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Maritime disasters and legal vacuum: Unpacking India's maritime environmental governance gaps

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Abstract
Recently the coast of Kerala witnessed two major maritime disasters. First was the sinking of MSC Elsa and the second one the fire in Wan Hai 503. These incidents have raised serious concerns about the vulnerability of Indian Maritime environmental governance. This article explores the legal and institutional deficiencies that arose following the disaster, focusing on the shortcomings of the Merchant Shipping Act of 1958, the lack of a specific liability framework for non oil marine pollution, and the poor enforcement of international agreements like MARPOL. The discussion points out that overlapping jurisdictions between central and state authorities, a lack of transparency in cargo reporting, and inadequate compensation mechanisms for communities hinder an effective response system. By comparing these issues to international best practices, the article calls for immediate legislative changes to create a comprehensive and enforceable framework for marine environmental protection and liability regime in India. It concludes by stressing the importance of aligning maritime law with the polluter pays principle and ecological justice, ensuring that coastal communities are supported in the aftermath of maritime environmental disasters.

Keywords: Maritime Disasters, Wani Hai, MSC Elsa 3, Indian laws on marine disasters

Introduction

Maritime trade serves as the foundation of global commerce. India plays a vital role in maritime trade with its extensive coastline and key shipping routes. As the maritime activities increase, the potential for environmental disasters at sea also increases. The recent incident of fire on the Wan Hai 503, a Singapore registered container ships, off to the coast of Kerala serves as a stark reminder of the significant environmental and legal implications involved in the maritime sectors. The ship, which was carrying hazardous chemicals and fuel, caught fire on 9th June 2025 raised concerns about marine pollution, ecological harm, and its impacts on the livelihoods of coastal communities. Although firefighting measures were implemented, the incident underscored a deeper issue. India lacks preparedness to address maritime environmental emergencies from a legal and regulatory perspective.

Although India is a signatory to MARPOL (International Convention for the Prevention of Pollution from Ships), it does not have a strong, enforceable domestic system to manage matters relating to liability, prevention and compensation for maritime pollution, particularly concerning hazardous cargo apart from oil. As far as our domestic law which handle the matters relating to shipping includes The Merchant Shipping Act of 1958 and the rules made there under and Environmental Protection Act etc. . majority of maritime related matters are covered under Merchant Shipping Act. This is an outdated and insufficient piece of legislation to handle the complexities of contemporary marine environmental challenges. Additionally, India lacks a comprehensive law that implements the polluter pays principle in the maritime sector and a law which covers matters such as a clear cargo disclosure, proactive risk management, and timely assistance for impacted communities etc.

This article examines the legal and policy gaps revealed by maritime disasters such as the MSC Elsa and Wan Hai 503 incident. It highlights the deficiencies in current laws, the lack of coordination between central and state governments, the restricted effectiveness of international agreements, and the exclusion of coastal and fishing communities from legal solutions. By analysing these governance issues, the article seeks to provide a critical legal perspective and propose a plan for reforming India's maritime environmental framework to address the needs of a swiftly changing ocean economy.

Objectives of the study

This study aims to thoroughly analyse the shortcomings in India's maritime environmental governance system. The study was focused on the recent fire of the Wan Hai 503 container ship near the Kerala coast and the MSC Elsa 3 sinking near Kerala coast. These accidents resulted in the discharge of dangerous chemicals and posed a significant threat of marine pollution. It highlights the pressing necessity to review and improve India's current legislation related to maritime safety, pollution management, liability, and environmental justice.

This research aims to identify and examine the shortcomings in India's domestic legal system concerning the matters relating to maritime disasters. The main focus is given to the Merchant Shipping Act of 1958. along with that the insufficient integration of international agreements such as MARPOL, CLC and other relevant international conventions into enforceable national legislation. This article again explores the absence of a specific liability and compensation framework for non-oil marine pollution, as well as the lack of a cohesive institutional response mechanism in India. It also highlights the difficulties encountered by coastal communities, particularly small-scale fishermen, who frequently suffer the most from these incidents while being legally and administratively overlooked.

