

## INDIA'S RESPONSE TO MARINE OIL SPILLS: AN EVALUATION

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**Abstract:** *India is a major importer of crude oil, while paradoxically, petroleum products constitute India's top merchandise export. India has a long coastline of 7516.6 km (which figure is likely to go up sharply as a consequence of more contemporary and far more accurate satellite-based measurements) is studded with 12 major and 200 non-major ports, which handle over 7,000 oil tankers annually. Key global oil transport chokepoints such as the Strait of Hormuz, the Strait of Bab el-Mandeb, and the Strait of Malacca witness the passage of nearly 70 per cent of the world's oil. The sheer volume of oil being transported, as also the economic significance of the rapidly growing oil trade necessitates India's formulation of a clear and comprehensive policy when it comes to marine oil spills. Oil spills pose a serious threat not just to the coastal economy but to the marine environment itself, and play a critical and entirely negative role in India's efforts — and those of the world — to mitigate the effects of climate change. This article examines the damage caused by oil spills to the coastal marine environment and the carbon sequestration capabilities of the latter. It examines the current liability regime and compensation policy in response to oil spills and concludes with policy recommendations to strengthen India's current response to such events.*

**Keywords:** Oil, Oil Spill, Climate Change

### Climate Change and Marine Oil Spills

Climate change is the greatest challenge that humanity is facing — a challenge that would be significantly greater had it not been for our oceans, which play a crucial ameliorating role when it comes to global warming. Oceans absorb a significant amount of heat and are the largest environmental storehouse or sink for the most consequential greenhouse gas (GHG), namely, carbon dioxide (CO<sub>2</sub>), whose rising concentrations are the direct result of human activities.

The capacity for carbon sequestration of the oceans is what enables them to mitigate climate-change impacts. In particular, vegetated coastal habitats, such as salt marshes, seagrasses and mangroves are powerful autotrophic systems that fix excess CO<sub>2</sub> and, therefore, act as valuable carbon sinks.<sup>1</sup> Roughly 50 per cent of the approximately 250 Tera grams of Carbon (TgC) buried in

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<sup>1</sup> United Nations Environment Programme (UNEP), C Nellemann, E Corcoran, CM Duarte, L Valdés, C de Young, L Fonseca, G Grimsditch (eds), *Blue Carbon: The Role of Healthy Oceans in Binding Carbon*, 2009,

ocean sediments each year is excess carbon.<sup>2</sup> This burial rate is remarkable considering that the vegetated habitats themselves cover less than 0.5 per cent of the sea floor. It is also troubling, given the severe threats these coastal ecosystems face.<sup>3</sup> The destruction of these habitats results in a dual injury — the loss of CO<sub>2</sub> burial capacity and the release of formerly dormant carbon pools back into the biosphere.<sup>4</sup> As a result, there is now national and international momentum to catalogue and protect coastal marine carbon stocks.<sup>5</sup>

To fully understand the nature of oil pollution, we must first understand the multifarious nature of oil. Oil is a complex mixture of hydrocarbons with 4 to 26 or more carbon atoms in its molecule. The exact composition of oil varies from one oilfield to another, and within a single oilfield over time. All types of oil are degradable by bacteria, although at varying rates. A variety of yeasts and fungi can also metabolise petroleum hydrocarbons.

Oil spills are amongst the most worrying forms of oceanic oil pollution because they typically result from a catastrophic event involving a vessel or floating platform and thus release large quantities of oil into the ocean in a short period of time. Besides the obvious economic loss of oil — a prized commodity — and the damage to the container, be it a tanker or an offshore installation, oil spills result in immediate and serious injury to the marine environment, which has both financial and ecological consequences.

