



A Study Of Economic Conditions And Challenges Of Fishermen In Ganga–Gomati Rivers

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Abstract

The present study examines the economic conditions and challenges faced by traditional fishermen inhabiting the Ganga–Gomati river basin. Fishing remains a primary source of livelihood for these communities, yet their socio-economic well-being is under persistent threat due to multiple environmental, institutional, and market-related factors. The study highlights pressing issues such as declining fish resources caused by overfishing, habitat degradation, and water pollution, which directly affect fishermen's income and food security. Market exploitation by intermediaries, lack of access to modern infrastructure, inadequate financial support, and bureaucratic hurdles further aggravate their vulnerability. Climate change-induced floods, droughts, and shifting river ecology have disrupted traditional fishing cycles and livelihoods. In addition, technological displacement by mechanized boats and the erosion of cultural traditions are weakening community resilience. The study emphasizes that strengthening market linkages, promoting sustainable fishing practices, improving access to credit and government schemes, and supporting livelihood diversification are essential to enhance economic resilience. Collaborative interventions from government bodies, NGOs, and local institutions are crucial for securing both the livelihoods and cultural identity of fishing communities in the Ganga–Gomati rivers.

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Keywords: *Fishermen, economic conditions, pollution, climate change, market exploitation, sustainable fisheries.*

I. INTRODUCTION

Rivers have historically sustained human civilizations by providing food, water, transportation, and cultural identity. Among these, the Ganga and Gomati rivers hold immense ecological, economic, and spiritual significance in northern India. Fishing communities along these rivers have traditionally depended on riverine fisheries for their livelihoods, contributing not only to local food security but also to the cultural and social fabric of the region. However, in recent decades, fishermen in these river basins have been increasingly marginalized due to a complex interplay of environmental degradation, socio-economic vulnerabilities, and institutional gaps.

The economic conditions of fishermen in the Ganga–Gomati river system are shaped by multiple factors, including fish resource availability, access to markets, government policies, and changing climatic patterns. Declining fish stocks caused by pollution, overfishing, and habitat loss have significantly reduced income opportunities. Simultaneously, fishermen often face market exploitation by intermediaries, poor bargaining

power, and lack of direct access to fair pricing mechanisms. Limited access to credit facilities, modern fishing equipment, and social welfare schemes further perpetuate economic insecurity among these communities.

Moreover, the challenges extend beyond economics. Climate change, manifested through unpredictable floods, droughts, and shifting river hydrology, has disrupted traditional fishing cycles. Technological advances in mechanized fishing have intensified competition, displacing traditional fishermen from their fishing grounds. The resulting socio-economic distress is compounded by issues of poverty, lack of healthcare and education, and cultural erosion as younger generations seek alternative livelihoods in urban centres.

Given these complexities, studying the economic conditions and challenges of fishermen in the Ganga–Gomati rivers is crucial for understanding their livelihood struggles and identifying pathways to resilience. Such an inquiry not only highlights the urgent need for sustainable fisheries management but also emphasizes the importance of inclusive development policies that safeguard the rights, culture, and economic security of traditional fishing communities.

II. REVIEW OF RELATED STUDIES

Lubos, Lesley et al., (2022). The environment of the Sawaga River is being polluted for a number of reasons, making its preservation an issue of growing concern. In particular, this study set out to determine how people's socio-demographic, economic, sanitation, and health-related characteristics affected the Sawaga River's water quality. In order to assess the Sawaga River's water quality, researchers used a quantitative approach to analyze a number of characteristics using the Multiple Fermentation technique. The study involved 109 participants who lived in close proximity to the river and was conducted using three stations in three different barangays. We also interviewed some barangay officials and health workers to make sure our findings were accurate. Two important factors associated with water-borne illness among respondents were age and the water's source, according to the study's findings. The socio-demographic, sanitary, and health profiles of the people residing near the Sawaga River all contributed to the high total coliform bacteria found in all three of the river's stations.

