India has a great maritime history. Maritime trade stimulated the South Indian reign and urban development even in the tenth to twelfth centuries of A.D\textsuperscript{1}. Historical evidences shows that trade had flourished through the South Indian sea ports during the kingships of Cholas and Pallavas with China and Egypt\textsuperscript{2}. The period when the medieval Europe had recovered from its ‘dark age’, also witnessed the economic expansion of Asian countries through sea trade\textsuperscript{3}. Ports played a prominent role in this economic development and continue to play so.

In Kautilya’s Arthasastra, there are references about ‘pattana’ meaning port, “a place officially designated as a centre for the exchange of goods which arrived by boat or by caravan”\textsuperscript{4}. Kautilya also mentions about the “Commissioner of Ports”, whose duty was to set regulations for the port town, and the “Director of Trade”, who was his subordinate\textsuperscript{5}. These historical references clearly show how significant were ports for the economic development of the country since time immemorial and how well organized were the port administration and the control systems.

**An Overview of the Port Sector in India**

Today, India is a major maritime country with a peninsular coastal line of 7517 Kilometers with over 13 major and 176 minor ports\textsuperscript{6}. Many of these

\textsuperscript{1} Clarence Maloney, “The Beginnings of Civilization in South India”, 29 Journal of Asian Studies\textsuperscript{3} (1970), pp. 603-616


\textsuperscript{3} Id


\textsuperscript{5} Id., 2.28.7

\textsuperscript{6} Ministry of Shipping, Government of India, Maritime Agenda 2010-20, dated January 2011
ports are at geostrategic locations either on the world’s busiest shipping routes or closer to it. India is also one among the largest crude oil importers in the world. Over 90% by volume and 70% by value of India’s international trade happens by sea. The major ports are directly administered by the Central government under the constitutional mandate. Non-major ports are administered by state governments and union territory administrations.

The Economic, Ecological and Strategic Sensitivity of Ports

Ports are the gateways to international trade and engines to the country’s economic development. “A port is a geographical area where ships are brought alongside land to load and discharge cargo - usually a sheltered deep-water area such as a bay or river mouth.” Ports are generally administered by the port authority, which may be public bodies, government organizations or private organizations. The main purpose of a port is to provide safe berthing location for ships. A good port has the versatility in handling different types of cargo and it also provides for storage facilities. In addition to its role in movement of goods, ports and associated waterways facilitates commercial activities like fishing, recreation, ferry services and cruise ship industry and generates job opportunities for huge population. Furthermore, ports are places where various industrial operations are performed, either by port authorities, stevedores or industries located within the port domain. Hence, ports are economically sensitive areas.

Maritime port is ecologically sensitive because it is at an interface between the land and the sea. Hence, any form of pollution in the port area will certainly have negative impacts on its sensitive ecosystem. Ports have rich

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7 Ibid
8 The Indian Constitution, Sch. VII, the Union List
9 Id., the Concurrent List
12 Ibid
habitats that include seabed, estuarine waters, mud flats and wetlands, which are strategic components of natural environment and home for rare marine flora and fauna. Ports are also strategically important places as it is home to the naval defence forces. Major industries like the ship building and recycling yards are operating in the port adjoined waters.

Hence, maritime ports are indispensable for a country’s economic development and its people’s well-being. Ports need to be conserved properly.

**Sustainable Development of Maritime Ports**

In order to compete with their global counterparts, all ports in India are undergoing massive expansion and development programmes through capacity building and technology infusion. Increased trade due to extensive expansion programs not only increases vessel traffic and generate revenue, but also results in drastic pollution effects in Indian ports.

Today, in any country, it is important that the ports provide clean, efficient and competitive services. Otherwise, ship owners would prefer other trade hubs, which are more efficient, fast and economic. In India, where shipping is a major industry, the poor performance of maritime ports could result in deterioration of national revenue and the standard of living of the people. Thus, ports have a national responsibility, to do the best they can for their customers, and keep on doing better. The dynamic shipping sector requires cost effective ports whereas the very existence of port itself depends upon its clean environment. The economy of a country like India, which is an emerging maritime country will be in jeopardy if, proper care is not exercised for port conservation. “Trade and environment are two facets of the same coin; both have to compliment mutually”\(^\text{13}\).

