



LIVELIHOOD AND SOCIO-ECONOMIC CONDITIONS OF FISHERMEN IN DIGHA COASTAL REGION, WEST BENGAL

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RESEARCH ARTICLE



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Abstract

The fishing community constitutes a significant component of the coastal economy of Digha, located along the Bay of Bengal. This study explores the livelihood patterns and socio-economic conditions of fishermen residing in the Digha coastal region of West Bengal. The research primarily focuses on income sources, occupational structure, educational status, housing conditions, and the challenges faced by fishing households. Both primary and secondary data sources were used in this study. Primary data were collected through field surveys, direct observations, and interviews with fishermen and their families, while secondary information was gathered from government reports, fisheries department publications, and academic literature. The findings indicate that marine fishing remains the principal source of livelihood for most households in the region. However, fishermen face several socio-economic challenges, including unstable income, declining fish resources, vulnerability to natural disasters, limited access to quality education, and dependence on intermediaries for marketing their catch. Additionally, the growth of tourism in Digha has generated alternative employment opportunities, which has slightly diversified local livelihoods. Despite these changes, the fishing community continues to experience economic and social vulnerability. The study emphasizes the need for improved infrastructure, better access to education and financial services, and sustainable fisheries management to enhance livelihood security and socio-economic well-being in the region.

Keywords: *Fishermen Livelihood, Socio-Economic Conditions, Coastal Communities, Digha Coastal Region, Sustainable Fisheries*

Introduction

Coastal regions play a crucial role in the economic and social development of many countries, especially where fishing serves as a major source of livelihood for local populations. In India, coastal fishing communities significantly contribute to food security, employment generation, and the overall growth of regional economies. Marine fisheries not only provide a vital source of protein for millions of people but also support a large number of families engaged in fishing, fish processing, transportation, and related activities.

The coastal town of Digha, situated in the district of Purba Medinipur, is one of the most important coastal regions of West Bengal. Located along the coast of the Bay of Bengal, Digha is widely known for its scenic beaches, thriving tourism industry, and marine fishing activities. Apart from tourism, fishing remains one of the primary livelihood activities for many households living in the coastal villages surrounding Digha.

Fishing practices in the region include both traditional and mechanized methods. Fishermen typically use wooden boats, motorized trawlers, and various types of fishing nets to catch different species of fish and marine resources. These fishing activities play a significant role in sustaining the local economy and supporting the livelihoods of coastal communities.

Despite their important contribution to the regional economy, fishermen in Digha often face numerous socio-economic challenges. These include irregular and seasonal income, vulnerability to natural disasters such as cyclones and coastal erosion, declining fish resources, and limited access to quality education and healthcare services. Additionally, many fishermen depend on middlemen for marketing their catch, which often reduces their profit margins and economic stability.

In this context, the present study aims to examine the livelihood patterns and socio-economic conditions of fishermen in the Digha coastal region. The study also seeks to identify the key challenges faced by the fishing community and highlight possible measures that could improve their livelihood security and overall well-being.

Need and Significance of the Study

The fishing community forms an important part of the coastal economy, particularly in regions where marine resources provide the primary source of livelihood. In coastal areas such as Digha, fishing not only supports household incomes but also contributes to local food supply, employment, and small-scale trade. Despite their economic contribution, fishermen communities often remain socially and economically vulnerable. Therefore, studying their livelihood patterns and socio-economic conditions is essential for understanding the challenges they face and for identifying strategies that can improve their living standards.

The need for this study arises from the increasing pressures on coastal fishing communities due to environmental, economic, and social changes. Factors such as declining fish resources, climate change, coastal erosion, and frequent natural disasters have made fishing a highly uncertain occupation. Additionally, fishermen often face problems such as unstable income, lack of modern fishing infrastructure, dependence on middlemen for marketing fish, and limited access to financial services. These issues directly affect their economic security and quality of life.

The study is also significant because it highlights the educational, health, and housing conditions of fishermen households in the Digha coastal region. Understanding these socio-economic aspects helps policymakers, researchers, and development agencies design appropriate welfare programs and livelihood support initiatives. Furthermore, the growth of tourism in Digha has created new economic opportunities, which may influence the traditional livelihood structure of fishing communities.

