	100.0	0.0	0.0
Tatikonda	40	52.5	42.5	5.0	97.5	2.5	0.0
Amistapur	40	60.0	35.0	5.0	100.0	0.0	0.0
Vemula	40	75.0	12.5	12.5	92.5	7.5	0.0
Janampeta	40	77.5	7.5	15.0	95.0	5.0	0.0
Nasurllabad	40	65.0	25.0	10.0	100.0	0.0	0.0
Aloor	40	80.0	15.0	5.0	100.0	0.0	0.0
Total	320	63.1	27.2	9.7	97.5	2.2	2.5

Source: Primary data

WASH Coverage

The primary data shows that all communities have better coverage of toilets and drinking water. 83.1 percent homes have a drinking water connection on their premises, while 16.9 percent do not have a water connection and must rely on public taps and open wells or tube wells for their drinking water. It is particularly low in the village of Amistapur, where it only covers 50 percent of the

dwellings. Study villages with low rates of access to drinking water include Janampeta (37 percent) and Nasurllabad (25 percent). Among the studied villages, only Vemula village has access to 100% of the drinking water, and five have 100 percent of their households equipped with toilets, while the remaining three, namely Aloor, Gajulapeta, and Vemula, have more than 90 percent facilities.

Table 5: Details of Household Amenities and Type of Ration Cards in Sample Villages

Name of the villages	Total HH	Household Amenities			Type of Ration Card	
		Drinking Water	Toilets	LPG	BPL	Anthyodaya
Kodur	40	95.0	100.0	100.0	100.0	0.0
Gajulapeta	40	97.5	90.0	97.5	100.0	0.0
Tatikonda	40	95.0	100.0	100.0	100.0	0.0
Amistapur	40	50.0	100.0	100.0	97.5	0.0
Vemula	40	100.0	90.0	100.0	100.0	0.0
Janampeta	40	62.5	100.0	100.0	97.5	0.0
Nasurllabad	40	75.0	100.0	100.0	97.5	0.0
Aloor	40	90.0	97.5	100.0	92.5	2.5
Total	320	83.1	97.2	99.7	98.1	2.5

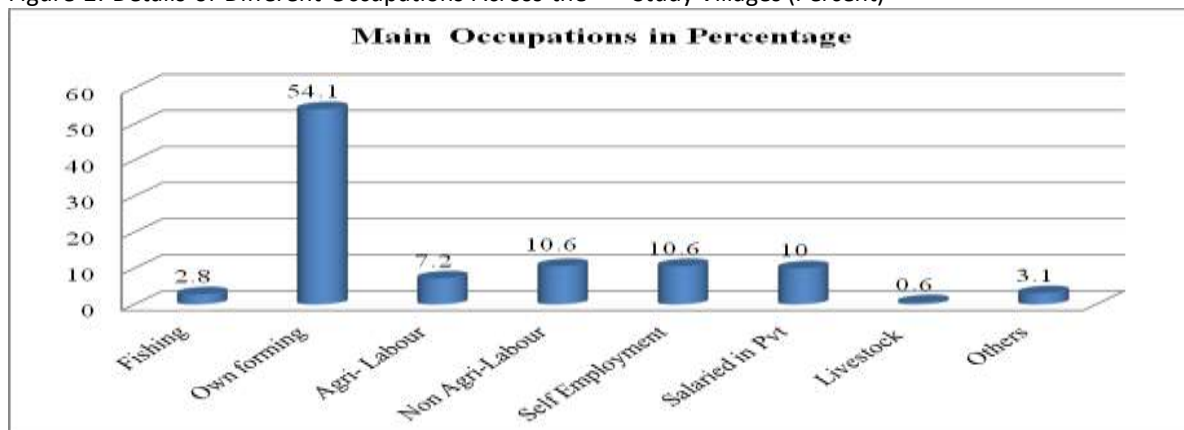
Source: Primary data

Occupations and Income Sources

According to the primary data, 54.1 percent of the respondents from the fishing community work in the agriculture sector, with only 7.2 percent of them doing agricultural labor. A quarter of the respondents were involved in other activities, such as self-employment (10.6%) and labor activity unrelated to agriculture (10.6%). The remaining

5.5% were employed in other seasonal jobs, and fishing represented a very small percentage (less than 3%). A total of 76.2 percent have their own land throughout all sample villages, while 23.7% do not. In Vemula village, the top (36- 90 percent), and they all engage in independent agricultural work. Landless households are most prevalent in the village of Aloor (65%), while they are least prevalent in the village of Vemula (10%).