Therefore, the maritime policy of India aims for sustainable development of ports. The Maritime agenda aims for ‘green ports’ by the year 2020\(^\text{14}\). It is also

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\(^{14}\) *Supra* n.6, at p. 443
expected to establish emission control areas in specific coastal waters.\textsuperscript{15} Considering the sensitive coastal peninsula that India is having, the agenda proposes to create Particularly Sensitive Areas\textsuperscript{16} under the Law of the sea regime so that complete prohibition of ship sourced waste discharges can be prohibited in Indian territorial sea.\textsuperscript{17} It proposes for better ballast water treatment and ‘port biological baseline survey and risk assessment’ for all major ports.\textsuperscript{18} In order to facilitate an effective marine disaster and oil pollution response system, the policy sets for the adequacy for tugs and connected infrastructural facilities for towing and de-canting of bunker oil from ships in distress, ready availability of salvors, non-conventional sources of energy for light houses, advanced navigational aids and promotes for ‘green ship’ technology for ship building.\textsuperscript{19}

**Vessel Sourced Pollution in Maritime Ports**

Vessel sourced pollution is a major source of pollution in maritime ports.

In the post-world war era, crude oil emerged as the primary source of energy and the prime commodity for maritime transport. There was a substantial rise in the maritime traffic and casualties. As a result, the American, French and British coasts were largely affected by tanker casualties such as the *Torrey Canyon, Exxon Valdez, Amoco Cadiz, Prestige and Erika*. There were public uproars in these countries against the loopholes in the existing regime of flag state control. Consequently, these maritime countries responded rigorously by enforcing stringent legislation over foreign vessels in ports. The traditional notions of free navigation eroded in favour of punctilious coastal regulations on vessel movements. Thus, port state jurisdiction became more scrupulous in developed countries like North America, Canada, the United Kingdom and Australia. As a natural consequence, substandard shipping operations shifted to

\begin{itemize}
  \item \textsuperscript{15} *Id*
  \item \textsuperscript{16} Herein after to be referred to as the PSSA
  \item \textsuperscript{17} *Id*
  \item \textsuperscript{18} *Id*
  \item \textsuperscript{19} *Id*
\end{itemize}
developing countries like India where the environmental regulations are less stringent and admiralty law is least developed.

The ever demanding revolutionary transformations in the needs of the shipping industry have promoted advancements in naval architecture and ship building technology. This resulted in vast diversity in marine fleet involved in the sea transport. It is not possible to predict with utmost precision the potential pollution risk involved with ultra-modern maritime transport involving super tankers like the Very Large Crude Carriers and Ultra Large Crude Carriers that could carry voluminous cargoes in lesser time. There has been no consensus among nations on how to respond to the newer versions of pollution caused by vessels such as biological, nuclear, chemical and air pollutions. The devastations of marine pollution are felt largely on the coastal areas. Hence, the environmental consciousness of littoral states has intensified in the past few decades. Experiences prove that environmental degradation can be devastating in under developed and developing economies where the risk prevention and management is poor and resources are limited.

Maritime trade is intensively regulated at the international level. Therefore, the number of tanker casualties and major oil spills are deteriorating since 1970’s. Naturally, a question on the relevance of more stringent port state control is raised. Dr. OyaOzcayir says, “In an ideal world there is no need for the port state control but when the regulatory regime falls below the required standards, port state control gains prominence”\(^\text{20}\). Hence, the International Maritime Organization\(^\text{21}\) imposes more obligations on port states to establish clean ports under its technical conventions.

There have been commendable efforts to promote quality shipping under the aegis of the IMO and other international institutions. India is a party to all major safety and pollution prevention conventions of the IMO. In India, the international prescriptions for safer and pollution free shipping is implemented by

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\(^{20}\) Dr. Z. Oya Ozcayir, Port State Control, Informa Professional, London (2001), p.93, para.4.1

\(^{21}\) Herein after to be referred to as the IMO
notices issued by the Director General of Shipping from time to time without any strong legal back up as it exist in other major maritime countries.