The purpose of the study is to

1. Analyse the current Indian maritime and environmental laws
2. Compare India's legal framework with International best practices in marine pollution liability and governance
3. Examine the recent maritime disasters in Indian coast
4. Propose legal and policy reforms to establish a robust responsive and equitable maritime environmental governance.

Hypothesis

"The existing Indian legal regime is adequate to prevent, respond to and mitigate environmental consequences of maritime disasters."

Fire at sea, Silence on Law: Wan Hai 503 disaster

On June 7, 2025, a container ship registered in Singapore the Wan Hai 503 reported fire on board at 54 nautical miles off the west coast of India [1]. The ship was travelling from Singapore to Colombo. The ship got fire on board while it was in between Kozhikode and Kochi. The vessel was carrying about 2,000 tonnes of bunker fuel and more than 750 containers. Some of the containers contained hazardous and carcinogenic substances like trichlorobenzene, hydroquinone, and tetrachloroethylene. These chemicals are extremely harmful to marine ecosystems and will pose significant threats to human health and biodiversity if they are released into the ocean.

After receiving the distress signal, the Indian Coast Guard sent several ships and aircraft to help control the fire and prevent any oil or chemical leaks. The crew of the Wan Hai 503 was successfully evacuated but four of crew are dead or missing from the ship [2] , and emergency cooling and containment efforts were conducted despite of challenging sea and weather conditions.

The Indian Coast Guard acted quickly, conducting firefighting efforts that continued for several days. While the crew was successfully evacuated and a major spill was averted, some containers were either lost at sea or burned. This may have released unidentified pollutants into the ocean. This incident took place during Kerala's prime fish breeding season, raising worries about environmental and economic harm, especially for local fishing communities.

However, despite these actions, there was no unified disaster management declaration from the central government, nor there was a public activation of emergency environmental contingency protocols. Although the situation was critical, there was no official disaster declaration from the central government, and the legal actions taken were disjointed.

Diesel on shore and gaps in law: MSC Elsa 3 Disaster

On May 25, 2025, the Liberian flagged container ship MSC Elsa 3 sank approximately 14.6 nautical miles off the coast of Alappuzha, Kerala. While all 24 crew members were successfully rescued, the incident sparked major environmental concerns due to the vessel's cargo and fuel. The ship was carrying over 640 containers [3], including 13 with hazardous materials. Out of this 12 containers contained calcium carbide, a substance that poses risks of dangerous chemical reactions when exposed to water. Additionally, the wreck released about a huge amount of oil into the marine environment. Plastic nurdles and debris from the containers began washing up along the shores of Kerala and Sri Lanka, raising fears of long term ecological damage. The disaster has brought renewed attention to maritime safety protocols, particularly concerning Flags of Convenience vessels and the transport of hazardous materials through sensitive coastal regions.

After the sinking CMFRI has launched a study to assess the environmental impact and to identify the various pollution resulting from shipwreck [4]. The Indian Coast Guard deployed three capital ships and aerial surveillance to monitor oil pollution [5]. The environmental impacts and the effects of disasters are not always preplanned. And the law is not that much effective to meet the urgent situations.

The MSC Elsa 3 grounding reflects deeper systemic shortcomings in India's maritime environmental governance, extending beyond mere mechanical failure. While India has ratified key international agreements like MARPOL and OPRC, its domestic enforcement framework suffers from fragmentation and obsolescence. During the incident response, the Indian Coast Guard took the lead, but with notably inadequate involvement from critical stakeholders such as the MoEFCC, regional pollution control bodies, or state level disaster management agencies.

