

# Economic Status of the Fishermen Community in the Coastal Areas from Chennai to Marakkanam, Tamil Nadu

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## Abstract

Fishing communities along the Tamil Nadu coastline face a complex web of socio-economic vulnerabilities, including income instability, constrained access to formal credit and insurance, inadequate cold storage and transportation infrastructure, market price volatility, and recurring exposure to natural disasters such as cyclones and coastal inundation. Despite the Chennai–Marakkanam coastal corridor's strategic proximity to urban markets and major port facilities, the economic conditions of fishing households remain comparatively marginal when measured against growth in allied coastal sectors such as tourism and industrial port development. Research on community-level economic resilience and institutional support frameworks provides important conceptual grounding for understanding these dynamics (Swadhi et al., 2025; Vettriselvan et al., 2026; Kariveliparambil et al., 2026). Fishing in this region is not merely an occupation it constitutes a hereditary livelihood deeply embedded in social structure, cultural identity, and community organization. However, progressive mechanization, resource depletion, climatic variability, regulatory restrictions, coastal industrialization, and market volatility have fundamentally disrupted the traditional economic foundations of fishing households. This study comprehensively examines the economic conditions of fishermen communities within this spatial corridor, integrating socio-economic indicators, livelihood strategies, and institutional support mechanisms to generate actionable insights for sustainable development planning and inclusive policy formulation.

Keywords: Fishermen, Tamil Nadu, Marakkanam, Artisanal Fishing, Economic Vulnerability, Livelihood Security

## 1. Introduction

The coastal belt of Tamil Nadu has sustained small-scale and artisanal fishing for centuries, shaping the local economy and defining the cultural identity and livelihood patterns of its coastal inhabitants. From the historic fishing hamlets of Chennai's northern shore to the expansive coastal fishing grounds near Marakkanam, fishermen communities constitute a vital human resource whose socio-economic conditions reflect broader challenges of sustainability, equity, and resilience within coastal development frameworks. Livelihoods in these coastal regions are shaped by a constellation of interacting forces: climatic variability, marine resource depletion, market integration dynamics, policy environments, and pervasive infrastructural deficits. Tamil Nadu's fisheries sector encompasses thousands of mechanized vessels, motorized and non-motorized traditional craft, fishing harbours, coastal landing centres, and export-oriented fish processing facilities. Despite this infrastructure, economic gains remain unevenly distributed. Small-scale and artisanal fishermen who constitute the numerical majority consistently realize marginal returns relative to mechanized operators and market intermediaries. Rising fuel costs, recurring gear maintenance expenditure, and declining nearshore fish stocks further constrain household profitability. The socio-economic landscape has also been shaped by broader structural transformations in the Chennai–Marakkanam corridor, including urban expansion, port infrastructure development, tourism growth, and coastal industrial projects each of which affects fishing grounds, market access pathways, cost structures, and the long-term sustainability of fishing livelihoods. Fishing communities in Tamil Nadu have traditionally belonged to specific coastal caste groups residing in closely knit, spatially defined settlements. Their socio-economic profile is characterized by seasonal income fluctuations, elevated occupational risk, dependence on middlemen for product marketing, limited integration with formal financial institutions, vulnerability to cyclonic storms and weather extremes, and moderate to low levels of educational attainment. Recent scholarly attention to the relationship between livelihood security, institutional participation, and economic resilience among marginalized coastal communities (Kariveliparambil et al., 2026; Swadhi et al., 2025) provides a valuable theoretical foundation for

contextualizing these conditions. Economic status in this study is conceptualized as a multidimensional construct encompassing household income levels, expenditure and consumption patterns, savings and investment behaviour, asset ownership, access to institutional credit, indebtedness levels, insurance coverage, and livelihood diversification. Rather than relying solely on income measures, this research adopts an integrated framework that captures both economic capability and vulnerability dimensions.

