Ports are the gateways to international trade. The economy of a country like India, which is an emerging maritime country will be in jeopardy if proper care is not exercised for its conservation. Increased trade not only increases vessel traffic and revenue, but also has a drastic effect on Indian ports due to vessel sourced pollution in various forms. The Indian government has a legal and constitutional obligation to safeguard the interests of the nation, its people and to maintain friendly relations with international community. The policies of the government should strike a balance between the economic interests and preservation of the coastal ecosystem. In order to achieve this objective there should be strong legal back up. The present study is focused on the Indian law on control of vessel sourced pollution in maritime ports. It also analyses how effective are the Indian standards of control on vessel sourced pollution and whether it is comparable with the International Maritime Organization’s vision of clean ports. Analysis is done also to find out whether the Indian law facilitates maritime trade or not. This is because the maritime trade prospects of the country depend on its clean and efficient ports.

Regulating access to ports is identified as a successful state practice to prevent vessel sourced pollution in ports. The coastal state’s right to deny access to substandard and unseaworthy vessels is well recognized both under the customary and conventional international law. A vessel in port is under the temporary sovereignty of the coastal state. It is the discretion of the coastal state whether to exercise jurisdiction over vessels in its ports. Generally, coastal states will not exercise port state jurisdiction over polluting vessels unless the incident has its effects on the coasts. In the international scenario, there is a growing concern among coastal states for the protection and
preservation of coastal environment. States have started to extend their jurisdiction over foreign vessels irrespective of the place of occurrence of pollution based up on the ‘effects doctrine’. The nature and scope of the ‘effects doctrine’ is well established in advanced maritime countries by means of legislations and judicial interpretations.

This huge power is vested with Indian port authorities by means of the Territorial Waters, Continental Shelf, Exclusive Economic Zone and other Maritime Zones Act, 1976. The Government of India under a notification had declared waters within the baseline, around the Indian coastal line, including the Lakshadweep and Andaman and Nicobar islands as “internal waters”\(^1\). The Ministry of Shipping in another notification had renamed the zone as “inland waters” thereby extending the provisions of the Inland Vessels Act, 1917 and the provisions of Merchant Shipping Act, 1958 to the same zone\(^2\). The Constitution of India permits extraterritorial application of laws, if a reasonable nexus is established between the subject matter of the law and the Indian coast\(^3\).

Despite this wide power to restrict the entry of polluting vessels, many substandard ships finds easy access to Indian ports and navigates freely through the territorial waters of the country. A prominent reason is that the Maritime Zones Act, 1976 and the rules thereunder set no clear criteria for denying access. Hence, what constitutes a threat to peace, good order or security of India is often a political consideration rather than a question of law. This legal crisis has weakened India’s port state enforcement. It encourages the practice of dumping into Indian ports ‘ghost ships’ of the western countries for dismantling. Many of these ships find unwarranted entry into Indian ports violating all international

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1. The Ministry of External Affair, Government of India, Notification No. SO 1197 (E), dated 1\(^{st}\) September 2009 on baseline system in India
2. The Ministry of Shipping, Government of India, D.G. Shipping Order No. 19, 2013, dated 16\(^{th}\) September 2013
3. The Constitution of India, art. 245(2)
norms for safe recycling of ships. This is an area where there exists a clear legal lacuna. India needs stringent legislation to restrict the entry of toxic ships. India should permit recycling only under the precautions set by international conventions. The Indian law on safe ship recycling is in its infancy. This situation has also produced conflicting judicial approaches on whether to order for or against the entry of ships into ports; also on how to balance the priorities of economic development and environmental protection.

The Maritime Policy of India aims for sustainable development of the shipping industry. This aim could be achieved only by means of strong port state enforcement. Today, India’s port state jurisdiction is not well supported by the legal system. The major reason is that the ‘admiralty law in India is still a grey area of jurisprudence’. The Indian law on admiralty is not in pace with the dynamic requirements of the shipping industry. Unless, the admiralty law is consolidated and well defined, India’s port state jurisdiction will not be effective and in tune with the international regime.

The High Courts in India are exercising admiralty jurisdiction by virtue of the colonial legislation, the Admiralty Jurisdiction Act, 1860, and the decision in the *M.V. Elisabeth*’s case. In India, under the Admiralty Jurisdiction Act, 1860, an action for claim can be brought ‘*in personam or in rem*’. In this way, the claimant can proceed either against the ship involved in case or against the owner. Literally, the Indian law is in tune with the law in other maritime countries. The major deficiency is the absence of clear supporting statutory provisions for enforcing such claims. In India, the usual practice in maritime claims is to obtain an order for the arrest of ship. The owners will provide bank guarantee and the ship sails to the next port of call.