Thus, this study is important for assessing the present socio-economic condition of fishermen in the Digha coastal region and for providing insights that may contribute to sustainable coastal development and improved livelihood security for the fishing community.

Objectives of the Study

The main objectives of this study are:

1. To examine the livelihood patterns of fishermen in the Digha coastal region.
2. To analyze the socio-economic conditions of fishermen households.
3. To identify the major challenges faced by fishermen communities.
4. To suggest measures for improving the livelihood security of fishermen in Digha.

Study Area

Digha is a prominent coastal town situated on the eastern coastline of India along the Bay of Bengal. It is located in the district of Purba Medinipur in the state of West Bengal. Digha lies approximately 185 kilometers from Kolkata, making it one of the most accessible and popular seaside tourist destinations in the region. The coastal area surrounding Digha includes several important fishing centers, notably Shankarpur, which functions as a major fishing harbor supporting marine fishing activities in the region. A large number of fishermen from nearby coastal villages depend on the sea for their livelihood, engaging in both traditional and mechanized fishing practices. The region experiences a tropical climate characterized by warm temperatures, high humidity, and moderate to heavy rainfall during the monsoon season. Such climatic conditions influence fishing activities, as weather patterns and seasonal changes affect the availability of marine resources. Economically, the Digha coastal region is largely dependent on fishing, tourism, and small-scale trade. While tourism has developed rapidly over the years and provides alternative employment opportunities, marine fishing continues to remain a vital source of income and livelihood for many coastal households in the area.

Methodology

The present study adopts a mixed-method approach by utilizing both primary and secondary sources of data to examine the livelihood patterns and socio-economic conditions of fishermen in the coastal region of Digha. Combining these two types of data helps to provide a more comprehensive and reliable understanding of the socio-economic realities of the fishing community.

Primary Data: Primary data form the core of this study and were collected through field-based research conducted in selected fishing villages in and around Digha. Field surveys were carried out to gather first-hand information on the livelihood practices and socio-economic conditions of fishermen households. Structured and semi-structured interviews were conducted with fishermen and their family members in order to understand their occupational patterns, income levels, educational background, housing conditions, and major livelihood challenges.

In addition to formal interviews, informal discussions with community members, local fish traders, and boat operators were also undertaken to gain deeper insights into the everyday experiences and problems faced by the fishing community. These qualitative interactions helped to capture local perspectives regarding fishing practices, market dependency, environmental changes, and livelihood diversification. The combination of surveys and interviews allowed the researcher to critically assess both economic and social aspects of fishermen's lives.

Secondary Data: To complement the primary data, relevant secondary information was collected from various published and institutional sources. These include government reports, fisheries department publications, census records, books, journal articles, and other academic studies related to coastal livelihoods and fisheries in West Bengal. Secondary data provided important contextual information about the regional fishing economy, demographic characteristics, and development policies affecting the coastal communities.

Data Analysis: The collected data were analyzed using descriptive and interpretative methods. Quantitative information from the surveys was organized and summarized to identify patterns related to income, occupation, and household conditions. Qualitative data from interviews and discussions were critically interpreted to understand the broader socio-economic challenges and livelihood strategies of fishermen households. This integrated approach helped to develop a more nuanced understanding of the socio-economic realities of the fishing community in the Digha coastal region.

Livelihood Pattern of Fishermen in Digha

Fishing is the principal occupation for many households in Digha, a coastal region located along the Bay of Bengal in the district of Purba Medinipur, West Bengal. Marine fishing plays a significant role in sustaining the local economy and supporting the livelihoods of coastal communities. In this region, fishing activities provide direct employment to fishermen and indirect employment to fish traders, processors, transport workers, and market vendors (Chanda, Tripathy, & Sahu, 2023).

Fishermen usually begin their fishing activities early in the morning or late at night depending on tidal conditions and weather patterns. Fishing expeditions may last several hours or extend for multiple days when mechanized vessels travel to deeper waters. Fishing practices in the region combine both traditional and modern techniques, reflecting the gradual technological transformation of the fisheries sector in coastal West Bengal (Karan & Chakrabarty, 2015).

Types of Fishing Activities

Fishing activities in the Digha coastal region can broadly be classified into several categories depending on scale and technology.

Marine Fishing: Marine fishing is the most dominant activity among fishermen in the region. Fishermen operate motorized boats and mechanized trawlers to catch marine fish from offshore waters of the Bay of Bengal. Mechanized vessels have significantly increased fish production but also require higher investment and operational costs (FAO, 2004).