Indian Legal Framework on Maritime disasters and Environmental Protection

India's maritime environmental regulations are mainly based on the Merchant Shipping Act of 1958, the Environment (Protection) Act of 1986, and the Coastal Regulation Zone (CRZ) Notifications and Rules made under Merchant Shipping Act.. Although these laws provide some level of protection, they are outdated and do not adequately address contemporary environmental threats. The Merchant Shipping Act fails to thoroughly cover hazardous materials or impose strict liability for pollution related damages. Additionally, there is a lack of incorporation of international standards like MARPOL and the London Convention into enforceable national legislation. The unclear division of responsibilities between central and state authorities also makes disaster response and enforcement more challenging.

In contrast to oil pollution, which is managed by the International Oil Pollution Compensation Funds (IOPC) and the Civil Liability Convention (CLC), India lacks domestic laws specifically for spills involving hazardous chemicals or containers. This lack of a regulatory framework results in legal ambiguity, hinders accountability, and leaves impacted communities without a formal means of seeking compensation.

Internationally the ships have the duty to provide information about hazardous cargo. At present, there are no mandatory regulations for ships to publicly reveal the type and toxicity of their cargo, particularly when it comes to hazardous materials. This lack of transparency undermines emergency readiness and obstructs prompt response actions by environmental and disaster management organizations. It is essential to have clear and immediate disclosure of cargo manifests to safeguard marine and coastal ecosystems.

Coastal communities, especially small-scale fishermen, are among the first and most severely impacted by marine pollution. However, Indian legislation does not include formal measures for acknowledging, consulting, or compensating them in these situations. There are no legal frameworks in place for direct compensation, assessing loss of livelihood, or providing relief for environmental damage to these communities.

India's institutional structure is divided among various ministries and state agencies, resulting in confusion during crises. The absence of a centralized authority for marine pollution leads to delays and a lack of coordination in response efforts, while regulatory duties are scattered and inadequately enforced. These shortcomings not only impede timely responses but also do not guarantee accountability and justice for the impacted communities.

Past events like the MSC Chitra oil spill in 2010, the MOL Comfort breakup in 2013, and the Ennore oil spill 2017 highlights ongoing issues of legal uncertainty, slow responses, and insufficient compensation. The MSC Chitra oil spill took place in August 2010 near Mumbai after a collision with the MV Khalijia 3, resulting in the release of over 800 tonnes of oil and numerous containers, some of which held hazardous materials. Despite the significant ecological harm to marine and coastal environments, the legal proceedings were sluggish, with little punitive action taken and minimal compensation provided to affected fishing communities.

In 2013, the MOL Comfort incident involved the structural failure of a Japanese container ship in the Arabian Sea. The ship split in two and sank, taking with it over 4,000 containers and a substantial amount of oil. This incident revealed major deficiencies in India's search, salvage, and pollution control capabilities, as it occurred within the country's maritime search and rescue area. There was a lack of a clear legal framework to enforce liability or recover costs related to environmental damage. In January 28th 2017 BW Maple rammed into petroleum tanker Dwan Kancheepuram resulting in huge oil spill. Nearly 70 tonnes of oil sludge near Ennore shore [6]. These incidents clearly outlines the drawbacks of Indian laws regarding the environmental governance gaps while dealing with maritime disasters.

In all these instances, the absence of a comprehensive marine pollution law and a dedicated environmental liability framework led to disjointed enforcement, uncoordinated response efforts, and minimal compensation for the damage inflicted on ecosystems and coastal communities.

"India's maritime environmental governance framework presents a paradox of robust legislation coupled with systemic implementation failures. The country boasts several key statutes such as The Merchant Shipping Act, 1958, which establishes ship safety standards, pollution prevention requirements, and liability frameworks for marine incidents. The Environment (Protection) Act, 1986 provides broad powers to regulate all forms of pollution, including marine pollution. The Merchant Shipping (Carriage of Cargo) Rules, 1995 specifies detailed protocols for handling hazardous maritime cargo. However, these legislative facade masks critical operational deficiencies. Port State Control inspections theoretically the primary enforcement mechanism frequently degenerate into box ticking exercises rather than meaningful vessel examinations. Post incident investigations suffer from chronic delays and over reliance on ship operator submitted documentation rather than independent forensic analysis. Multiple CAG reports and academic studies reveal structural weaknesses: under resourced regulatory bodies, inadequately trained personnel, and bureaucratic inefficiencies. The Directorate General of Shipping's dependence on Recognised Organizations for vessel surveys creates problematic self-certification scenarios where surveyors may face conflicts of interest. The judicial system compounds these challenges. India lacks specialized maritime benches, resulting in prolonged litigation and inconsistent rulings, particularly involving foreign vessels. Most pollution cases either settle through opaque compensation processes or become mired in jurisdictional complexities, effectively shielding violators from meaningful accountability