Under the existing law, *in personam* proceedings against the owner are very difficult and impractical. As per the prevailing circumstances, the owner of the foreign ship is most unlikely to be available for prosecution, within the

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4 The Admiralty Jurisdiction Act, 1861
Indian jurisdiction. Hence, the master can be prosecuted for his physical presence and for the reason that a personal prosecution is more likely to bring home to the master his individual responsibility and thus to make him more careful in future. An issue when prosecuting the master rather than the owner is that, “the fine on the master must be relevant and proportionate to his personal responsibility”, while the fine on the owner can relate to the nature and extent of pollution. In order to impose monetary penalties upon the captain, crew or agents of the ship owner, there should be a proven act or omission committed with an intention to cause such damage, or recklessly with full knowledge that such a damage is the probable result of such acts or omission. The law gives an option to proceed either against the ship or the owner or master. But at the same time, to proceed against the master, it insists on strong evidentiary requirement to prove the willful negligence of the master or crew, causing pollution. In effect, the claimant can proceed only against the ship involved.

Hence, during the *in personam* proceedings, the power of the court is limited, only to hold the master and thereafter imposing fine on him proportionate to his responsibility, thus not placing the owner under direct liability. Unless the owner cannot be made responsible, the entire purpose of compensation regime will be futile. The law does not address this.

The British law on admiralty jurisdiction and liability in maritime claims has undergone radical changes. But in India, the provisions remain the same, in spite of the dynamic changes in shipping operations. A committee appointed by the central government had opined that admiralty jurisdiction in India is out dated and requires a comprehensive legislation, defining the scope of admiralty jurisdiction of the courts. The inadequate provisions in law have actually weakened the civil liability regime. There is increase in criminal prosecutions against seafarers worldwide.

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5 The Parveen Singh Committee Report, 1986
The Indian law also permits criminal prosecution of seafarers under the provisions of the Merchant Shipping Act, 1958, the Indian Ports Act, 1908, general environmental laws and the Indian Penal Code, 1860. One of the deficiencies identified is that, the seafarer involved in the marine casualty should face double trial-one under the shipping legislation and the other under the ordinary laws and the Indian Penal Code. This has created delay in closing of investigation proceedings on time and there are instances when mariners had to undergo trial for several years. The enquiry under the MSA and the Indian Ports Act are administrative enquiries. Therefore, marine casualties in India face huge investigative delays and nothing is attempted to end the ordeal.

In order to overcome this difficulty, the civil liability regime should be more effective. A possible suggestion is that the law should be having clear provisions to implement the insurance schemes available in pollution incidents. There are a number of voluntary insurance schemes such as the TOVALOP\(^6\) and compulsory schemes under the Merchant Shipping Act, under which an owner is liable up to a limit for the pollution damage, irrespective of the cargo carried or the place of occurrence. Enforcement against a foreign ship owner is, in fact, no real problem in view of the arrangements which have been made by ship owners’ mutual insurance associations to guarantee payment. Hence, there is no need for criminal prosecution of the seafarers for minor spills.

The administrative enforcement against polluting vessels in ports is also based on another colonial legislation, the Indian Ports Act, 1908. Unless, the Indian Ports Act, 1908 is amended to incorporate provisions for ensuring safe and pollution free shipping under various international conventions, India’s port state enforcement will remain inefficient.

\(^6\) The Tanker Owners Voluntary Agreement Concerning Liability for Oil Pollution which became effective on October 6, 1971. This is an agreement whereby tanker owners reimburse national governments for damage caused by oil spilt from a tanker up to certain financial limits without proof of negligence. It is understood that over 90 per cent of tanker owners are subscribers to this agreement.
The Indian standards of port state control inspections are mediocre and the inspections conducted by the Indian PSCOs are definitely below the target specified under the international law. This has facilitated the hassle free entry of unseaworthy vessels and increased pollution incidents in ports. The port state control should be made an independent arm of the port authority which can solely dedicate its manpower and resources to control and monitor the vessels calling at Indian waters thereby increasing its effectiveness. If the entries of inferior quality ships are not regulated judiciously, it may question the very existence of ports; the trade and economic prospects of the country.

Another reason for weak port state enforcement is identified as the segregation of enforcement powers on various ministries and departments by means of a handful of legislations and also under the Allocation of Business Rules, 1961. The Indian coast guard is empowered to take any action to combat marine pollution in coastal waters but the enforcement powers of the coast guard are not clearly defined under the Indian Coast Guard Act, 1978. The issue of overlapping jurisdiction among the customs, police, coast guards and port authorities should be eliminated by clearly defining the role and hierarchy of enforcement agencies and by streamlining their activities under a central agency, preferably the Indian Coast Guard. In this way, the surveillance and monitoring of unseaworthy ships can be made very effective and substandard shipping operations can be eliminated from the Indian ports.

Oil is identified as the most important source of vessel sourced pollution. When it comes to operational discharges, oil pollution always arouses public outrages and media attention because of its visible impacts on the coastal environment⁷. It is estimated that about seventy five per cent of oil released into

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the oceans by vessels is during routine operations\(^8\). The International Maritime Organization prescribes technical specifications for the construction, design, equipment and manning of ships. It also specifies regulations and guidelines on oil pollution preparedness, response and co-operation and establishes the Fund regime for the compensation of pollution victims.

