Ship- Source Marine Pollution, Legal Theory, Law and Practice: The Regime of Pakistan's Perspective

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Abstract

Ship-source pollution is a maritime menace which continues to harm the marine environment and also cause damage to persons and property, in particular, in the event of a serious oil spill. The international law governing such pollution is almost entirely contained in conventions addressing both the public as well as the private law dimensions of the subject. The principal purpose of this chapter is to address the private law side of the ship-source pollution equation focusing on a critical analysis of the legal regime in this field as it obtains in Pakistan, a common law jurisdiction. Pakistan is a party to the Civil Liability Convention, 1992 (CLC), but not to the Bunkers Convention of 2001. It is not as yet a party to the Fund Convention, 1992 but is looking to enter that convention. Pakistan is also not a party to the HNS Convention of 1996 modified by its 2010 Protocol. This chapter provides an overview of the legal theory of ship source marine pollution law from the perspective of both the private and public legal regimes in Pakistan. In conclusion, lacunae in the national law in both regimes are pointed out and commensurate proposals for their improvement and refinement are made.

Keywords: *Marine, Pollution, Legal Theory, Pakistan*

1. Introduction

1.1 Background

Ship-source oil pollution is a maritime menace which continues to harm the marine environment and causes damage to persons and property, particularly, in instances of serious oil spills. The international law governing marine pollution caused by oil carried on board ships as cargo or fuel, as well as other pollutants, is almost entirely contained in conventions addressing both the public as well as the private law dimensions of the subject. The conventions have received overwhelming support from maritime countries globally. Whereas the public international law contained in Part XII of the International Convention on the Law of the Sea, 1983 (1833 UNTS 3) provides the universal legal framework for all marine pollution, the regulatory and private law aspects are found predominantly in the conventions of the International Maritime Organization (IMO) with few exceptions (1046 UNTS 120).

1.2 Purpose

The central purpose of this chapter is to address the legal theory of ship-source marine pollution from the perspective of the prevailing legal regime of Pakistan. These

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will be explained briefly as the discussion proceeds. Also, the chapter emphasizes the role of the maritime sector acting as the backbone of the national economy. This sector is the natural fountainhead for economic growth from which the country can benefit immensely. The marine environment is a natural national endowment which needs to be protected, and in this respect, there is a dire need for an integrated national maritime policy. As a part of that policy, there is the need to raise and increase awareness of the problem through the enhancement of knowledge and understanding of maritime potentials and prospects among the decision-makers as well as the general public. In conjunction with the above, capacity building through partnerships between private and public sector is essential.

In that vein, there must be proper decision-making and decisions made must be implemented and enforced by the relevant administrative and regulatory bodies within government. Also, it must be recognized that national and international collaboration in this regard can stimulate the economic growth of the country. It is postulated that a unified national maritime legal regime and an effective compliance system together with a suitable re-configuration of the national maritime sector are the prerequisites for regional and international cooperation and collaboration will lead to economic growth and general betterment of the country. The chapter critiques the positive and negative aspects of the respective legal regimes of Pakistan and makes suggestions for improvement as and when necessary.

2. The Blue Economy of Pakistan

Pakistan has approximately 1,050 kms of coastline with a land to coast ratio of 1:36 (Dawn, 2009) and is ranked 74th among the world's 142 coastal states. The Exclusive Economic Zone (EEZ) covers an area of about 240,000 sq kms. The case for extension of the continental shelf up to 350 nautical miles (approximately 50,000 sq. kms) from the coastline was presented before the United Nations in 2009. The positive aspect of this case is that it has been approved subject to its technical examination by the sub-commission without any objections (Abbasi, 2013). After the extended continental shelf, the EEZ is the largest maritime zonal area of Pakistan, and in terms of overall area of the country, it ranks after the province of Baluchistan.

Pakistan as a maritime nation is endowed with a lengthy coastline, numerous marine resources, natural harbours and a sizeable volume of sea trade. A major contribution to Pakistan's national economy comes from the maritime sector. It is seen that 95 percent of trade and 100 percent of oil/coal imports are transported by sea. Oil is used to produce electricity which in turn provides light in streets, powers the factories and facilitates the operation of businesses. The majority of food items are imported through their carriage by sea. Thus, the daily lives of the population are inextricably linked to the sea in one way or another. There are several qualified and competent maritime experts in Pakistan but the majority of the population is unfamiliar with the maritime sector and with the so-called blue economy. Needless to say, educating the masses on at least the basics of maritime matters is of utmost importance to the well-being of the nation.

2.1 Sectors in the Maritime Economic Domain of Pakistan

There are several sectors in the maritime domain of Pakistan which contribute to its growth in multiple ways including advancement of the country's economic welfare and international recognition.

2.1.1 Ports

There are three busy and thriving ports in Pakistan; they are Karachi Port, Port Qasim and Gwadar Port. The port of Karachi is the busiest. It has two container terminals, operated by the private sector. About 60 percent of the country's cargo goes through this port. Around 75,000 metric tonnes of deadweight is carried by vessels entering and leaving Karachi port. Karachi Port Trust, established in 1882, has undertaken the biggest project in its history to establish a port bridge and cargo village in the west side of the existing harbour which will be constructed and the cargo capacity will thus be significantly increased. Karachi port also has plans for establishing a Port District Project named "Maritime Enclave" which will encompass and accommodate shipping, multinational companies, stevedoring facilities and banks, among other businesses, near to Karachi Port (Humayun, A. & Zafar, N. 2014).