The released oil spreads over the surface of the water to form a thin film, called an oil slick.<sup>6</sup> An oil slick does not remain in one place but travels downwind at 3–4% of the wind speed. The rate of spread and thickness of the film depends on the sea temperature and nature of the oil. A light oil spreads faster and results in a thinner film than a heavy, waxy oil. Ocean traffic must perforce sail around an oil slick, leading to trade delays and losses. Further, oil gradually starts decaying under the influence of various concurrent processes, collectively termed as oil weathering processes (OWP). Weathering makes an oil slick more persistent in marine waters and lengthens its presence in marine ecosystems.<sup>7</sup>

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[https://www.researchgate.net/publication/304215852\\_Blue\\_carbon\\_A\\_UNEP\\_rapid\\_response\\_assessment](https://www.researchgate.net/publication/304215852_Blue_carbon_A_UNEP_rapid_response_assessment)

<sup>2</sup> CM Duarte, JJ Middelburg, and N Caraco, 2005, “Major Role of Marine Vegetation on the Oceanic Carbon Cycle”, *Biogeosciences*, 2, 1–8, <https://doi.org/10.5194/bg-2-1-2005>

<sup>3</sup> M Waycott et al, 2009, “Accelerating Loss of Seagrasses across the Globe Threatens Coastal Ecosystems”, *Proceedings of the National Academy of Sciences of the United States of America*, 106 (30) 12377–12381, <https://doi.org/10.1073/pnas.0905620106>

<sup>4</sup> DC Donato, JB Kauffman, D Murdiyarto, S Kurnianto, M Stidham, M Kanninen, 2011, “Mangroves among the Most Carbon-Rich Forests in the Tropics”, *Nature Geoscience* 4, 293–297, <https://doi.org/10.1038/ngeo1123>

<sup>5</sup> Washington DC: Executive Office of the President of the United States, Council on Climate Preparedness and Resilience, *Priority Agenda: Enhancing the Climate Resilience of America’s Natural Resources*, 2014, [https://obamawhitehouse.archives.gov/sites/default/files/docs/enhancing\\_climate\\_resilience\\_of\\_americas\\_natural\\_resources.pdf](https://obamawhitehouse.archives.gov/sites/default/files/docs/enhancing_climate_resilience_of_americas_natural_resources.pdf)

<sup>6</sup> RB Clark, “*Marine Pollution*”, (Oxford University Press, 2001)

<sup>7</sup> AK Mishra, GS Kumar, “Weathering of Oil Spill: Modeling and Analysis”, *Aquatic Procedia* 4 (2015) 435–442

To add to these consequences, a drop in water level, as occurs at low tide, allow the oil slick to be deposited directly on marine flora and fauna in intertidal zones, leading to their decay. Beaches are destroyed or seriously degraded, impacting quality of life and tourism. India is strategically located at the global epicentre of oil trade with the Strait of Hormuz, and the Strait of Bab el-Mandeb lying to its west and the Strait of Malacca to its east. These maritime chokepoints of trade carry nearly 70 per cent of the world's oil. India's 12 major ports and 200 non-major ports<sup>8</sup> handle some 95 per cent of India's international trade by volume and about 68 per cent by value.<sup>9</sup> Each year, India's major Indian ports handle over 7,000 tankers carrying crude oil, lubricants, and a variety of other petroleum products.<sup>10</sup>

In addition, in the year 2020-21, over 84 per cent of India's petroleum product demand (crude oil and petroleum products) was met through imports. Gross petroleum imports of about 239 million tonnes (MT), with an estimated value of some US\$ 77 billion, accounted for over 19 per cent of India's total merchandise imports.<sup>11</sup>

Given the above, and the fact that India is intentionally growing its petroleum export, it would be well worth our time to delve into our overall response to oil slicks, both in terms of prevention as well as consequence. This article examines the current response mechanism that India has for dealing with oil spills. It then focuses on the various liability regimes imposed on the polluter and the compensation mechanisms covering the loss caused by the spillage. The article concludes with policy recommendations that would enable India to retain her trade position in the world while ensuring that her coastal marine ecology is safe and protected.