Figure 2: Details of Different Occupations Across the Study Villages (Percent)



Source: Primary data

Annual Income Sources

The three main factors of income in a family are: 1) the number of working persons in the household; 2) the kind of the activity; and 3) the duration of the activity. According to the study, the average monthly income per household is 500 rupees in Aloor village and

17,187 rupees in Tatikonda village. The overall annual fishing revenue, which accounts for the eight villages and 320 sample households, is 11,41,300 rupees. Every sample village had an average monthly income of less than 3,000 rupees, with the exception of Tatikonda village. Table 6: Households Average Fishing Annual Income in the Sample Villages

Village	Total HH	Average Income	Total Annual Income
Kodur	40	3812	152500
Gajulapeta	40	625	25000
Tatikonda	40	17187	687500
Amistapur	40	1250	50000
Vemula	40	1422	56900
Janampeta	40	2072	82900
Nasurllabad	40	1662	66500
Aloor	40	500	20000
Total	320	3566	1141300

Source: Primary data

Of the eight study villages, only three—Gajulapeta, Tatikonda, and Janampeta—respondents reported making less than 3 lakh rupees annually; however, these respondents also indicated that their income exceeded that of agriculture in non-agricultural sectors. Out of all the research villages, Aloor village respondents had the highest percentage (13%) for the three to six lakh group. From non-agricultural sectors, sixty percent of respondents and above earn more than one lakh rupees annually; roughly thirty percent of respondents earn between one and three lakh rupees and just three percent make between three and six lakh.

Household Savings and Expenditure

The fishing community data on monthly

family expenditures reveals that only 2.8% of families lead very low-income lifestyles, spending less than 3000 rupees a month. The study said that, monthly expenses of the finishing community family range from Rs-3000 to 9000/-. The households with the largest yearly expenditure (41.3 percent, or 132 respondents) reported spending between Rs. 25000 and Rs. 50000, while another 25.9 percent, or 83 families, reported spending less than Rs. 25000 annually. The data indicates that 15.3 percent of respondents spend between 50000 and 75000/-per year, and 29 respondents (9.1%) spend more than 1 lakh. Out of 320 respondents, the data indicates that only 86 came from official institutions and 38 from informal ones. There is a single respondent in Amistapur and a greater number in Kodur

village when it comes to formal savings. Regarding informal savings, the majority of respondents are from Aloor village, while there is only one respondent from Nasurllabad.

Assets, Indebtedness and Tools

The 240 of the 320 respondents said they had taken out loans. SHGs and regional banks contributed 32.9 percent and 31.7 percent, respectively, to the total number of borrowers among all sources. An additional 21% came from commercial banks, with the remaining share coming from PACS/Co-

Operative banks (8.8%) and other sources (5.4%). Only 123 electrical pump sets are being used for irrigation out of 244 irrigated formers. A total of 22 responses are used by the main agricultural machinery, which includes DCM vans (5), tractors (12), and power tillers (5). Thirty-two (10%) of the 320 respondents use dragnets, while ninety-three (29.0%) use cast nets throughout the eight research communities.

Table 7: Respondents Benefited Welfare Schemes in the study Villages (Percent)

Villages	Benefited welfare schemes		Awareness on welfare schemes	
	Boat & Nets	Skill1 development	Boat & Nets	Skill1 development
Kodur	11.9	12.6	35	5
Gajulapeta	11.3	11.6	33	7
Tatikonda	10.6	13	31	9
Amistapur	13.7	13.3	40	0
Vemula	11.9	11.6	35	5
Janampet	13.3	13	39	1
Nasurllabad	13.7	12	40	0
Aoolur	13.7	13	40	0
Total	100	100	293	27

Source: Primary data

Details of Cultural Characteristics

The study fishermen's community has been found to contain a sizable Hindu population and a comparatively small amount of people from other religions. The fishermen's community regularly visits the Lord Shiva and Peddamma temples in Durgamma, Maramma. According to primary data, 34.4 percent of respondents go to religious worship regularly, 54.1 percent go occasionally, 2.8 percent go infrequently, and 8.8 percent haven't gone in a year because they are too busy at work. The

data also reveals that, 44.4 percent of the respondents go and celebrate the community festival weekly once only and rest celebrate on the monthly basis (8.1 percent), and several times in a year (43.8 percent). The study also found that, majorities (85.3 percent) of individuals support to the celebrations and ready to pay to the community festivals and rest of the 14.7 percent of the respondents are not interested to involve in the community festival celebrations.