Small-Scale Coastal Fishing: A large number of fishermen also practice small-scale fishing close to the shoreline using small wooden boats and traditional fishing gears. This type of fishing requires relatively low capital investment and is generally practiced by small family-based fishing units (FAO, 2004).

Traditional Net Fishing: Traditional fishing techniques such as gill-netting, set bag-net fishing, and hook-and-line methods are still widely used by fishermen in shallow coastal waters. These techniques are often adapted to local ecological conditions and seasonal availability of fish species (Mathew, 2016).

The fishermen in the region catch several commercially important fish species including pomfret, prawn, hilsa, and bhetki, which are sold in local markets or transported to nearby urban centers.

Additional Livelihood Activities: Despite fishing being the main occupation, income from fishing is often uncertain due to seasonal fluctuations, environmental changes, and variations in fish availability. As a result, many fishermen households diversify their livelihood strategies to supplement their income. Some families are involved in fish trading, fish drying, and fish processing activities, which provide additional income opportunities (Chanda et al., 2023).

The rapid growth of tourism in Digha has also created alternative employment opportunities for local residents. Some fishermen and their family members work in hotels, restaurants, transport services, and small businesses catering to tourists. Such livelihood diversification helps reduce economic vulnerability and provides supplementary income during the off-season of fishing activities (Islam & Sinha, 2016).

Overall, the livelihood pattern of fishermen in the Digha coastal region reflects a combination of traditional marine fishing practices and emerging alternative occupations that help coastal communities cope with economic uncertainties and environmental challenges.

Socio-Economic Conditions of Fishermen

The socio-economic condition of fishermen in the coastal region of Digha reflects the broader realities faced by many small-scale fishing communities along the Bay of Bengal. Although fishing remains the primary source of livelihood, the living conditions of fishermen households are often marked by economic insecurity, limited social infrastructure, and vulnerability to environmental risks. The dependence on marine resources makes these communities particularly sensitive to fluctuations in fish availability, climatic variability, and market dynamics. As a result, the socio-economic status of fishermen is shaped not only by occupational factors but also by broader structural issues such as limited educational opportunities, inadequate healthcare facilities, and weak institutional support. An analysis of key socio-economic indicators such as income, employment, education, housing, and health conditions provides a deeper understanding of the challenges faced by fishing communities in the Digha coastal region.

Income and Employment: Income generation among fishermen households is largely dependent on marine fishing activities, which are inherently uncertain and seasonal in nature. Fish availability in the Bay of Bengal varies across seasons due to ecological conditions, fishing regulations, and weather patterns. During peak fishing seasons, fishermen may earn relatively higher incomes due to increased fish catch and market demand. However, during lean seasons or periods of adverse weather, fishing activities may decline significantly, resulting in reduced household income. Cyclones, storms, and rough sea conditions frequently restrict fishing operations and further contribute to income instability.

Another important factor affecting fishermen's income is their dependence on intermediaries or middlemen for marketing their catch. Many fishermen lack direct access to organized markets and therefore rely on fish traders who often provide loans or financial assistance for purchasing fishing equipment and operational costs. While such arrangements enable fishermen to continue their fishing activities, they also create a cycle of dependency where fishermen are compelled to sell their catch at lower prices to repay debts. This reduces their bargaining power and ultimately limits their overall earnings (FAO, 2004). Consequently, economic insecurity remains a persistent feature of fishermen's livelihoods in the Digha coastal region (Chanda, Tripathy, & Sahu, 2023).

Education: Educational attainment among fishermen communities tends to be relatively low compared to urban populations and other occupational groups. Several socio-economic factors contribute to this situation. Many fishing families face financial constraints that make it difficult to support the education of their children beyond basic schooling. In addition, children often participate in household livelihood activities such as assisting in fishing operations, sorting fish, repairing nets, or helping in fish markets. These responsibilities sometimes lead to irregular school attendance and eventually result in school dropout.

The limited availability of educational institutions and educational infrastructure in coastal villages further restricts access to quality education. In many cases, students must travel long distances to attend secondary schools or higher educational institutions, which discourages continued education. Social attitudes and occupational traditions within fishing communities may also influence educational aspirations, as many young individuals tend to follow the occupational patterns of their parents. As a result, the lack of educational opportunities perpetuates a cycle of limited socio-economic mobility within the fishing community (Islam & Sinha, 2016).