Ahmed, Maruf et al., (2021). The *Hilsa* fish, scientifically known as *Tenualosailisha*, has become an integral part of the fishing community's prosperity and a source of pride for the fishermen. By administering well-structured questionnaire interviews to 250 *hilsa* fishers in the Meghna river estuary in Chandpur District, researchers aimed to gain a better understanding of the socio-economic conditions prevailing among this fishing community. Due to poor wages, lack of professional skills, and low literacy rates, the poll found that fishers' livelihoods and living conditions were still below average. Among the fishers, over 2/3 relied solely on *hilsa* fishing for their livelihood, and over 1/3 had fishing experience ranging from 11 to 20 years. During prohibition periods, nearly two-thirds of the fishers did not work in any other capacity, and half of them did not make good use of the government incentives. Three categories of fishermen were identified based on the extent to which they relied on *hilsa* fishing. Age, yearly revenue from fishing, and number of activity days spent fishing were three categories where these groups differed significantly. Thus, in order to ensure sustainable management, the government, fisheries cooperatives, non-governmental organizations (NGOs), and other pertinent groups must collaborate to back fishers.

Ikechukwu, Chukwumaije et al., (2021). People in the Ebenebe and Otuocha regions of Anambra State, Nigeria, who live along the rivers Ezu and Omamabala rely heavily on fishing for their livelihood. In order to gather socioeconomic information from the participants, 120 structured questionnaires were handed out. In order to analyze the data, descriptive statistics were employed. The study found that Ebenebe and Otuocha fishing communities differed significantly ($p < 0.05$) in terms of the education level its members had, but there was no significant difference ($p > 0.05$) in terms of the average monthly income they earned. According to the survey, the majority of the respondents (71.7%) were men who farmed fish, while 28.3% were women who processed and traded fish; the majority of these women were in the age range of 30–39. With 92.3% of the population holding some sort of degree, the largest household size recorded was 6 individuals, accounting for 35.9% of all households. The majority of respondents (69.6%) worked primarily in the fishing industry, with 30.4% engaging in additional occupations. The socioeconomic conditions of the fisher folks in the study areas were not very excellent due to a lack of basic social amenities and contemporary fishing facilities, among other issues. A 5-point likert scale was used to record the challenges of the respondents.

P., Punya et al., (2021). The rare tropical storm Ockhi, which made landfall in December 2017 on the Indian subcontinent's beaches of Tamil Nadu and Kerala, intensified quickly and had an erratic course. Based on an investigation of the effects of Ockhi on man-days lost, catch, and revenue, it was found that Tamil Nadu lost an estimated 1.85 million rupees in revenue due to a loss in fishing days, while Kerala lost \$15.17 million. While the motorized sector lost the most man-days and the most revenue, the mechanized sector lost the most income overall. The number of man-days lost by fishers directly involved in marine fishing activities was

3,21,495 in Kerala and 1,06,250 in Tamil Nadu. Reducing the catch, damaging fishing infrastructure, and killing 449 fishermen all point to the fishermen's community's precarious position; hence, it is imperative that we strengthen early warning systems and mandate satellite vessel tracking systems for all fishing vessels.

III. PROBLEMS FACED BY TRADITIONAL FISHERMAN IN GANGA AND GOMATI RIVER

Many threats threaten the survival, health, and cultural legacy of the traditional fisherman of the Ganga and Gomati rivers. Environmental deterioration, socioeconomic issues, governmental limitations, and technology developments are only a few of the many causes of these problems. In order to create tailored interventions and strategies to enhance the resilience and sustainability of traditional fisherman, it is vital to understand the specific difficulties they confront.

1. The loss of habitats due to pollution, siltation, sand mining, and river channelization is a major problem for traditional fishermen in the Ganga and Gomati rivers. Fish populations decline, breeding and spawning sites are disrupted, and fisheries productivity is diminished as a whole due to degradation of riverine habitats.

2. Water Pollution: In rivers, water quality and fish health are impacted by pollution from various sources, including industrial effluents, agricultural runoff, household sewage, and solid waste. The long-term viability of fish populations and the well-being of traditional fishers are jeopardized by pollution-induced fish deaths, disease epidemics, and reproductive abnormalities.

3. Overfishing: The Ganga and Gomati rivers are vulnerable to the effects of overfishing and other unsustainable fishing practices, such as the use of illegal gear, undersized mesh nets, and dynamite fishing. Traditional fishermen are seeing their economic viability and food security eroded as a result of diminished catch per unit effort (CPUE) caused by declining fish availability and species variety.

