

Oil Spill and Legal Dichotomy: An Introspection in the Light of Environmental Impacts and Economic Costs

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I. Introduction

The rapid economic development of countries since World War II has contributed to a considerable increase in marine transportation of raw materials, especially of crude oils and offshore activities. A significant amount of oil comes into the sea from operational discharges of ships¹ from incidents such as collisions, groundings and contacts. Offshore exploitation and exploration of oil and gas is connected with the danger of blow-outs and major spills.²

The advancement of science, technology, trade, commerce, and globalization has damaged our ecosystem beyond repair. Several incidents of oil-spill across the Globe has not only damaged the natural water reserves and water resource management system but also caused severe damage to the marine life. Oil-spill has been a major cause of environmental imbalance along with huge economic loss impacting the ocean currents that are instrumental to climatic change.

II. Oil Spill and Its Consequential Effects

Last 30 years, the issue of oil-spills and their effects has taken on much importance.³For example- **Exxon Valdez oil spill** ⁴(1989) spilled 10.8million gallons of crude oil covering 11,000sq miles into the waters of Prince William Sound after striking Bligh Reef. It killed 250,000- 500,000fishes, thousands of sea birds, sea otters, hundreds of harbor seals, bald eagles and a couple of whales etc.⁵in 1991 another world's largest spill occurred due to war in Persian Gulf was **Gulf War Oil Spill**. It approximately released 240-336 million gallons of crude oil killing marine fishes and mammals. It was considered one of the worst disasters, beating the **Ixtoc 1 Oil spill**(1979)in Mexico. By 2010, six oil spills were seen in

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¹ From ballast and bilge water.

²J.W. Doerffer, *Oil Spill Response in the Marine Environment*, Pergamon Press Oxford, first edition, 1992, p.7.

³ ITOPE estimated that between 1970- 2016 approximately 5.73million tonnes of oil were lost as a result of tanker incidents.

⁴*Exxon Shipping Co. v. Baker*, 554 U.S. 471 (2008)

⁵Larry West, 'ThoughtCo', available at: <https://www.thoughtco.com/exxon-valdez-oil-spill-1203710>, (Updated on 18, June, 2017).

the U.S.A. Other than U.S, Canada, Nigeria, France, U.K. and China also witnessed oil-spill.

In India, **Indian ONGC Urban Plan** (2013) spilled 5000 liters of crude oil in Arabian Sea and **Ennore**(2017)oil spill in Tamil Nadu. The MSC Chitra and MV Khalijia III collision in the Arabian Sea.⁶ **Sundarban Oil Spill** (2014) occurred in Bangladesh.

Deeper insight into oil pollution was not taken until the Torrey Canyon incident.⁷ In 2010 an explosion on the BP (British Petroleum) which operated Deep-water Horizon oil rig, discharged 200million gallons of crude oil into the Gulf of Mexico. Oil rig exploded, causing worst environmental disaster in U.S. history as oil and methane spewed from an uncapped wellhead going below the surface of the ocean. Trauma lasted for 87 days killing 11 rig workers and marine life.⁸

Nearly five years after the BP incident, a report released by the National Wildlife Federation⁹ reports that creatures like dolphins, sea turtles and fish still haven't fully recovered; bottle-nose dolphins were found dead on the Louisiana coast in 2014; 32% of laughing gulls died; around 27,000- 65,000 Kemp's ridley sea turtles died.¹⁰ When an oil spill occurs, it causes a multitude of problems for the environment including the humans. **Effects of oil spill may be analyzed under the following heads-**

(i) Effects on the Environment: Oil spills can have long-lasting effects on the environment. With the use of clean-up methods, it may appear that oil has vanished

⁶ On August 7, 2010 Panama-flagged MSC Chitra, outbound from South Mumbai's Nava Sheva port, collided with the inbound MV Khalijia-III, which caused about 200 cargo containers from MSC Chitra to be thrown into the Arabian sea. MSC Chitra tilted to about 80 degrees after the collision, spilling an estimated 400tonnes of oil. The ship was loaded with an estimated 2,600tonnes of oil, 300tonnes of diesel and 70tonnes of lubricating oil at the time of the accident. *available at:* <http://timesofindia.indiatimes.com/city/mumbai/Mumbai-oil-spill-continues-300-containers-tumbled-into-water-so-far/articleshow/6280073.cms> (Visited on 20th January, 2019).