The control exerted by the International Maritime Organization under the MARPOL regime is proactive; yet there are incidents of intentional non-compliance by marine fleet who defy procedural requirements thereby causing pollution in foreign ports. The flouting of operational requirements are happening more at the ports of the developing countries like India, where the administration is less alert and the enforcement regimes are of mediocre standards. Bearing in mind India’s growing potential as a prominent maritime country and the size and types of vessels anchoring at its ports in huge numbers, it is high time that the administrations should give serious thoughts over potential threats of oil pollution from routine vessel operations.

The study identifies chief sources of operational oil pollution as tank washings, engine effluents, bunkering and cargo spills. The major deficiencies of the international law on control of operational vessel pollution are identified as the weak flag state implementation of the MARPOL provisions, expensive tanker design specifications without any details on technology sharing, inadequate provisions to implement port reception facilities, minimum commitment of crew towards due diligence and maintenance of proper oil record books and ambiguous provisions leaving enough scope for unilateral legislations at the domestic level.

The technical and procedural requirements prescribed by MARPOL Annex I are clearly incorporated under Part XII A of the M.S. Act, 2003. In the recent past, many pollution incidents and maritime casualties have been

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reported in Indian ports because of improper cargo operations. The preliminary investigations on the grounding of *M.V. RAK* and *M.V. Asian Forest* had identified that the ships didn’t comply with the requirements of the convention and the ports never applied the codes of safe practices as applicable to their different terminals. There was no effective co-ordination between the ship and the port; the “port-ship interface” guidelines were not adhered to. Hence, these incidents prove that operation on board and in ports will have to complement each other by following applicable safety guidelines, codes and rules for the effective implementation of MARPOL Annexes. The blind adoption of international prescriptions without taking into consideration the technical inadequacies of the Indian maritime sector has proved that the enforcement of MARPOL provisions can be very difficult in the country.

In India, waste oil is collected and disposed of from ships by private contractors, who are licensed by pollution control boards. Timely requests have to be given to port authorities, if the ship requires port reception facility. This time interval is different for different ports. Upon receiving such requests, the port may grant these licensees permission to collect sludge and waste oil from the vessel. Private contractors are required to submit bank guarantee and insurance policy for public liability. Permission is granted by the port upon satisfactory compliance of all license documents. The removal of sludge waste and its final disposal also requires further clearance from other authorities like the customs. Therefore, waste removal and allocation of port reception formality is a cumbersome process as such in the Indian ports. Under the existing system, the agent will have to get permission from customs, port and environmental agencies for disposing of the waste oil safely into the shore reception facilities. This slow and tedious process can corrupt the crew to by-pass technology specified under the convention making illegal discharges into the coastal waters itself. Very few ports are having port reception facility in India. This is a major constraint for MARPOL compliance.
The system operates through private contractors and unless there are clear rules for monitoring such operations there can be serious deterioration of prescribed standards. Also, it has to be seen where these waste oil collected ultimately reaches and whether the entire process of the recycling is done without causing any harm to the environment. Strict monitoring by the conservator of ports and pollution control boards would minimise the pollution risks during the entire process. The law establishes a pollution control cell for all major ports whose duty is to ensure safe discharge operations but this institution is yet to start functioning. In addition to this, the Conservator of Ports is also conferred with similar powers. Segregation of powers under different officers has made the monitoring and control regime extremely inefficient. A comprehensive work manual set commonly for such contractors setting guidelines, procedures and standards for waste oil disposal may bring better efficiency in the system.

There are reports that the discharge is being carried out in jetties at Mumbai port polluting the areas with grease and oil, making the conditions unsafe and unhealthy for general public. Every port is to have an environmental audit and submit the same to the Ministry of Environment and Forests through port trust authorities. All major ports should also have environmental management plan as per their needs and assess pollution risks in terms of cargo handled at the ports. In India, very few ports are having the environmental management plan and the environmental auditing is not regularly conducted at the ports. As a result, the seriousness of vessel sourced oil pollution issues in ports albeit being reported in major scientific studies conducted under the auspices of various organizations are not promptly reported by the port trust to the Ministry of Environment and Forests. In many cases, the information given in the audit reports are found contradictory to the actual scenario.

India’s proximity to international trade route and her growing role as an oil importing country suggests urgent need to amend existing laws on
operational pollution by vessels. At present, India does have large number of legislations to combat pollution from illegal discharge of oil, cargo residues and the system is fragmented. The control and monitoring systems under various Acts are not updated with the international regime and are inept to meet extreme contingencies such as a major oil spill.

Often the costs involved in mitigating the effects of oil and other cargo spills cannot be estimated. Hence, it is better to strengthen the control and monitoring systems. India needs a well-organized system with basic competencies, proficiency and authority to deal with extreme contingencies arising out of operational spills. The port authority should be equipped to monitor the implementation of laws meant for combating operational oil pollution in ports.