India's maritime environmental governance framework demonstrates significant structural deficiencies across legal, institutional and policy dimensions. The legislative architecture of India comprising the Merchant Shipping Act (1958), Environment Protection Act (1986), Coast Guard Act (1978) and Maritime Zones Act (1976) and the rules remains```` outdated, lacking specific provisions to address contemporary marine pollution challenges while prioritizing security over ecological protection. This legal vacuum creates a reactive rather than preventive governance approach. Institutionally, fragmented authority across multiple agencies like the Indian Coast Guard, which lacks environmental specialization, Directorate General of Shipping, with limited compliance monitoring capacity and the National Oil Spill Disaster Contingency Plan, always focused on post-disaster cleanup etc. results in inefficient environmental protection. Policy initiatives such as the Green Shipping Vision 2030 and Blue Economy Policy remain largely aspirational without binding enforcement mechanisms, evidenced by the slow progress in port decarbonization where only 3 of 12 major ports meet compliance targets. This tripartite failure of legal frameworks, institutional coordination and policy implementation leaves India's maritime environmental governance ill-equipped to handle modern ecological challenges.

Flag of Convenience (FoC) Loopholes: Regulatory Arbitrage in Maritime Enforcement

The systemic weaknesses in India's maritime governance are exacerbated by the widespread use of Flags of Convenience (FoC), a practice where shipowners register vessels in jurisdictions like Liberia, Panama, and the Marshall Islands to exploit lax oversight, minimal liability, and opaque ownership structures. The MSC ELSA 3 sinking near Kerala illustrates this evasion. The vessel frequently changed its name and flag registration, a practice known as 'flag-hopping' used to evade stricter inspections and legal obligations imposed by more rigorous flag states [7]. This allows its owners to bypass stricter regulations while benefiting from weak enforcement in the flag state. When the spill occurred, Indian authorities faced significant challenges in assigning accountability. The ship's ownership was hidden behind shell companies, the crew refused cooperation on instructions from undisclosed owners, and Liberia, as the flag state, showed no proactive interest in investigations or reparations [8]. This regulatory void persists because international maritime law imposes no binding obligation on FoC states to investigate violations in foreign waters unless formally requested, then also the compliance remains discretionary. While the International Maritime Organization (IMO) has acknowledged this loophole, reforms face resistance. India, despite being a signatory to MARPOL, lacks a domestic legal framework to pierce the corporate veil of FoC registered vessels or enforce reciprocal compliance from flag states with weak oversight.

Without stronger legal mechanisms, FoC vessels will continue exploiting this blind spot, leaving coastal states like India to bear the environmental and financial burdens of maritime disasters.

India's maritime governance suffers from critical gaps in both domestic implementation and international alignment, creating a dangerous legal vacuum. The nation's failure to ratify key global conventions like the Bunker Oil Pollution Convention (2001), Wreck Removal Convention (2007), and HNS Convention (2010) leaves it without access to international compensation mechanisms while allowing liability loopholes to persist.. The prevalence of "flags of convenience" used by vessel owners exacerbates accountability challenges. India lacks legal instruments to pursue foreign shipowners for post-incident. Addressing these systemic failures requires urgent ratification of IMO conventions alongside domestic reforms including strengthened inter-agency coordination, rigorous port inspections with meaningful penalties, and technological investments in pollution monitoring. A long-term vision must align national laws with global standards while developing specialized legal expertise, creating an enforceable framework that balances blue economic growth with ecological protection and coastal community justice. These comprehensive measures would transform India's reactive stance into proactive maritime environmental governance.