## 2. Review of Literature

A synthesis of recent and contextually relevant scholarship on the economic dimensions of Indian fishermen communities reveals recurring themes: livelihood fragility, inadequate institutional support, climate vulnerability, market integration deficits, and constrained financial inclusion. Rajasekar and Subramanian (2015) examined income instability among small-scale fishers in Tamil Nadu, identifying unpredictable catch patterns and intermediary dependency as primary drivers of reduced net earnings and recommending cooperative marketing models as a structural remedy. Singh and Nair (2016) established a robust connection between seasonal climatic variability and income fluctuation among fisherfolk in eastern India, advocating for climate-adaptive livelihood diversification. Reddy (2017) highlighted the pivotal role of formal financial inclusion and microcredit access in stabilizing fishermen incomes, identifying collateral deficits and high informal lending rates as principal barriers. Krishnan and Jayalakshmi (2018) demonstrated that inefficient market linkages and the absence of cold chain infrastructure resulted in significant price losses and diminished bargaining power for fish producers a finding directly relevant to the Chennai–Marakkanam context. Ghosh et al. (2019) examined resilience practices in West Bengal's coastal communities, emphasizing the centrality of income diversification and community-based risk reduction strategies. Menon and Thomas (2021) explored the paradox of mechanization in small-boat fisheries, showing that while motorization improved catch volumes, it simultaneously intensified debt burdens through higher operational costs. Swaminathan (2022) reported that approximately 70% of surveyed Tamil Nadu fishing households fell below the poverty line and experienced chronic food insecurity attributable to income instability. Patel and Desai (2023) assessed the pandemic-induced economic shock on coastal fishing communities, documenting significant income losses from supply chain disruption and lockdown measures. Srinivasan and Lakshmi (2024) identified persistently low insurance penetration among fishers despite their frequent exposure to weather-related hazards. The relationship between economic resilience, institutional participation, and social capital examined in Kariveliparambil et al. (2026) among marginalized indigenous coastal communities provides a broader theoretical context for interpreting the structural vulnerabilities documented in this study. Furthermore, scholarship on platform work, income precarity, and livelihood challenges among informal workers (Kariveliparambil et al., 2026) offers a comparative lens for understanding the asymmetric institutional conditions confronting artisanal fishers. Natarajan (2025) specifically compared economic conditions across Tamil Nadu coastal districts, revealing significant spatial disparities linked to proximity to urban markets and infrastructure development.

## 3. Conceptual Framework

The conceptual framework situates economic status as the dependent outcome of independent structural and socio-economic factors, mediated by institutional interventions. Independent variable constructs include Fishing Asset Ownership, Access to Natural Resources, Institutional and Policy Support, Infrastructure and Market Access, Market Integration, Financial Inclusion, and Livelihood Diversification. The mediating construct is Institutional Participation, capturing fishermen's engagement with cooperatives, fishermen associations, and government training programs. The dependent variable constructs collectively constituting the Economic Status of Fishermen Households encompass Income Levels, Expenditure Patterns, Economic Vulnerability, and Livelihood Outcomes. Income Levels are measured through perceptions of income sufficiency, income trajectory over time, and dependence on fishing as the primary livelihood source. Expenditure Patterns capture the allocation of household income across daily consumption, social investments (education and healthcare), and operational fishing expenses. Economic Vulnerability reflects the degree to which households are exposed to financial instability from seasonal fluctuations, environmental shocks, and credit dependency. Livelihood Outcomes measure improvements in living standards, savings capacity, and long-term livelihood security. This framework draws conceptual support from scholarship on community economic resilience and social capital (Kariveliparambil et al., 2026), sustainable livelihoods and institutional support (Swadhi et al., 2025; Vettriselvan et al., 2026), and recent analyses of financial inclusion among marginalized communities (Ashifa, 2019; Vettriselvan & Anto, 2018).

## 4. Research Methodology

### 4.1 Research Objectives

To evaluate and analyse the economic status of fishermen communities in the coastal stretch from Chennai to Marakkanam, Tamil Nadu, with particular emphasis on market integration, income dynamics, and livelihood outcomes.