Pakistan's second busiest port is Port Qasim which deals with almost 40 percent of the country's cargo movements. Privately owned jetties and terminals are situated in the port for both liquid and solid cargoes but the present capacity of the port is to be increased enormously in order to meet future needs (Humayun, A. & Zafar, N. 2014). There are already two terminals which are to be increased in number by adding three more LNG terminals at the port to enhance the export capacity of textile products. The government is planning to establish a "Textile City" and make it operational in the industrial area of Port Qasim in the near future (The Nation, 2013).

The port of Gwadar is a relatively new project located about 460 km west of Karachi established and developed through Chinese investments. It was constructed on the Arabian Sea and started off its operations deep water in 2008. The project is a major milestone reached by the government which is projecting and promoting Gwadar port as the sea link between China and the countries of Central Asia and the route between Central Asian countries and those of the Middle East and Europe. This port is proving to be a major project in the energy and trade sector. Unfortunately, however, it does not match the government's expected outcomes which were attached with this port because of the unstable socio-political situation in Pakistan. Another reason for weak outcomes of the Gwadar Port project is the lack of sufficient foreign investments because of the government's untimely announcement about another port on the Makran coast (UN ESCAP, Country Report from Pakistan, 2024).

2.1.2 Shipping

The Government of Pakistan nationalized 10 shipping companies under the state-owned National Shipping Corporation (NSC). In 1979, two shipping companies were merged into one big national shipping company. Only 7 percent of external dry cargo trade is to be carried out by the Pakistani flagged vessels; consequently, they faced considerable financial losses. This shows that there is a great opportunity for foreign investors to make private investments in Pakistan's shipping industry (Asghar,

2011). The nationalization of the shipping industry caused a huge economic loss which still remains unrecoverable. After the nationalization of the shipping industry, private ownership of ships virtually disappeared and as a result, the competition between the private and public sectors also came to an end. Undoubtedly, the shipping industry is a great source of foreign exchange as well as the impetus for various other shipping related businesses and activities such as ship management, ship building, ship repairing, ship breaking otherwise known as ship-recycling, and marine insurance. Thus, Pakistan certainly has the potential for becoming a sizeable participant in the world shipping fleet and can achieve economic gains by offering incentives through attracting private investments into the national shipping sector.

2.1.3 Seafaring

Seafaring is an important sector and a source of livelihood in the world maritime domain. However, just over a decade ago, the International Maritime Organization (IMO) reported a shortfall of seafarers (Humza, 2009). That trend seems to have lingered on, and in this context, Pakistani seafarers have much to contribute not only to the shipping sector but indeed, also to the greater arena of the international employment market by providing adequately trained seafarers. In this way, the seafaring community and their employers, the shipping companies, can earn sizeable financial gains and the country can increase the national revenue intake. Pakistan has around 20,000 registered seafarers; a good number of them continue to serve in international fleets, but the numbers have reduced to around 5,000. In the past, the numbers were considerably higher which resulted in a reduction of their contribution to the national economy.

Relatively recent information shows that Pakistani seafarers are efficient, diligent and resolute in their jobs and have remained so as they have become members of the international seafaring community (Humza, 2009). Pakistan Marine Academy was established in 1962 and has been a successful institution since its establishment. It has made a significant contribution to Pakistan being included in so-called "white list" of the IMO which attests to the fact that as a shipping state, Pakistan is fulfilling all the provisions and related requirements of the STCW Convention of IMO (Humza, 2009). It is incumbent on every government take advantage of the potential benefits emanating from the current scenario of short supply of seafarers in several countries at the international level. The Ministry of Ports and Shipping of Pakistan should take serious and concerted action to exploit the current employment potential in international seafaring.

2.1.4 Ship Breaking and Recycling

At the outset, it must be stated that what was hitherto referred to as "ship-breaking" is now called "ship-recycling" pursuant to the convention of that name adopted under the auspices of the IMO. Even though the two terms are often used interchangeably, for reasons of projecting environmental consciousness and promoting the pro-environmental dimension of that activity, the appellation "ship recycling" is preferable. The present author subscribes to that viewpoint. That said, a distinction can be made between the two descriptions. Ship-breaking is the proper

term for referring to the activity of dismantling a ship that has outlived its usefulness as a means of transportation at sea without heed to its possible future utilization whereas ship-recycling denotes a more structured approach where the purpose is to retain as much as is possible, parts of it that can be recycled, that is, re-used in another shape or form. In this case, both expressions are used as may be appropriate or expedient.

