



ILLEGAL, UNREPORTED AND UNREGULATED (IUU) FISHING AS MARINE ENVIRONMENTAL CRIME IN INDIA: Legal Gaps, Enforcement Deficits, and the Blue Economy At Risk

SURIYA T

How to Cite this Article:

T, S. (2026). ILLEGAL, UNREPORTED AND UNREGULATED (IUU) FISHING AS MARINE ENVIRONMENTAL CRIME IN INDIA: Legal Gaps, Enforcement Deficits, and the Blue Economy At Risk. International Journal of Creative and Open Research in Engineering and Management, 2(6).
<https://doi.org/10.55041/ijcope.v2i6.419>

License:

This article is published under the terms of the Creative Commons Attribution 4.0 International License (CC BY 4.0), which permits unrestricted use, distribution, and reproduction in any medium, provided the original author(s) and the source are credited.

© The Author(s). Published by International Journal of Creative and Open Research in Engineering and Management.



<https://doi.org/10.55041/ijcope.v2i6.419>

Abstract

India commands a formidable maritime position — a 7,516-kilometre coastline, an Exclusive Economic Zone (EEZ) of more than two million square kilometres, and a marine fisheries sector sustaining the livelihoods of over 28 million coastal citizens. Yet this maritime domain is gravely imperilled by a form of organised environmental crime that remains structurally underaddressed within Indian law and policy: Illegal, Unreported and Unregulated (IUU) fishing.¹ As the world's second-largest fish-producing nation,² India confronts persistent IUU activity within its EEZ and in the wider Indian Ocean Region (IOR), with estimates placing illegal and unreported catches at between 16 and 34 percent of total Indian Ocean harvests.³

This paper examines IUU fishing through the lens of green criminology and maritime law, arguing that its scale, organisational sophistication, and intersection with other criminal enterprises categorise it as a form of transnational marine environmental crime.⁴ Drawing on international instruments including the United Nations Convention on the Law of the Sea (UNCLOS),⁵ the FAO Port State Measures Agreement, and the Cape Town Agreement, as well as

domestic legislation and judicial materials, the paper undertakes a comprehensive assessment of India's legal and enforcement architecture. It identifies four structural deficits — legislative fragmentation,

¹Food and Agriculture Organization of the United Nations (FAO), 'International Plan of Action to Prevent, Deter and Eliminate Illegal, Unreported and Unregulated Fishing' (FAO 2001) 2–4. The tripartite definition has been universally adopted in subsequent international instruments and domestic fisheries legislation.

²Department of Fisheries, Ministry of Fisheries, Animal Husbandry and Dairying, Government of India, 'Handbook on Fisheries Statistics 2023' (Government of India 2023) 11–14. India ranks second globally in total fish production after China.

³Pramod G and others, 'Estimates of Illegal and Unreported Fish in Seafood Imports to the USA' (2014) 48 Marine Policy 102, 103. The Indian Ocean accounts for approximately 15 percent of global marine fish landings.

⁴Rob White, *Crimes Against Nature: Environmental Criminology and Ecological Justice* (Willan Publishing 2008) 1–22. Green criminology examines harms inflicted upon ecosystems, non-human species, and future generations, situating environmental violations within a justice-oriented framework.

⁵United Nations Convention on the Law of the Sea (UNCLOS), opened for signature 10 December 1982, 1833 UNTS 3 (entered into force 16 November 1994) arts 55–75 (Part V). India ratified UNCLOS on 29 June 1995.



jurisdictional ambiguity, inadequate vessel surveillance, and limited multilateral engagement — and proposes a tripartite reform model to address them. Without urgent reform, India's Blue Economy ambitions risk being undermined by a governance failure of its own making.

Keywords

IUU Fishing • Marine Environmental Crime • India • UNCLOS • Blue Economy

Maritime Enforcement • Exclusive Economic Zone • Indian Ocean Region • Green Criminology

Part I: Introduction

1.1 The Ocean as a Site of Organised Environmental Crime

The governance of the world's oceans has long been confronted by an enduring paradox: the ocean is the largest shared commons in human experience, yet it is also the domain where legal authority dissipates most rapidly with distance from shore. It is within this vast regulatory twilight that Illegal, Unreported and Unregulated (IUU) fishing has established itself as one of the most economically damaging and ecologically destructive forms of organised environmental crime in the twenty-first century. The FAO estimates that IUU fishing removes approximately 26 million tonnes of fish from global marine ecosystems annually — a figure with an estimated economic value of between USD 10 billion and USD 23 billion each year.⁶

In the Indian context, the stakes are particularly acute. India is the world's second-largest fish-producing nation,⁷ and marine fisheries constitute a critical pillar of the rural economy, coastal employment, and national food security. Estimates by fisheries scientists suggest that IUU fishing in the Indian Ocean Region has reduced the sustainable yield of key commercial fish stocks by margins that, if uncorrected, will lead to the collapse of several commercially important species within decades.⁸ For a country that has articulated an ambitious 'Blue Economy' development vision, the persistence of IUU fishing represents a direct structural threat to that agenda.