### 4.2 Research Hypotheses

H1a: A significant relationship exists between market integration and livelihood outcomes among fishermen households.

H2a: A significant relationship exists between income levels and expenditure patterns of fishermen households.

The study adopts a descriptive research design. Primary data were collected using a structured questionnaire comprising demographic items and seven research constructs measured on a 5-point Likert scale (1 = Strongly Disagree to 5 = Strongly Agree). The sample consisted of 100 respondents (n = 100) drawn from fishing communities across the Chennai–Marakkanam coastal corridor. Cronbach's alpha reliability values for all constructs exceeded the minimum acceptable threshold of 0.70, confirming measurement reliability.

### 4.3 Reliability Statistics

S. No.	Construct	Cronbach's Alpha
1	Market Integration	0.75
2	Financial Inclusion	0.79
3	Livelihood Diversification	0.74
4	Income Levels	0.76
5	Expenditure Patterns	0.81
6	Economic Vulnerability	0.79
7	Livelihood Outcomes	0.77

## 5. Data Analysis and Interpretations

### 5.1 Demographic Profile of Respondents

The survey sample comprised 100 respondents drawn from fishing households along the Chennai–Marakkanam coastal stretch. Male respondents constituted 96% of the sample, with female respondents accounting for 8% a distribution that reflects the male-dominated occupational structure of active marine fishing in this region, where women's participation tends to be concentrated in post-harvest processing, drying, and retail marketing activities. Age distribution data reveal that the largest cohort (40%) falls within the 35–45 years bracket, followed by 20% in the 45–55 years range and 18% in the 25–35 years group. This concentration in mid-career age groups confirms that fishing remains a primary livelihood for mature and economically active community members. Fishing frequency analysis indicates that 48% of respondents engage in fishing 5–10 times per month, while 30% fish fewer than 5 times. The moderate fishing frequency pattern influenced by seasonal resource availability, adverse weather conditions, fuel costs, and regulatory restrictions has direct implications for income continuity and household financial stability. Fishing experience distribution reveals that 52% of respondents possess 5–7 years of experience, with an additional 18% in the 3–5 years range and 15% in the 7–10 years bracket. The predominance of mid-career fishermen with established practical skills yet potentially facing challenges in technology adoption and income diversification reflects broader structural dynamics within artisanal fishing communities documented in the Tamil Nadu literature (Geetha & Rajendran, 2020; Selvaraj, 2022).

Category	Respondents	Percentage (%)
Male	96	96%
Female	8	8%
Age 35–45 years	40	40%
Age 45–55 years	20	20%
5–7 years experience	52	52%
Fish 5–10 times/month	48	48%

## 5.2 Correlation Analysis

### 5.2.1 Market Integration and Livelihood Outcomes

Pearson correlation coefficients were computed to examine the relationship between market integration variables and livelihood outcome indicators. The analysis reveals strong and consistent positive correlations across all variable pairs, providing compelling empirical support for H1a. The ability to sell fish directly in markets without intermediary involvement demonstrates very strong positive correlations with improvement in household standard of living ( $r = 0.92$ ), long-term livelihood security ( $r = 0.91$ ), and income savings capacity ( $r = 0.85$ ). These values confirm that eliminating intermediary dependency enables fishermen to retain a greater share of market value, thereby enhancing household income stability and savings potential a finding consistent with Krishnan and Jayalakshmi (2018) and Xavier et al. (2023). Access to wider markets shows strong correlations with standard of living improvement ( $r = 0.84$ ), savings capacity ( $r = 0.81$ ), and long-term livelihood security ( $r = 0.79$ ), indicating that expanded market reach translates directly into improved economic outcomes. The availability and use of market price information is associated with savings capacity ( $r = 0.82$ ), livelihood security ( $r = 0.84$ ), and standard of living ( $r = 0.77$ ), confirming the informational dimension of market integration as a significant determinant of economic well-being (Srinivasan & Lakshmi, 2024; Xu & Aboud, 2024).