Thus, substandard shipping operations are being shifted to India from the west, raising crucial issues of pollution and safety of the country’s ports. Unhindered access to sea ports is indispensable for economic progress. Equally important is to establish a balance between trade and environment. In the absence of proper access control and monitoring quality of ships, the topography of Indian ports and its navigable waters may not be environmentally secure in future. This may in turn produce negative impacts on the trade prospects of the country.

Relevance of the Study

At the international level, there are many studies on crucial issues relating to vessel sourced pollution, especially on jurisdiction issues. In India, no systematic study had been conducted on the legal standards for controlling vessel sourced pollution in ports. In spite of the plethora of legislation, India is not able to establish the IMO vision of clean and safe ports. The reason for this is an unexplored area. Hence, the present study examines the legal issues involved in control of vessel sourced pollution in Indian ports.

Objective of the Study

The major objectives of the study include in identifying the sources of vessel sourced pollution in maritime ports in India. It is also analyzed whether the existing laws, regulations and bye laws are adequate to control vessel sourced pollution in ports. Yet another focus of this study is to find out whether the existing laws are in conformity with the international law controlling vessel sourced pollution. Thereafter it is analyzed whether higher standards of control are required to prevent vessel sourced pollution in ports. The study examines whether the higher standards of control if executed are legitimate and whether the existing laws of control facilitate international trade. It is also an aim to find out how good is the Indian law in balancing the conflicting interests of coastal states and maritime states. The study examines the deficiencies in the enforcement regime. It is also aimed to suggest modifications and improvements in the existing laws controlling vessel sourced pollution in ports.
Chapter 1

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Research Problem

The present study tries to analyze whether the Indian law is able to establish the IMO vision of clean ports. It attempts to suggest improvements required in the control regime to facilitate international trade.

In order to carry out this research work in a systematic manner and to answer the research problem, the researcher has further formulated various sub-questions.

Hypothesis

Indian legislation lacks behind the IMO vision of clean ports on several aspects. This hypothesis is ought to be tested in this work.

Research Methodology

This is a doctrinal study based on primary and secondary sources of legal data. The primary sources are Indian legislation, rules and bye-laws, case laws of Indian, American, British and international courts, international instruments such as the IMO Conventions, ILO Conventions, the EU Directives, soft laws like the Marine Environmental Protection Committee resolutions and guidelines, guidelines of international organizations such as the UNEP, Comite Maritime International, Green peace initiatives and the Agenda 21 and various commission reports. The secondary sources are books, journal articles, conference papers, annual port reports, web-articles, news-paper and magazine reports. The theories and opinions of many legal scholars are also examined to find out whether they are supporting the existing laws.

Scheme of the Study

The study is divided into ten chapters. The first chapter is the Introduction which provides a sketch of the research area. It gives an overview of Indian port sector, the significance and scope of the study. This chapter also states the research problem and methodology adopted for conducting the study. The second chapter is on the historical review of laws on control of vessel sourced pollution in ports. It highlights the existing studies on the topic and the Indian and international legal framework to control vessel sourced pollution.
Chapter three discusses the role of denial of access as a method to prevent port pollution. It analyzes whether there is any right to deny access for physically unseaworthy and substandard ships. It also focuses on the criteria set by Indian law in denying access. It compares the Indian practice of denying access with the international regime. It also analyses the limitations in the Indian law in denying access to ships and the judicial approaches on denying access. This chapter aims to analyze the port state control regime in India. It studies on the port state jurisdiction of India under the Law of the Sea Convention regime. It suggests modifications to strengthen India’s port state control system and port state jurisdiction.

The fourth chapter identifies the sources of operational oil pollution in ports. The international law on the topic is analyzed. The deficiencies in the International Convention for the Prevention of Pollution from Ships, 1973 and its Protocols in 1977 and 1978\textsuperscript{22} with respect to control of operational oil pollution are analyzed. The provisions for controlling vessel sourced operational oil pollution under the Indian law are examined. The chapter analyzes the Indian standards of control in comparison with the MARPOL regime. The deficiencies in Indian law are identified and suggestions made.