1.2 Situating IUU Fishing within Green Criminology

The theoretical framework of green criminology — an emerging sub-discipline that examines crimes and harms directed at the natural environment, non-human animals, and future generations — provides the most productive analytical lens through which to examine IUU fishing.⁹ Unlike conventional fisheries management, which tends to treat IUU fishing as a technical regulatory infraction, green criminology situates it as a form of organised environmental harm that generates victims across multiple registers: the marine ecosystem itself, the coastal communities whose livelihoods depend on healthy fish stocks, and future generations who will inherit a depleted ocean.

The green criminological frame also directs attention to power asymmetries in marine governance: large-scale commercial IUU operations extract resources with relative impunity, while small-scale artisanal fishers bear the ecological consequences of stock depletion and the enforcement costs of regulatory frameworks designed without their interests as a primary consideration. This dimension of

⁶Food and Agriculture Organisation of the United Nations (FAO), 'International Plan of Action to Prevent, Deter and Eliminate Illegal, Unreported and Unregulated Fishing' (FAO 2001) 2–4. The tripartite definition has been universally adopted in subsequent international instruments and domestic fisheries legislation.

⁷Department of Fisheries, Ministry of Fisheries, Animal Husbandry and Dairying, Government of India, 'Handbook on Fisheries Statistics 2023' (Government of India 2023) 11–14. India ranks second globally in total fish production after China.

⁸Pramod G and others, 'Estimates of Illegal and Unreported Fish in Seafood Imports to the USA' (2014) 48 Marine Policy 102, 103. The Indian Ocean accounts for approximately 15 percent of global marine fish landings.

⁹Rob White, *Crimes Against Nature: Environmental Criminology and Ecological Justice* (Willan Publishing 2008) 1–22. Green criminology examines harms inflicted upon ecosystems, non-human species, and future generations, situating environmental violations within a justice-oriented framework.



distributional injustice, increasingly theorized under the concept of 'blue justice', informs the reform proposals advanced in Part VI of this paper.¹⁰

1.3 Scope and Structure

This paper proceeds in six parts. Part II outlines the definitional framework for IUU fishing and quantifies its scale within the Indian maritime context. Part III examines India's domestic legal architecture and identifies its principal structural weaknesses. Part IV analyses the enforcement apparatus — its agencies, capacities, and operational deficits. Part V addresses the intersection of IUU fishing with broader organized criminal networks, including drug trafficking, human smuggling, and money laundering. Part VI evaluates India's international engagement and proposes a comprehensive tripartite reform framework. Part VII draws conclusions.

Part II: IUU Fishing — Definitional Framework and Scale

2.1 The FAO Definitional Framework

The term 'IUU fishing' acquired formal definitional content through the FAO's International Plan of Action to Prevent, Deter and Eliminate Illegal, Unreported and Unregulated Fishing, adopted in 2001.¹¹ The framework distinguishes three categories of non-compliant activity. 'Illegal' fishing encompasses operations conducted without a valid licence in the waters of a coastal state, in contravention of conservation measures established by relevant Regional Fisheries Management Organisations (RFMOs), or in violation of the domestic laws of the flag state. 'Unreported' fishing covers catches not declared to the competent national authority or RFMO in breach of reporting obligations. 'Unregulated' fishing refers to activities in areas or for species not subject to applicable conservation measures, or activities conducted in a manner inconsistent with the responsibilities of states under international law. These three categories overlap significantly in practice. A vessel fishing without authorisation in a coastal state's EEZ simultaneously engages in illegal fishing (no licence) and unreported fishing (no declaration of catch). The composite nature of IUU activity means that enforcement frameworks must address all three dimensions simultaneously; a regulatory response that targets only one element will be systematically evaded through the others.

2.2 Scale and Ecological Consequences in the Indian Context

India's fisheries sector contributes approximately 1.24 percent to national GVA and over 7.28 percent to agricultural GVA.¹² Approximately 14.5 million people are directly employed in the sector, with a wider economic circle of approximately 28 million dependants concentrated in coastal states including Kerala, Tamil Nadu, Andhra Pradesh, Gujarat, Odisha, and West Bengal. IUU fishing — by both domestic actors and foreign distant-water fleets — threatens this productive capacity directly. Estimates for the Indian Ocean as a whole suggest that between 16 and 34 percent of total catches go unreported, meaning that the actual fish removed from the ecosystem substantially exceeds the official production statistics.¹³

¹⁰Courtney Farthing and others, 'Blue Justice and IUU Fishing: Protecting Artisanal Fishers in the Global South' (2023) 15 Marine Policy 105432. The concept of 'blue justice' frames IUU fishing suppression as a prerequisite of equitable access to marine resources by small-scale and indigenous fishing communities.