⁷ The disaster occurred in 1967 when a tanker carrying around 100,000tons of crude oil had run aground in the western coast in Cornwall, England.

⁸John C Cruden, Steve O'Rourke,"The Deepwater Horizon Oil Spill Litigation: proof of concept for the manual for complex litigation", *Michigan Journal of Environmental & Administrative Law*,1 Vol. 6, Issue 1, (2016).

⁹National Wildlife Federation, "[Five Years and Counting: Gulf Wildlife in the Aftermath of the Deepwater Horizon Disaster](https://www.nwf.org/~media/PDFs/water/2015/Gulf-Wildlife-In-the-Aftermath-of-the-Deepwater-Horizon-Disaster_Five-Years-and-Counting.pdf)", P. 3 *available at:* https://www.nwf.org/~media/PDFs/water/2015/Gulf-Wildlife-In-the-Aftermath-of-the-Deepwater-Horizon-Disaster_Five-Years-and-Counting.pdf, (visited on February 11, 2019).

¹⁰Craig Pittman, "Study examines what lives in the Gulf of Mexico after BP disaster" *Tampa Bay Times*, *available at:* <https://phys.org/news/2018-07-gulf-mexico-bp-disaster.html#jCp>, (Published on July 9, 2018).

but in reality it remains in the environment for decades. Oil can percolate down through the sand on beaches and create harmful sediments. The animals who live in the water or near the shore are most affected. The grasses in the wetland absorb oil which eventually damage plant's growth by making it unsuitable for the habitat, oil also chokes the animals to death.¹¹ Moreover, the destruction of such marshy vegetation fails to control the impact of cyclones, tsunamis etc.

(ii) Effects on Marine Life: Oil can have harmful effects on marine life's growth which consists of sea otters, fish, countless species of birds, oceanic mammals i.e., whales and dolphins.¹² Thousands of whales and dolphins die after each oil spill. In 2010, after the sinking of the Deep-water Horizon oil rig, more than 5,000 cetaceans were found dead on the coast. The entire situation led to a decrease in reproduction of species by harming their eggs and larvae. Oil spill may lead to migration and extinction of species.

(iv) Effect on Economy: The second major effect of the oil spill is seen on the economy. When precious crude oil or refined petroleum is lost, it decreases the amount of petroleum and gas available for commercial circulation. This means shortage of oil increases prices. The process of cleaning the oil spill requires a lot of financing, resources, technologies, man-power. Oil spill also affects fishing industry directly due to less supply of fish and the consequent increase in unemployment there is loss of export, revenue and increase in food scarcity.

(v) Effect on Tourism Industry: The local tourism industry suffers a huge setback as most of the tourists stay away from such places. Dead birds, sticky oil and huge tar balls become common sight. Due to this, various activities such as sailing, swimming, rafting, fishing, parachute gliding cannot be performed. Industries that rely on sea water to carry on their day to day activities halt their operations till it gets cleaned.

IV. International Legal Framework for the Prevention of Oil Spill:

'Liability arises when discharge happens' and the liability ends when the loss is recovered fully. The question remains what kind of discharge can be termed as discharge causing pollution? The Oil Pollution Act, 1990 of U.S.A. defines discharge- all intentional and unintentional emissions other than the natural seepage it includes processes like spilling, pumping, pouring, emitting, leaking, emptying, dumping, etc.¹³ apparently emission may be extended to include effluents even if it is not mentioned specifically.

¹¹ Available at: <https://www.conserve-energy-future.com/effects-of-oil-spills.ph>, (26th January 2019).

¹² *Ibid.*

¹³ Oil Pollution Act, 1990, available at: <http://www.epw.senate.gov/opa90.pdf>. (Visited on 16th April, 2019).