Housing and Living Conditions: Housing conditions in fishing villages around Digha reveal significant socio-economic disparities. While some fishermen families live in permanent houses constructed with concrete and brick, a large number of households still reside in semi-permanent or temporary structures made of bamboo, wood, or tin sheets. These houses are usually located near the coastline to facilitate easy access to fishing activities. However, such proximity to the sea also increases the vulnerability of these settlements to environmental hazards such as cyclones, storm surges, tidal flooding, and coastal erosion. The lack of adequate infrastructure in fishing villages further affects the living conditions of residents. Many villages face challenges related to poor road connectivity, inadequate drainage systems, limited electricity supply, and insufficient sanitation facilities. The absence of proper waste management systems and safe drinking water sources often contributes to environmental degradation and public health concerns. These infrastructural deficiencies highlight the marginalization of fishing communities within the broader framework of coastal development.

Health and Sanitation: Health conditions in coastal fishing communities are influenced by both occupational hazards and inadequate healthcare facilities. Fishing is a physically demanding occupation that exposes fishermen to several risks such as injuries during fishing operations, prolonged exposure to harsh weather conditions, and accidents at sea. Fishermen often work long hours under physically strenuous conditions, which can lead to fatigue, musculoskeletal problems, and other health issues. Access to healthcare services in many coastal villages remains limited due to the lack of well-equipped medical facilities and trained healthcare personnel. In several cases, fishermen and their families must travel to nearby towns to access medical treatment, which can be both time-consuming and costly. Furthermore, poor sanitation infrastructure and limited access to safe drinking water contribute to the prevalence of water-borne diseases and other health problems within these communities. These health challenges highlight the need for improved healthcare infrastructure and targeted health awareness programs in coastal fishing areas (Mathew, 2016).

Overall Socio-Economic Vulnerability: The socio-economic conditions of fishermen in the Digha coastal region illustrate the complex interplay between environmental, economic, and social factors. The dependence on marine resources, combined with fluctuating income, limited education, inadequate infrastructure, and health risks, contributes to the vulnerability of fishermen households. Addressing these challenges requires a comprehensive approach that integrates improved infrastructure, enhanced educational opportunities, better healthcare services, and effective livelihood support programs. Strengthening institutional support and promoting sustainable fisheries management are also essential for improving the long-term socio-economic well-being of fishing communities in the region.

Major Challenges Faced by Fishermen

Fishing communities in the coastal region of Digha face a range of environmental, economic, and infrastructural challenges that significantly affect their livelihood security and overall well-being. The dependence of fishermen on marine resources from the Bay of Bengal makes them particularly vulnerable to natural and economic uncertainties. These challenges not only influence fishing productivity but also shape the socio-economic conditions of fishermen households.

Environmental Challenges: Environmental hazards are among the most significant threats faced by fishermen communities in the Digha coastal region. Natural disasters such as cyclones, storm surges, and coastal flooding frequently affect coastal settlements, damaging fishing boats, nets, and housing structures. Coastal erosion has also become a serious issue in several parts of the Digha coastline, leading to loss of land and displacement of fishing households. In addition, rising sea levels and changing climatic conditions have altered marine ecosystems, which in turn affect fish availability and fishing patterns (FAO, 2004).

Economic Challenges: Fishermen often encounter economic difficulties due to unstable income and limited market access. In many cases, fishermen depend heavily on intermediaries or middlemen for the sale of their catch. These intermediaries provide credit or financial support to fishermen for fishing operations, but they also control the marketing process, often purchasing fish

at lower prices. As a result, fishermen receive a smaller share of the final market value of their catch, which limits their economic gains (Islam & Sinha, 2016).

Resource Depletion: Declining fish stocks have emerged as a major concern for coastal fishing communities. Overfishing, pollution, and habitat degradation have contributed to the reduction of marine resources in the Bay of Bengal. Increased competition among fishing units and the use of mechanized trawlers have also intensified pressure on fish stocks. This depletion of resources directly affects fishermen's livelihoods by reducing the quantity and value of fish catches (Mathew, 2016).

