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Socio-economic condition of fishermen in Mangrol Village, Junagadh District, Gujarat: A comprehensive analysis

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Abstract

This study provides a comprehensive analysis of the socio-economic landscape of 50 fishermen in Mangrol village, Junagadh district, Gujarat, a critical hub for marine fisheries in the state. Conducted from March to May 2025, the research assesses demographic profiles, educational attainment, family dynamics, income patterns, fishing practices, and prevailing challenges. The findings reveal that the fishing community is predominantly aging, with 68% of fishermen over 45 years old. Educational limitations persist, with 35% having only primary education and 8% remaining illiterate, though there is a notable presence of secondary (28%) and tertiary (20%) education. Joint family structures are prevalent (58%), yet a significant 42% of households rely on a single income earner, highlighting economic vulnerability. The majority (65%) initiated their fishing enterprises between 1991 and 2001, and 82% possess over six years of experience. Income analysis shows a mid-range dominance, with 45% earning between ₹51,000-70,000 annually, while 30% earn above ₹71,000. The Mangrol fishery harbour is central to their operations, but infrastructural deficiencies, such as inadequate cold storage and processing facilities, coupled with high operational costs and limited market access, constrain profitability. This study underscores the urgent need for targeted interventions in education, infrastructure modernization, and policy support to enhance the sustainability and socio-economic well-being of this vital coastal community.

Keywords: Fishermen, socio-economic conditions, Mangrol, Junagadh, Gujarat, fishery harbour, livelihood, marine fisheries

1. Introduction

India's economy and food security are inextricably linked to its vast fisheries resources. The sector is a cornerstone of national development, providing gainful employment to approximately 14.5 million people and contributing significantly to nutritional security and foreign exchange earnings (FAO, 2022) [1]. With an extensive coastline of 7,000 km and an Exclusive Economic Zone (EEZ) exceeding 2 million square kilometers, India's marine fisheries potential is immense. Gujarat stands as a titan in this sector, being the second-largest fish-producing state and the largest contributor to marine fish production in India (DOF, 2022) [2]. The state's 2300 km coastline, representing one-fifth of the nation's waterfront, supports a continental shelf area of 164,000 sq. km and an EEZ of 214,060 sq. km. Junagadh district is the epicenter of this activity, alone accounting for approximately 40% of Gujarat's total fish production (Mangrol Fishery Harbour Project Report, 2023) [5].

Mangrol, a coastal town in Junagadh district (21.12°N, 70.12°E), is home to a key fishery harbour that plays a pivotal role in the livelihoods of the local population. The harbour, equipped with basic landing quays, breakwaters, and a local market, serves as the primary node for fishing activities, boat maintenance, and initial fish trade. However, despite its strategic importance and the high volume of fish landed, the socio-economic conditions of the fishermen who depend on this harbour remain under-documented. Previous research in Gujarat has focused on other districts like Valsad (Tandel *et al*., 2024) [3] and Gandevi (Tandel *et al*., 2024) [4], highlighting patterns of aging populations, educational gaps, and infrastructural challenges. These studies provide a valuable comparative framework but do not capture the unique context of Mangrol, which boasts a more developed harbour facility.

This study addresses this critical research gap by conducting a focused assessment of the fishermen in Mangrol village. The objectives are to: (i) Delineate the demographic and educational profile of the fishermen; (ii) Analyze their family structures and economic dependence; (iii) evaluate their income levels, fishing experience, and operational practices; and (iv) Identify the key challenges that impede their socio-economic advancement. The findings aim to provide baseline data to guide policymakers, development agencies, and harbour authorities in designing targeted interventions for the sustainable development of the Mangrol fishing community.

2. Materials and Methods

2.1 Study Area

The research was conducted in Mangrol, a coastal village in the Junagadh district of Gujarat. The town has a population of approximately 55,000 and is situated 83 km from Porbandar and 50 km from Veraval. The primary site of investigation was the Mangrol fishery harbour, which includes existing infrastructure such as breakwaters, a harbour basin, landing platforms, berthing quays, a fuel station, and a local fish market. The harbour is well-connected to the town and nearby industrial areas.