The introduction of pathogens and alien species through ship’s ballast water is considered as an important vessel sourced operational pollution. The contemporary thinking links marine pollution and human health hazards created by it. It is identified that like in many other parts of the world, the awareness on this crucial environmental issue is minimal or non-existent among various stakeholders of the industry. Scientific research in India on bio pollutions of the sea is still in the budding stage, which has created complications for the administration in designing a proper regulatory regime. As the number of vessels visiting Indian ports increases day by day, the risks associated with bio-invasions also increases. Even though ballast water discharge from ships is not the sole source of bio-invasions, it is a major

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10 Ibid
11 Id, reports that around 5000 ships call annually at the Mumbai port, discharging about two million tonnes of ballast water.
Conclusions and Suggestions

Indian Law on Control of Vessel Sourced Pollution in Maritime Ports

contributor\textsuperscript{12}. Hence, it is high time that India should legislate exclusively on the topic.

India does not have a direct and comprehensive law to control the harmful effects of bio invasions through ballast water discharges from ships. As a result, many of the environmental issues connected with ballast pollution remain un-addressed in law suits filed before the courts of the country. Yet this does not exempt India from its obligations to enact a comprehensive ocean management law. India is a party to the UNCLOS III and is under obligation to enforce its provisions at domestic level.

Under the existing system, the major difficulty identified is about determining the nature of ballast pollution. There is ambiguity on whether it is a ship sourced operational pollution or a problem of bio diversity or a health hazard in the international law. Hence, the same ambiguity exists in the Indian law.

Even though ship acts only as a vector transporting ballast water that pollute the ports, it can be safely concluded as a form of vessel sourced operational pollution under the scheme of the Law of the Sea Convention, 1982. This is because of the potential harm that ballast causes to the port environment, irrespective of the causal factor. Apart from the general obligation on state parties to control ballast water pollution, the convention does not specify the method of control. Ballast usually contains diluted form of sewage. Hence, the provisions of MARPOL as to safe disposal of sewage are also applicable. But MARPOL is not an effective law to control this form of pollution because ballast pollution has multi-dimensional impact on health and sanitation of the citizens. Hence, the need for Ballast Water Convention, 2004

The study identifies that similar problems exist at the domestic level also. Since, India does not have a separate law for controlling ballast pollution it is possible only to consider it as a ship sourced operational pollution. India should go for a comprehensive ballast water management regulation under the scheme of the Merchant Shipping Act, 1958. Under the prevailing system in India, decentralized approaches like those existing in the United States, delegating some powers to make rules under the major legislation is recommended. In this manner, the local enforcement agencies may adopt stringent bye laws setting standards for ballast water exchange and ballast water management plan in accordance with the local concerns and demands.

Both precautionary and curative concepts have equal importance in controlling ballast water pollution. The major legislation should adopt the important precautionary principles set forth in the Ballast Water Convention for all ships visiting Indian ports. Specifications for mid ocean exchange, ballast water exchange, ballast water management plan, performance standards, monitoring and control specifications should be clearly set under the ballast water management regulations. The mid-ocean exchange is a temporary measure and new technologies are coming up to control ballast pollution which the law should be anticipating for the future.

The officer in charge of monitoring the oil record book and for implementing the ballast water management plan should be identified and clearly designated.

The coast guard should be vested with more surveillance powers. Monitoring of vessels beyond the port limits is equally important and this involves high costs and requires sophisticated infrastructural and technology specifications.

Indian ports should provide ballast reception facilities. Liaison officers need to be designated in ports in case of contingencies to make effective
communications on ballast water exchange as between the port officials, ship owner and the master and crew.

Most important is to create awareness about the problems of bio invasion among various stake holders of the industry. This could be done by means of organizing workshops and conferences on the topic.

The problem of ballast water pollution can be controlled effectively by concentrating on better training to the crew, good ship designs on board, co-ordinated efforts to receive ballast in port reception facilities, creating awareness through education campaigns and by strong port state enforcement. The problem of bio invasions has got global implications as it extends beyond boundaries. Therefore, international and regional co-operation is important to control this form of pollution. India should go for a comprehensive law on ballast water pollution as the protection of marine bio diversity and public health are also larger commitments under the ballast water management. The ordinary environmental laws may not be useful for regulating ballast discharges. State practices suggest that this form of pollution is very unique and distinct. It may be controlled to a considerable extent by continuous monitoring and enforcement of proper laws but it cannot be eliminated completely.

The illegal discharge of garbage and sewage from merchant ships offers significant threat to port environment and marine bio-diversity. Often prosecutions are very rare as the exact source of pollution is difficult to identify\textsuperscript{13}. Hence, it is important that pollution by ship’s sewage and garbage need to be properly controlled. In India, till date, no significant steps have been taken to control ship generated waste. In real practice, licensees of ports handle these waste and the administrations have not realized the crucial environmental threats associated with this practice. With the increase in the number of ships

visiting ports, the waste production is also on rise. Consequently, port waste management needs to be addressed in a structured and systematic way. This can ensure environmental protection under viable economic and operational system by fulfilling international requirements.

