



DAILY EDITORIAL ANALYSIS

TOPIC

**TOWARDS SUSTAINABLE FISHERIES
AND AQUACULTURE IN INDIA**

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Context

- Fisheries and aquaculture in India, vital for livelihoods, nutrition, and trade, faces mounting challenges, from overfishing and pollution to climate change and inequitable access to resources.

Aquaculture & Fisheries in India

- Aquaculture** refers to the breeding, rearing, and harvesting of aquatic organisms—including **fish, crustaceans, mollusks, and aquatic plants**—in controlled environments.
 - It complements capture fisheries and is vital for meeting the growing demand for protein-rich food.
- According to the **National Fisheries Development Board (NFDB)**:
 - India is the **third-largest aquaculture producer globally**, contributing significantly to global fish supply.
 - The sector contributes **1.24% to India's Gross Value Added (GVA)** and **7.28% to agricultural GVA**.
- Fisheries in India**: India is the **second largest fish producing country** with **around 8% share** in global fish production.
 - According to the **FAO's State of World Fisheries and Aquaculture (SOFIA) 2024**, global capture fisheries reached **92.3 million tonnes** in 2022, while aquaculture hit a record **130.9 million tonnes**, valued at **\$313 billion**. India contributed **10.23 million tonnes**.
 - Fish production has **more than doubled in the past decade**—from 96 lakh tonnes in 2013–14 to 195 lakh tonnes in 2024–25, marking a **104% increase**.
- The sector supports the livelihoods of **over 3 crore fishers and fish farmers** across the country.
 - More than 26 lakh stakeholders are registered on the **National Fisheries Digital Platform (NFDP)** as of August 2025.

India's Major Aquaculture & Fisheries Zones

- Marine Fisheries Zones**: India has an extensive coastline of 11,098.81 km, supporting for aquaculture and fisheries sector, including:
 - West Coast (Arabian Sea)**: From Gujarat to Kerala, including Maharashtra, Goa and Karnataka.
 - East Coast (Bay of Bengal)**: From West Bengal to Tamil Nadu including Andhra Pradesh and Odisha.
- Inland Fisheries Zones**: India's inland fisheries are supported by rivers, reservoirs, ponds, tanks, and wetlands, especially in:
 - Eastern India**: West Bengal, Bihar and Assam.
 - Southern India**: Andhra Pradesh, Tamil Nadu and Telangana.
 - Central and Northern India**: Chhattisgarh, Madhya Pradesh, and Uttar Pradesh
- Brackish Water Aquaculture Zones**: Brackish water aquaculture, especially shrimp farming, is concentrated in Andhra Pradesh (over 60% of India's shrimp production), Tamil Nadu and Odisha, and West Bengal (Traditional **Bheri Systems in the Sundarbans**).

Key Concerns in the Sector

- Environmental Stress**: Overfishing, habitat degradation, and water pollution are straining aquatic ecosystems, threatening biodiversity and long-term productivity.
 - In **Kashmir's Wular Lake**, mass fish deaths—especially of **snow trout**—have been linked to illegal fishing practices using electric shocks, which devastate aquatic life.
- Climate Change Impacts**: Rising temperatures and erratic rainfall patterns are affecting breeding cycles and water quality, especially in inland aquaculture zones.
- Regulatory and Governance Challenges**: Despite new deep-sea fishing rules, enforcement remains weak. The **government's recent notification** aims to empower **Fishermen Cooperative Societies** and **Fish Farmers Producer Organisations (FFPOs)**, but concerns persist over foreign vessel bans and equitable access to marine resources.

- **Food Safety and Traceability:** The **Marine Products Export Development Authority (MPEDA)** stresses the need for certification and traceability to maintain **credibility in global markets**.
 - ♦ India risks losing export competitiveness, without robust standards.
- **Socioeconomic Vulnerabilities:** Small-scale fishers often lack access to credit, insurance, and infrastructure, making them vulnerable to market shocks and environmental disruptions, while aquaculture is a major employment generator.

Related Efforts & Initiatives

- **Institutional and Policy Drivers:** National agencies — including the Indian Council of Agricultural Research (ICAR), MPEDA, National Fisheries Development Board (NFDB), and Coastal Aquaculture Authority (CAA) — have driven **innovation and sustainability** across the value chain.
 - ♦ Private sector investments have strengthened hatcheries, feed production, and export-oriented value addition.
- **Transformative Government Initiatives:** Flagship programmes like **Blue Revolution** and **Pradhan Mantri Matsya Sampada Yojana (PMMSY)** have accelerated inland and coastal aquaculture, improved safety standards, and enhanced regulatory frameworks.
- **Key Reforms:**
 - ♦ **Vessel transponders** for fisher safety and marine monitoring;
 - ♦ **Kisan Credit Card inclusion** for digital and financial access;
 - ♦ **Matsya Seva Kendras** for integrated fisheries support;
 - ♦ **Climate-Resilient Coastal Fishermen Villages Programme** to enhance adaptation;
 - ♦ **Draft National Fisheries Policy (2020)** for sustainable governance;