2.2 Sampling and Data Collection

A purposive random sampling method was employed to select 50 boat-owning fishermen for the study. This sample size was chosen to ensure a statistically significant representation of the community while remaining manageable for in-depth data collection. The study was carried out over a three-month period, from March 2025 to May 2025.

A well-structured questionnaire was designed to gather primary data. The questionnaire was divided into sections to capture information on:

Demographic Profile: Age, gender, and educational status.

Family Dynamics: Family type (joint/nuclear), number of family members, and number of earning members.

Fishing Profile: Year of business initiation, total years of experience, primary landing centers, and types of fishing gear used.

Economic Profile: Annual income from fishing and primary sources of household income.

Challenges: Open-ended questions on perceived difficulties related to infrastructure, market access, finance, and government support.

Prior to administration, the questionnaire was pre-tested with a small group of fishermen to ensure clarity and cultural appropriateness. Data were collected through face-to-face interviews, with informed consent obtained from all participants. To maintain confidentiality and encourage honest responses, anonymity was assured.

2.3 Data Analysis

The collected data were meticulously verified and entered into MS Excel for processing. Descriptive statistical methods, including frequencies, percentages, and means, were used to analyze the data. The results were presented in the form of text, tables, and charts (pie charts and bar graphs) to facilitate clear interpretation and comparison of different socio-economic variables.

Questionnaire: Socio-Economic Survey of Fishermen

Survey Title: A Study on the Socio-Economic Conditions of Fishermen in Mangrol Village, Distract: Junagadh, Gujarat

Date of Interview: _____

Interviewer's Name: _____

S. No.	Questionnaire Items	Response / Notes
Part A: Personal and demographic information		
1	What is your age?	_____ Years
2	What is your gender?	☐ Male ☐ Female ☐ Other
3	What is your highest educational qualification?	☐ Illiterate ☐ Can write name only ☐ Primary (1-5) ☐ Secondary (6-10) ☐ Higher Secondary (11-12) ☐ Graduate/Diploma ☐ Post-graduate ☐ Other: _____
Part B: Family and household details		
4	What type of family do you belong to?	☐ Joint Family ☐ Nuclear Family
5	How many members are there in your family?	_____ Members
6	How many members in your family are currently earning?	☐ None ☐ One ☐ Two ☐ More than Two
7	How many members in your family are dependent on you?	_____ Members
Part C: Fishing experience and practices		
8	How many years of experience do you have in fishing?	☐ Less than 3 years ☐ 3-6 years ☐ More than 6 years
9	In which year did you start your fishing business?	_____ (Year)
10	Do you own or operate the fishing vessel?	☐ Owner ☐ Operator (Hired) ☐ Both
11	What is the type of your primary fishing vessel?	☐ Non-motorized ☐ Motorized ☐ Mechanized
12	What is the primary fishing gear you use? (Multiple select)	☐ Gill Nets ☐ Trawl Nets ☐ Purse Seine Nets ☐ Cast Nets ☐ Hook & Line ☐ Other: _____
13	Primary landing center/port for selling your catch?	☐ Mangrol ☐ Okha ☐ Mumbai ☐ Dholai ☐ Other: _____
14	Average duration of one fishing trip	☐ Same day return ☐ 1-3 days ☐ 4-7 days ☐ More than 7 days
15	Average fish catch per trip (kg)	☐ <100 kg ☐ 100-250 kg ☐ 251-500 kg ☐ >500 kg
Part D: Income and economic details		
16	Estimated annual income from fishing	☐ < ₹50,000 ☐ ₹51,000-70,000 ☐ ₹71,000-90,000 ☐ >₹90,000
17	Does your family have any other income source?	☐ No ☐ Yes (Specify: _____)
18	Major expenditure items (Multiple select)	☐ Diesel/Fuel ☐ Gear maintenance ☐ Vessel maintenance ☐ Labor wages ☐ Ice ☐ Other: _____
19	Primary source of credit/loans	☐ Banks ☐ Govt. Schemes ☐ Cooperatives ☐ Moneylenders ☐ Friends/Relatives ☐ Self-financed