Market Integration Factor	Standard of Living	Savings Capacity	Livelihood Security
Direct selling without intermediaries	0.92	0.85	0.91
Access to wider markets for better prices	0.84	0.81	0.79
Market price information guides selling decisions	0.77	0.82	0.84

### 5.2.2 Income Levels and Expenditure Patterns

The second correlation analysis examined the relationship between income level indicators and expenditure pattern variables. The results provide strong support for H2a, demonstrating a robust interdependence between fishing income adequacy, household expenditure allocation, and fishing-related operational costs. Income sufficiency from fishing activities is most strongly correlated with daily consumption expenditure ( $r = 0.92$ ) and fishing-related operational expenses such as fuel, gear maintenance, and boat repair ( $r = 0.91$ ). This suggests that households relying on fishing as a primary income source face proportionally high operational cost burdens that constrain discretionary spending. However, income sufficiency also correlates strongly with the capacity to allocate funds to education, healthcare, and savings ( $r = 0.85$ ), indicating that where fishing income is adequate, households demonstrate meaningful capacity for welfare-oriented investment. Improved household income over time is most strongly associated with social investment capacity ( $r = 0.81$ ), confirming that income trajectory improvement gradually enables greater allocation to education and healthcare consistent with evidence from Swaminathan (2022) and Pownkumar et al. (2022). When fishing constitutes the primary income source, households demonstrate stronger correlations with social investment ( $r = 0.82$ ) and operational fishing expenses ( $r = 0.84$ ), reflecting the dual demands of a fishing-centred livelihood structure.

Income Level Factor	Daily Consumption	Social Investment	Fishing Expenses
Fishing income sufficient for basic needs	0.92	0.85	0.91
Household income improved over past years	0.84	0.81	0.79
Fishing as primary household income source	0.77	0.82	0.84

## 6. Conclusion

This study presents a systematic analysis of the economic status of fishing communities in the coastal stretch between Chennai and Marakkanam, Tamil Nadu. The findings reveal a predominantly male, middle-aged, and moderately experienced fishing workforce whose livelihood conditions are shaped by traditional occupational patterns, limited

income diversification, and dependence on seasonal marine resources. These characteristics underscore the structural vulnerability of artisanal fishing households and highlight the imperative for targeted policy interventions addressing fishing infrastructure, formal financial access, and alternative livelihood development consistent with recommendations advanced in the Tamil Nadu coastal fisheries literature (Geetha & Rajendran, 2020; Selvaraj, 2022; Xavier et al., 2023). The correlation analyses provide robust empirical evidence that market accessibility, transparent price information systems, and the reduction of intermediary dependency are pivotal determinants of improved household economic outcomes. The very high correlation coefficients ( $r = 0.84\text{--}0.92$ ) across market integration and livelihood outcome variables confirm that strengthening direct marketing channels and market information infrastructure can substantially enhance income stability and long-term livelihood security for coastal fishermen. These findings are reinforced by evidence from Xu and Aboud (2024) and Vidhyalakshmi et al. (2024) on the role of digitization and information access in enhancing fisherwomen's economic resilience. The income-expenditure correlation analysis further demonstrates a strong interdependence between income sufficiency, daily consumption needs, and fishing-related operational costs. The data suggest that while households with adequate fishing income exhibit some capacity for social investment in education and healthcare, high operational costs continue to absorb a disproportionate share of household budgets. Institutional support frameworks, including subsidized fuel schemes, gear maintenance assistance, and cooperative purchasing arrangements, could meaningfully reduce this cost burden. Furthermore, the structural parallels between fishermen's livelihood challenges and the broader dynamics of informal and precarious work analysed in contemporary scholarship on social capital, institutional trust, and community resilience (Kariveliparambil et al., 2026) reinforce the value of community-based institutional strengthening as a complementary development strategy. In conclusion, improving market infrastructure, expanding formal credit and insurance access, reducing intermediary dependence, and fostering institutional participation through cooperatives and community organizations are essential policy priorities for enhancing the economic resilience and livelihood security of fishermen communities in coastal Tamil Nadu.

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