## Oil Spill Response in India

India became one of the few countries that adopted the International Convention on Oil Pollution Preparedness, Response and Co-operation (OPRC) immediately after it was adopted by the International Maritime Organisation (IMO) in 1990. As per the National Oil Spill Disaster Contingency Plan (NOSDCP), the Indian Coast Guard<sup>12</sup> is the national authority to coordinate the response to oil spills in India's maritime zones.

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<sup>8</sup> Ministry of Ports, Shipping and Waterways, Government of India, "Ports Wing", 20 November 2022, <https://shipmin.gov.in/division/ports-wing>

<sup>9</sup> Ministry of Commerce and Industry, Government of India, "India's Overseas Port Investments", India Brand Equity Foundation, 20 November 2022, <https://www.ibef.org/blogs/india-s-overseas-port-investments>

<sup>10</sup> Puneet Rathsharma, "Oil Spill Liability & Responses under Indian Law: Time for an Integrated Regulatory Framework?", *IJPIEL* 2021, <https://ijpiel.com/index.php/2021/09/02/oil-spill-liability-responses-under-indian-law-time-for-an-integrated-regulatory-framework/>

<sup>11</sup> Lydia Powell et al, "India's Oil Imports: Trends in Diversification", *Observer Research Foundation*, 02 April 2022, <https://www.orfonline.org/expert-speak/indias-oil-imports/>

<sup>12</sup> *The Coast Guard in India is the national agency for ensuring marine environment security in India. It involves protection and preservation of the environment and prevention and control of pollution. The Coast Guard Service was crystallised in India by passing the Coast Guard Act in the Parliament on 18 August 1978 which was brought into force on 19 August, 1978*

The NOSDCP divides India's maritime zones into three regions: West, East, and Andaman & Nicobar Islands, which are further divided into 11 districts. Each of the three regions has a designated Regional Commander who is responsible for combating oil spills under the Regional Oil Spill Disaster Contingency Plan (ROS-DCP). Every region has a Response Centre, manned by qualified personnel and a well-stocked inventory of equipment. Apart from the response centres, a number of other resource agencies under the NOS-DCP coordinate with the Coast Guard to combat oil spills.

### **Liability Regime - Strengths and Weaknesses**

International Conventions with respect to oil pollution are divided into two categories — measures aiming at prevention (*ex-ante*) and measures aiming at compensation (*ex-post*). The International Convention for the Prevention of Pollution from Ships 1973 ANNEX I - Regulations for the Prevention of Pollution by Oil 1983 (MARPOL) focuses on prevention of marine pollution by oil. The International Convention on Civil Liability for Oil Pollution Damage 1969 (CLC) and International Fund for Compensation for Oil Pollution Damage 1971 (Fund Convention), on the other hand, specify liability and compensation for oil pollution. India imposes civil liability upon parties identified as being responsible for oil spills and the resultant pollution caused due to the spillage. It has ratified all of the above Conventions by incorporating them into The Merchant Shipping Act 1958.

In addressing the damage of marine environment by oil pollution, the Merchant Shipping Act 1958 places the liability primarily upon ship owners. It requires that in every case of an oil spill, the party/ parties responsible for the damage must be identified, as must the mental element "*Mens Rea*" or knowledge for conducting the act in order to fix the extent and amount of liability for the damage caused. However, while the Act does prescribe various provisions for imposing oil-spill-related liabilities, it does not go so far as to have specific provisions addressing the extent of such liability for the damage inflicted to the environment or the amount assigned for conducting clean-ups and ecological restoration. This is a significant shortcoming that India would do well to address.