Part E: Challenges and perceptions		
20	Biggest challenges in profession (Multiple select)	☐ High fuel cost ☐ Fluctuating prices ☐ Poor infrastructure ☐ Limited market access ☐ Scarcity of labor ☐ Govt. regulations ☐ Weather risks ☐ Other: _____
21	Awareness of government fisher schemes	☐ Yes ☐ No
22	If yes, have you benefited from any scheme?	☐ Yes ☐ No
23	Improvements needed at local fishery harbour	_____
24	Support needed to improve livelihood	_____
25	Future of fishing for next generation	☐ Very Promising ☐ Promising ☐ Uncertain ☐ Not Promising

3. Results

3.1 Age Distribution

The age of the fishermen surveyed ranged from 25 to over 45 years. The data indicates an aging workforce, which is a common trend in traditional occupations. The largest cohort was fishermen above the age of 45, constituting 68% of the total sample. This was followed by the 35-45 age group at 24%, while the youngest group (25-35 years) represented only 8% of the respondents.

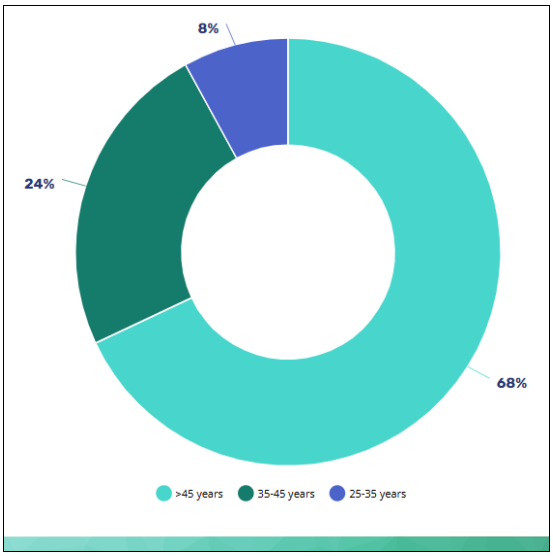

Fig 1: Age Distribution of Fishermen in Mangrol (N=50)

3.2 Educational Status

Educational attainment showed a mixed but promising trend. A significant portion of the community had progressed beyond primary education. 35% of the fishermen had completed primary education, while 28% and 20% had attained secondary and tertiary education, respectively. However, a concerning 8% of the fishermen remained illiterate, and 9% could only write their names, indicating a need for continued educational interventions.

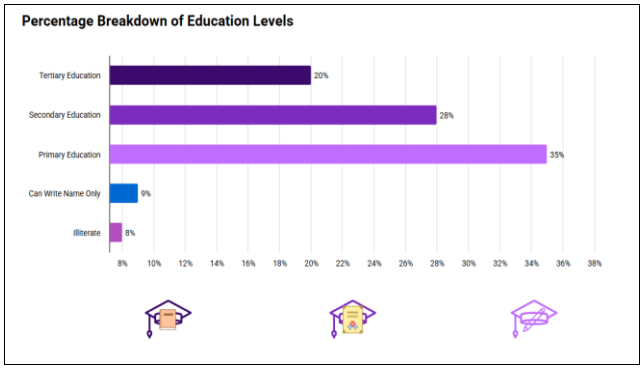

Fig 2: Educational Status of Fishermen in Mangrol (N=50)

3.3 Family Structure and Economic Dependence

The study found that traditional joint family systems were more prevalent than nuclear families. 58% of the fishermen belonged to joint families, while 42% were part of nuclear families. In terms of family size, 50% of the families had more than 5 members, 40% had 3-5 members, and only 10% were small families with 1-2 members.

Regarding household income sources, there was a significant reliance on single earners. 42% of the families depended on the income of one member, while 38% had two earning members. The remaining 20% of families had multiple members contributing to the household income.

Table 1: Socio-Economic Profile of Respondents

Parameter	Category	No. of Respondents	Percentage (%)
Family Type	Joint Family	29	58%
	Nuclear Family	21	42%
Earning Members	Single	21	42%
	Two	19	38%
	Multiple	10	20%

3.4 Fishing Experience and Practices

The fishermen in Mangrol are highly experienced. A vast majority, 82%, had more than six years of experience in fishing, while the remaining 18% had between three to five years of experience. The majority (65%) initiated their fishing businesses between 1991 and 2001, a period of significant mechanization in Gujarat's fisheries.

