Blue Economy and Rural Fishers in India: Opportunities, Challenges and the Path Ahead

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ABSTRACT

Blue economy is a concept for sustainable development that encompasses the economic growth, environmental sustainability and social inclusion through marine resources. Fisheries and aquaculture form a key pillar of India's economy due to their socio-economic importance. This article reviews the implications of the Blue Economy for rural fishers with a special interest in livelihoods and economic contributions along with technology, governance, and institutional dimensions. It contends that sustainable fisheries, food security and inclusive development will only be realized by giving priority to rural fishers.

INTRODUCTION

The Blue Economy has emerged as a significant development paradigm that recognizes oceans, coastal areas, and aquatic ecosystems as key drivers of economic growth while ensuring environmental sustainability and social inclusion. It refers to the sustainable use of ocean resources for employment generation, improved livelihoods, and economic development, while maintaining the health of marine and aquatic ecosystems. According to the United Nations Development Programme (2023), the Blue Economy emphasizes balancing economic benefits derived from ocean resources with the need for conservation and responsible management.

In recent years, this concept has gained global prominence due to increasing concerns over climate change, marine resource depletion, biodiversity loss, and environmental degradation. Countries across the world are adopting Blue Economy approaches to ensure long-term sustainable development. The global ocean economy is estimated to be worth approximately USD 1.5 trillion annually and is projected to grow rapidly by 2030 (OECD, 2016). Key sectors of the Blue Economy include fisheries, aquaculture, marine biotechnology, coastal tourism, renewable ocean energy, and maritime transport. These sectors collectively contribute to food security, employment, trade, and economic resilience, especially for coastal and island communities.

Source: Mongabay (2025)

Various international organizations such as the World Bank, FAO, and OECD have highlighted the importance of the Blue Economy in achieving Sustainable Development Goals (SDGs), particularly those related to poverty alleviation, food security, and life below water. Thus, the Blue Economy provides a comprehensive framework that integrates economic development with ecological sustainability and social equity, making it a crucial strategy for future global growth.

India's Blue Economy: Fisheries and Aquaculture

In the Indian context, the Blue Economy holds immense potential due to the country's vast marine and inland water resources. India has a coastline of approximately 11,099 km along with extensive river systems, reservoirs, and other inland water bodies (Department of Fisheries, Government of India). Fisheries and aquaculture are among the most important sectors within India's Blue Economy, providing livelihood support to millions of people. About 18% of the country's population resides in coastal regions, with a significant proportion dependent on fishing and allied activities for their sustenance.

India is currently the third-largest fish producer in the world and the second-largest in aquaculture, with total fish production exceeding 17 million tonnes (FAO, 2022; Government of India, 2023). The fisheries sector contributes around 1.2% to the national GDP and over 7% to agricultural GDP, while supporting the livelihoods of more than 28 million people. Recognizing the importance of this sector, the Government of India has introduced several initiatives such as the Pradhan Mantri Matsya Sampada Yojana (PMMSY) and the Sagarmala Programme to promote sustainable fisheries, enhance infrastructure, and improve the socio-economic conditions of coastal communities.

Thus, fisheries and aquaculture play a central role in strengthening India's Blue Economy by contributing to economic growth, employment generation, and food security while supporting sustainable resource management.

Resource Constraints and Livelihood Challenges

Growth in the industry has not always translated into benefits for small-scale and rural fishermen, despite the Blue Economy's expanding policy purview. According to Gopalakrishnan *et al*. (2023), India's marine capture fisheries have stagnated over the past ten years, with landings ranging from 2.7 to 3.8 million tons between 2013 and 2022, compared to the estimated potential of

approximately 5.3 million tons. It is a reflection of growing fishing pressure, excessive nearshore resource exploitation, habitat degradation, and governance constraints.

This loss of resources directly affects livelihood security for small-scale and artisanal fishermen by lowering household income and catch per unit of effort. The difficulties outlined here show that the sustainability of the Blue Economy involves not only environmental concerns but also a crucial socio-economic issue that necessitates specific targeted interventions for the vulnerable fishing communities.

Technological Interventions and Rural Livelihoods

Technological interventions are critical to sustainable blue growth in fisheries and aquaculture. Gopalakrishnan *et al*. (2023) claim that improvements in broodstock development, seed quality, disease diagnosis, and culture techniques have decreased environmental effects while boosting productivity. Government initiatives like Nucleus Breeding Centres aim to boost survival rates and give rural fish farmers a reliable source of income in order to produce high-quality, disease-free broodstock, particularly for shrimp aquaculture (Jothieswaran *et al*., 2022). Technological advancements in post-harvest management, such as value addition and cold chain infrastructure, reduce losses and boost market returns, enabling fishermen to more successfully integrate into value chains (Government of India, 2024).