Lack of Infrastructure: Another significant challenge faced by fishermen in the Digha region is the lack of adequate fishing infrastructure. Many fishermen have limited access to modern fishing equipment, cold storage facilities, and efficient transportation networks for marketing their catch. Inadequate harbor facilities and poor storage infrastructure often lead to post-harvest losses, reducing the income of fishing households. Improved infrastructure and institutional support are therefore essential to enhance the economic stability of fishermen communities (Chanda, Tripathy, & Sahu, 2023).

Overall, these environmental, economic, and infrastructural challenges highlight the vulnerability of fishermen communities in the Digha coastal region. Addressing these issues requires integrated coastal management, sustainable fishing practices, improved infrastructure, and stronger institutional support to ensure the long-term livelihood security of the fishing population.

Government Initiatives and Development Programs

The Government of West Bengal and the Government of India have introduced several initiatives to support the welfare and livelihood security of fishermen communities in coastal regions such as Digha. These programs aim to improve the socio-economic conditions of fishing households by providing financial support, infrastructure development, insurance coverage, and skill enhancement opportunities. Such interventions are particularly important for fishermen communities that are vulnerable to environmental hazards and economic instability.

One of the key areas of government support is financial assistance for fishing equipment and infrastructure. Various schemes provide subsidies and loans for the purchase of fishing boats, engines, nets, and other fishing gear. These initiatives help fishermen adopt improved fishing technologies and increase their productivity. Programs under the Department of Fisheries (India) and the Pradhan Mantri Matsya Sampada Yojana focus on strengthening the fisheries sector through modernization and sustainable resource management (Government of India, 2020).

Another important initiative is the provision of insurance schemes for fishermen. These schemes provide financial compensation to fishermen and their families in cases of accidents, natural disasters, or loss of fishing equipment. Insurance coverage is essential because fishermen often face occupational risks due to harsh marine conditions and unpredictable weather.

The government has also introduced housing and welfare schemes to improve living conditions in coastal villages. Programs aimed at constructing durable housing structures help fishermen families protect themselves from cyclones, storms, and coastal flooding. In addition, welfare measures often include access to sanitation facilities, drinking water, and basic infrastructure in fishing villages.

Furthermore, training and capacity-building programs are conducted to promote modern fishing techniques and sustainable fisheries management. These training initiatives help fishermen learn about improved fishing practices, resource conservation, and post-harvest management. Skill development programs also encourage diversification of livelihoods, enabling fishermen and their family members to engage in fish processing, aquaculture, and tourism-related activities.

Overall, these government initiatives play a crucial role in improving the economic stability and social welfare of fishermen communities. However, effective implementation, awareness among fishermen, and improved institutional support are necessary to ensure that these programs reach the intended beneficiaries and contribute to sustainable coastal development.

Conclusion

The fishing community of Digha plays a significant role in supporting the coastal economy of West Bengal, particularly through marine fishing activities along the Bay of Bengal. Fishing provides livelihood to a large number of households and contributes to local food supply as well as employment in related sectors such as fish trading, processing, and transportation. However, despite their important economic contribution, the socio-economic conditions of many fishermen households remain vulnerable. The findings of this study indicate that fishing continues to be the primary source of livelihood for most families in the Digha coastal region, but their income is often unstable due to seasonal fluctuations in fish availability, changing weather conditions, and market uncertainties. Environmental challenges such as cyclones, coastal erosion, and climate change further increase the vulnerability of fishing communities. In addition, limited access to education, healthcare facilities, modern fishing infrastructure, and organized market systems restricts the overall development and well-being of fishermen families.

To improve the livelihood security and socio-economic conditions of fishermen in the Digha coastal region, several measures are necessary. Development of modern fishing infrastructure such as improved harbors, cold storage facilities, and transportation networks can help reduce post-harvest losses and increase income. Providing better educational opportunities and support programs for children of fishermen families can help reduce school dropout rates and enhance future livelihood prospects. Strengthening fishermen cooperatives and market linkages can reduce dependence on middlemen and ensure fair prices for fish products. Furthermore, promoting alternative livelihood opportunities such as aquaculture, eco-tourism, and fish processing can diversify income sources for coastal households. Finally, the adoption of sustainable fishing practices and effective coastal

resource management policies is essential to ensure the long-term sustainability of marine resources and the economic stability of fishermen communities in the region.

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