It must be noted that the owner of a ship can, in many ways, limit his/her liability with respect to oil-pollution damage arising from one or more incidents.<sup>13</sup> The Supreme Court of India, in the case of World Tanker Corporation *versus* SNP Shipping Services Pvt Ltd,<sup>14</sup> pointed out that the whole purpose of limitation of liability is to protect an owner against claims so large as to far exceed the value of the ship and cargo. However, Section 352 I imposes strict liability on all ship owners, irrespective of their nationality or flag, in respect of cases of oil pollution damage. Further, once negligence is proven against a ship owner, it precludes the option of limiting liability.<sup>15</sup> Neither

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<sup>13</sup> The Merchant Shipping Act 1958, Section 352 H (a)

<sup>14</sup> SC, AIR, 2330, 1998

<sup>15</sup> The Merchant Shipping Act 1958, Section 352 J (2)

can any other person, such as the master and crew, operator, salvor or any other person involved in the functioning of the vessel, be held liable, except where such person is proven to have caused damage wilfully or recklessly. However, the Act does not prohibit a claim of negligence from being made against a third party or the above exempted persons. Instead, Sections 352 I (3), (4) and (6)<sup>16</sup> of the Act insist on the identification of the mental element “*Mens Red*”. This gives rise to complex issues in cases involving collision and consequential oil pollution, especially when viewed through the lens of Section 286 of the Merchant Shipping Act 1958, which deals with the “*observance of collision regulations*”.

### **Prevention and Containment of Pollution**

As a precautionary principle, all Indian oil tankers and ships are required to procure an International Oil Pollution Prevention Certificate<sup>17</sup>. Vessels carrying noxious liquid substances in bulk similarly require an International Pollution Prevention Certificate.<sup>18</sup> These certificates must also be procured by ships and oil tankers that are registered outside India.<sup>19</sup> A Pollution Prevention Certificate is issued to every ship by its respective government once the ship has been inspected and found to be compliant with the MARPOL Convention.

When an ongoing or potential oil spill is suspected, the Central Government may give notice to the owner of a ship/vessel.<sup>20</sup> Once it has been established that oil or a noxious liquid is escaping or likely to escape from a tanker or ship and is causing or threatening to cause pollution to any part of the coast or coastal waters, Government may issue notice for the purpose of minimising or preventing pollution. This notice may be issued to either one or all of the concerned parties<sup>21</sup> involved and may require them to take such action in relation to the ship, tanker or installation as may be specified in the notice.

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<sup>16</sup> The Merchant Shipping Act 1958, Section 352 I (3) states “*Where, with respect to any incident the owner proves that the pollution damage resulted, either wholly or partially, from an act or omission done, with intent to cause such damage, by the person who suffered damage, or from the negligence of that person, the owner shall be exonerated wholly or, as the case may be, partially, from liability to that person*”; Sub-section (4) states “*When any incident involving two or more ships occurs and pollution damage results therefrom, the owners of all the ships concerned, unless exonerated under sub-section (3), shall be jointly and severally liable for such damage which is not reasonably separable*”; Sub-section (6) states “*Without prejudice to any right of recourse of the owner against third parties, no claim for compensation for pollution damage may be made against- (a) the servants or agents of the owner or the members of the crew; (b) the pilot or any other person who, without being a member of the crew, renders services for the ship; (c) any charterer (howsoever described, including a bare-boat charterer), manager or operator of the ship; (d) any person performing salvage operations with the consent of the owner or on the instructions of a competent public authority; (e) any person taking preventive measures; (f) all servants or agents of persons mentioned in clauses (c), (d) and (e), unless the incident causing such damage occurred as a result of their personal act or omission committed or made with the intent to cause such damage, or recklessly and with knowledge that such damage would probably result*”

<sup>17</sup> The Merchant Shipping Act 1958, Section 356 C (1)

<sup>18</sup> The Merchant Shipping Act 1958, Section 356 C (2)

<sup>19</sup> The Merchant Shipping Act 1958, Section 356 D

<sup>20</sup> The Merchant Shipping Act 1958, Section 356 J

<sup>21</sup> *Concerned parties could be- (i) the owner, agent, master or charterer of the tanker; (ii) the owner, agent, master or charterer of the ship other than a tanker; (iii) the owner, agent, master or charterer or operator of a mobile offshore installation; (iv) the owner, operator, lessee or licensee of offshore installation of any other type*