Other Important Initiatives

- **Pradhan Mantri Matsya Sampada Yojana (PMMSY):** It includes:
 - ♦ Fish Farmers Producer Organisations (FFPOs);
 - ♦ Fisheries and Aquaculture Infrastructure Development Fund (FIDF);
 - ♦ Pradhan Mantri Matsya Kisan Samridhi Sah-Yojana;
 - ♦ Integrated Aqua Parks Under PMMSY;
 - ♦ Artificial Reefs Deployed Under PMMSY;
 - ♦ Designated Nucleus Breeding Centres (NBCs);
- **Technological Advancements:**
 - ♦ **Satellite Technology Integration:** National Rollout Plan for Vessel Communication and Support System, application of Oceansat, Potential Fishing Zones (PFZ) etc
 - ♦ **GIS-Based Resource Mapping:** Implementation of GIS technology for mapping marine fish landing centers and fishing grounds.
- **India's Sustainable Fishing Efforts:**
- **National Policy on Marine Fisheries (NPMF, 2017):** It places a strong emphasis on **sustainability as the core principle** for all marine fisheries actions.
 - ♦ It guides the conservation and management of India's marine fishery resources.
- **Regulation and Conservation Measures:** It has implemented several conservation measures to ensure the long-term sustainability of marine fish stocks, including:
 - ♦ **Uniform Fishing Ban:** A 61-day **uniform fishing ban during the monsoon season** in the EEZ to allow fish stocks to replenish.
 - ♦ **Prohibition of Destructive Fishing Methods:** Bans on pair trawling, bull trawling, and the use of artificial LED lights in fishing, which help reduce overfishing and minimize damage to marine ecosystems.

- ♦ **Promotion of Sustainable Practices:** Encouraging sea ranching, the installation of artificial reefs, and mariculture activities such as seaweed cultivation.
- ♦ **Fisheries Regulations by States/UTs:** Coastal States/UTs have implemented gear-mesh size and engine power regulations, **minimum legal size (MLS)** of fish, and zonation of fishing areas for different types of vessels, contributing to sustainable fishing.

FAO's Longstanding Partnership with India

- **Bay of Bengal Programme (BOBP):** Enhanced small-scale fishing technologies, sea safety, and post-harvest practices.
- **Bay of Bengal Large Marine Ecosystem (BOBLME) Project:** Supported the Ecosystem Approach to Fisheries Management (EAFM), conservation of endangered species, and reduction of Illegal, Unreported, and Unregulated (IUU) fishing.
- **GEF-Funded Aquaculture Project in Andhra Pradesh:** Promotes climate-resilient, low-footprint aquaculture under Ecosystem Approach to Aquaculture (EAA) and Guidelines for Sustainable Aquaculture (GSA) principles.
- **Technical Cooperation Programme (TCP) of FAO:** For modernization and sustainability of fishing ports, starting with pilot projects in **Vanakbara (Dadra and Nagar Haveli and Diu)** and **Jakhau (Gujarat)**.
- Recently, the **Food and Agriculture Organization (FAO)** called for renewed commitment to 'India's Blue Transformation: Strengthening Value Addition in Seafood Exports', on **World Fisheries Day 2025 (November 21)**.

Way Forward: Focusing on Sustainability and Inclusivity

- India's fisheries and aquaculture sectors are poised for continued growth — but sustainability remains non-negotiable. India needs to:
 - ♦ Regulate fishing efforts using **science-based stock assessments**;
 - ♦ Strengthen **Monitoring, Control, and Surveillance (MCS)** systems to curb IUU fishing;
 - ♦ Promote **ecosystem-based approaches** and **sustainable aquaculture guidelines**;
 - ♦ Enhance **traceability, certification, and digital monitoring tools**;
 - ♦ Ensure **inclusivity** for small-scale fishers and farmers;
- **Blue Revolution 2.0:** It is a new phase in India's Blue Revolution, focusing on:
 - ♦ **Sustainability:** Emphasizing responsible fishing, habitat conservation, and climate resilience.
 - ♦ **Inclusivity:** Empowering women and small-scale fishers through training and access to markets.
 - ♦ **Diversification:** Expanding into mariculture, ornamental fish farming, and high-value species like shrimp and tuna.

Source: TH

Daily Mains Practice Question

[Q] Discuss the key challenges and policy interventions necessary for achieving sustainable fisheries and aquaculture in India. How can India balance ecological conservation with economic growth in this sector?