¹¹Food and Agriculture Organisation of the United Nations (FAO), 'International Plan of Action to Prevent, Deter and Eliminate Illegal, Unreported and Unregulated Fishing' (FAO 2001) 2–4. The tripartite definition has been universally adopted in subsequent international instruments and domestic fisheries legislation.

¹²Department of Fisheries, Ministry of Fisheries, Animal Husbandry and Dairying, Government of India, 'Handbook on Fisheries Statistics 2023' (Government of India 2023) 11–14. India ranks second globally in total fish production after China.

¹³Pramod G and others, 'Estimates of Illegal and Unreported Fish in Seafood Imports to the USA' (2014) 48 Marine Policy 102, 103. The Indian Ocean accounts for approximately 15 percent of global marine fish landings.



At the ecological level, IUU fishing in Indian waters is associated with several categories of harm: the harvest of commercially important species in excess of scientifically determined sustainable yield limits; the use of prohibited gear types, including bottom trawls in ecologically sensitive areas and small mesh nets that capture juvenile fish before reproductive maturity; and fishing within designated protected areas and during seasonal ban periods. Collectively, these practices reduce the capacity of marine ecosystems to regenerate, with long-term consequences for biodiversity, coastal food security, and the sustainability of the Blue Economy.

Part III: Legal and Regulatory Framework — Structural Assessment

3.1 The Constitutional Architecture: A Federal Dilemma

India's constitutional structure creates an endemic complexity for marine environmental law enforcement. Fisheries within the territorial sea (0–12 nautical miles) fall under Entry 21 of the State List, vesting primary regulatory authority in coastal state governments.¹⁴ Fisheries beyond the territorial sea, within the EEZ (12–200 nautical miles), fall under the Union's residual power and are governed principally by the Territorial Waters, Continental Shelf, Exclusive Economic Zone and Other Maritime Zones Act 1976.¹⁵ This constitutional division generates a regulatory seam precisely at the 12-nautical-mile boundary — the most commercially active zone for both legal and illegal fishing — where jurisdictional handovers between state marine police and the central Coast Guard create enforcement gaps that are routinely exploited.

Fourteen distinct pieces of central and state legislation bear upon marine fisheries governance, and no single statute provides an integrated enforcement mechanism connecting them.¹⁶ The resulting patchwork of regulatory frameworks — with varying licensing regimes, gear restrictions, seasonal ban schedules, and penalty provisions across different states — creates arbitrage opportunities for IUU operators who exploit inconsistencies between adjacent state jurisdictions or simply shift their operations to less regulated maritime zones.

3.2 The Territorial Waters Act 1976 and Its Limitations

The Maritime Zones Act 1976 establishes India's sovereign rights over living marine resources within the EEZ but does not prescribe specific criminal offences for IUU fishing.¹⁷ Section 7(4) of the Act permits the Central Government to make regulations for the conduct of fishing and related activities in the EEZ, but the regulatory framework created under this power has not been updated to reflect the scale, sophistication, or transnational character of contemporary IUU operations. The penalties available under the Act are modest and do not include imprisonment for serious commercial-scale violations, reducing their deterrent effect against organised operators whose profits substantially exceed the maximum fines.

3.3 The National Policy on Marine Fisheries 2017

¹⁴Nitya Jacob, 'Fisheries Governance in India: Federal Lacunae and State Responses' (2022) 14 *Journal of Indian Ocean Studies* 45, 52–57. The constitutional division of fisheries regulation between Entry 21 (State List) and Entry 57 (Union List) creates endemic jurisdictional ambiguities for marine crime enforcement.

¹⁵Territorial Waters, Continental Shelf, Exclusive Economic Zone and Other Maritime Zones Act 1976 (India), s 7(4). The Act vests sovereign rights over living and non-living marine resources within the EEZ in the Union of India.

¹⁶Meenakumari B and Boopendranath MR, 'Review of Indian Marine Fisheries Legislation' (2001) 38(2) *Indian Journal of Fisheries* 101, 108–112. The authors identify 14 distinct pieces of central and state legislation bearing on marine fisheries governance, finding no integrated enforcement mechanism connecting them.

¹⁷Territorial Waters, Continental Shelf, Exclusive Economic Zone and Other Maritime Zones Act 1976 (India), s 7(4). The Act vests sovereign rights over living and non-living marine resources within the EEZ in the Union of India.



The National Policy on Marine Fisheries 2017 represents the most recent authoritative statement of government intent regarding fisheries governance.¹⁸ The Policy articulates principles of ecosystem-based fisheries management, calls for the registration and monitoring of all fishing vessels, and identifies IUU fishing as a threat requiring regulatory response. However, the Policy has not been translated into binding legislation and carries no penal provisions. It functions as a statement of administrative aspiration rather than an enforceable legal standard, leaving the gap between policy intent and operational reality unbridged.