The liability of oil-spill rests upon “nationality” concept it means that nation state whose flag is flying over the registered ship is liable to enforce rules and regulations of its municipal as well as international law. A ship without a flag will be deprived of benefits and rights available under the legal regime of high sea.¹⁴The Lotus Case¹⁵ also enumerates that the vessels on the high sea are subject to no authority except of that State whose flag they fly.

IV.I. Conventions Relating to Maritime Safety and Security and Ship/Port Interface:¹⁶

There is Convention on Facilitation of International Maritime Traffic (FAL), 1965 aims at facilitating maritime transport by simplifying the formalities, data requirements and procedures associated with arrival, stay and departure of ships. It has 171 members. Convention on the International Regulations for Preventing Collisions at Sea (COLREG), 1972 provides for navigation rules for ships and other vessels at sea to prevent collisions. On the other hand, International Convention for Safe Containers (CSC), 1972 has two goals: to maintain a high level of safety of human life in the transport and handling of containers by providing test procedures. Towards maritime safety Convention on the International Maritime Satellite Organization (IMSO C), 1976 helps to oversee public safety and security communication services through Inmarsat satellites for Search and rescue communications. The Torremolinos International Convention for the Safety of Fishing Vessels (SFV), 1977, superseded by the 1993 Protocol & Cape Town Agreement of 2012 on the Implementation of the Provisions of the 1993 Protocol relating to the Torremolinos International Convention for the Safety of Fishing Vessels. The convention has also been ratified by India.

IV.II. Conventions Relating to Prevention of Marine Pollution

International Convention Relating to Intervention on the High Seas in Cases of Oil Pollution Casualties (INTERVENTION), 1969 applies to casualties involving oil pollution. Convention for Preventing Marine Pollution by Dumping Wastes and Other Matter (LC), 1972 (along with 1996 London Protocol) and International Convention on Oil Pollution Preparedness, Response and Co-operation (OPRC), 1990 is another measure towards minimizing pollution by effectively controlling marine pollution by taking proper steps to prevent pollution of the sea by dumping of wastes matters. Total 87 and 112 States have ratified this Convention respectively excluding India. Similarly, International Convention on the Control of Harmful Anti-fouling Systems on Ships (AFS), 2001 made States to agree for

¹⁴Malcolm N. Shaw, *International Law*, p. 611 (6th Edition, Cambridge).

¹⁵*France v. Turkey* (1927) P.C.I.J series A no 10.

¹⁶ IMO, available at: <http://www.imo.org/en/About/Conventions/ListOfConventions/Pages/Default.aspx> (Visited on 16th April, 2019).

prohibiting the use of harmful anti-fouling paints and harmful substances like organotin tributyltin. For preventing the spread of harmful aquatic organisms from one region to another and halt damage to the marine environment from ballast water discharge, by minimizing the uptake and subsequent discharge of sediments and organisms has express mention in International Convention for the Control and Management of Ships' Ballast Water and Sediments, 2004.

IV.III. Conventions Covering Liability and Compensation

International Convention on Civil Liability for Oil Pollution Damage (CLC), 1969, Protocol-1992 to the International Convention on the Establishment of an International Fund for Compensation for Oil Pollution Damage (FUND 1992) is strict liability in which compensation is to be paid by shipowners which ensured adequate compensation in oil pollution damage by oil tankers i.e. ships that carry oil as cargo. Similarly, International Convention on Liability and Compensation for Damage in Connection with the Carriage of Hazardous and Noxious Substances by Sea (HNS), 1996 (and Protocol-2010) cover pollution damage caused by persistent oil from tankers. The HNS Convention establishes a two-tier system of compensation to be paid in the event of accidents at sea, involving hazardous and noxious chemicals. However, it goes further by covering damages for the risks of fire and explosion, including loss of life, personal injury or of property. Tier one will be covered by compulsory insurance taken out by shipowners. In those cases, where the insurance does not cover an incident, or is insufficient to satisfy the claim, a second tier of compensation will be paid from a fund, from contributions of the receivers of HNS. International Convention on Civil Liability for Bunker Oil Pollution Damage, 2001, was another measure adopted to ensure adequate, prompt, and effective compensation to persons who suffer damage caused by oil spill when oil is carried as fuel in ships' bunkers. Nairobi International Convention on the Removal of Wrecks, 2007 tries to establish uniform rules for the prompt and effective removal of shipwrecks located in the exclusive economic zone (EEZ) by a member state that may be hazardous to navigation and to the environment.