Pakistan, despite having 127 ship-breaking sites in Gadani represents only 11 percent of the world's ship recycling industry (Mikelis, 2013). The province of Baluchistan in Pakistan has its only ship-breaking yard in Gadani which is known to be the world's largest. This yard supplies steel scrap and other materials to Karachi city which exemplifies how ship recycling is essential and integral to the process of building the shell plating of a ship's hull. The ship-breaking or ship- recycling industry can provide numerous job opportunities and facilitate employment for a large section of the national population. Students who have studied the mechanics as well as the sociological and health implications of ship-recycling have the opportunity to enter this field as skilled employees operating in different capacities. It is thus not an overstatement that this industry provides a reasonable source of livelihood for many. However, more people with appropriate qualifications and proficiencies can be involved in this sector if the government pays sufficient attention to this activity and adopts rational policies and strategies that are sounder and more effective (Humayun & Zafar, 2014).

The ship-breaking/recycling industry has the capacity to provide or facilitate relevant jobs to over 400,000 people and thus contribute positively towards enhancing the country's economic position (Mikelis, 2013). It is, however, a thought provoking observation that in 2011, this industry, despite its larger capacity, provided only 27 percent of the melting steel scrap (Humayun & Zafar 2014). If we look at the global shipping scenario, this industry can foster excellent growth in the coming years and generate an abundance of job and career opportunities in Pakistan. But the government needs to revise its sales tax and income tax policies. A sound long term strategy can make the industry more vibrant and viable and consequently increase revenue generation, particularly for the province of Baluchistan. In addition, and further to the above, the government should ensure that the industry is granted an adequate and uninterrupted supply of electricity, better training opportunities and good working conditions for workers at all levels. Safe and efficient environmental protection practices must be implemented which will result in major improvement in the ship-breaking and ship-recycling industry of Pakistan.

2.1.5 Fishing and Sea food industry

Pakistan has a growing and viable fishing and sea food industry which in monetary terms, can translate into a significant contribution to the national economy if utilized properly. According to a 2011 Report submitted by Dr. Nasim Akhtar, a Fisheries Sector expert at the United Nations Industrial Development Organisation (UNIDO), the export of seafood products increased from USD 213 in 2007-2008 to USD 240 in 2008-20009. At any rate, evidently the exports are relatively low and

every effort should be expended by all concerned to increasing the numbers. The industry presently provides employment to about 1.5 million people and contributes about 1% to Pakistan's GDP (2013, Dawn). The employees are mostly from the provinces of Sindh and Baluchistan (2007, Ministry of Food, Agriculture and Live Stock). Around 14,000 large and small boats comprise Pakistan's fishing fleet which is ranked 28th in the world (Mohsin et al., 2017). Out of the total fish catch in Pakistan, some 400,000 tonnes come from marine fisheries. Among other practices required to uplift the fishing industry, it is important to recruit people with requisite fishing skills which requires proper training.

An important deficiency is the poor level of quality control which results in unwanted and undesirable wastage of fish yield in considerable quantities (Mohsin et al., 2017). The lackadaisical and apathetic attitude of fishers is detrimental to their vocation and threatens the marine ecosystem. It reflects a lack of adequate awareness among fishing communities of the vulnerability of the marine environment. This state of affairs is attributable to the weak regulatory framework and ineffective implementation measures which need to be updated with new regulations and an efficient enforcement mechanism.

Another serious issue is smuggling of high quality fish being smuggled out of Pakistan which is rapidly causing unwanted losses. This kind of illegal activity can be eliminated by strict monitoring and proper implementation of the relevant laws. The lack of coordination among different stakeholders in the fishing industry needs to be curbed in order for Pakistan to have an effective administration for fisheries resources. The country is fortunate to be endowed with quality marine resources including fish and other commodities. It has been exporting fish products for many years because the Arabian Sea area is rich in fish production. But it needs to revise its export policies in order to compete with countries conducting low cost production in the fisheries sector.

There are various factors at the national level which impinge on the high cost of production which need to be addressed on a priority basis. One of these is foreign interference with fishing activities, which if not addressed, can result in huge losses (2013, Dawn). The high-priced fish catches are a major attraction to foreign interveners from neighbouring countries. Despite the fact that several fishers are apprehended by the relevant maritime enforcement authorities, no big change has yet been seen in this regard. According to the Food and Agriculture Organization (FAO) of the United Nations, aquaculture is the fastest growing food production sector across the world but in Pakistan it has not yet reached any significant level of popularity. The production of salt-water fish is negligible in terms of aquaculture. In this context, there is potential for considerable financial gains to be made which can be achieved through proper development of the aquaculture sector in Pakistan (2013, Dawn). Poverty can also be alleviated and high quality food production can be assured through advancement of this lucrative industry which requires public awareness and appropriate training of labour instigated by the relevant authorities at the governmental level.

2.1.6 Ship Building

Pakistan has its only government owned shipyard in Karachi known as Karachi Shipyard & Engineering Works Limited (KSEW). This shipyard caters to new ship building, ship repairing and fulfils other engineering works whenever it is needed. It consists of three ship building berths fully equipped with heavy machinery designed for building and repairing of ships at the same time. KSEW has been engaged in building and repairing ships for local as well as foreign customers. The shipyard has built 430 vessels of various types, repaired 5,000 vessels of different nationalities and built over 2,000 heavy engineering units. This government-owned corporation needs to be upgraded by removing the limitations that obstruct the construction and repairs of ships. Educated manpower is required in this field whose should be trained in ship design and must be well versed in the latest technology for ship building. The government needs to take requisite steps to establish a new ship yard soon in order to open new doors for private investment and to carry out capacity building in the field of ship building.