In terms of operational practices, the Mangrol fishery harbour was the primary landing center for 80% of the fishermen. Other notable landing centers included Okha (15%) and Mumbai (5%). Gill nets were the most dominant fishing gear, used by 85% of the fishermen, followed by trawl nets, which were used by 40% of the respondents (some used both).

3.5 Annual Income

The annual income from fishing provided a range of economic outcomes. The largest segment of the community, 45%, earned an annual income between ₹51,000 and ₹70,000. A substantial 30% earned a higher income of ₹71,000 to ₹90,000, and 10% earned above ₹90,000. However, 15% of the fishermen were in a lower income bracket, earning between ₹10,000 and ₹50,000 annually.

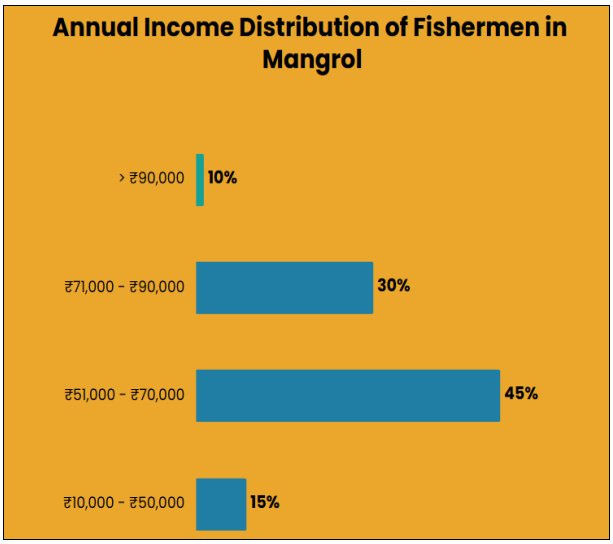

Fig 3: Annual Income Distribution of Fishermen in Mangrol (N=50)

4. Discussion

The findings of this study paint a detailed picture of the socio-economic fabric of Mangrol's fishing community, revealing both strengths and critical vulnerabilities.

The demographic profile, dominated by an aging workforce (68% >45 years), mirrors trends observed in Gandevi (76%) and other parts of India (Hasan *et al.*, 2016) [10]. This suggests a potential future labor shortage, as younger generations are less inclined to pursue the strenuous and uncertain profession of traditional fishing. The lack of youth entry could be attributed to the perception of fishing as a low-status, high-risk occupation compared to emerging opportunities in other sectors.

Educational attainment in Mangrol presents a nuanced picture. While the illiteracy rate (8%) is lower than in Valsad (15%) [3], it remains a significant concern. The presence of fishermen with secondary (28%) and tertiary (20%) education is an encouraging sign, indicating a shift towards valuing formal education. This educated cohort could be a vital resource for adopting modern technologies, improved fishing practices, and better market negotiation strategies. However, the large segment with only primary education (35%) may struggle to cope with the increasing technical and regulatory complexities of the fisheries sector.

The prevalence of joint families (58%) reflects the enduring traditional social structure, which can provide a social safety net. However, the high dependence on single-income households (42%) is a major economic risk factor. This aligns with findings from Valsad (40%) [3] and Gandevi (40%) [4], suggesting that a significant portion of the fishing community across Gujarat lives on the edge of financial precarity. A bad fishing season, a boat breakdown, or a market crash could devastate such households.

The income data reveals a community that is largely in the lower-middle-income bracket. While 40% earn above ₹71,000 annually, the majority (45%) are in the ₹51,000-70,000 range, and 15% earn less than ₹50,000. This income level is barely sufficient to sustain large families, especially given the rising costs of fuel, gear, and maintenance. The primary reason for this income ceiling appears to be infrastructural limitations, as detailed in the Mangrol harbour project report [5]. The lack of adequate cold storage, ice plants, and hygienic processing facilities forces fishermen to sell their catch immediately at the local market at lower prices, rather than preserving it for export to more lucrative national or international markets. The unhygienic transportation of fish to distant processing plants further degrades the quality and value of the product.

