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## The significance of fish in India's northeast.

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### Abstract

India's fishing industry is a significant global player, contributing to the country's GVA and agricultural GVA and benefiting coastal communities. A rapid annual growth rate of 7% provides essential nutrition and employment to over 28 million people. Marine and inland fisheries are vital to the industry, with the North-Eastern region being a biodiversity hotspot. However, overfishing and habitat destruction pose challenges to this delicate ecosystem. The government's Pradhan Mantri Matsya Sampada Yojana (PMMSY) aims to enhance fish production, increase exports, and create job opportunities while promoting sustainable fishing practises and conservation programmes. The fisheries sector significantly contributes to India's economy, and the North-Eastern region's fish markets boost tourism and trade. Ensuring a balance between conservation and exploitation is critical for long-term growth. In conclusion, India's fisheries sector is crucial for its economy, culture, and nutrition. Sustainable practises and conservation efforts will sustain its position as a critical player in the global fishing sector.

### Introduction

India is a significant player in the worldwide fishing sector, ranking third in fish production and second in aquaculture after China (M. Fayaz, 2020). The Indian fishing industry produces around 1.24% of the country's Gross Value Added (GVA) and more than 7.28% of agricultural GVA, accounting for 7.56% of worldwide production (Lingamurthy, 2015). Fisheries and aquaculture are critical in providing food, nutrition, income, and livelihood to millions of people in impoverished coastal communities (M. Fayaz, 2020). The Indian fisheries sector is quickly expanding, meeting a vast population's nutritional and food



security needs while providing income and employment to over 28 million people (GOI, 2019). It serves around 280 lakh individuals at the primary level and nearly twice that number further up the value chain. The average annual growth rate in the fisheries sector over the last few years has been an astounding 7% (GOI, 2019). Fish, an inexpensive and high-protein source of animal protein, is critical in combating hunger and nutrient deficiencies, particularly in vulnerable areas (Maulu S., 2021). Recognised as a 'Sunrise Sector,' the fisheries industry has seen exceptional double-digit average annual growth of 10.87% since 2014–15, achieving a record fish production of 142 lakh metric tonnes in FY 2019–20 and demonstrating enormous potential for further expansion (GOI, 2021).

Marine fisheries in India are centred along the country's enormous 7,500-kilometer coastline, with states such as Kerala, Tamil Nadu, Andhra Pradesh, Odisha, West Bengal, Gujarat, and Maharashtra making substantial contributions to marine seafood production. India's marine fish production has increased throughout the years, with the Government of India's Department of Fisheries reporting a total marine fish production of over 3.94 million metric tonnes in 2020–2021 (GOI, 2021). Essential marine fish in Indian waters include mackerel, sardines, pomfret, tuna, prawns, and crabs. Aside from coastal fisheries, India has a sizable inland fishery industry that takes advantage of the country's abundant rivers, lakes, ponds, and reservoirs. Inland fishing is popular in states such as West Bengal, Andhra Pradesh, Odisha, Karnataka, Kerala, and Uttar Pradesh. In recent years, India's inland fish production has increased significantly, with an expected 7.73 million metric tonnes in fiscal year 2020-2021 (GOI, 2021). Rohu, Catla, Mrigal, Carp, Tilapia, and Pangasius are significant freshwater fish species cultivated in inland waters (C. Hamilton 2012). The North-Eastern region of India, which includes states such as Assam, Arunachal Pradesh, Manipur, Mizoram, Meghalaya, Nagaland, Tripura, and Sikkim, relies mainly on agriculture and associated sectors for a living (Singh et al., 2017). With its different topographical and climatic circumstances spanning from the Imphal Valley's highland plains to hilly regions, this region is home to many aquatic resources (Munilkumar and Nandeesha, 2007). The North-East region is home to 58 major rivers and tributaries and 247 different species, including ornamental fish. It is home to 267 indigenous fish species grouped into 114 genera, 28 families, and ten orders (De and Singh, 2017). Fish is an essential aspect of the lives of the people of the North-Eastern states because it is an ample food supply, an essential part of

their cultural history, and an essential component of their economy. It is critical to meet the nutritional demands of the people, particularly in areas where malnutrition is prevalent (Maulu S., 2021). Fishing festivals held by several indigenous tribes in the northeast highlight the cultural significance of fish, as evidenced by local folklore, songs, and dances (De and Singh, 2017). Unfortunately, overfishing and habitat destruction substantially challenge the Northeastern states' delicate ecosystems. Various conservation programmes are being implemented to promote sustainable fishing practises and safeguard aquatic habitats to maintain ecological balance and support local livelihoods (GOI, 2021). The North-Eastern states' dynamic fish markets and culinary scene attract tourists, boosting tourism growth and creating additional local economic prospects (GOI, 2019). Furthermore, the high demand for Northeastern fish products in the country and foreign markets contributes significantly to the region's trade and commerce (Ministry of Commerce and Industry, June 2023).

2024–25 Fisheries contribute significantly to India's economic and livelihood growth. According to the most recent Handbook of Fishery Statistics (2020), it provides 1.24% of GDP and 7.28% of agricultural GDP. It is one of the most crucial credit sectors for the development of Atmanirbhar Bharat, and its importance cannot be overemphasised. The government launched the Pradhan Mantri Matsya Sampada Yojana (PMMSY) on July 5, 2019, to increase fish production by an additional 0.7 MMT, increase fisheries export earnings to Rs. 1,00,000 crores, double farmer income, reduce post-harvest losses from 20–25% to around 10%, and create an additional 0.55 million fisheries job opportunities by 2024–25. India's North-East (NE) includes Arunachal Pradesh, Assam, Manipur, Meghalaya, Mizoram, Nagaland, and Tripura. The North-East (NE) India region is made up of eight states: Arunachal Pradesh, Assam, Manipur, Meghalaya, Mizoram, Nagaland, Tripura, and Sikkim, with a total geographical area of 2.55 lakh km<sup>2</sup> (about 8% of the country), 43% of which is located at an elevation of 300m, 30% at 300–1200 m, and 27% at more than 1200m above MSL. Temperatures range from 180°C to 250°C on average, with local variations of 1500–12,000 mm. The pH ranges from 4.5 to 6.5 for chernicenosols found on high plains and plateaus to orthic tenosols found on hills and mountains. North-east India is a 'global hotspot' for aquatic biodiversity and a hub for fisheries and aquaculture enhancement due to its diverse and dynamic environmental conditions.

**Conclusion:**

Fish is significant in India, primarily for its contribution to millions of people's economy, nutrition, and livelihoods. The North-Eastern region stands out as a treasure trove of different landscapes and rich fish species, vital to satisfying its population's nutritional needs and presenting its cultural history. However, the delicate balance between conservation and exploitation must be maintained to ensure long-term growth and development.

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