2.1.7 Offshore Resources

In as far back as 1982, Pakistan reportedly had the potential for findings of oil and gas in the Indus offshore basin south of the Karachi trough and Thar slope but after nine wells were drilled in the area, no oil or gas deposits was discovered although in the investigation, traces of gas were recorded (2014, UNIDO Report of Nasim Akhtar). In the latest literature on this matter, it is stated in a report which was the outcome of a concerted Sino-Pak study, that whereas there is a shortage of oil and gas resources in Pakistan, "no commercially viable oil and gas sources have been yet discovered in its offshore areas up to now" (2014, UNIDO Report of Nasim Akhtar). In fact, this report was an affirmation of an earlier report published by Reuters in which a spokesman of the Oil and Gas Development Co. Ltd. of Pakistan (OGDC) was quoted as saying that "no oil and gas reserves were found off the coast of Pakistan. In view of these statements and publications, perhaps the Government of Pakistan should consider formulating fresh policies to attract investment schemes aimed at investigating offshore petroleum prospects.

It must not be overlooked that offshore resources also include living and mineral resources. Seaweeds are living resources available in abundance in the coastal area of Pakistan (Shuaib, 1982). These seabed plants are not only used as food but also as medicine and are among the food items in demand which are internationally exported. But clearly, private sector investment and capacity building is needed in this sphere of development. For the prosperity of future generations, it is important that these resources are preserved and this is possible through promoting and implementing sound environmental management.

3. Legal Theory and Policy Framework

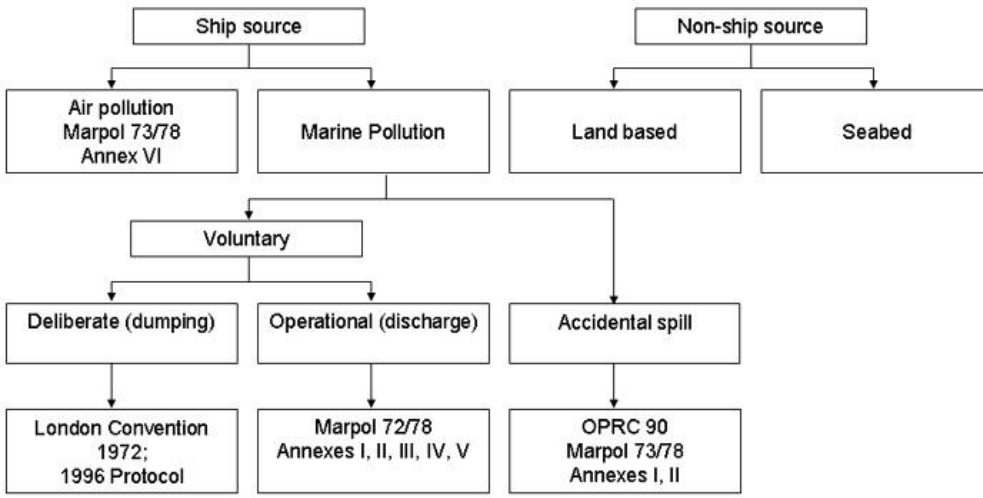
3.1 Growing Environmental Concerns: Preliminary Observations

No doubt, there are strengths and weaknesses inherent in the maritime sector of Pakistan like in any other, but there are some uniquely important challenges faced by the maritime domain. These are causing serious environmental concerns which are

resulting in impediments to economic growth (Ming et al., 2020). In this scenario, there is a dire need to revise the old and obsolete maritime legal framework and produce new and innovative law, perhaps emulating the regimes in countries and regions that have been successful in dealing with marine environmental issues. In this context, some transformations of law are required to deal effectively with environmental threats to the Arabian Sea caused mainly by ship-generated pollution although it must be recognized that quantitively speaking, most of the pollution inflicted on the world's seas emanate from land-based sources.

Basically, there are three sources of marine pollution, namely, effluents from land, oil or gas released from the seabed in the event of an oil rig blowout, and pollution from ships that are operational discharges or deliberate dumping of wastes or accidental pollution caused by casualties (Mukherjee, 2021).

Figure 1: *Marine Pollution Continuum Diagram*



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There are multifarious ways in which ship-source pollution occurs including operational discharges from ships, accidental oil spills caused by casualties and deliberate dumping of wastes at sea in the maritime zones and waters of Pakistan. Pollution generated by ships negatively impact on the marine resources of the country (Khan, 2011).

Pakistan should join all relevant international conventions and implement them domestically. In particular, a viable and rational regulatory legal framework should be created**.** Unregulated pollution increases the level of acidification in the waters resulting in destruction of marine resources and reduction in fish production. Such regulation, indeed, the entire ship-source pollution regime, should be carried out through the application of international conventions and regulations, and the maritime industry should conduct eco-friendly operations across the globe.

In light of the above, before proceeding further, it is expedient to review the general legal theory of ship-source pollution as it obtains in the context of Pakistan's

policy considerations in this field. The envisaged legal framework should be based on the formulation of such policies.