4. Traditional fisherman frequently encounter difficulties in obtaining the necessary inputs and resources, including financing, boats, gasoline, safety gear, and fishing gear. Traditional fisherman face significant challenges when it comes to accessing financial services and government support programs. As a result, they are unable to invest in technologies that can increase production or prepare for unexpected calamities.

5. Challenges in the Market: Small-scale commercial fishing enterprises have an advantage in the industry, but traditional fishermen have a harder time getting their catch sold at a reasonable price and getting access to markets. Traditional fisherman suffer from poor wages and economic fragility as a result of intermediaries' exploitation, knowledge asymmetry, and a lack of market infrastructure.

6. The traditional fisherman of the Ganga and Gomati rivers face grave dangers from the changing patterns of precipitation, higher average temperatures, and more frequent and severe weather extremes like droughts and floods as a result of climate change. Traditional fishing schedules and ways of life are being upended by changes in river hydrology and water temperature, which impact fish behavior, migration patterns, and spawning.

7. Regulatory Restraints: Disputes over access and resource distribution, as well as bureaucratic red tape, are common problems that traditional fisherman face. Traditional fishing methods are cast into doubt due to the lack of clarity surrounding tenure rights, the overlap in authority between several government bodies, and the insufficient implementation of fisheries legislation.

8. Technological Displacement: Conventional fishermen are feeling the heat as more advanced fishing techniques and automated boats gain ground. Because of the increased capacity and efficiency of mechanized boats, trawlers, and seine nets, traditional fishermen are being pushed out of their fishing grounds and seeing a decline in their catch rates.

9. Socioeconomic Vulnerability: Fishing villages along the Ganga and Gomati rivers are prone to social exclusion and economic shocks. Poverty, starvation, and health inequalities are worse for traditional fishermen and their families because of limited access to healthcare, sanitation, education, and social protection.

10. Cultural Erosion: As younger generations seek other livelihoods in urban areas, traditional fishermen confront the risk of cultural erosion, which includes the loss of traditional knowledge, rituals, and practices. Quick social and economic shifts, as well as outside influences, pose a danger to traditional fishing ways of life, cultural identity, social cohesiveness, and community resilience.

Government agencies, NGOs, civil society groups, and local communities must all work together in an inclusive and collaborative effort to help traditional fishermen in the Ganga and Gomati rivers overcome the challenges they confront. Promoting sustainable fishing practices, increasing access to capital and resources, fortifying market links, strengthening regulatory frameworks, building climate resilience, and empowering fishing communities through collective action and capacity building initiatives are all potential strategies to support traditional fishermen. By taking a comprehensive approach to these issues, India can protect traditional

fishermen's livelihoods and cultural legacy while making sure the fisheries in the Ganga and Gomati rivers can survive for a long time.

IV. ECONOMIC CONDITIONS OF FISHERMAN IN GANGA AND GOMATI RIVER

Several factors influence the economic circumstances of fishermen in the Ganga and Gomati rivers. These include resource availability, market forces, government regulations, environmental considerations, and socio-economic background. There is a wide range of socio-cultural identity, economic vulnerability, and livelihood methods among the fishing communities that reside along these rivers. Examining the income sources, spending patterns, market opportunities, and constraints that fishermen in the Ganga and Gomati rivers encounter is essential for understanding their economic realities.

1. **How People Make Money:** Fishing, which includes both capture fisheries and aquaculture, is the main way that people in the Ganga and Gomati rivers make money. In addition to aquaculture in bodies of water, traditional fishing techniques including netting, angling, and trapping are still widely used. Seasonality, changes in fish availability, shifts in market demand, and environmental factors all have an impact on fishing income. To lessen their reliance on fisheries and broaden their income sources, some fishermen may also work in agriculture, raise livestock, or work as wage labourers.

2. **Market Dynamics:** Factors including customer demand, fish quality, transportation infrastructure, and market access impact the market potential for fishermen in the Ganga and Gomati rivers. Most of the time, fishermen sell their catch to people either directly or to intermediaries like fish sellers or local marketplaces. Fishermen typically have little leverage in negotiations and poor earnings due to market infrastructure limitations, knowledge asymmetry, and price swings. The economic potential of fishery products could be lessened if there is restricted access to formal markets, value-added processing facilities, and export markets.