3.4 India's Non-Engagement with Key International Instruments

India's failure to accede to two key international instruments represents a significant structural gap in its marine environmental crime framework. The 2012 Cape Town Agreement, which establishes minimum safety and documentation standards for fishing vessels of 24 metres and above,¹⁹ has not been signed by India. Without adherence to this instrument, Indian-flagged fishing vessels are not subject to the internationally standardised documentation protocols that enable port states to identify and detain IUU operators, and Indian ports lack a harmonised inspection framework for foreign fishing vessels.

The FAO Port State Measures Agreement, which entered into force in 2016 and represents the first binding international treaty specifically targeting IUU fishing,²⁰ has similarly not been ratified by India. The PSMA requires states parties to establish port inspection systems that deny landing and transshipment rights to vessels engaged in IUU fishing. Without PSMA implementation, illegally caught fish can enter Indian commercial markets and be incorporated into export supply chains without detection, providing the economic proceeds that sustain IUU operations.

3.5 UNCLOS Obligations and Their Domestic Translation

India ratified UNCLOS in 1995 and is thereby bound by its fisheries conservation obligations, including the duty under Article 62 to ensure that living resources within the EEZ are not subject to over-exploitation and to take measures against foreign fishing vessels violating applicable conservation laws.²¹ However, UNCLOS provides an inadequate enforcement framework for two structural reasons. First, ratification creates international obligations but does not automatically produce domestic enforcement mechanisms; the translation of UNCLOS obligations into operational law requires specific domestic legislation that India has not enacted.²² Second, UNCLOS's dispute settlement mechanisms explicitly exclude EEZ fisheries disputes from compulsory arbitration, leaving coastal states with limited binding accountability for non-compliance by flag states.²³

¹⁸National Policy on Marine Fisheries 2017 (India), Ministry of Agriculture and Farmers Welfare, paras 4–6. The Policy articulates sustainable fisheries development as a goal but lacks the force of binding legislation and prescribes no criminal sanctions.

¹⁹Cape Town Agreement on the Implementation of the Provisions of the Torremolinos Protocol of 1993 Relating to the Torremolinos International Convention for the Safety of Fishing Vessels 1977, opened for signature 11 October 2012 (not yet in force). India has not signed this Agreement, leaving Indian fishing vessels and ports outside its harmonised vessel documentation regime.

²⁰Agreement on Port State Measures to Prevent, Deter and Eliminate Illegal, Unreported and Unregulated Fishing (PSMA), opened for signature 22 November 2009, [2016] ATS 10 (entered into force 5 June 2016) art 9. Port State Measures deny landing and transshipment facilities to IUU vessels, closing the market gateway through which illegal catch generates profit.

²¹UNCLOS (n 5) art 62(4). Coastal states must adopt laws and regulations ensuring that foreign nationals fishing in the EEZ comply with conservation and management measures; violations attract enforceable penalties.

²²UNCLOS (n 5) Annex VIII; Natalie Klein, *Dispute Settlement in the UN Convention on the Law of the Sea* (Cambridge University Press 2005) 211–215. EEZ fisheries disputes are explicitly carved out of compulsory arbitration under Annex VIII, leaving flag and coastal states with limited binding accountability mechanisms.

²³UNCLOS (n 5) Annex VIII; Natalie Klein, *Dispute Settlement in the UN Convention on the Law of the Sea* (Cambridge University Press 2005) 211–215. EEZ fisheries disputes are explicitly carved out of compulsory arbitration under Annex VIII, leaving flag and coastal states with limited binding accountability mechanisms.



Part IV: Enforcement Architecture — Capacity and Coordination

4.1 Institutional Mandates and Fragmentation

Marine environmental law enforcement in India is distributed across multiple institutions, none of which holds comprehensive jurisdiction over all aspects of IUU fishing. The Indian Coast Guard (ICG) holds primary responsibility for fisheries enforcement within the EEZ and is empowered to board, inspect, and detain fishing vessels suspected of violating applicable regulations. The Indian Navy, whose mandate is primarily national defence, provides maritime domain awareness capabilities and surveillance of foreign vessel activity in the broader IOR. The Fisheries Survey of India (FSI) conducts stock assessment surveys and issues advisories, but has no enforcement capacity. State marine police forces exercise jurisdiction within the territorial sea. Port authorities regulate vessel entry and exit but lack fisheries enforcement specialisation.

The absence of a unified command authority that integrates the intelligence, surveillance, and enforcement functions of these agencies is a defining structural weakness of India's marine law enforcement framework. Real-time information sharing between the ICG, FSI, Navy, and state police is ad hoc rather than institutionalised, meaning that surveillance data collected by one agency is not systematically available to others in a form that enables coordinated enforcement action.