3 .2 Legal Theory of Ship-Source Marine Pollution

There are those who would postulate that theory of any sort is the antithesis of practicality and is therefore of little consequence in the real world, that is, where results are what matter rather than the basis or rationale. That may well be true in the realm of pragmatism but the discipline of law is based on such phenomena as logic, reason and conceptuality, and therefore must have a theoretical foundation. That said, theory often derives from a state of affairs giving rise to a practical problem which needs to be resolved. Such is the case with the theory of ship-source pollution law in its fundamental terms which is aptly illustrated by the proposition that ship-source pollution is grossly undesirable; that essentially, the law is designed to prevent it, but if preventive measures do not succeed, the law must invariably provide for mitigative action and remedial measures (Mukherjee & Brownrigg, 2013).

An extended aspect of this legal theory is the functional approach to law-making in this field which focuses on what is the envisaged function of the law. In many instances, the existing law may be inadequate or the circumstances may require new law to be introduced (Bassiouni, 1990). This is exemplified in the creation of the International Oil Pollution Compensation (IOPC) Fund instigated by the oil industry.

Most importantly, in terms of legal theory, it must be recognized that marine pollution law including the law of ship-source pollution, spans over a spectrum ranging from public international law through regulatory law to the private law side of the equation (Xu, 2013). Also, almost all of the law governing marine pollution is today covered by international conventions and protocols. The legal framework in public international law (PIL) is contained in Part XII of UNCLOS as mentioned in the introductory section of this chapter. It is sometimes referred to as the constitution of marine pollution law (Mukherjee & Lefevbre, 1984). The international regulatory framework and its counterpart in private law focusing on liability and compensation for ship-source pollution damage are covered in numerous conventions adopted mainly by the International Maritime Organization (IMO), which needless to say, plays a pivotal role in the creation and propagation of ship-source pollution law. All of this is fittingly presented in the so-called Spectrum Diagram which encapsulates the legal theory of the law of ship-source marine pollution (Xu, 2007).

4. Relevant International Conventions

Given that international treaties and related instruments govern virtually every aspect of the law in this field, in the text below, the relevant international conventions are discussed in synoptic fashion.

UNCLOS is hailed as the "constitution of the oceans" (Koh, 1983) and further to it, Part XII of the convention provides the foundational framework for the international law of marine pollution. It is thus rightly captioned "Protection and Preservation of the Marine Environment". The only other PIL convention is the Intervention Convention of 1969 (970 UNTS 211) which predates UNCLOS and is tangentially referred to in its Article 221 *ex post facto*. Because UNCLOS is a

framework convention, there are several Articles in Part XII which are then substantively particularized in a number of IMO conventions and one UNEP convention (Xu, 2007).

Insofar as regulatory conventions/instruments are concerned, there are at present nine of them, of which seven are IMO conventions, one is an UNEP convention and one, which was originally a convention sponsored by the UK but is now administered by the IMO (Mukherjee & Brownrigg, 2013). Of all these, the most important one is MARPOL (1340 UNTS 61). The convention is entirely of a preventive character and consists of six Annexes, each covering a particular type of pollutant. Thus, Annex I deals with oil, Annex II with noxious liquid substances (NLS) which basically means liquid chemicals and Annex III with packaged harmful substances which are essentially dry chemicals, Annexes IV and V address sewage and garbage, respectively, and Annex VI deals with the topical issue of air pollution caused by exhaust emissions which indirectly harm the marine environment. Notably, Annexes I and II are compulsory meaning that in order to be a state party to MARPOL, a state must at least ratify or accede to them. The other Annexes are optional but that is now redundant since all Annexes are in force. Incidentally, Annex I is a virtual replica of the OILPOL Convention of 1954 which was its predecessor (327 UNTS 3). Whereas all the regulatory conventions/instruments are of commensurate importance *vis á vis* each other, some are of more contemporary significance such as Annex VI of MARPOL which is still unfinished business because deliberations are on-going. The Basel Convention (673 UNTS 5) is remarkable, first, because it is an UNEP, and not an IMO Convention, and second, because it has effectively given way to the Hong Kong Convention on Ship Recycling (Xu, 2007). That said, it must be noted that the Hong Kong Convention is not yet in force and therefore, the Basel Convention still governs ship-recycling activity in practice. It is to be noted all the regulatory conventions are synoptically but adequately discussed in both the Xu and Yu/Mukherjee articles.

The two international conventions dealing with the private law dimension of ship-source oil pollution damage are the CLC 1992 and Fund 1992 Convention. The original framework of the regime was based on the CLC 1969 and the Fund Convention, 1971 (973 UNTS 3). They were amended in 1992 by two protocols resulting in the CLC 1992 and Fund 1992 Convention. CLC 1992 deals with civil liability and compensation in respect of laden tankers and combination carriers which carried oil on the voyage previous to the casualty. Subject to a number of specific exceptions, liability is strict; in other words, a claimant need not prove any fault on the part of the polluter, but simply prove that pollution did in fact occur and that the polluting oil emanated from the ship in question. It is the registered owner of the ship that is liable, and if it invokes an exception, must bear the burden of proving it. However, except where the owner can show that it meets the requirements set out in the convention which are quite complex, it cannot escape or limit its liability.

