India’s Marine Fisheries: Sustainability, Emerging Challenges and the Way Forward

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Recent Developments:

- The **Government of India**, based on the latest assessment by the **Central Marine Fisheries Research Institute (CMFRI)**, reported that **91.1%** of the **135 assessed marine fish stocks** remain in sustainable condition.
- At the same time, the **Food and Agriculture Organization (FAO)** has cautioned that India's marine fisheries face growing ecological pressures, including **stagnant marine fish production**, **fully exploited fish stocks**, **declining catches**, **degradation of coastal ecosystems** and increasing pressure from **mechanised trawling**.
- The debate highlights the need to balance **marine resource conservation**, **livelihood security** and the **Blue Economy** objectives through scientific fisheries governance.

India’s Fisheries Sector:

Present Status:

- India possesses an **Exclusive Economic Zone (EEZ)** of nearly **2.4 million sq. km**, extending up to **200 nautical miles**, making it one of the world's major maritime resource zones.
- The **continental shelf** and **inshore waters** constitute the country's most productive marine fishing grounds due to high biological productivity.
- According to the latest **CMFRI** assessment, **91.1%** of assessed marine fish stocks were found to be sustainable during **2022**, with most commercially important species remaining in healthy condition.
- Unlike many developed fishing nations that conduct **scientific stock assessments at sea**, India primarily estimates fish stock status through **landing (catch) data**, which may not always reflect the actual abundance of fish populations.
- Fisheries contribute around **7.43%** of **Agricultural Gross Value Added (GVA)**, while total fish production increased to **197.75 lakh tonnes** during **FY 2024–25**.
- India's seafood exports reached **?62,408 crore** during **FY 2024–25**, with **frozen shrimp** accounting for the largest share and the **United States** and **China** remaining the principal export destinations.
- The **Union Budget 2026–27** allocated a record **?2,761 crore** to the fisheries sector, including **?2,500 crore** under the **Pradhan Mantri Matsya Sampada Yojana (PMMSY)**.
- The **Fisheries and Aquaculture Infrastructure Development Fund (FIDF)** and enhanced **Kisan Credit Card (KCC)** limits of **?5 lakh** have expanded institutional credit and fisheries infrastructure.
- India operates more than **64,000 mechanised fishing vessels**, alongside a large fleet of traditional and artisanal fishing boats, reflecting increasing mechanisation.
- Adoption of **Recirculatory Aquaculture Systems (RAS)** and **Bio-floc Technology** is improving resource efficiency, reducing water consumption and promoting sustainable aquaculture.
- The **National Fisheries Digital Platform (NFDP)** provides digital identity and integrated service delivery to more than **30 lakh** fisheries stakeholders.

- The **Pradhan Mantri Matsya Kisan Samridhi Sah-Yojana (PM-MKSSY)** promotes formalisation, traceability and value-chain development across the fisheries sector.
- The **Rules for Sustainable Harnessing of Fisheries in the EEZ and High Seas, 2025** strengthen sustainable utilisation of marine fisheries resources in India's **Exclusive Economic Zone** beyond territorial waters.

Importance of Fisheries Sector:

Economic and Strategic Significance:

- Fisheries provide livelihood opportunities to millions of coastal and inland households while contributing significantly to food security and nutritional security.
- The sector supports export earnings, employment generation, coastal economic development and the growth of the **Blue Economy**.
- Fisheries contribute to balanced regional development, especially in coastal States and island territories.
- Sustainable fisheries also strengthen marine resource conservation and support India's commitments under **Sustainable Development Goal 14 (Life Below Water)**.

Major Challenges Facing India's Marine Fisheries:

Scientific and Ecological Challenges:

- Heavy dependence on **landing-data-based assessments** instead of comprehensive marine stock surveys creates uncertainty regarding the actual health of fish populations.
- Coastal ecosystems, particularly **mangroves**, **estuaries**, **seagrass beds** and **benthic habitats**, are experiencing degradation due to pollution, habitat destruction and altered river flows.
- Excessive mechanised bottom trawling repeatedly disturbs seabed ecosystems, reduces biodiversity and damages fish breeding habitats.
- Climate change, ocean warming, marine heatwaves, ocean acidification and changing fish migration patterns are creating new uncertainties for marine fisheries. The **Indian National Centre for Ocean Information Services (INCOIS)** has observed increasing climate-driven variability in marine ecosystems affecting fisheries productivity.