4.2 Vessel Monitoring: The Transponder Gap

Effective enforcement of fisheries regulations requires the capacity to identify, locate, and track vessels in real time. India's vessel monitoring framework is built primarily around the Vessel Monitoring System (VMS) and, more recently, the Automatic Identification System (AIS). The government's transponder installation programme, launched under the Pradhan Mantri Matsya Sampada Yojana (PMMSY) in 2020 with a target of equipping 100,000 fishing vessels across 13 states and union territories,²⁴ has fallen significantly short of its targets as of 2024. With approximately 250,000 registered fishing vessels active in Indian waters, the majority remain without functional tracking equipment, rendering comprehensive real-time vessel monitoring operationally impossible.

A compounding problem is the quality and integrity of existing tracking devices. Reports have emerged of fisherfolk using low-specification transponders that broadcast false vessel identities, and of transponders being deliberately deactivated when vessels enter prohibited fishing areas. Without mandatory AIS installation, legally enforceable obligations to maintain active transponders at sea, and technical validation of device integrity, the vessel monitoring framework cannot serve as the basis for systematic enforcement.

4.3 The Foreign Vessel Challenge

A particularly challenging dimension of IUU enforcement in Indian waters is the persistent incursion of foreign distant-water fishing fleets operating without authorisation in the Indian EEZ.²⁵ Foreign vessels present distinct enforcement challenges under international law: while coastal states may board and detain foreign fishing vessels within the EEZ for violations of applicable conservation laws, actions against foreign vessels on the high seas require the consent of the flag state or the application of specific treaty provisions. India's enforcement capacity on the high seas is further limited by the absence of bilateral fisheries enforcement agreements with the principal flag states of concern.

²⁴Pradhan Mantri Matsya Sampada Yojana (PMMSY), Department of Fisheries, Government of India, Scheme Guidelines (2020) para 3.2.1. The transponder programme targets 100,000 fishing vessels across 13 coastal states and union territories; as of 2024, implementation remains significantly below target.

²⁵Observer Research Foundation, 'India's IUU Fishing Imperative in the Indian Ocean' (ORF Expert Speak, March 2024). The report documents persistent incursions of foreign distant-water fishing fleets, particularly from China, within India's EEZ and in adjacent high-seas areas of the IOR.



Part V: The Crime-Security Nexus — IUU Fishing and Organised Criminal Networks

5.1 IUU Fishing as Gateway Crime

Contemporary analysis of IUU fishing has increasingly established that it rarely operates as an isolated criminal enterprise. Rather, vessels and networks engaged in IUU fishing are routinely implicated in co-occurring criminal activities, using the same maritime infrastructure, routes, and landing points as organised crime networks involved in narcotics trafficking, arms smuggling, and human trafficking.²⁶ This convergence is neither accidental nor coincidental. A vessel operating without authorisation in remote ocean areas, evading surveillance through transponder deactivation and flag state manipulation, is ideally positioned to function as a multi-purpose criminal platform.

In the Indian Ocean context, the nexus between IUU fishing and drug trafficking is of particular security concern. The western Indian Ocean narcotics corridor, originating in Afghanistan and transiting through Pakistan's Makran coast, and the eastern corridor emanating from Myanmar's Shan State, both intersect with established IUU fishing routes in the Arabian Sea and Bay of Bengal respectively.²⁷ The United Nations Office on Drugs and Crime has specifically identified the Indian Ocean as a region of growing convergence between fishing vessel crime and drug trafficking, representing a compound threat requiring coordinated responses from fisheries management, maritime law enforcement, and narcotics interdiction agencies.

5.2 Labour Exploitation and Human Rights Violations

IUU fishing vessels, operating beyond state authority and beyond the regulatory reach of port inspections, routinely employ labour under conditions that violate international standards. Debt bondage, forced labour, document confiscation, and physical abuse have been documented on fishing vessels operating in the Indo-Pacific, including vessels transiting Indian Ocean waters.²⁸ Migrant fishers, many of whom lack documentation and legal status in the coastal state where they originate, are particularly vulnerable to exploitation aboard vessels where the captain's authority is absolute and the isolation of the open ocean renders escape or recourse impossible.

India does not have a comprehensive legal framework addressing labour rights specifically in the offshore commercial fishing sector. The ILO Work in Fishing Convention (C188), which establishes minimum standards for living and working conditions on fishing vessels, has not been ratified by India. This gap means that fishers aboard Indian-flagged vessels operating in IUU conditions, as well as foreign fishers aboard vessels landing at Indian ports, fall outside the specific protections that C188 would provide.