At this juncture, it is instructive to note that at the diplomatic conference leading up to the adoption of CLC 1969, the question was raised as to whether liability

for oil pollution damage should be shared between the ship owner and the owner of the pollutant cargo. The application of the so-called polluter-pays principle begs the question as to who is the polluter in law. Under tort law, within which pollution damage resides, such liability would rest on the entity which had custody and control of the pollutant, namely, the ship owner through its shipboard alter ego, the master and the ship's crew (1953 UNTS 165). It was agreed that the matter would be addressed at another diplomatic conference which was convened in 1971 at which the original Fund Convention was adopted. The convention established the International Oil Pollution Compensation Fund (IOPC Fund) as a legal entity which could sue and be sued in its own name pursuant to the convention. The IOPC Fund would pay compensation beyond the ship owner's limitation amount under the CLC 1969 up to a limit set by the Fund Convention (973 UNTS 3). In the interim period, the tanker industry and the oil cargo owners set up voluntary compensation funds to supplement the amounts payable by the registered ship owner under the CLC 1969 (1956 UNTS 255).

Apart from the above two conventions, there is also the Bunkers Convention (40 ILM 1493) and the HNS Convention (35 ILM 1415). The Bunkers Convention deals with liability and compensation in respect of pollution damage caused by oil carried in the bunkers of a non-tanker. Incidentally, damage from bunker oil pollution of an oil tanker is covered by the CLC. The HNS Convention deals with civil liability arising from pollution damage caused by hazardous and noxious substances. It was originally adopted in 1996 but materialized only in 2010 due to protracted disagreement among states within the international maritime community.

5. The Regime of Pakistan

As indicated earlier, the principal object in this chapter is to depict the legal regime of Pakistan in terms of pointing out the major ship-source pollution casualties, and its position in relation to acceptance and implementation of international conventions in the field through domestic legislation. It is notable in this regard that Pakistan is a party to most conventions relevant to this field of inquiry. However, formulation of an effective compliance framework for their implementation is relatively weak. These areas need serious attention and consideration by the authorities and the relevant public alike.

5.1 Major Ship-Source Pollution Incidents

A catastrophic oil spill was caused by m.t. *Tasman Spirit* on July 27, 2003, after it ran aground in the approach channel to the port of Karachi and broke in half spilling 30,000 tons of crude oil in the harbour. It polluted the Clifton and Sea View beaches and caused severe damage to marine life and the health of coastal inhabitants. According to ports and shipping experts in Pakistan, there was an incident in 1998 of a damaged vessel being abandoned which caused a major oil spill to the Baluchistan coast. In 1998 an unidentified oil tanker pumped out oil in waters within the jurisdiction of Port Qasim, which caused major ecological damage to mangroves and also choked the cooling system of the KESC power generation plant situated nearby. In 2002, the m.t. *Golden Gate*, hit and sank a trawler in the Karachi Port area spilling

1,300 tons of oil. However, the perpetrators of these acts which caused severe damage were not apprehended and no compensation could be claimed from them.

5.2 Pakistani Position on Ship-Source Pollution Conventions

5.2.1 Public Law Conventions

UNCLOS is a framework convention of universal application. The provisions which have codified the customary international law of the sea of the past are universally binding. Pakistan became a party to UNCLOS by ratification in 1997, but it does not seem to have given full effect to the convention through domestic legislation. UNCLOS is a voluminous and complex convention, not easy to give complete effect through detailed individual implementing legislation domestically, but as indicated below, the mechanism of enabling legislation can be adopted to avoid enacting detailed legislation, yet be in formal compliance with the requirements of treaty law as it obtains in the dualistic system used in Pakistan.

Regarding other public law regulatory conventions adopted under the auspices of IMO and the Basel Convention which is of UNEP extraction, Pakistan is a party to most of them, in particular, MARPOL, the most important of them all. But seemingly they have been implemented through domestic legislation in a rather fragmented way. Incidentally, Pakistan has not acceded to Annex VI of MARPOL as yet, but that does not detract from the fact that it is a party to the convention since ratification or accession to only Annexes I and II are required for a state to be a party to MARPOL.

Granted, regulatory conventions such as MARPOL are of a highly technical nature; in common law jurisdictions such as Pakistan, they are usually given effect through subordinate legislation in the form of Regulations which are difficult to draft and promulgate without the availability of requisite technical expertise in drafts man-ship. However, through the "enabling legislation" technique, frequently used in civil law jurisdictions, it is possible to implement complex technical convention texts in national legislation without the need for detailed recasting of the conventions (Mukherjee, 2021).

5.2.2 CLC and Fund Convention

Pakistan did not join the original CLC and Fund Convention and thus remained exposed to risks of damage caused by ship-source oil pollution to its coastal waters, coastline and coastal interests without the prospects of compensation. No government entity or responsible ministry ventured to join any international convention to alleviate the harm caused by marine pollution from ships or otherwise. After experiencing the horrendous pollution damage to marine life and people living in the vicinity of the Tasman Spirit oil spill, in 2005, the government deposited the instrument of accession for CLC 1992 with the IMO. Under this convention, compensation for damage resulting from ship-source oil pollution is payable without any contribution from the state party. Safeguards against damage caused by ship-source oil pollution to the coastline and coastal waters extending to the outer limits of the exclusive economic zone (EEZ) and coastal interests such as fisheries resources are still inadequate (1956 UNTS 255).

