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Article:	**Legal Analysis on Regulations of London Convention 1972 And Its Protocol: Implementation and Participation in Countries**
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ABSTRACT

To prohibit marine pollution from ship waste and other materials being dumped into the ocean, the London Convention of 1972 as well as its Protocol were created. This article examines the rules of the London Convention and also it's Protocol on the dumping of hazardous materials and other substances and provides historical context for the two ocean dumping treaties. The article then contrasts how the London Convention of 1972 and its Protocol were ratified and implemented in various nations, concentrating on P.R.China, the United States, and commonwealth of Australia. In-depth information is provided on the application of the London Convention and also it's Protocol in China, including general rules, designating specific areas of water for waste disposal, fees and authorizations, and dumping rules. The article also covers the London Convention's implementation in the United States, such as rules governing research, monitoring coastal water quality, and ocean dumping. Australia's compliance with the London Convention and also its Protocol is also investigated. Generally speaking, this article examines the differing degrees of engagement and application of these regulations in various nations while highlighting the significance of the London Convention of 1972 and it's Protocol throughout preventing marine pollution.

Keywords: London Convention, Protocol, Marine Pollution, Dumping, Implementation

Introduction:

The marine environment, people's health, and the financial opportunities of coastal countries are all seriously threatened by marine pollution brought on by ships dumping toxic waste and other materials. The London Convention of 1972 and also its Protocol have been created to prevent and control the dumping of waste materials and other material at sea in order to address this issue.

The London Convention, also recognised as the Convention on the Prevention of Marine Pollution by Dumping of Wastes and Other Matter, was the initial international agreement designed to prevent marine pollution brought on by ships discharging waste and other materials. The Convention was ratified in 1972 and went into effect the following year. The Protocol to the Convention, which was agreed in 1996 and came into effect in 2006, strengthened the laws governing marine pollution brought on by ship garbage and other debris being dumped into the ocean (Stokke, 2018).

In order to combat marine pollution brought on by ships' discharge of rubbish and other materials, the London Convention of 1972 and its Protocol's restrictions are being thoroughly analysed in this article. It will examine the historical background of the two ocean dumping treaties and discuss the regulations set forth in the Convention and its Protocol.

The participation and application of the London Convention and also its Protocol in other nations will also be compared in this article, with a focus on P.R.China, the United States, and commonwealth of Australia. The implementation of the Convention and its Protocol in these countries will be discussed in detail, including the general regulations, designation of waters areas to dump wastes, fees and permits, and regulations on dumping.

The article will also highlight the importance of the London Convention 1972 and its Protocol in preventing marine pollution and provide recommendations for improving the participation and implementation of these regulations in countries around the world (Stokke, 2018).

Overall, this article will provide valuable insights into the regulations of the London Convention 1972 and its Protocol on preventing marine pollution caused by the dumping of wastes and other matter from ships, and its implementation in countries. It will also contribute to the ongoing global efforts to protect the marine environment and ensure sustainable use of marine resources for future generations.

Literature Review

The London Convention of 1972, also recognized as the Convention on the Prevention of Marine Pollution by the Dumping of Wastes and Other Matter, is a key piece of international legislation intended to stop marine contamination brought on by ship waste as well as other matter dumping. This section of the article reviews some of the key literature on the Convention and its Protocol, providing an overview of the evolution of the regulations, their impact on marine pollution, and the challenges in their implementation.

The main objective of the 1972 London Convention and 1996 Protocol was to stop marine pollution brought on by ships discharging rubbish and other materials into the ocean. The Protocol brought a cautious strategy for the handling of such material, whereas the Convention established a legal structure to govern the handling of waste as well as other materials. The Protocol's rules forbid the disposal of any wastes or other items at sea, with the exception of a few materials that are listed in Annex I.

The efficiency of the rules outlined in the Convention and also its Protocol has been studied. (2018) Bamber et al. undertook a thorough analysis of the Convention's and its Protocol's effects on marine pollution. According to the report, the laws have been successful in lowering the degrees of marine pollution brought on by ships' discharge of waste and other materials, and they have contributed to bettering the marine environment generally.

While the London Convention and its Protocol have been successful in reducing marine pollution, their implementation has faced significant challenges. One of the key challenges is ensuring compliance with the regulations. Kim et al. (2019) conducted a study on the implementation of the London Convention and its Protocol in the Asia-Pacific region. The study found that while there have been significant efforts by some countries to implement the regulations of the Convention and its Protocol, there are still significant challenges in ensuring compliance with the regulations and preventing marine pollution caused by the dumping of wastes and other matter from ships.