3. **Thirdly,** government policies and assistance programs are crucial in determining the economic circumstances of the Ganga and Gomati river fishermen. Sustainable fisheries management and better socioeconomic conditions for fishermen are the goals of programs including market infrastructure development, insurance schemes, credit facilities, and subsidies for fishing equipment. Nevertheless, these initiatives frequently fail to improve fishermen's livelihoods due to problems including bureaucratic red tape, corruption, and insufficient execution.

4. **The economic sustainability** of fishermen in the Ganga and Gomati rivers is threatened by environmental concerns such as water pollution, habitat degradation, overfishing, and climate change, which represent substantial constraints on their industry. The river water becomes polluted with pollutants from farms' runoff, homes' sewage systems, and businesses' effluents, which in turn harms fish populations, water quality, and the fish products' marketability. The drop in fish abundance caused by habitat degradation and overfishing has a direct impact on fishermen's catch rates and wages. These problems are already hard, and the economic resilience of fishing towns is getting increasingly worse as a result of climate change's effects on precipitation patterns, average temperatures, and the frequency and severity of extreme weather events.

5. **Availability of Resources:** The economic sustainability of fishermen in the Ganga and Gomati rivers depends on their access to resources including fishing gear, boats, fuel, and finance. Yet, disadvantaged and landless fishermen have even less access to resources, making it harder for them to invest in technology that boost output and weather economic storms. Competition from large-scale commercial fishing operations, disputes over tenure, and an uneven distribution of resources all contribute to the already existing socio-economic inequities in fishing villages.

6. **Cultural and Social Aspects:** Cultural and social aspects impact the economic circumstances of fishermen in the Ganga and Gomati rivers, which in turn affects their livelihood methods, social networks, and community resilience. Economic prosperity and a sense of community are two outcomes of the close-knit social networks, mutual support systems, and cultural values held by traditional fishing communities. The economic resilience of fishing villages may be threatened by fast socio-economic changes, urbanization, and foreign influences, which have the potential to undermine traditional lifestyles, social cohesiveness, and community solidarity.

7. **Diversifying Livelihoods:** With the economy in a state of flux and environmental concerns mounting, fishermen along the Ganga and Gomati rivers may decide to lessen their reliance on fishing by trying new things. Agricultural work, cattle raising, petty commerce, or wage labor are all examples of alternative income-generating activities that may be part of a diversified livelihood. Fishing communities can benefit from diversification initiatives in several ways, including increased economic resilience, less shock vulnerability, and better household food security.

V. CONCLUSION

The study of fishermen in the Ganga–Gomati river basin reveals that their livelihoods are under considerable stress due to a convergence of ecological, economic, and social challenges. Declining fish stocks, pollution, and habitat degradation have reduced both the availability and diversity of fish resources, directly impacting household incomes. At the same time, the dominance of middlemen in marketing channels, lack of institutional credit, and limited access to modern technology keep fishermen trapped in cycles of poverty and dependency. These economic insecurities are further compounded by climate change, which disrupts fishing cycles and threatens the sustainability of riverine ecosystems.

Beyond economics, the challenges faced by fishermen also touch upon their social and cultural identity. With younger generations migrating to urban areas in search of better opportunities, traditional fishing knowledge and practices are slowly eroding. Without timely interventions, both the livelihoods and cultural heritage of these communities face significant risks.

The findings highlight the need for a multipronged approach that combines sustainable resource management, better financial inclusion, and empowerment of fishing communities. Government schemes must be made more accessible and effective, while cooperatives and community-based organizations should be strengthened to reduce market exploitation. Additionally, promoting alternative livelihoods, skill development, and education will help reduce vulnerability while ensuring long-term resilience.

In conclusion, improving the economic conditions of fishermen in the Ganga–Gomati rivers requires not only policy reforms but also active community participation and ecological conservation. Protecting these traditional communities is not just an economic necessity but also a cultural and ecological imperative for sustainable riverine development.

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