Table 8: Details of Visit for Religious Worship in the Study Villages

Response	Percent	Response	Percent
Regularly	34.4	Weekly once	44.4
Occasionally	54.1	Monthly Once	8.1
Rarely	2.8	May times in a Month	2.8
Never	8.8	Several times in a Year	43.8
		Never	0.9
Total	100.0 (320)	Total	100.0 (320)

Source: Primary data

Marriage Practises

The study discovered Marriages in the fishing community are usually arranged. 92–97 percent of respondents were married, with the

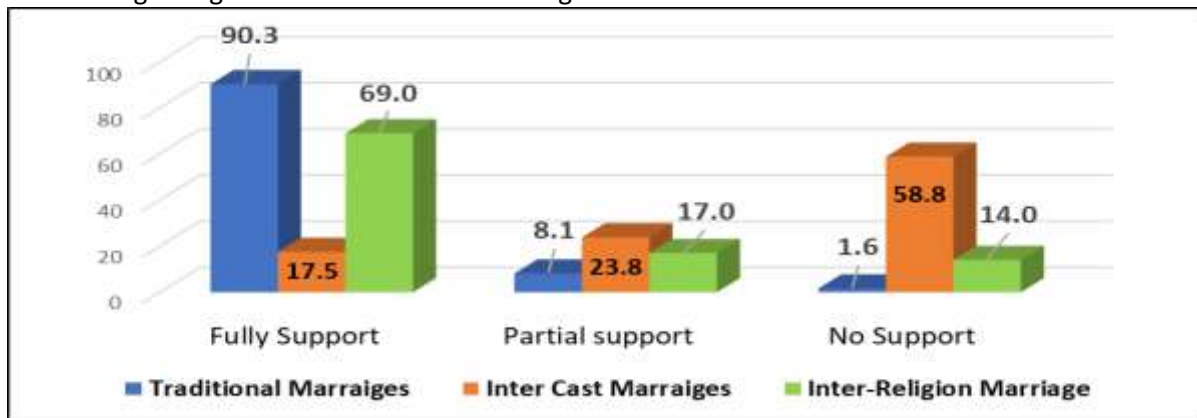
exception of Gajulapet village. 96 percent of respondents were married overall across all study villages. It also plays a major role in determining one's eligibility for participation in the regional fishing societies. In the study villages, 3.7 (12) percent of the respondents are

single, while 96.2 (308) percent of the respondents are married. In this study, 98.8 percent respondents are reported arranged marriages and very less proportion reported in the love marriages (0.3 percent) and rest of the 0.9 percent got to the inter-castes or inter-religion marriages. Just 1.6 percent of respondents opposed the traditional marriage system, whilst 90.3 percent of respondents supported it and 8.1 percent of community members accepted partial support. In the fishing community, 54.4 percent supported marriages involving non-blood relatives, while 45.6 percent preferred unions involving blood relatives.

system, the vast majority of fisherman (58.8%) oppose inter caste marriages, with only 17.5% totally supporting them and the remaining 23.8% only moderately supporting them. Merely 17% of participants in those specific communities indicate complete approval, 14% indicate moderate acceptance, and 69% deny the validity of marriages between different faith groups. Dowry is one of the social problems and cultural ills in our civilization. The main statistics show that while 28% of respondents support the dowry system, an interesting majority of respondents (72%) do not.

Figure 3: Opinion on the Types of Marriage Systems in the Study Villages

Regarding the inter-caste marriage



Source: Primary data

Health Status

According to the primary data, of the 320 respondents, only 12% acknowledged any health conditions, and the remaining 88% of the members are in good health and continue to reside in the research areas. One-hundredth of the participants experience authorities (17.5 percent); diabetes (17.5%), appendicitis (10%), heart issues (10.0%), renal issues (7.5%), nerve issues (7.5%), hypertension (5%) and cancer (5%) among other conditions. Twenty percent of the responders are unwell with additional conditions.