5.3 Money Laundering Through Fish Commodity Chains

The proceeds of IUU fishing are laundered through established commercial fish supply chains with relative ease, given the perishable nature of fish products, the fragmented character of the fishing industry, and the absence of systematic catch documentation requirements in Indian law.²⁹ Fish caught illegally can be blended with legally harvested fish at the point of landing or processing, creating a

²⁶United Nations Office on Drugs and Crime (UNODC), 'Transnational Organized Crime in the Fishing Industry' (UNODC 2011) 49–68. UNODC identifies four primary nexus activities: drug trafficking, human trafficking, document fraud, and money laundering through fish commodity chains.

²⁷Sanjay Chaturvedi, 'Piracy, IUU Fishing and Maritime Security in the Indian Ocean' in David Brewster (ed), *India and the Indian Ocean* (Routledge 2015) 172, 179–183. The western Indian Ocean narcotics corridor from Afghanistan transiting through Makran and the eastern corridor from Myanmar both intersect with established IUU fishing routes.

²⁸International Labour Organization (ILO), 'Work in Fishing Convention' (C188, 2007). The Convention establishes minimum standards for living and working conditions on fishing vessels; India has not ratified C188, leaving offshore fishers without a binding domestic legal protection framework.

²⁹Prevention of Money Laundering Act 2002 (India), s 3. Proceeds from IUU fishing, where fish is sold through commercial networks, may constitute proceeds of crime susceptible to attachment and forfeiture under PMLA, though no reported prosecution has yet applied this provision to a marine fisheries case.



product that is commercially indistinguishable from legitimately sourced seafood. The Prevention of Money Laundering Act 2002 theoretically provides a legal basis for the confiscation of proceeds derived from IUU fishing, but no reported Indian prosecution has yet applied its provisions to a marine fisheries case, reflecting both institutional unfamiliarity with marine crime and the absence of dedicated marine crime investigation units.

Part VI: India's International Engagement and Proposed Reforms

6.1 Existing International Engagement

India has made meaningful, if incomplete, progress in multilateral maritime governance. The Information Fusion Centre – Indian Ocean Region (IFC-IOR), established in December 2018 and hosted by the Indian Navy at Gurugram,³⁰ functions as a hub for maritime domain awareness across the IOR, collecting vessel movement data and sharing it with partner nations. The IFC-IOR explicitly includes IUU fishing within its monitoring mandate and maintains operational relationships with similar centres in Australia, France, Singapore, and the United Kingdom.

The Quad's Indo-Pacific Maritime Domain Awareness (IPMDA) initiative, launched in May 2022,³¹ represents a significant step toward real-time satellite-based vessel surveillance across the Indo-Pacific, with IUU fishing suppression identified as a core application. India's participation in IPMDA enhances its capacity to detect dark vessels — those that have deactivated their AIS transponders — using satellite-based radar and radio-frequency detection. However, improved awareness does not automatically produce improved enforcement: the translation of surveillance data into timely, legally compliant interdiction operations requires institutional capacity and legal frameworks that India has not yet fully developed.

At the multilateral level, India's engagement with the WTO Agreement on Fisheries Subsidies, concluded at MC12 in June 2022,³² signals a growing recognition that addressing IUU fishing requires market-based as well as enforcement-based tools. The Fisheries Subsidies Agreement prohibits WTO member states from providing subsidies that contribute to IUU fishing, creating a potential trade-law mechanism to supplement maritime enforcement.

6.2 Proposed Reform I: Legislative Consolidation and Criminal Liability

The most fundamental reform required is the enactment of a comprehensive central Marine Fisheries (Regulation and Management) Act that consolidates jurisdiction over all fishing activity within Indian waters, including both the territorial sea and the EEZ, into a single enforceable legal framework. Such legislation should prescribe specific criminal offences for IUU fishing — fishing without authorisation, false reporting of catches, use of prohibited gear, and obstruction of enforcement officers — with penalties calibrated to reflect the economic scale and organised nature of the violation. Penalties should include substantial fines, imprisonment for serious commercial-scale violations, mandatory forfeiture of vessels and equipment used in the offence, confiscation of all proceeds derived from illegally harvested fish, and lifetime disqualification from fishing licence eligibility for repeat offenders.

Criminal liability under the proposed Act should extend beyond vessel operators to encompass corporate directors and shareholders of entities that finance IUU operations, fish processors who

³⁰Information Fusion Centre – Indian Ocean Region (IFC-IOR), 'Annual Maritime Security Review 2023–2024' (Indian Navy 2024) 12–17. The IFC-IOR was established in December 2018 at INS Garbada, Gurugram, and currently partners with 32 countries and 6 multinational maritime security agencies.

³¹Quad Leaders' Joint Statement, 'Indo-Pacific Maritime Domain Awareness (IPMDA) Initiative' (Tokyo, May 2022). IPMDA integrates commercial satellite data, partner-nation radar networks, and AIS fusion to enable near-real-time vessel tracking across the Indo-Pacific, with IUU fishing suppression as a stated objective.