Reducing the discharges of sewage and garbage into the oceans will certainly facilitate the protection of marine environment. This can be achieved by implementing the objectives set out in Annexes IV and V of MARPOL 73/78, i.e. by reducing on board ship generated waste, improving the availability of port reception facilities and by punishing the defaulters. The introduction of MARPOL Annexures has reduced the entanglements and ingestions to marine biota in some places, but at some other locations the situations remain the same or without much improvement and sometimes, even worse\(^{14}\). The MARPOL implementation to a great extent depends upon the ship owner’s willingness to stick on to the provisions of the Annexures and the proper implementation of the International Safety Management Code. The reduction in pollution level will certainly depend upon the waste management plans and standards set by the home port, port of call and other requirements and plans to be carried out on board the vessels.

In India, ships continue to discharge vast amount of plastics and sewage illegally into the oceans and this shows gross neglect of the provisions of Annexure IV and V. It also shows the pathetic condition of enforcement of environmental regulations in ports. It is identified that the economic costs involved with waste management compliance are exorbitant in India. Therefore, companies may practice illegal discharging of sewage and garbage into the seas. Unfortunately, waters of developing countries like India are highly susceptible to the non-compliance and illegal discharging or rather

improper disposal of ship generated wastes because of the lack of proper laws and poor enforcement regime. The environmental laws should clearly address the legal, financial and practical responsibilities of all concerned in the operations of delivery and disposal of ship generated wastes in ports.

Port waste management should be an important agenda for port administrations. The ship generated wastes and cargo residues need to be regulated properly. The waste management law should incorporate provisions to supplement the modern concept of “reduce, re-use and recycle”.

Waste fee should be charged on all vessels visiting the ports, irrespective of the fact whether they use it or not, and this should be included in the port taxes. The cost recovery system will definitely encourage the disposal of waste on land rather than its illegal dumping at sea.

Along with strict punitive or negative incentives, government may also consider giving positive incentives to those who comply with the requirements. These incentives can be tax incentives, loan guarantees or government subsidies.

In order to minimize the burden of providing port reception facilities for wastes, ship board management plan should be encouraged. The flag states should provide incentives to ship owners to purchase and install equipment such as incinerators on board.

The government should also encourage research and development of technology for the compliance of Annex IV and V for ships and ports. When amending the domestic legislation, the voluntary practices adopted by the shipping industry to comply with Annex IV and V may also be considered.

In India, private contractors collect wastes from ship and this system does not encourage the delivery of waste on land. A change is worth considering. Port administrations need to adopt better technology for proper management of waste received from ships. This can be done by means of technology sharing agreements with foreign counterparts.
In India, maritime accidents are on a rise especially during the monsoon season. Majority of ships operating in India’s coastal waters does not comply with documentary seaworthiness. The international law on control of vessel safety and pollution is changing rapidly. These radical changes are implemented in countries like the United States of America and the European Union by means of specific legislations. There are ample provisions in these legislations to empower the enforcement authorities. As a result criminalization of seafarers has become very common in major maritime countries.

When analyzing the Indian law the major problem identified is that the enforcement standards of environmental and safety regulations in ports is very poor. The reasons are several. The far-reaching changes made in the international norms of vessel safety, navigational requirements, manning, equipment standards, response and planning in case of incidents are merely repeated *verbatim* in the rules framed under the Merchant Shipping Act, 1958 and by the circulars issued by the Director General of Shipping. The corresponding changes are not incorporated into the port regulations. Hence, obsolete standards on lighting, manning, crewing and piloting are found in port regulations. Most of the vessels find it easy to make a port entry as they need to comply only with these out of date specifications.

In India, the phasing out schedule for single hulls has been extended till 2015 and is likely to continue at least for a few more years. In the United States and in the European Union, the phasing out of single hull tankers is complete. Taking advantage of this situation the ghost ships from the western countries are brought to be dismantled at recycling yards like Alang. Reports are coming that many of these ships are anchored in India’s territorial waters, seeking port clearance to Alang, thereby causing substantial threat of being capsized during the monsoon seasons. Hence, the advanced phasing out schedule under the MARPOL regime should be strictly implemented.
Maritime accidents are bound to happen but its effects on environment can be minimized by legislation, proper regulation and effective litigation processes. For this, India has to set long term plan for port environmental management and a well-suited economic policy. In the long run, the ‘polluter pays principle’ along with anticipate and prevent strategies could eliminate the risks of maritime casualties in ports.