Another challenge is the lack of capacity and resources in some countries to implement the regulations. Huang et al. (2020) conducted a study on the implementation of the London Convention and its Protocol in China. The study found that while China has made significant progress in implementing the regulations, there are still challenges in enforcing the regulations due to the lack of resources and capacity.

Research Methodology

This legal study is based on a thorough analysis of the literature that has already been published and pertinent legal documents concerning the 1972 London Convention and also its Protocol on the prevention of marine pollution brought on by the discharge of garbage and other materials from ships. The research methodology used in this article is primarily a qualitative approach, as it involves analyzing and synthesizing information from various sources.

The literature review was conducted by searching relevant academic databases, such as JSTOR, LexisNexis, and Westlaw. The search terms used in the literature review include "London Convention," "Protocol," "marine pollution," "dumping," and "implementation." The selected articles and legal documents were analyzed, and the information was synthesized to provide a comprehensive overview of the regulations of the London Convention and its Protocol.

In addition to a review of the literature, this article compares how the London Convention and also its Protocol are being implemented in various nations, with a focus on P.R.China, the United States, and Commonwealth of Australia. Information on the Convention's and its Protocol's implementation in these nations was gathered from official government sites, publications, and other pertinent official papers.

Generally, this article's research methodology was a qualitative one that involved a thorough evaluation and analysis of the body of literature and legal papers pertaining to the 1972 London Convention and its Protocol. The comparison study of the Convention's and its Protocol's application in various nations offers important insights into the disparities in the adoption and application of these rules in various parts of the world.

Regulations of the London Convention and Its Protocol

History of the two ocean dumping treaties

In 1972, there were several separate Conventions but related to marine pollution due to dumping of waste at sea.

First off, the Oslo Convention, also known as the Convention for the prevention of marine pollution by dumping from ships and aeroplanes, was an international agreement created to regulate the discharge of hazardous materials into the ocean from ships and aircraft. The Convention was ratified in Oslo, Norway, in 1972, and it became effective in 1974. The Convention forbade the disposal of sustainable materials, non-biodegradable plastics, and toxic trash that could cause cancer. The Convention also put restrictions on and mandated permits for the disposal of waste containing hazardous materials, metals, and their compounds. Additionally, the Olso Convention mandates that members uphold the agreement in respective territorial seas and make some effort to avoid material dumping outside the bounds of the accord. Only one amendment to the Convention was made in 1981, and it went into effect in 1982. The Convention for the Preservation of the Maritime Ecosystem of the North-East Atlantic, generally known as the OSPAR Convention, replaced the provisions of the Oslo Convention. On March 25, 1998, the OSPAR Convention went into effect. The Oslo Convention (OSPAR Convention) is regarded as a crucial Convention to stop maritime environment degradation caused by ship trash discharge. The Northeast Atlantic, Arctic Ocean, and North Sea are the only areas in which this Treaty is applicable. However, because rubbish dumping is a global problem, a thorough Convention is required to stop global marine environment damage (Hong & Lee, 2015).

Second, the Stockholm Conference, also known as the UN Conference on the Human Environment, was the first UN conference to specifically address global environmental challenges. From June 5 to June 16, 1972, the Conference was place in Stockholm, Sweden.
The human desire to safeguard the marine environment worldwide is reflected in this conference. Also, the Conference served as a watershed in the evolution of global environmental policy. The Stockholm Conference was inspired by a proposal made by Sweden to the United Nations in 1968 to host an international meeting on the environment. The Stockholm Conference came to an agreement and published a proclamation outlining 26 environmental tenets. The Stockholm Conference Declaration is a proclamation in favour of the environment. It is a declaration of the decreasing supply of resources and the need to safeguard them (Hong & Lee, 2015).

Two of the principles that were adopted by the Stockholm Conference deal with dumping. Governments were required to take all reasonable precautions to prevent the contamination of the oceans by substances that could endanger human health, damage amenities, or interfere with other legal uses of the sea, according to seven Principle. And Principle 21 states that "States have the sovereign authority to utilize their own resources in accordance with their own climate change policies, and the duty to guarantee that activities inside of their control or authority do not adversely negatively impact the environment of many other States and also of areas well beyond limits of national jurisdiction," in accordance with the United Nations Charter and the fundamental international law concepts. We can see from the aforementioned principles that Principle 7 closely matched the description of marine pollution put out by groups like the IMO, UN, and UNEP as well as the definition of the Group of Experts on the Scientific Aspects of Marine Pollution (GESAMP). Principle 21 appears to

be more in line with UNCLOS 1982, which mandates that the coastal State must preserve the shore and other seas in accordance with international law (Tan, 2005).