V. National Legal Framework for the Prevention of Oil Spill

The Constitution of India confers a duty on every citizen of India to protect and improve the natural environment including forests, lakes, rivers and wildlife and to have compassion for the living creatures.¹⁷ The Constitution also confers the right to life and personal liberty which encompasses the right to have a clean environment.¹⁸

¹⁷ Article 51-A (g).

¹⁸ Article. 21.

Our rights go hand in hand with our duties. Even if one doesn't commit any environmental damage one can be liable for no-fault. The situation evolved from 1868 to 1987. The principle of strict liability evolved in case of *Rylands v. Fletcher*¹⁹ where the court, held the defendant is strictly liable for the injury done to the plaintiff when the water escaped from the reservoir and flooded the plaintiff's mine causing huge damage. A different rule applied in India in case of *M. C. Mehta v. Union of India*²⁰ where, oleum gas leaked from Shriram Food and Fertilisers Ltd. complex at Delhi. Due to the leakage, many people were affected. The Apex Court then evolved the rule of absolute liability on the rule of strict liability and stated that the defendant would be liable for the damage caused without considering the exceptions to the strict liability rule. The rule laid in MC Mehta case was also followed by the Apex Court while deciding the case of Bhopal Gas Disaster in the leakage of Methyl Isocyanide (MIC) gas. To ensure that victims of such accidents get quick relief through insurance, the Indian Legislature passed the Public Liability Insurance Act in 1991.

The sources of the law of liability for maritime accidents in India also include- international custom, treaties, conventions, decisions of the Indian courts and of foreign countries as recognized by the Indian courts. Liability in India can be fixed both under civil and criminal law. Under civil law specific relief and tort are most useful. Now the question is whether pollution of water is a tortious act or a criminal act. By 1956 in *Esso Petroleum Co. Ltd. v. Southport Corp.*²¹ the Court of Appeal applied the principle of *res ipsa loquitur* which considered the act as a criminal act and rejected the defense of "necessity" for discharging 400-tonnes of oil to lighten the vessel for saving the lives of crew members, by polluting the Southport coastline. Similarly, by 1969 the Madras High Court covered the act under the tort as it causes injury to person, property and health of living beings. In *Pakkle v. Aiyasami Ganapathi*,²² the court held- altering the natural quality of water and rendering it less fit for any purpose for which it is capable of being used gives the cause of action under nuisance.

In India we have legislation which makes accidental discharge of oil a criminal offence.²³ **Indian Penal Code, 1860**²⁴ deals with law relating to rash navigation of vessels and endangering the human life is punished with an imprisonment which may extend to six months, or fine extending to Rs 1000, or with both.

Indian Companies Act, 1956 with amendment- 2013, section-135 provides Corporate Social Responsibility for companies having net worth of Rs 500 crore

¹⁹ (1868) L.R. 3 H.L. 330.

²⁰ A.I.R. 1987 S.C. 1086.

²¹ (1956) A.C. 218.

²² AIR 1969 Mad 351.

²³ *Hisa A. Sheng v. Administrator*, 2007 CriLJ 821 (oil spill in Lakshadweep Island)

²⁴ Section 280- Rash navigation of vessels and Section 336- Act endangering life or personal safety of others

or more turnover of Rs 1,000crore or more or net profit of Rs 5crore or more during any financial year. The companies are mandatorily obliged to adopt a responsibility towards society. For example, Adidas, one of the biggest names in sportswear fights to preserve marine life through Run for the Oceans program. Between June 8th- July 8th cities across the world host running events to gain public attention towards the devastating effect of plastic pollution on marine life. Adidas contribute \$1 million to the Parley Ocean Plastic Program and, on top of that, runners raise money through their participation.