Once a notice is received, the concerned person(s) shall be required to take: (a) action for preventing the escape of oil; (b) action for removal of oil or noxious liquid substances; (c) action for removal of the tanker or a ship other than the tanker, or a mobile offshore installation or an offshore installation; (d) action for removal of oil slicks on the surface of the sea; (e) action to disperse the oil slicks on the sea surface.<sup>22</sup>

In case the person(s) to whom the notice is served fails to comply with the actions to be undertaken as specified in the notice, the Central Government cause the directives given in the notice to be carried out by a specified agency of the government and costs incurred by the Central Government shall be recovered from all or any of the person(s) who had been notified.<sup>23</sup>

The above-mentioned provisions were enforced as a consequence of the infamous 2010 oil spill case off the coast of Mumbai. On 7th August 2010, the MSC *Chitra* collided with MV *Khalijia III* within Mumbai harbour, following which the former tilted precariously and began leaking oil into the sea. An estimated 500 tonnes of oil spilled into the sea and about 250 containers, some carrying hazardous chemicals and pesticides, fell overboard. The owners of MSC *Chitra* were then served a notice by the Maharashtra Pollution Control Board (MPCB) for an advance payment of Rs 3 Crore for damage-control operations. The Director General of Shipping subsequently initiated a legal suit that demanded compensation from the owners for the oil spill and the catastrophic ecological damage, as they were identified as the responsible polluters.<sup>24</sup>

## Legal Issues

An examination of the legal regime governing oil spills in India identifies multiple issues that need to be addressed in order to determine liability and establish a limit that can address the environmental damage incurred due to an oil spill.

Multiple parties are involved in the trade of oil, each of whose liabilities and level of negligence differ. In many cases, it would not be difficult to show that the stranding or collision that caused the spillage and consequent ecological damage was brought about by the negligence of one or more ship-owners. For example, a failure to exercise reasonable care by a crew member or poor construction, or inadequate maintenance, are all identified as negligence on the part of the owner.<sup>25</sup> On the other hand, situations do arise where accidents cannot be directly attributed to the negligence of one person, such as vessels involving multiple parties, namely the respective owners of the cargo and ship, the party that chartered the ship, the ship manufacturer, the insurer or party responsible for the maintenance of the ship, etc. With the focus of the liability regime in place being

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<sup>22</sup> The Merchant Shipping Act 1958, Section 356 J (2)

<sup>23</sup> The Merchant Shipping Act 1958, Section 356 K (2)

<sup>24</sup> Press Trust of India, "Mumbai Oil Spill Continues, 300 Containers Tumbled into Water So Far", *The Times of India* (Mumbai), 09 August 2010, <https://timesofindia.indiatimes.com/city/mumbai/mumbai-oil-spill-continues-300-containers-tumbled-into-water-so-far/articleshow/6280073.cms>

<sup>25</sup> Robert P Grime, "*Shipping Law*", (Sweet and Maxwell London 1st ed/1978), 218

upon the owner, other parties responsible for the oil spill have a greater chance of evading their liability and payment of the costs involved in the oil spill clean-up.

Additional complications also exist, resulting in further opportunities for liability to be evaded. For instance, a ship registered in one nation could well be sailing under the flag of another. Likewise, an oil tanker owned by one company could be chartered by another. In the case of an offshore installation, an oil platform owned by one corporation might easily be licensed to another company for drilling. To summarise, it is not pragmatic to apply ordinary rules of law for the determination of the costs and consequences of oil spillage.