Finally, the United Kingdom government hosted the International Conference on the Convention against the Dumping of Wastes at Sea in London in 1972. This is also the year's last major occasion. The conference approved the London Convention, also known as the Convention on the Prevention of Sea Pollution by Dumping of Wastes and Other Materials, which was signed on December 29, 1972, and went into effect on August 30, 1975. The United Nations Conference on the Human Environment requested the London Convention.

The Parties stipulated that the London Convention Amendment Group will meet in 1994, 1995, and 1996 with regard to the London Convention. Two-thirds of the participants to the London Convention asked for a special meeting to be held in 1996 in order to update the convention with a stringed instrument in 1995. The Parties resolved that this comprehensive instrument should be known as the "1996 Protocol to the Convention on the Prevention of Marine Pollution by Dumping of Wastes and Other Matter, 1972" during a special conference in 1996. The London Protocol's content takes into account environmental management advancements between 1972 and 1996 as well as the outcomes of the 1992 Rio de Janeiro-hosted United Nations Conference on Environment and Development (Tan, 2005).

Overview of the regulations

The London Convention is a pact to stop and regulate marine pollution caused by rubbish dumped at sea. The dumping of rubbish at sea or other things from ships, aircraft, or platforms is covered by this Agreement. 87 States are currently participants to this convention. One of the first international accords to safeguard the marine ecosystem against human activity is the London Convention. 22 Articles and 3 Annexes make up the London Convention. A blacklist, or Annex I, is a list of wastes that cannot be disposed of in the maritime environment. Plastic garbage as well as other persistent synthetic pollutants that float or remain in the marine environment are specifically included on the list of forbidden wastes. The marine ecosystem, fishing, navigation, and other legal uses of the waters could all be harmed by these wastes. Although Annex II, sometimes known as the "grey list," contains a list of wastes that, with the State's permission, may be dumped into the maritime environment. The basic technical criteria for determining requirements for the issue of dumping licences are provided in Annex III. It is clear that the London Convention and the Oslo Convention share a blacklist (Annex I), grey list (Annex II), and only allow the disposal of garbage and other items with national permission system. But, unlike the Oslo Convention, which is solely enforceable in the territory, the London Convention is implemented globally (de La Fayette,1998).

The term "dumping" is also defined by the London Convention. As stated in Article 3(a), "dumping" refers to "any intentional discretion at ocean of wastes or even other matter from ships, aircraft, systems, or other man-made frameworks at sea," and as stated in Art. 3(b), "dumping" excludes the discharge of waste produced during routine operation of vessels, aeroplanes, systems, or other man-made frameworks at ocean and their machinery. From the description above, it is required to make a distinction between the rules for disposing of trash in the London Convention and Annex V of the MARPOL 73/78. Because MARPOL 73/78 Annex V calls for the prevention of environmental pollution by the release of rubbish produced during ship operation, the discharge of garbage from a ship cannot be confused with the

dumping of waste. The London Convention, meantime, governs the transportation of garbage for dumping at sea via ships, aeroplanes, and platforms.

The London Convention's primary goal is to stop the careless discharge of garbage at ocean. These waste disposal practises have the potential to disrupt the marine ecosystem as a whole, marine life, fishery, farming, tourism, and human health. They can also have an adverse effect on the aquaculture and fishing industries. The London Convention forbade the dumping of hazardous materials and broadened its application to "all marine waters beyond the internal seas of States". The Convention has offered a framework for managing and preventing marine pollution on a global basis since it entered into force in 1975. States Ocean protection has been aggressively carried out by Convention Parties with success. In addition to national initiatives, the IMO's permanent secretariat actively supports these goals and offers guidance in the form of subject-matter experts from the IMO, Food and agriculture organization, UNESCO, IOC, WMO, WHO, IAEA, UN, UNEP, and GESAMP (de La Fayette,1998).