The Merchant Shipping Bill, 2024

The Merchant Shipping Bill, 2024 represents a significant legislative overhaul designed to update and streamline India's maritime regulatory system, superseding the antiquated Merchant Shipping Act from 1958. This progressive reform seeks to establish a contemporary legal structure that better aligns with current maritime industry standards and challenges. By consolidating various maritime provisions into a unified framework, the bill addresses the evolving needs of India's growing shipping sector while replacing the six decade old legislation that has become increasingly inadequate for modern maritime governance. The proposed legislation reflects India's commitment to creating a more robust, efficient, and internationally competitive maritime legal environment.

The Merchant Shipping Bill, 2024 significantly strengthens India's maritime environmental governance by introducing comprehensive measures for pollution prevention, incident response and liability. The part VII of the Bill specifically deals with prevention and containment of pollution from vessel and response [9]. It mandates strict controls on harmful discharges, expands pollution certification requirements for all vessels, and enforces compliance with IMO conventions like MARPOL and the CLC. The Bill empowers authorities to detain polluting ships, mandates timely spill reporting, and establishes liability frameworks for maritime disasters, including mandatory insurance and compensation funds. It promotes sustainable practices such as banning single-use plastics on ships and supporting green ship recycling while enhancing enforcement through digital monitoring and a strengthened National Shipping Board. By aligning with global standards and addressing gaps in pollution control, the Bill reflects India's commitment to a modern, environmentally responsible maritime legal framework [10].

Conclusion

The MSC Elsa 3 grounding and Wan Hai 507 fire incidents collectively expose deep seated flaws in India's maritime environmental governance, revealing a systemic failure to prevent, mitigate, or effectively respond to marine disasters. Both emergencies have marked by diesel spills and environmental damages to marine environment, highlight how India's outdated legal framework and fragmented institutions perpetuate environmental harm without accountability. Despite ratifying international conventions like MARPOL and UNCLOS, India's domestic laws remain woefully inadequate. The country still operates under archaic statutes such as the Merchant Shipping Act (1958) and Environment Protection Act (1986), which lack provisions for strict liability, ecological restoration, or timely compensation. Crucially, India's refusal to ratify key treaties like the Bunker Oil Pollution Convention (2001) and Nairobi Wreck Removal Convention (2007) creates legal voids that let polluters evade responsibility. These aren't abstract shortcomings but they directly enable the governance paralysis witnessed during both incidents, where unclear liability, poor coordination, and institutional inertia left coastal communities and ecosystems unprotected. The institutional landscape exacerbates these failures. While the Indian Coast Guard leads under the National Oil Spill Disaster Contingency Plan, it lacks environmental oversight or prosecutorial authority. Pollution Control Boards remain land centric, while the Ministry of Shipping focuses narrowly on navigation, not ecology. This disjointed system normalizes delayed responses, diluted accountability, and repeated harm to marine dependent communities, particularly fishers who suffer irreversible livelihood losses without recourse. These incidents underscore India's inefficiency toward maritime environmental protection. The country must urgently enact a Marine Environmental Protection Act that enforces strict liability, mandates ecological restoration, and guarantees community compensation etc.. Ratifying pending international conventions must make a transition from symbolic gestures to enforceable legal commitments. Most critically, India needs a dedicated maritime environmental authority with powers to coordinate responses, prosecute violations, and safeguard marine ecosystems. Without such reforms, India's governance will remain reactive, where spills are cleaned up but legal gaps persist, where agencies respond but fail to collaborate, and where laws exist but aren't enforced. The real crisis isn't the temporary pollution from these incidents; it's the enduring silence in India's legal and institutional framework that allows such disasters to recur without consequence. This silence demands immediate correction through systemic reform.

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