Oil spills fall purely under the ambit of civil liability, and there is no regime of criminal liability for punishing a party liable for oil-pollution under the Act. However, oil pollution is a public nuisance and cases have been registered under the Indian Penal Code (IPC) for rash navigation and endangerment of life of others. Section 268 of the IPC allows a person to be held guilty for causing public nuisance. Section 278 of IPC also allows a person to be held responsible for vitiating the atmosphere so as to *“make it noxious to the health of persons in general dwelling or carrying on business in the neighbourhood or passing along a public way”*. However, the challenge with applying this provision in case of oil pollution is that the prescribed penalty of up to Rs. 500 is ludicrously small.

In India, a further legal issue is that, under the statutory regime, there is no difference between accidental and operational discharge of oil at sea. The International Convention on Civil Liability for Bunker Oil Pollution Damage 2001 (Bunker) provides laws governing only the operational discharge of oil by a ship. The Bunker Convention deals with a particular type of oil, i.e., bunker oil, which is a very low-quality oil. In the event of operational discharge of such oil, the extent of the loss or damage caused outside the ship by the contamination, certainly needs to be determined more rigorously. Additionally, measures and their costs need to be identified to prevent further incidents.

However, India's lack of adoption of the Bunker Convention, leaves oil-spill incidents due to operational discharge unaddressed, with The Merchant Shipping Act 1958 being the only recourse. This is quite clearly insufficient and ineffective since accidental discharges are quite different from operational discharges in terms of the magnitude and implications of the oil spill, and the causation and extent of liability. While occurrences of operational discharge are far more prevalent, the financial and ecological damage caused by an accidental oil spill is of far greater magnitude. It is, therefore, imperative that India signs the Bunker Convention.

### **Policy Recommendations**

In order to create a meaningful deterrent against carelessness leading to oil spills within the maritime zones of India, the associated liability regime needs to be strengthened. Heavy fines must be imposed on all persons closely associated and/or responsible for the spill. A special law for oil spills must be enacted or additions made to The Merchant Shipping Act 1958. This law (or additions,

should adoption of the latter course be deemed preferable) must impose strict penalties and heavy fines for negligence and improper maintenance of ships and offshore installations. Considering the nature of the crimes and the extent of the damage, a specific financial liability should be identified, taking into account prevailing economic circumstances and the implications of the oil spill on the economy and the coastal environment.

Given the challenges associated with establishing the direct liability of parties in relation to the environmental damage caused under the current civil liability regime, a fund should be created which compensates for environmental damages caused by oil spills. The existence of such a fund will ensure that the environmental damages are addressed even in situations where compensation is not retrievable from the responsible parties, or no responsible parties are identified, or the compensation is insufficient to cover the environmental damage suffered.

The creation of such a fund must be in accordance with the intent of the Fund Convention. Annual contributions to the fund must be provided by the various shipowners' associations in India, concerned state governments, and the various ministries of the central government.

## **Conclusion**

Marine oil spillages have devastating effects upon marine flora and fauna. A spill of serious magnitude has the potential to inflict incredible damage on the marine environment, adversely impact the lives and livelihood of coastal dweller, constrain trade, and affect the entire Indian economy. Even though a great majority of compensation claims have been settled amicably through negotiations, not much has been done to evaluate the financial impact of the harm done to the marine environment due to an oil spill. It must be kept in mind that every oil spill is a unique case involving multiple factors and circumstances and there is no reasonable way to calculate the 'average' cost of an oil spill or the cost of mitigating its ecological impact.

While limiting the liability of the ship owner might sound like a great incentive, in practice the associated strict liability principle is working well enough. It does not, however, consider ecological damage in the evaluation of overall damages. Keeping in view the short- and long-term effects of oil spills on the marine environment, legal rules concerning oil pollution must consider both the cause and the extent of the damage. Specifically, not only should damage to property and personal injury be taken into account, but also the damage caused to the environment.

India is a leading economy, and it occupies a commanding position in the Indian Ocean. It must set an example to other Asian and African countries by providing strict and robust laws to counter oil pollution. In matters of oil spills, the ecological and financial consequences will be most burdensome to developing nations and it will be far more efficacious for them to adopt a policy that recognizes that 'prevention is always better than cure'.

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