Merchant Shipping Act, 1958 (MSA) is related to liability for maritime accidents. The Act applies to every Indian and foreign ship within the territorial waters of India or any marine areas adjacent thereto over which India has exclusive jurisdiction in regard to control of marine pollution.²⁵ Act does not apply to warships or ships owned or operated by a state for non-commercial purposes. The Parts IX²⁶, X²⁷, XA²⁸, XB²⁹, XC³⁰ & XIA³¹ provides for a liability and insurance regime. The Act, also ensures safety measures like- a ship must have lifesaving appliances (section-288), radio appliances (Section-291 to 296), fire-signaling appliances (section 289-290 and 297 respectively). The ship must have safety certificates (Section 299 to 309A). Section-335 casts an obligation on the owner to use all reasonable means to ensure seaworthiness of a ship and prohibits an unworthy ship to be sent into the sea, endangering lives. It punishes the unjustified ship master who knowingly takes the ship to sea without compelling circumstances.

India has ratified the Convention on the Establishment of an International Fund for the Compensation of Oil Pollution Damage in 1990. Under this Act, a person shall be liable to compensate when he acts as an importer of the contributing oil or a person by whom the oil is to be received in India. Any non-compliance with the act will be a punishable offence.

The Marine Insurance Act of 1963 helps to mitigate the risks of financial loss to the property such as ship, or other movables in maritime transport.

Principle-7 of Stockholm Conference 1972, states that states shall take all possible steps to prevent the pollution of the seas by substances that are liable to create hazards to human health, to harm living resources and marine life, to damage amenities or to interfere with legitimate uses of the sea. India should adhere to this principle.

²⁵ Section-352G.

²⁶ Part IX- provisions related to Safety.

²⁷ Part X- Collisions, accidents at sea and liability.

²⁸ Part XA- Limitation of Liability.

²⁹ Part XB- Civil Liability for Oil Pollution Damage.

³⁰ Part XC- International Oil Pollution Compensation Fund in the sections 352S to Section 352ZA.

³¹ Part XIA-Prevention and Containment of Pollution of the Sea by Oil.

Water (Prevention and Control of Pollution) Act, 1974 aims to protect water from being polluted by noxious solid liquid and gaseous wastes. The penalty for contravention of the provisions under section-24 i.e., prohibition on use of stream or well for disposal of polluting matters etc. shall be punishable with imprisonment for a term which shall not be less than 1 year and 6 months, but may extend to 6 years with fine.³² In addition to this the Act prescribes punishment (not fixed) for offences done by companies and Government Departments.³³

Environmental Protection Act, 1986 prevents humans, living creatures, plants and property from accidental discharge of hazardous substances and ensures penalty to whoever contravenes any of the provisions, rules, orders or directions under the Act. The person shall in respect of each failure or contravention be punishable with imprisonment for a term which may extend to 5 years, or fine extending to Rs 1 lakh, or with both. For continual offence, the offender shall be liable to pay additional fine of Rs 5000 for every day during which the failure continues.³⁴ In addition to this the Environmental Protection Act, 1986 prescribes punishment (not fixed) for offence committed by companies and Government Departments.³⁵

Public Liability Insurance Act, 1991 provides for insurance and liability based on 'no fault' principle.³⁶

The National Oil Spill Disaster Contingency Plan, 1996 (NOS-DCP) was prepared by the Ministry of Defense to handle oil-spill situations. It was updated in 2015 to meet international standards. *Inter alia* plan, provide for better coordination among different agencies for oil cleaning operations, makes individual ports responsible, facilitates regional oil spill contingency plan and establish online oil-spill Advisory System.

The problem is that the MSA, 1958 has had many lacunae like the Merchant Shipping (Prevention of Pollution of Sea by Oil) Rules had been framed in the year 1974, 1981, 2010, 2018 and regulation had to be made in the year 2019 to cover up those lacunas.

Several environment protection legislations existed even before India's Independence. However, the true thrust for putting in force a well-developed framework came only after the UN Conference on the Human Environment (Stockholm, 1972). After the Stockholm Conference, the National Council for Environmental Policy and Planning was set up to establish a regulatory body in 1972 to review the environment-related issues. This Council later evolved into a

³² Section-43.

³³ Section-47 & 48.