1. Summary and Conclusion

Numerous issues are brought to light by the study, including socioeconomic status, community cultural aspects, family dynamics, size and composition of the family, education and career mobility between and within generations, technology use, the cooperative

role that fishermen play in society, and political participation. The study finds out that, the majority of respondents, own their homes, with the remaining 3% residing in temporary housing or rented homes. Additionally, the data shows that all families of fishermen are below the poverty line (BPL) households solely. Interestingly, only 12 percent reported their illness condition which means majority respondents are still healthy conditions in study areas. The study concluded that, the traditional marriage systems within the fishing communities in the sample locations are still in take place with little to no changes. The majority of people support and encourage the system of arranged marriages, and they might not permit marriages between members of different castes or religions.

Since the Karvina reservoir backwater has engulfed the village's whole agricultural area, the study areas respondents have shifted from own agriculture to wage labor activities in both agriculture and non-agriculture labor

activities. The study's findings showed that, for a variety of reasons, the percentage of people who work as fishers is extremely low— below 3 percent. When compared to other occupations, these include short employment days, poor income, seasonal occupation, low rainfall, and low agricultural lands. These factors have made agriculture the primary source of income for the residents of the fishing village.

The study concluding that, education and skill-based vocational training are essential for boosting rural residents' self- confidence and serving as a beneficial resource during the off-season fishing industry. All significant sources of income other than agriculture and fishing are categorized in this report as non-agricultural

sectors. Both skilled and semi-skilled laborers work as supervisors and Mestri in addition to in local industries and the construction sector. Women participated in the village's fish harvesting operation by selling and grading fish in addition to answering the survey. According to the study's findings, most participants are eager to save money at nationalized banks as well as informal private chits. According to the research, a significant portion of respondents rely on SHGs or regional banks. The community's reliance on wage labor for both agricultural and non-agricultural purposes means that many fishermen and respondents have little interest in savings or investments. The family doesn't have enough money to cover their basic needs.

References

- Basavakumar, K.V., Devendrappa, S., & Srenivas, S.T. (2012). A study on profile of fishing community of a village in Karnataka. *Karnataka Journal of Agricultural Sciences*, 24.
- Bhendarkar, Mukesh & Sarang, N & Bhosale, Mangesh & Rathod, Rajiv & Verma, Laxmi & Vardia, H.K.. (2017). A Study on Profile of Socio-Economic Condition of Fishermen in Selected Village in Kabirdham District, Chhattisgarh State, India. *International Journal of Educational Science and Research*. 7. 49-56. 10.24247/ijesrdec20176.
- FAO. (2018). *World Food and Agriculture – Statistical Pocketbook 2018*. Rome. 254 pp. Licence: CC BY-NC-SA 3.0 IGO.
- Handbook on Fisheries Statistics (2020). Department of Fisheries Ministry of Fisheries, Animal Husbandry & Dairying Government of India, New Delhi November, 2020 <https://fisheries.telangana.gov.in/>
- Khatua R (2022). A Synopsis of Fish Farming. *Fish Aqua J*. 13:297.
- Martin, Sarah & Lorenzen, Kai & Bunnefeld, Nils. (2013). Fishing Farmers: Fishing, Livelihood Diversification and Poverty in Rural Laos. *Human Ecology*. 41. 10.1007/s10745-013-9567-y.
- Pintu Paul et al (2016). Impact of Inland Fisheries on the Socio – Economic Development: A Focus on Perspectives on Development, Nadia District, West Bengal, India. International Journal of Fisheries and Aquaculture Sciences. ISSN 2248-9975 Volume 6, Number 1 (2016), pp. 59-76 © International Research Publication House <http://www.irphouse.com>
- Sarah M. et.al (2013). Fishing Farmers: Fishing, Livelihood Diversification and Poverty in Rural Laos, *Human Ecology*, Vol. 41, No. 5 (OCTOBER 2013), pp. 737-747.
- Shivaji Bhagwan Ubarhande & Manisha Ghonge (2022). Socio- Economic Studies of Fishermen from Deulgaon-Raja, District- Buldhana (M.S). *IJCRT*, Volume 10, Issue 11 November 2022 | ISSN: 2320-2882.
- Simon Funge-Smith, Abigail Bennett (2019). A fresh look at inland fisheries and their role in food security and livelihoods, First published: 26 September 2019, <https://doi.org/10.1111/faf.12403>