Governance and Livelihood Challenges:

- Weak enforcement of seasonal fishing bans, coastal zoning regulations and gear restrictions reduces the effectiveness of fisheries management.
- Rapid expansion of mechanised fishing has created overcapacity, increasing competition over declining fish resources.
- Small-scale and traditional fishers face livelihood insecurity because of unequal access to marine resources and growing conflicts with mechanised vessels.
- Deep-sea fishing promotion alone may not substantially increase fish production while requiring significantly higher investment in fuel, technology and infrastructure.
- Post-harvest losses remain substantial because of inadequate cold-chain infrastructure, processing facilities and market linkages.

Government Initiatives for Sustainable Fisheries:

Major Measures:

- The **National Policy on Marine Fisheries (2017)** places sustainability, ecosystem conservation and responsible fishing practices at the centre of marine fisheries management.

- A **61-day uniform fishing ban** during the southwest monsoon allows fish populations to breed and replenish naturally.
- Prohibition of **pair trawling**, **bull trawling** and artificial **LED-light fishing** reduces destructive fishing practices.
- Promotion of **sea ranching**, **artificial reefs**, **mariculture** and **seaweed cultivation** diversifies coastal livelihoods while reducing pressure on capture fisheries.
- Coastal States and Union Territories regulate **mesh size**, **engine power**, **minimum legal size of fish** and **zonal fishing restrictions** to promote sustainable harvesting.
- The **Pradhan Mantri Matsya Sampada Yojana**, launched in **2020**, aims to achieve a **Blue Revolution** through infrastructure development, productivity enhancement, post-harvest management, exports and fisheries governance. It also aligns with the vision of the **Blue Economy** and **Atmanirbhar Bharat**.
- India is implementing the **Fishery Survey of India's** resource assessment programmes and expanding **Potential Fishing Zone (PFZ)** advisories through **Indian National Centre for Ocean Information Services**, enabling fuel-efficient and sustainable fishing operations.

Way Forward:

Priority Reforms:

- Strengthen governance of **territorial waters** and **nearshore fishing zones** through vessel monitoring systems, coastal surveillance, community participation and stricter enforcement.
- Expand scientific stock assessments using underwater surveys, ecosystem monitoring and benthic habitat assessment in addition to landing statistics.
- Strictly regulate mechanised bottom trawling through improved zoning, seasonal closures and effective monitoring.
- Promote **Aquaponics**, integrating aquaculture with hydroponics, to improve water-use efficiency and diversify farmers' income.
- Strengthen cold-chain infrastructure, fish landing centres, refrigerated transport, processing units and export logistics to minimise post-harvest losses.
- Promote value addition through fish processing, branding, ready-to-eat products, fish oil, nutraceuticals, collagen products and export diversification.
- Encourage **co-management**, involving fishing communities, cooperatives, scientific institutions and State governments in fisheries governance for better compliance and sustainable resource use.
- Align fisheries development with the **Ecosystem Approach to Fisheries (EAF)** promoted by the **Food and Agriculture Organization**, ensuring conservation of marine biodiversity alongside sustainable livelihoods.
- Promote **Marine Spatial Planning (MSP)** for balancing fisheries, conservation, shipping, tourism and offshore economic activities within India's marine space.

Conclusion:

Towards Sustainable Marine Fisheries:

- India's fisheries sector must simultaneously promote economic growth, food security and ecological sustainability through science-based governance.
- Long-term sustainability will depend upon restoring coastal ecosystems, improving scientific resource assessment, regulating destructive fishing practices and ensuring meaningful participation of traditional fishing communities.
- A balanced fisheries policy integrating conservation, technology, institutional reforms and livelihood security will strengthen India's position as a resilient and globally competitive maritime nation