³⁴ Section-15(1).

³⁵ Section-16(1) & 17(1).

³⁶ Section-3.

Ministry of Environment and Forests (MoEF). Since 1970s, a number of environment legislations have been enacted. The MoEF and the pollution control boards like CPCB and SPCB i.e., Central and State Pollution Control Board respectively together form the regulatory and administrative core of the sector. The Supreme Court of India has been engaged in interpreting and introducing new changes in the environmental jurisprudence directly through judgments, directions because of which the legislations need to apply stringent laws by revising it time to time.

VI. Legal Dichotomy

Pertinent question arises as to who is to bear the costs and to what extent the ship owners, carriers or the nature (in case of act of god) be made liable? The fact is that multiple parties are involved in the whole array of transaction of transporting oil it becomes imperative to analyze the liability of insurer and the other parties involved in the chain of transaction. Question also arises as to the extent of liability to be incurred-strict or absolute? The law of oil spill liability is a mixture of civil liability and criminal regimes in certain jurisdictions like U.S. The liability and fund conventions limit the liability of the ship-owner in case of maritime accident causing oil pollution. Principles governing the law on oil spill liability are strict liability in case of countries say Norway, United Kingdom under the Petroleum Activities Act, 1996. Liability and caps on liability limit is also to be determined towards the massive costs involved in the cleanup and the damage caused to the natural resources and private parties is also grave. In India the rule of absolute liability as decided in *M. C. Mehta v. Union of India*³⁷ can be applied other than the strict liability rule laid down in *Ryland v. Fletcher*³⁸ having its own exceptions. Liability for maritime accidents in India has been codified by the Merchant Shipping Act, 1958. But it was very difficult to obtain compensation to pollution caused by bunker oil-spill or leakage from ships other than tankers which was not covered in Merchant Shipping Act, 1958. Governments and local authorities found it difficult to recover costs on preventive measures and cleanup operation on such type of pollution. The Indian laws related to pollution from oil (except bunker oil pollution damage) are existing in the MSA, 1958, but there is a need to make specific legislation for covering except bunker oil pollution damage.

India follows the civil liability principle on the footings of international Convention on civil liability for oil pollution and merchant shipping act holding the owner liable for oil pollution. The principle of public trust doctrine and polluters pay principle should be invoked to determine the actual compensation to the irreversible loss incurred.

³⁷ 1987 SCR (1) 819.

³⁸ (1868) L.R. 3 H.L. 330.

By ratifying, International Convention on Civil Liability for Bunker Oil Pollution Damage, 2001 (Bunker Convention)³⁹ in 2015 India ensures adequate, prompt, and effective compensation for damage caused by oil spills, when carried as fuel in ships' bunkers. This is similar to the liability legislation enacted in the nuclear power sector, where the liability is clearly spelt out and prompt compensation for the victims of a nuclear incident is assured.

The provisions of Bunker Convention require registered owner of every vessel to maintain compulsory insurance cover that allows claim for compensation for pollution damage to be brought directly against an insurer. As a step towards this direction, every ship above one thousand gross tonnages will have to carry a certificate on board to the effect that it maintains insurance or other financial security, such as the guarantee of a bank or similar financial institution. The Directorate General of Shipping has been mandated to issue this certificate and no vessel will be permitted to enter or leave India without this document.

Since 2008, 91% of world shipping tonnage maritime nations are parties to the Bunker Convention, the U.S.A. and Japan are notable exceptions. At present, irrespective of whether India is a party to the Convention- Indian ships have to carry 'Blue Card' issued by insurance companies, if, it is trading in countries that are parties to this Convention. However, the reverse is not true and the same is not applicable for foreign ships trading in India. Even if they are carrying 'Blue Cards', pollution in Indian waters will not be under the purview of such insurance as India is not party to this Convention.

The United States has enacted the Oil Pollution Act, 1990, which covers all types of oil, from the ship, whether bunkers or Cargo. The compensations and the requirement are more stringent than the Bunker Convention and hence there was no need by US to adopt the Bunker Convention, which came into force at a much later stage in 2008. The Japanese 'Act on Liability for ship oil pollution 1975' was amended in 2005 to cover bunker pollution damage before the Bunker Convention came into force internationally in 2008, and also the requirement under the local regulations were more stringent.