Accession to CLC 1992 has enabled Pakistan to apply the international liability regime for payment of compensation in respect of pollution damage claims arising from persistent oil escaping from ships. Needless to say, government action for compensating victims of ship-source oil pollution was long awaited (Özçayir, 1998). It would now be in the wider interest of the country to initiate efforts necessary to join the Fund Convention, 1992 which will undoubtedly further enhance the compensation regime of Pakistan. However, accession to the Fund Convention, 1992 is not solely within the ambit of the relevant government ministry. All persistent oil importing entities of the country have to agree since they will be required to contribute towards the levy imposed by the Fund Convention, 1992. The contribution to the IOPC Fund is nominal compared with the benefits and compensation received by victims of oil pollution who remain uncompensated because of the ship owner's limitation of liability under the CLC 1992.

5.3 Relevant National Legislation

5.3.1 Preliminary Remarks

The fact that more than 90% of world trade is dependent on shipping needs no reiteration. Indeed, this statistic is increasing rapidly with the corresponding increase in the population of the world. Much of seaborne world trade involves transportation of oil which remains the most important source of energy for industrial and consumer use. Above all, the need for efficient shipping to sustain global trade and commerce is an indisputable verity.

5.3.2 Specific Legislation

5.3.2.1 Pakistan Environmental Protection Act, 1999

The Federal Ministry of Environment was constituted in 1975. The Ministry is responsible for promulgation of the Pakistan Environmental Protection Ordinance, 1983. This is the foremost complete legislation made on the subject in the country. The major aim of the Ordinance of 1983 was to set up the institutions known as the Pakistan Environmental Protection Council (PEPC) and the Federal & Provincial Environmental Protection Agencies. The Government organized the National Conservation Strategy (NCS) the same year, which gives Pakistan a broad structure for addressing environmental concerns. As well, National Environmental Quality Standards (NEQS) were also designed and established in 1993.

The Pakistan Environmental Protection Ordinance 1983 was repealed upon the enactment of the Pakistan Environmental Protection Act (PEPA) on 6 December 1997. This Act provides the structure for implementation of the strategies on conservation of renewable resources, establishment of tribunals, appointment of Environmental Magistrates NCS, protection and conservation of species, establishment of Provincial Sustainable Development Funds, establishment of the concepts of Environmental Impact Assessment (EIA) and Initial Environmental Examination (IEE).

5.3.2.2 Pakistan Maritime Security Agency Act, 1997

According to this Act, "maritime interests of Pakistan" means-rights, control, jurisdiction and sovereignty over its maritime zones and includes the sovereign rights

of Pakistan to explore, exploit, conserve, manage the living and non-living resources and other activities for economic exploitation, exploration and to safeguard the unauthorized exploitation of resources of Pakistan seas and protection of those seas from damage resulting from pollution.

The Act undoubtedly has important legal implications for claims made against a polluter by a government authority or entity as well as private law claims made in respect of damage to marine resources caused by ship-source pollution.

5.3.2.3 Pakistan Merchant Shipping Ordinance, 2001

In Pakistan**,** admiralty and maritime law legislation mainly comprises the Carriage of Goods by Sea Act, 1925 giving effect to the Hague Rules and the Merchant Shipping Law (the Pakistan Merchant Shipping Ordinance, 2001). Admiralty jurisdiction is conferred on the Sindh and Baluchistan High Court by virtue of the Admiralty Jurisdiction of High Court Ordinance, 1980. This Ordinance is similar to the corresponding United Kingdom legislation and provides the statutory regime for arresting ships. In order for a claimant who has suffered pollution damage to bring civil liability action against a polluting ship, he must invoke admiralty jurisdiction; to found such jurisdiction, the claimant must arrest the offending ship. Hence the importance of this legislation.

The Ordinance requires all ships entering Pakistani waters to abide by relevant international laws in conjunction with the Ordinance and prohibits the pollution of the seas in any way. The following are specific provisions in Chapter 43 of Part XIV of the Ordinance relevant to ship-source pollution:

Sections 554 and 555 stipulate that "no oil or oily mixture or harmful substance can be discharged into the sea from any Pakistani or foreign ship". According to subsection (3) of section 555 –if oil or oily mixture or harmful substance is discharged the master or the owner of the ship shall be liable to imprisonment which shall not be less than two years and fine which shall not be less than $50,000 but may extend to 1 million US dollars. In the case of continuing contravention, an additional fine may be imposed which may extend to $50,000 for every day after the first during which such contravention or failure continues.

Section 556 stipulates -no noxious liquid substances shall be discharged into the sea from a Pakistani ship or foreign ship". Subsection (2) provides in particular - "if noxious liquid substances or their residues are discharged the master or the owner of the ship shall be liable to imprisonment which shall not be less than two years and fine which shall not be less than $50,000 but may extend to 1 million US dollars.

Section 562 stipulates that "a surveyor or any person appointed by the Federal Government may, at any reasonable time, go on board a ship for the purpose of ensuring that the prohibitions, restrictions and obligations imposed by or under the convention are complied with".