³²WTO Agreement on Fisheries Subsidies, MC12 Outcome Document (Geneva, 17 June 2022). India, as a major fishing nation, was an active participant in the negotiations and has signalled commitment to eliminating subsidies for IUU fishing, though domestic implementation mechanisms remain to be prescribed.



knowingly purchase illegally caught fish, and financial institutions that facilitate the laundering of IUU fishing proceeds. This extended liability framework would align Indian law with the 'beneficial owner' approach emerging in comparative marine environmental crime legislation and would close the impunity gap that currently allows those who profit most from IUU fishing to evade legal accountability.³³

6.3 Proposed Reform II: Technological Surveillance Integration

Universal vessel monitoring must be established as a legal obligation for all commercial fishing vessels above a specified length threshold — the international standard of 24 metres is recommended as a starting point, with phased extension to smaller vessels. Legal obligations should require that AIS transponders remain actively transmitting at all times while the vessel is at sea, with transponder deactivation or manipulation treated as a criminal offence creating a presumption of IUU activity.³⁴ A dedicated National Marine Fisheries Monitoring Centre, integrating real-time AIS data, satellite imagery feeds from IPMDA, radar returns from ICG stations, and FSI survey data, should be established under joint oversight of the Ministry of Fisheries and the Ministry of Defence, with protocols for immediate handover to ICG enforcement units when IUU indicators are detected.

6.4 Proposed Reform III: International Treaty Adherence and Multilateral Cooperation

India should accede to the 2012 Cape Town Agreement³⁵ and ratify the FAO Port State Measures Agreement,³⁶ implementing the full suite of port inspection procedures required by the PSMA. India should further advocate within the Indian Ocean Rim Association (IORA) and the Indian Ocean Naval Symposium (IONS) for a binding regional fisheries enforcement agreement establishing shared vessel blacklisting procedures, joint patrol protocols, and mutual legal assistance obligations in IUU fishing investigations. Bilateral fisheries enforcement agreements with key flag states of concern should include provisions for extradition or surrender of persons accused of serious marine environmental crimes, closing the safe harbour that flag state passivity currently provides for IUU operators.

6.5 Proposed Reform IV: Data Infrastructure and Community Engagement

Effective governance of marine environmental crime requires accurate data. The NCRB should establish a dedicated category for marine environmental crime offences, enabling systematic tracking of IUU fishing investigations, prosecutions, and convictions.³⁷ The FSI should implement a national catch documentation scheme requiring all commercially landed fish to be accompanied by catch certificates recording the vessel identity, location and date of catch, and gear type used — creating an evidentiary chain that enables port inspectors and market regulators to identify illegally sourced fish.

³³Prevention of Money Laundering Act 2002 (India), s 3. Proceeds from IUU fishing, where fish is sold through commercial networks, may constitute proceeds of crime susceptible to attachment and forfeiture under PMLA, though no reported prosecution has yet applied this provision to a marine fisheries case.

³⁴Pradhan Mantri Matsya Sampada Yojana (PMMSY), Department of Fisheries, Government of India, Scheme Guidelines (2020) para 3.2.1. The transponder programme targets 100,000 fishing vessels across 13 coastal states and union territories; as of 2024, implementation remains significantly below target.

³⁵Cape Town Agreement on the Implementation of the Provisions of the Torremolinos Protocol of 1993 Relating to the Torremolinos International Convention for the Safety of Fishing Vessels 1977, opened for signature 11 October 2012 (not yet in force). India has not signed this Agreement, leaving Indian fishing vessels and ports outside its harmonised vessel documentation regime.

³⁶Agreement on Port State Measures to Prevent, Deter and Eliminate Illegal, Unreported and Unregulated Fishing (PSMA), opened for signature 22 November 2009, [2016] ATS 10 (entered into force 5 June 2016) art 9. Port State Measures deny landing and transshipment facilities to IUU vessels, closing the market gateway through which illegal catch generates profit.

³⁷National Crime Records Bureau, 'Crime in India 2023' (Ministry of Home Affairs 2024) Chapter 7. Environmental crimes are recorded under a single aggregate category that conflates terrestrial and marine offences and does not separately enumerate fisheries violations or IUU fishing prosecutions.