In 2015, a bill was introduced to amend the Merchant Shipping Act, 1958. Once enacted, the Act shall also give effect to the Nairobi International Convention on the Removal of Wrecks, 2007 and the International Convention on Salvage, 1989 of IMO, to which India is already a signatory. Convention will facilitate purposeful approach towards removal of wrecks as well as salvage and protect Indian waters from the wreck hazards and introduce internationally recognized/approved rules

³⁹ Rajya Sabha, 204th Report: Merchant Shipping (Amendment) Bill, 2015 (Parliamentary Standing Committee On Transport, Tourism & Culture), (Presented to the Rajya Sabha on 2.12.2015 and laid on the Table of Lok Sabha on 1.12.2015), *available at*: <https://www.prsindia.org/uploads/media/Merchant%20Shipping/SCR%20%20Merchant%20Shipping,%202015.pdf>.

for wreck removal. There is a question mark with regard to the exemption to smaller ships. A representative of Indian National Ship-owner's Association (INSA), though, stated that the exemption to the vessels which are 1,000 gross tonnage and less would add up to around 500- 600 vessels, which is not a substantial amount.⁴⁰ Finally, India became the accession state to Nairobi convention in April, 2015 and salvage convention in October, 1996.

The U.S.A., China and Japan, Italy, Norway, Republic of Korea, and Russian Federation are the major maritime nations that are not party to the Nairobi Convention. As of now the national legislation of above countries provide adequate mechanism of direct action against the shipowners in their coastal waters hence, there may not be a need for them to be a party to this Convention. But in case of India, the provisions related to the wreck removal already exist in the Merchant Shipping Act. However, these provisions need to be updated, as an opportunity to make Indian legislation fully compliant with the Nairobi Convention.

In case of Salvage Convention, Japan, Panama, Republic of Korea, is few major maritime nations which are not signatory to the Convention. This is because of the fact that their national legislation has already made necessary provisions for salvage and the courts have the sole jurisdiction of awarding the salvage compensation. The salvage convention applies to judicial or arbitral proceedings pertaining to salvage.

The oil pollution Act, 1990 of U.S.A. lays down a fine up to \$10million for tank vessels and it extends up to \$350million to the responsible parties on onshore facilities, deep water ports and \$75million fine for responsible parties at off shore facilities. Global convention of IMO laid a fixation of compulsory insurance in this case ship-owners are liable to pay up to Rs 700crores in case of oil spill but, India in Merchant Shipping Act, 1958 provides a jail term of 6 months and fine up to Rs 10lakhs or both and under Environmental Protection Act, 1986 the fine is only Rs 1lakhs for commission of marine pollution.

Australian Maritime Safety Authority has researched on oil pollutants for 2006-2007. As a result, 57% pollution is a direct result from the ship incidents, 33% pollution reason is unknown; shore based pollution is 6% and 4% from exploration.

The MSA, 1958 applies to the pollution caused by onshore ships but most of the pollution occurs not only from ship collision but also from industrial, municipal, domestic wastes into the water bodies. The Act applies to the Indian ships or registered ships, which creates problem when an unregistered ship collides with foreign ship. The Indian government should frame regulation for the promotion of

⁴⁰Editorial, "Mayday: India plans legal ring-fence from oil spills", *The Indian express*, 9th December, 2015, available at: <https://indianexpress.com/article/india/india-news-india/mayday-india-plans-legal-ringfence-from-oil-spills/> (Visited on, 11th February, 2019).

Compressed Natural Gas substituted with petroleum/diesel. The unnoticed domestic or industrial wastes should be regulated by local government (Panchayat or Municipalities). Attention must also be given to overloaded ship which eventually sinks and cause pollution. India has no strict law for pirated ships too.

VII. Conclusion

Oil is most transported commodity worldwide and because of its physical and chemical nature, sea is the most convenient medium of transportation. Damage caused by oil spills affects entire food chains along with damaging environment, resulting loss of economy, health, trade and business.