Legal control of ballast water pollution is analyzed in the fifth chapter. It examines whether ballast water pollution is a form of ship sourced operational pollution on the basis of international law. It analyses the Indian position on control of ballast water pollution and identifies the deficiencies in the control system. The chapter examines the bio security aspects of ballast pollution and the need for an integrated approach to control it. It recommends modifications in the existing system of control.

The next chapter examines the concept of sewage and garbage pollution by ships and the international law on it. The chapter identifies the provisions

\textsuperscript{22} Herein after to be referred to as the MARPOL 73/78, adopted in 1973, entry into force on 2\textsuperscript{nd} October 1983, available at http://www.imo.org/About/Conventions/List of Conventions/Pages/International-Convention-for-the-Prevention-of-Pollution-from-Ships- (MARPOL).aspx., last accessed in December 2013
for port reception facilities in Indian law and the practical difficulties in implementing it. It generally examines the waste disposal and environmental compliance system as to sewage and garbage disposal from ships in Indian ports. The chapter discusses whether control should also be exercised under the Environmental Protection Act, 1986, the Bio-Diversity Act, 2002 and the fisheries conservation laws. It analyzes the merits of control under the shipping law. The Indian standards of control are analyzed in comparison to the international regime and modifications suggested.

Under chapter seven, the control measures to prevent accidental pollution are examined. The provisions under the safety conventions and self-regulatory system to ensure safety in shipping operations are analyzed. The importance of port state control in tracking unseaworthy ships and the Indian practice on port state control relating to tracking of substandard vessels is examined. It examines how far the Indian law is in conformity with the technical conventions of the International Maritime Organization on safety and pollution control. The deficiencies in the existing system are identified. Suggestions are made for improving the monitoring and safety control of ships in ports.

The eighth chapter focuses on Indian standards of contingency planning, mandatory insurance, and the establishment oil pollution compensation fund. It identifies the major deficiencies in the liability regime. The need to implement the ‘potential polluter pay’ principle is discussed. It also examines whether criminal prosecution of seafarers is needed in India and whether it is effective in preventing accidental pollution. The draconian law of criminalizing seafarers on grounds of public welfare is critically examined. Major deficiencies in the Merchant Shipping Act, 1958 on defining pollution damage and limitations on fixing civil liability are critically examined. Modifications and suggestions are made in order to improve adjudication of claims on pollution damages.

Chapter nine is on control of ship recycling. The U.N network on ship recycling is examined in detail. Indian laws are also examined. Multiplicity of Indian laws on the topic has weakened the enforcement regime by conferring jurisdiction on a handful of bureaucratic agencies. The need to implement the
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Basel Convention requirements to prevent illegal trafficking of vessels and beaching on Indian ports are suggested. Conflicting judicial approaches allowing ship dismantling at Alang are examined in detail. Deficiencies in the existing legal system are identified and modifications suggested.

Chapter ten contains the conclusions and Suggestions of the study. In India vessel sourced pollution is a major source of port pollution. The control exercised under various environmental laws does not deter pollution of Indian Ports. Shipping could be effectively regulated only under a consolidated and strong admiralty law. There are many limitations for exercising control under the existing system. The study suggests practical solutions to overcome this. India’s Maritime Policy aims at sustainable development of the shipping industry. But the Indian admiralty law is not in pace with the dynamism in shipping operations. The effectiveness of the control system depends on Port state control. The study examines the deficiencies in this system and suggests methods to improve the same. The port authority should be given sufficient authority, power and resources to control and monitor the vessels calling at Indian Waters. This can increase the effectiveness of the law. If the entry of inferior quality ships is not regulated properly, it may question the very existence of Indian ports; the trade and economic prospects of the country.

For the purpose of this study, emphasis is given to international legal materials on the topic. The researcher has examined how far these international norms had been implemented in India. Even though many of these international materials are not binding on the Indian government and act as a recommendation, it is always better to conform to such rules to bring in uniformity of this practice in this area. Wherever there are shortcomings, the reasons for such infirmities are identified and remedial measures are suggested. The focus of this work is to identify the defects in Indian law in the light of international and comparative practices.