Section 568 provides -the dumping of wastes or other matter prescribed as such is prohibited and any person acting in contravention of this section shall be liable to imprisonment which shall not be less than two years and fine which may extend to

one million US dollars. The implementing agency is the Ministry of Ports & Shipping Government of Pakistan".

This Ministry is responsible for ensuring that the requirements of all maritime legislation including that involving ship-source pollution, are properly implemented in all areas falling within its jurisdiction.

All the above-noted provisions have implications for private law claims in respect of ship-source pollution damage apart from the obvious regulatory and penal provisions embedded in this legislation.

5.3.2.4 The Gwadar Port Authority Ordinance, 2002

This Ordinance extends to the whole of the Port area. The Authority may with the prior approval of the Federal Government, make regulations for carrying out the purposes of the Ordinance including matters pertaining to ship-source pollution.

5.3.2.5 The Sindh Environmental Protection Act, 2014

After the implementation in April 2010, of the 18th amendment made to the constitution of Pakistan, 1973, the Sindh Environmental Protection Act, 2014 and relevant EIA/IEE rules and environmental quality standards entered into force for the improvement of the environment. Before the 18th amendment, PEPA had recommended the following:

(a) The Marine Pollution Control Board may be revised with legal authority to direct any organization to take necessary measures with regard to pollution control.

(b) Standards of sea water quality should be declared.

(c) A Harbour Management Plan be prepared and implemented considering the relevant areas and precise tasks and targets be assigned to relevant authorities.

The two above-noted legislative instruments are obviously regulatory in nature but can have legal implications for private law claims as well involving pollution damage caused by ship-source pollution.

5.4 Legal Regime of Liability and Compensation for Ship-Source Pollution: Challenges Ahead

The maritime sector of any country holds considerable benefits for its inhabitants and directly contributes to national development. Yet, there is little public awareness of the importance of the maritime sector in Pakistan. Added to that, the public perception of ship-source pollution is limited to say the least. A recent positive development is the popularity of CPEC (China-Pakistan Economic Corridor) which has exposed the legal standing of the maritime sector of the country and the associated rights and obligations associated with it. This phenomenon must operate through international and domestic legal bodies and instruments. In the context of the theme of this chapter, the main international body is the IMO and to a lesser extent UNEP. The relevant instruments are the ones referred to and discussed in section 3 of the chapter. The majority of them are the regulatory conventions but there are a number of private law conventions as well addressing liability and compensation matters.

As mentioned above, Pakistan has joined most of the regulatory and but not all the liability conventions in the field. An important step taken by the government in this regard is accession to CLC 1992 but it has not yet acceded to Fund 1992, its

companion convention. Hopefully, this will happen soon in the short run. In respect of every pollution convention to which Pakistan is a party, national implementing legislation must be put into place imminently where it is absent. Due attention must be paid to joining all remaining conventions in the field of ship-source pollution in due course including HNS and Bunkers. Mention of the Salvage Convention of 1989 must also be made in this regard; it plays an important role in the mitigation of pollution damage after the occurrence of a pollution incident such as an oil or chemical spill from a ship.

6. Conclusion

6.1 Need for Integrated National Maritime Policy

In Pakistan, the public perception of what prevails in the maritime sector is rather limited; most people consider it to be linked with the transportation of goods by sea and nothing more. This mind-set leads to a lack of understanding of other facets of this sector particularly the impact of ship-source pollution damage including the associated law and policy perspectives inextricably tied to this phenomenon. Pakistan produced its first National Maritime Policy in 2002, which needs to be updated with the changing circumstances. The revision exercise has already begun at the national level with a broader vision. The revised maritime policy is poised to address all stakeholders in the maritime sector. New updated guidelines for adopting a uniform approach will hopefully provide an integrated structure for maritime development across Pakistan. The provinces will be encouraged to strategize their own maritime affairs in accordance with the guidelines of the national maritime policy to promote sustainability in the maritime sector.

6.2 The Way Forward

Further to the discussion on ship-source marine pollution in respect of the maritime sector of Pakistan, the following recommendations are made for the attention of the government and its associated bodies:

- Generate a new national integrated maritime policy;
- Join international conventions on ship-source marine pollution and implement them through national legislation;
- Develop a national compliance and enforcement mechanism in respect of the regulatory and penal law in the field of ship-source marine pollution;
- Increase public awareness of the effects of marine pollution on everyday life and foster knowledge and understanding of the relevant law among decision-makers;
- Instigate provincial Governments to take appropriate steps in accordance with the national policy and law on marine pollution to protect fisheries resources and coastal and offshore installations.
- Make the roles of National Co-ordination bodies, namely, NMACC (National Maritime Affairs Coordination Committee) and JMICC (The Joint Maritime Information & Co-ordination Centre) more robust and extended.

Pakistan is fortunate to be a maritime country of great promise but is yet to realize all its rich and under-utilized maritime potential to become a successful blue economy and rise up to meet the associated challenges. Karachi is the largest city, the economic hub of the country and a port city situated on the coast. In order to take in the prevailing international trends, Pakistan needs expertise and professionals with credentials of the highest order in the maritime field. There are many obstacles in the way to reaching a pollution-free marine environment for living and non-living resources but continuous efforts expended in pursuing knowledge and understanding of the phenomenon of marine pollution and the attendant law can surely overcome them.

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