Total elimination of shipping accidents is impossible because the risk of natural perils of the sea is inherent in the transportation of goods. Improper co-ordination between various authorities, willful and negligent violations of international and national safety rules, inept communication and signal systems, lack of commitment on the part of regulators, ship owners and operators, all these factors have contributed to the increase in the number of shipping casualties in the recent past. Accidents will continue to occur irrespective of the technology advancements and capacity building measures to prevent it. Yet it remains a reality that the response measures, investigative and adjudicatory mechanisms remain the same as it used to be a hundred years ago.

The Contingency Planning and Response system in the USA is based upon the ‘potential polluter pays’ principle whereas in India it is the Government –only –Approach. The main drawback of the Indian system is that the ability to deal with major spill is contingent on the happening of the incident. In the USA and Canada, the system has adopted new techniques and standards to deal with major oil spill catastrophe, which is primarily based on a long term commitment to the problem posed by oil spills. These countries by means of legislation have integrated the salvage operations with the contingency plan. Therefore, expert towing arrangements are readily available. The vessels in distress are given safer options or at least helped to find other

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alternatives. The USA under the OPA 90 scheme follows a *proactive response approach* and hence is far more capable in controlling spills when compared to the European counterparts.

When it comes to the implementation of the NOS-DCP plan, there has been a strong prominence in the co-ordination roles and practically nil responsiveness to command and control procedures. The Port authorities have not developed expertise in risk management procedures. Little effort is being made to evaluate the effectiveness of the policies and regulations on a regular basis. Practically no research and development projects in the field of oil spill prevention and response has been attempted so far. Functional responsibilities have been allocated to various stakeholders, yet no feedback is attempted or at least there is not an established mechanism to ensure effective participation of them in the definition and implementation of preparedness and response policies. Thus, more comprehensive and elaborated guidelines need to be developed for the regional and local contingency and response plans. In conclusion, with regard to contingency planning, India has weaker legislation compared to that implemented in the USA and Canada. This situation can be attributed to the fact that India has not implemented an intelligible and regular structure to evaluate the ability, competence and usefulness of the measures taken. India should enter into regional co-operation and bilateral agreements with neighbouring countries so as to implement the contingency planning and response envisaged under the OPRC. The OPRC-HNS Protocol need to be ratified soon and immediate legislation is required in this behalf so as to eliminate the risk of accidental spill of hazardous goods.

The Indian law when defining a wreck is not in tune with the international regime. Therefore, it creates ambiguity as to the scope and extent of powers of the receiver in marking, raising, removing or selling of wrecks without any liability to the owner. The ‘government alone approach’ is the rule regarding removal of wreck at present. Even if the wreck is not affecting environmental or public safety, because of the current statutory provisions, compensation claims cannot be strictly
enforced against the owner as the wreck should be an abandoned vessel or goods. Also, salvage laws are not integrated with the NOS-DCP Contingency Plan. Thus, there are potential pollution risks while salvage operations are going on for removing wrecks. The Indian law does not address this issue.

Across the globe, heavier penalties are imposed in accidental oil pollution cases under the civil liability regime. The MSA is inadequate in fixing the quantum and liability in marine casualties. Collision is dealt under a separate part and the Act completely ignores collisions leading to pollution. The Act has no provisions to be applied in such cases. Moreover, these parts leave out all vessels other than tankers from its purview for civil liability in oil pollution damages. In cases of marine casualty, the provisions of MSA are inept for representing community interests collectively. Under the Act pollution damage is restricted to reasonable costs involved in reinstatement but it is not clear as to what constitute the “reasonable measures of reinstatement”?

India lacks a consolidated law for dealing with marine pollution from collisions at sea. The existing law is inadequate to deal with marine casualty incidents. The MSA is not enough to fix the quantum and extent of liability in marine casualty cases. Vessel detentions are temporary solutions since, the ship owner may abandon the vessel and the government will be left with the task of cleaning up the shores.

Hence, there is an urgent need to amend the law on collisions and civil liability regime under the MSA and the investigative proceedings under the Indian Ports Act to keep them in tune with the international regime. The Indian law should also incorporate provisions for ship pollution response contracts as between the ship owner and the recognized pollution response agencies as a condition for entry to ports. India should enter into agreement with advanced countries for technology sharing to combat major spills. Port authorities should have sufficient man power for supervising and maintaining navigational and safety aids.
The analysis of Indian standards on control of ship breaking reveals that the problem is not with inadequate legislation but immense laws conferring jurisdiction on more than a dozen bureaucratic instruments and institutions. A ship breaker has to obtain numerous clearance certificates\(^\text{16}\) before entering the recycling facility and also during demolition. Thus, multiple jurisdictional regimes\(^\text{17}\) make the clearance procedure extremely cumbersome for the ship breakers. Therefore, they resort to illegal methods for conducting the ship breaking activity.