The challenges are compounded by external factors such as fluctuating global fish prices, high diesel costs, and the lingering effects of the COVID-19 pandemic, which disrupted supply chains and reduced market access. The fishermen's own observations about a lack of scientific knowledge and insufficient government support are critical. Without access to training in sustainable fishing practices, financial literacy, and modern technology, their ability to improve their socio-economic condition remains constrained.

5. Conclusion

This study provides a comprehensive assessment of the socio-economic conditions of fishermen in Mangrol, Junagadh district. The community is characterized by an experienced but aging workforce, moderate educational attainment with persistent gaps, and a family structure that, while traditional, faces significant economic risk due to reliance on single earners. While the Mangrol fishery harbour provides a crucial operational base, its current limitations in infrastructure and support services act as a bottleneck to higher income and improved livelihoods.

To foster sustainable development and enhance the well-being of this vital community, the following targeted interventions are recommended:

- **Educational and Skill Enhancement:** Establish adult literacy and vocational training centers at the harbour. These centers should focus on practical skills such as modern gear operation, engine maintenance, financial management, and digital literacy for accessing market information.
- **Infrastructure Modernization:** Prioritize the development of a modern ice plant and cold storage facility at the harbour. This will empower fishermen to preserve their catch, reduce post-harvest losses, and sell at better prices. Upgrading the auction hall and providing hygienic handling areas are also essential.
- **Policy and Financial Support:** The government should introduce targeted subsidies for high-speed diesel, modern fishing gear, and boat insurance. Establishing a dedicated fisheries extension office at the harbour can facilitate access to government schemes, credit facilities, and real-time market information.
- **Market Linkage and Diversification:** Promote the formation of Fishermen Cooperatives to collectively bargain for better prices and invest in value-added services like processing and branding. Exploring alternative livelihoods such as aquaculture, fisheries tourism, and net-making can provide supplementary income and reduce dependency on fishing alone.
- **Harbour Management:** Implement an efficient and transparent harbour management committee that includes representatives from the fishermen community to oversee operations, maintenance, and fee collection, ensuring the facility is managed for the benefit of all

stakeholders.

By implementing these measures, the socio-economic condition of the Mangrol fishermen can be significantly improved, ensuring that the fishing industry continues to be a viable and prosperous source of livelihood for generations to come.

References

1. Food and Agriculture Organization (FAO). The State of World Fisheries and Aquaculture 2022 - Towards Blue Transformation. Rome: FAO; 2022. doi:10.4060/cc0461en
2. Department of Fisheries, India. Handbook on Fisheries Statistics 2022. New Delhi: Ministry of Fisheries, Animal Husbandry and Dairying, Government of India; 2022. https://dof.gov.in/sites/default/files/202301/HandbookFisheriesStatistics19012023.pdf
3. Tandel VR, Lende SR, Tandel RV, Kharadi SV, Vyas UD, Vala FD, Dimmar SN, Vala SR. Socio-economic condition of fishermen in Valsad district. Int J Agric Ext Soc Dev. 2024;7(11):320-324. doi:10.33545/26180723.2024.v7.i11e.1333
4. Tandel VR, Lende SR, Tandel RV, Kharadi SV, Vyas UD, Dhimmar SN, *et al*. Study on the socio-economic condition of fishermen in Gandevi taluka, Gujarat. Int J Agric Ext Soc Dev. 2024;7(12):192-196. doi:10.33545/26180723.2024.v7.i12c.1401
5. Mangrol Fishery Harbour Project Report. Government of Gujarat, Department of Fisheries; 2023. Unpublished project document.
6. Bhutti JK, Lende S, Pargi NA, Vasava RJ, Taral PV. Studies on the socio-economic condition of fish farmers in Sabarkantha district of Gujarat state. Pharma Innov J. 2022;SP-11(4):970-974.
7. Maloth M, Swetha M, Naaiik B, Rajkumar BV, Bhavyamanjari M, Suresh M, *et al*. Socio-economic profile of fish farmers of Nizamabad District, Telangana. J Entomol Zool Stud. 2020;8(5):1727-1732.
8. Hasan M, Afrad MSI, Haque ME, Hossain MA, Barau AA. Socioeconomic status of fishermen: A comparative study in Trishal Upazila under Mymensingh District, Bangladesh. Bangladesh J Ext Educ. 2016;28(1&2):55-67.