Many factors affect the ultimate cost of an oil spill, including the type of oil, climate, proximity to industry, tourism, recreation and environmentally sensitive areas. From society's standpoint, all of the external cost of oil spill are social costs. They represent a real resource that could have been used elsewhere to produce a social benefit. In addition, all of the private costs of an oil spill except fines and punitive damages are social costs as well. Fines and punitive damages—unless they are designed to compensate for other third party losses – are simply transfer of wealth from one party (firms) to another (government). They may serve as a deterrent but they are not social costs. Problem remains as to who should pay and how much? Problem also remains regarding the computation of the ultimate costs of spill. For example by tallying all the costs borne by BP except for litigation by foreign countries if the ultimate cost is estimated it will be seen that the cost involve \$144.89 billion, a figure much higher than the \$62.59 billion which BP reported in its 2016 annual report.⁴¹ Such incremental costs items consists of \$19.33 billion committed by BP in a global settlement; \$700 million in contingent liabilities, \$175 million in SEC settlements, legal fees of \$680 million and \$61.41 billion in hidden costs not reportable in the current accounting system.

The law of oil-spill liability is a mixture of civil liability and criminal regimes in certain jurisdictions like U.S.A The liability and fund conventions limit the liability of the shipowner in case of maritime accident causing oil pollution. Principles governing the law on oil-spill liability are strict liability in case of countries i.e., Norway, United Kingdom under the Petroleum Activities Act, 1996. Liability and caps on liability limit is also to be determined towards the massive costs involved in the cleanup and the damage caused to the natural resources and private parties is also grave. The U.S.A., China, Japan, Italy, Norway, Republic of Korea, and Russian Federation are the major maritime nations that are not party to the Nairobi Wreck Removal Convention. On the other hand, Japan, Panama, Republic of

⁴¹ Yong Gyo Lee, Xavier Garza-Gomez, Rose M. Lee, "Ultimate Costs of the Disaster: Seven Years After the Deepwater Horizon Oil Spill", 29 vol. issue 1, *the Journal of Corporate Accounting and Financing*, p. 69-79 (2018), available at: <https://onlinelibrary.wiley.com/doi/full/10.1002/jcaf.22306>. (Visited on 29th April, 2019).

Korea, are few major maritime nations which are not party to the Salvage Convention.

Since, 2008, 91% of the world Shipping tonnage maritime nations are parties to the Bunker Convention, whereas U.S.A and Japan are not a party to it. U.S.A. follows the Oil Pollution Act, 1990. But the fact of the matter is that the compensation prescribed in Oil Pollution Act, 1990 is much higher and stringent than Bunker Convention. And Japan follows Liability for Ship Oil Pollution Act, 1975, which was amended in 2005 to cover Bunker pollution damage and the local regulation made thereunder are more stringent.

As far as India is concerned, the country has moved from strict liability to absolute liability principle. India follows the civil liability principle on the footings of international Convention on civil liability for oil pollution and Merchant Shipping Act holding the owner liable for oil pollution. The principle of public trust doctrine and polluters pay principle should be invoked to determine the actual compensation to the irreversible loss incurred. With regard to awarding of compensation it may be submitted that the extent will be much lower in case of India in comparison to other jurisdictions like U.S.A. U.K., China and Japan.

India being a party to Bunker Convention which imposes civil liability, the Merchant Shipping Act, 1958 needs to be amended because, it has already become a bulky piece of legislation over the years as a result various (17) amendments carried out in the Act between 1966- 2014. This has resulted in an increase in the number of sections to over 560. These provisions have been meticulously shortened to 280 sections in the proposed Amendment Bill, 2016 but it is yet to see the light of the day. The Indian and International Laws should be very precise, stringent, lucid and understandable and adequate so that all the relating laws could be included under one platform which will help in carrying out the entire process.

India needs a better response to maritime ecological disasters. It is felt that the provisions are inadequate as the government should also be made liable for giving license to such activities and the liabilities must be shared to bring back the environment as it was at the earliest. It is submitted that the liability should not only be civil rather criminal to cover up the criminal negligence and commission of matricide which cannot be excused at all.