Inter-ministerial consultation should be effective for proper enforcement of rules and regulations on ship recycling. At present more than half a dozen ministries are involved with matters pertaining to giving and denying of licenses for ship breaking and issuance of clearance certificates. The Ministry of Forest and Environment as a nodal institution can do a lot more by calling for reports from other ministries and various departments towards control of ship breaking. Since the jurisdiction of various authorities under different acts cannot be ousted, the practical solution is to coordinate the clearance activities under a comprehensive system. The comprehensive system should have the state maritime board as the apex institution to conduct inspections, coordinating different departments under various ministries. This could definitely strengthen the enforcement regime and make the port clearance formalities handy and efficacious.

In India, not many states have constituted maritime boards or enacted legislation for controlling pollution in ports from ship dismantling. The Gujarat


\(^{17}\) Customs Department, State Pollution Control Board, Department of Explosives, State Factories and Labour Commission, Atomic Energy and Radiation Board, Department of Inspection, State Maritime Board and Inter-Ministerial Committee exercise jurisdiction
State Maritime Board’s Ship Recycling Regulations, 2006\textsuperscript{18} is the only legislative effort in this regard. The scrapping industry can be very well regulated through quality monitoring, inspections, reporting and prosecutions at national level. The state maritime boards, port authorities and state pollution control boards are expected to conduct periodic investigations, call for information from the recycling yards and submit timely reports to the state governments. If they do this job properly, there would be no issue of illegal scrapping across the shores of India.

In order to tackle the present legal crisis, there should be co-ordination and co-operation at national and international levels. International law on waste shipment should clearly design the obligations of flag state, reception state, port state, ship owners and all other stake holders of the industry. Tracking of illegal vessel trafficking is very important. This can be achieved only by sharing of information between the flag states and recipient states. The international law on ship registration should provide ample guidelines for the national system to enact laws that would make the original owners accountable in pollution cases and would also curb fake ownership. Tracking of unseaworthy vessels being imported to India may be of utmost concern for the authorities in respect of subsequent process of ship dismantling.

Absolute obligation should be placed on the flag states to decontaminate vessel before exporting to developing countries. They should strictly enforce the ‘inventory’ requirement and prior informed consent procedure. Laws

\textsuperscript{18} Gujarat is the major state involved in ship recycling in India. The state maritime board was created under the Gujarat Maritime Board Act 1981. The Board has enacted Ship Recycling Regulations, 2006. The regulations insist strict compliance of Basel Convention. The Gujarat Maritime Board has created a “Treatment, Storage and Disposal Facility” (TSDF) which is authorized by the Gujarat Pollution Control Board under the Hazardous Waste( Management & Handling) Rules vide GPCB/HAZBHV-C-28/05/12431 dated 13th May-2005. This plan was implemented following the Honourable Supreme Court’s decision in the \textit{Clemenceau Case}
governing the design, manning, construction and equipment of vessels should go for adoption of eco-friendly technology and use of non-hazardous materials in ship building.

The international law on ship recycling is still in its infancy. Apart from the IMO Guidelines and several NGO efforts\(^1\), which are mainly recommendations, a vacuum is created by the absence of legally binding instruments.

The Hong Kong Convention is already under high criticism for its too much technicality. The convention *albeit* having many provisions for recycling in an eco-friendly manner is all bark and no bite in terms of strict enforcement measures. Also, the ambiguity regarding many provisions can add to the dilemma of national administrations as to the implementation of its provisions in the domestic system. The convention legitimizes beaching process whereas beaching is not at all advisable, taking into account the technological crudeness in South Asia. The greatest drawback of the convention is that it does not implement total ban of export of toxic wastes from developed to developing countries. Hence, in the existing circumstances, it cannot replace the Basel Convention in terms of strict enforcement. The Basel ban once implemented may totally ban the export of toxic ships to developing countries. The actual success of the enforcement regime under the Ship Recycling Convention would depend upon the economic circumstances and the diligence shown by states in its strict implementation.

Often, vessels exported for scrapping to developing countries do not comply with the Basel Convention requirements on decontamination. There exist ample loop holes in the current enforcement regime where ship owners can escape from the liability by transferring the vessel in ‘fake names’. These intermediate buyers are non-accountable and would have deposited 10-15% of

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\(^1\) Best recycling practices are adopted by the International Chamber of Commerce and Association of Baltic countries
the value of ship in an Escrow Account. Therefore, the owners may sink the ship and sue for insurance costs, if some objections are raised by the authorities of the recycling state.

The authorities of the receiving state may help the recycling facility to achieve technology sophistication as per the international specifications. India need to explore the chances of regional or sub-regional co-operations for establishing training centres and technology transfers regarding the management of hazardous wastes and the minimization of environmental impacts from ship recycling. Yet another option is to recycle the hazardous vessels in the country of its origin, rather than exporting it to global commons. This movement has already been kicked off in the United States

There is nothing wrong in being pro-economic but it is equally pertinent to regulate the hazardous industries properly. Or at least, establish a comprehensive control regime. In India, the lethargic legislative reforms have enabled law evaders to pull the wool over the eyes of administration and to conduct million dollar businesses along the shores of the country.