Community-based enforcement mechanisms should complement top-down surveillance. Coastal fishing communities, who bear the most direct economic harm from IUU competition, have both the motivation and the local knowledge to serve as effective first-line monitors of illicit activity. Formal whistleblower protection, anonymous reporting mechanisms, and financial incentives for information leading to successful IUU prosecutions would harness this community capacity while protecting informants from retaliation. The concept of 'blue justice' demands that reform frameworks prioritise the interests of artisanal and small-scale fishers who have been systematically disadvantaged by the impunity of large-scale IUU operators.³⁸

Part VII: Conclusion

IUU fishing in India is not a peripheral regulatory challenge at the margins of fisheries management. It is a form of organised environmental crime that imperils the ecological foundations of a sector upon which tens of millions of Indian citizens depend, undermines national sovereignty over constitutionally significant maritime resources, and intersects with criminal networks that pose broader security threats. The evidence surveyed in this paper establishes that India's legal and enforcement architecture — fragmented, underpenalised, and insufficiently integrated with international frameworks — is structurally inadequate to the task of suppressing this organised harm.

The reform agenda proposed in Part VI is comprehensive but not radical: its components — legislative consolidation, universal vessel monitoring, treaty ratification, and community co-governance — are individually achievable within India's existing institutional framework and are consistent with the international norms to which India is already nominally committed. What has been absent is not capacity but political will, driven by the absence of academic and policy attention to marine environmental crime as a distinct and serious category of organised offending.

This paper has sought to supply a measure of that attention and to provide a scholarly foundation for the legislative and institutional reforms that India's Blue Economy agenda — and its obligations to the 28 million people who depend on a healthy ocean — demands. The blue frontier is not ungovernable. It is, at present, simply ungoverned. That can change.

³⁸Courtney Farthing and others, 'Blue Justice and IUU Fishing: Protecting Artisanal Fishers in the Global South' (2023) 15 Marine Policy 105432. The concept of 'blue justice' frames IUU fishing suppression as a prerequisite of equitable access to marine resources by small-scale and indigenous fishing communities.



Bibliography

Primary Sources — International Instruments

Cape Town Agreement on the Implementation of the Provisions of the Torremolinos Protocol of 1993, opened for signature 11 October 2012 (not yet in force).

Food and Agriculture Organisation of the United Nations, Agreement on Port State Measures to Prevent, Deter and Eliminate Illegal, Unreported and Unregulated Fishing, opened for signature 22 November 2009, [2016] ATS 10 (entered into force 5 June 2016).

Food and Agriculture Organisation of the United Nations, International Plan of Action to Prevent, Deter and Eliminate Illegal, Unreported and Unregulated Fishing (FAO 2001).

International Labour Organization, Work in Fishing Convention (C188, 2007).

United Nations Convention on the Law of the Sea, opened for signature 10 December 1982, 1833 UNTS 3 (entered into force 16 November 1994).

WTO Agreement on Fisheries Subsidies, MC12 Outcome Document (Geneva, 17 June 2022).

Primary Sources — Indian Legislation and Policy

National Policy on Marine Fisheries 2017 (India), Ministry of Agriculture and Farmers Welfare.

Prevention of Money Laundering Act 2002 (India).

Pradhan Mantri Matsya Sampada Yojana (PMMSY), Scheme Guidelines (Department of Fisheries, Government of India 2020).

Territorial Waters, Continental Shelf, Exclusive Economic Zone and Other Maritime Zones Act 1976 (India).

Secondary Sources — Books

Klein N, *Dispute Settlement in the UN Convention on the Law of the Sea* (Cambridge University Press 2005).

White R, *Crimes Against Nature: Environmental Criminology and Ecological Justice* (Willan Publishing 2008).

United Nations Office on Drugs and Crime, *Transnational Organized Crime in the Fishing Industry* (UNODC 2011).

Secondary Sources — Journal Articles and Reports

Chaturvedi S, 'Piracy, IUU Fishing and Maritime Security in the Indian Ocean' in Brewster D (ed), *India and the Indian Ocean* (Routledge 2015).

Department of Fisheries, Ministry of Fisheries, Animal Husbandry and Dairying, *Handbook on Fisheries Statistics 2023* (Government of India 2023).

Farthing C and others, 'Blue Justice and IUU Fishing: Protecting Artisanal Fishers in the Global South' (2023) 15 *Marine Policy* 105432.

Information Fusion Centre – Indian Ocean Region, *Annual Maritime Security Review 2023–2024* (Indian Navy 2024).

Jacob N, 'Fisheries Governance in India: Federal Lacunae and State Responses' (2022) 14 *Journal of Indian Ocean Studies* 45.

Meenakumari B and Boopendranath MR, 'Review of Indian Marine Fisheries Legislation' (2001) 38(2) *Indian Journal of Fisheries* 101.

National Crime Records Bureau, *Crime in India 2023* (Ministry of Home Affairs 2024).

Observer Research Foundation, 'India's IUU Fishing Imperative in the Indian Ocean' (ORF Expert Speak, March 2024).

Pramod G and others, 'Estimates of Illegal and Unreported Fish in Seafood Imports to the USA' (2014) 48 *Marine Policy* 102.

Quad Leaders' Joint Statement, Indo-Pacific Maritime Domain Awareness Initiative (Tokyo, May 2022).