By offering weather forecasts, fishing zone advisories, and market information systems, information and communication technologies have been demonstrated to improve decision-making and reduce risks for rural livelihoods (Gopalakrishnan *et al*., 2023). Additionally, the sustainability of resources is enhanced by the use of technologies like biofloc systems, aeration systems, and aquaculture recirculatory systems.

Despite the benefits of technological advancements, rural fishermen continue to face significant challenges, including unequal access to technology, high adoption costs, and limited technical knowledge, highlighting the need for strengthened extension support (Department of Fisheries).

Governance, Policy Support, and Institutional Frameworks

In order to guarantee that rural fishing communities' profit from the Blue Economy, governance, policies, and institutional frameworks are crucial. India's Vision of a New India by 2030 acknowledges the Blue Economy as a significant driver of development. In order to encourage a coordinated approach to ocean governance in India, a National Blue Economy Advisory Council has been proposed (Government of India, 2024). India's dedication to a comprehensive approach to ocean governance is evident in regional initiatives like SAGAR and BIMSTEC.

A sunrise sector for achieving "Viksit Bharat" by 2047 is the fishing industry. From Financial year 2014 to financial year 2023, the fishing industry grew at an astounding average rate of 8.9%. India produced 174.45 lakh tonnes of fish overall in 2023–2024 (Department of fisheries, 2024). Increased budgetary allotments and the Pradhan Mantri Matsya Sampada Yojana (PMMSY), which focus on infrastructure development, market access, capacity building, and productivity enhancement in fisheries, demonstrate the government's efforts to support fisheries.

Sustainability

The concept of the Blue Economy is closely aligned with Sustainable Development Goal 14 (SDG 14), which emphasizes the conservation and sustainable use of marine resources (United Nations, 2023). Integrating sustainability principles into fisheries management enables economic growth without compromising ecosystem health. Sustainable resource management is essential for ensuring the long-term livelihood security of rural fishermen, as it supports consistent fish production and enhances resilience to climate change (Arora, 2022).

Although such measures may involve short-term constraints, they lead to long-term gains in terms of improved livelihood stability and regeneration of fish stocks (FAO,2022). Moreover, ecosystem-based approaches—such as the conservation of mangroves, wetlands, and breeding grounds—play a vital role in strengthening climate resilience and reducing vulnerability to extreme weather events (United Nations, 2023).

CONCLUSION

The Blue Economy offers a sustainable and inclusive pathway for the development of rural fishing communities in India by promoting the responsible use of aquatic resources. It not only contributes to economic growth, employment, and food security but also ensures the conservation of marine ecosystems for future generations. With India's strong fisheries base and supportive initiatives, the sector holds significant potential for improving rural livelihoods.

However, challenges such as limited access to technology, high costs, and climate vulnerabilities continue to affect small-scale fishers. Addressing these issues through effective policies, capacity building, and sustainable practices is essential. Overall, the successful implementation of the Blue Economy can enhance livelihood security while ensuring environmental sustainability, making it crucial for the future of rural fishers in India.

REFERENCES

Arora, A. (2022). *Impact of blue economy and sustainable development in India with correlation to SDG 14: Life under water*. Quest Journals.

Food and Agriculture Organization (FAO). (2022). *The state of world fisheries and aquaculture 2022: Towards blue transformation*. FAO.

Gopalakrishnan, A., Parappurathu, S., Menon, M., Suresh, V. V. R., George, G., Kizhakudan, S. J., Sukumaran, S., & Ignatius, B. (2023). *Propelling India's blue economy: Technological and governance perspectives in fisheries and aquaculture*. ICAR–Central Marine Fisheries Research Institute, Kochi.

Government of India. (2024). *Accelerating the blue economy wave towards Viksit Bharat*. Department of Fisheries, Ministry of Fisheries, Animal Husbandry and Dairying.

Jothieswaran, V., Vidhyavathi, A., Padmarani, S., Balaji, P., & Vasanthi, R. (2022). *The role of fisheries sector in India's blue economy: An integration of economic vitality, sustainability and future potential*. Tamil Nadu Agricultural University.

Organisation for Economic Co-operation and Development (OECD). (2016). *The ocean economy in 2030*. OECD Publishing.

Research and Information System for Developing Countries (RIS). (n.d.). *Blue economy: Enhancing growth and sustainability*. New Delhi.

United Nations. (2023). *Blue economy: India's current contributions and opportunities*. United Nations Publications.

World Bank. (2017). *The potential of the blue economy: Increasing long-term benefits of the sustainable use of marine resources*. World Bank.