Trade and environment may not be conflicting. These elements should actually complement each other. The regulatory regime should try to bring in harmony between these two paramount concepts. The laws of any country are a clear depiction of its governmental policies. Unfortunately, India is blindly adopting the Euro-American trade and maritime policy without taking into consideration the decline of these economies in the recent past. India needs a policy that brings equilibrium between trade and environment. Our export – import policy should follow a holistic approach when dealing with import of

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hazardous substances. Already, the draft maritime policy gives thrust for environmentally sound ship dismantling. By implementing this policy through proper legislation and detailed guidelines India can enrich its economy without comprising health and safety of its citizens.

**Suggestions**

The study analyzed the Indian law on control of vessel sourced pollution in maritime ports. The plethora of legislations has actually weakened the enforcement mechanisms in India. Therefore, the following suggestions are made.

1. The amendment of the Merchant Shipping Act, 1958 for consolidating the law on control of vessel sourced pollution. The law should address all aspects of newer and advanced versions of vessel sourced pollution with effective provisions to control it. The Merchant Shipping Act, 1958 should be amended and consolidated taking into consideration the potential pollution risks associated with maritime transport, which is anticipated for at least a few decades in the future. It should have effective provisions for implementing MARPOL in India.

2. The amendment of the Indian Ports Act, 1908 is also suggested by incorporating the provisions that actually compliment the scheme of pollution control under the Merchant Shipping Act, 1958. In the absence of this, the enforcement of safety and pollution control rules under the Merchant Shipping Act, 1958 will be futile. The Act in its present form is a colonial legislation which does not suit the dynamic requirements of the shipping industry. The new Act should sort out the issue of overlapping jurisdiction within the port area by clearly laying down the powers of port authorities to control vessel sourced pollution in ports.

3. The Maritime Zones Act, 1976 and the rules under it should clearly provide the criteria for denying access to defaulting vessels into the ports. The ship pollution response contracts as introduced by the People’s Republic of China may be introduced in India also as a requirement for
port entry. This would eliminate the issues related to salvage and pollution control to a great extent in the event of any maritime casualty.

4. The Indian Coast Guard Act, 1978 should also be amended to specify the role of coast guard in controlling vessel sourced pollution. The enforcement powers of the coast guard and the role played by it as a nodal agency to co-ordinate activities in cases of major spills should be made clear. The coast guard court established under the Act can be given adjudicatory jurisdiction over vessel pollution cases. Towards this, the Act requires amendment.

5. An admiralty law should be enacted at the earliest redefining the jurisdiction of Indian courts in pollution cases. As such there are serious vacuums and ambiguities in the admiralty law especially on adjudication of maritime claims as to safety and pollution control in ports, wreck removal and salvage. The new law should be addressing to these issues.

6. As a secondary line of enforcement, the port state control in Indian ports should be strengthened. The port authorities should be manned with sufficient resources for inspections, certificate verifications, technical surveys and for strict administrative enforcement.

7. The civil liability regime for pollution damages should be made more effective by consolidating and making clear the provisions of the Merchant Shipping Act, 1958. The sections dealing with incidents leading to pollution, the quantum, nature and extent of liability that can be imposed on the vessel and owners requires major changes and it should be consolidated. The law should have ample provisions to protect community interests. It should have provisions for proper reinstatement of victims of pollution incidents.

8. Criminalization of seafarers is a draconian law and should be resorted to only in cases of major spills, only when pollution is caused by the willful or reckless vessel operations by the mariner. The law should address to the
issue of possible double prosecutions and investigation delays against mariners in the Indian legal system.

9. Ship recycling is a major source of revenue for the country. Considering its importance in India’s economic development, there should be a harmonious development of law on ship recycling by balancing trade and environment.

10. The response system can be made effective and comparable with the international law by enacting more comprehensive and elaborate guidelines for the regional and local contingency and response plans. India should implement an intelligible and regular structure to evaluate the ability, competence and usefulness of the measures taken. India should enter into regional co-operation and bilateral agreements with neighbouring countries so as to implement the contingency planning and response envisaged under the OPRC. The OPRC-HNS Protocol need to be ratified and immediate legislation is required in this behalf so as to eliminate the risk of accidental spill of hazardous goods.

11. Vessel sourced pollution is a global problem. Its impacts are not confined to the territorial limits of the country where it occurs but may be felt on the coasts of other countries as well. India should enter into agreements with the advanced maritime countries for technology sharing in order to combat vessel sourced pollution. In this way, all major ports can be equipped with port reception facility. The MARPOL can be effectively implemented only by equipping enforcement agencies with advanced technology specification prescribed under the convention.

In order to eliminate the risk of vessel sourced pollution in ports, it is important that India should have a strong enforcement system on international prescriptions. Unless, the law is consolidated and made clear, the IMO vision of clean ports will be a distant dream. This may in turn have huge negative impacts on the trade prospects of the country.