1996 Protocol

At a special conference on November 17, 1996, the Contracting Parties decided to replace the London Convention with the 1996 Protocol to the Convention on the Prevention of Marine Pollution by Waste and Other Problems 1972. Ten years after its adoption, on March 24, 2006, the London Protocol came into effect. The 1996 Protocol has been ratified by 48 nations at this time. A contemporary and extensive global agreement with the goal of preventing marine environment degradation from garbage disposal at sea is the 1996 Protocol to the London Convention. The "proactive approach" and the "polluter pays concept" were two core aspects in Protocol 1996, which brought about significant advances. Except for those included on the "reverse list," all wastes are prohibited by the Protocol. According to the "reverse list" of the 1996 Protocol, only compounds specified in Annex I shall be taken into account for a licence to be dumped at sea. The disposal of any substances at sea that are not on this listing will be strongly forbidden. The 1996 Protocol, the Olso Convention, and the London Convention are so distinct from one another. The Member Countries should ban the dumping of wastes or other items that are not mentioned in Annex I ("reverse list") of the 1996 Protocol in place of prohibiting the disposal of hazardous waste as specified in Annex I of the two Conventions. It must fulfil the standards outlined in Annex II of this Protocol in order to dump rubbish or place other items on the "reverse list" of the 1996 Protocol (Coenen, 1997).

Two international agreements governing ocean dumping are the 1972 London Convention and the 1996 London Protocol. The 1972 London Convention was revised and replaced by the 1996 London Protocol. The London Protocol, nevertheless, aims to better safeguard the marine ecosystem. The London Convention has been improved to further ensure that only a small amount of rubbish or materials are permitted to be dumped in the ocean. Also, these wastes and materials need to be carefully examined to make sure they won't threaten either human health or perhaps the marine environment.

Vietnam has thus far actively engaged in IMO Conventions, however the most of them are concerned with preventing oil pollution. Vietnam has not ratified any international agreements pertaining to maritime dumping. The problem of marine environment pollution, in particular contamination from the dumping of rubbish and other things, is not a problem that only affects one country because oceans are intrinsically connected environments. It takes the collaboration of all countries in the globe to protect the maritime environment against dumping,

in addition to national efforts. Vietnam will have the opportunity to work with the international community to execute a worldwide agreement on the control of marine pollution by dumping waste at sea by joining this Convention and its Protocol. This international treaty is the ideal way for Vietnam to discover an effective way of avoiding and address ocean pollution by dumping and sustainable utilization of the ocean, despite the fact that Vietnam will face many difficulties and challenges and that the country's marine environment is currently seriously contaminated (Verlaan, 2011).

These two Conventions are considered to be the global standards for protecting the marine environment. However, studying these Conventions shows that there are still some issues that need to be further discussed and resolved in the future.

Problems with the London Convention and London Protocol systems come first. The most recent treaty (London Protocol), which further updated the earlier treaty (London Convention), and eventually replaced it, was designed to adhere to the new environmental laws. In the hopes that both its participants and new nations will ratify the London Protocol in the future years, the parties to the London Convention have decided against amending the convention. Nevertheless, this choice did not produce the desired outcomes and instead contributed to the current misunderstanding surrounding the two Conventions and the combined meeting for the London Convention and London Protocol.

The London Convention has been accepted by 87 governments, while the London Protocol has been ratified by 48 states as of September 2020. 39 of the 48 participants to the London Protocol and the London Convention are also members to the latter. It is important to note that although the London Protocol entered into force the following year and the parties to the London Convention decided to stop amending it, there was still one country that signed the London Convention in 2005. Even some countries have ratified both Conventions simultaneously; one in 2006 and the other in 2008. Until the present time with a small number of London Protocol parties, some researchers doubt whether the London Protocol will be able to represent a new global standard to replace London Convention. Meanwhile, other researchers only simply argue that London Convention and London Protocol are two separate Conventions that address the problems of dumping of waste at the ocean in addition to the UNCLOS 1982 . The opinions not only appear to ignore the issues brought on by the recent joint meetings, but they also make it more difficult to grasp how the two related Conventions operate (Verlaan, 2011).

Second, issues with Carbon Capture and Sequestration (CCS). One key transboundary issue still must be addressed in the near future. At the moment, the London Protocol is the sole international agreement that governs carbon capture as well as sequestration in subseabed geological formations. In order to allow CO2 exports for geological storage, export modifications were adopted in 2009; however, they must be ratified by two-thirds of the Members in order to take effect. Only two of the 48 participants to the London Protocol have so far ratified the 2009 amendment, which falls far short of the conditions for entry-into-force and remains a severe issue. The 2009 amendment will not take effect until the 2019 annual conference of the London Convention and the London Protocol, which will be hosted by the International Maritime Organization (IMO) in London from October 7–11, 2019. States cannot transfer CO2 to another state for storing in the marine ecosystem since it will take several years for this 2009 modification to take effect at the present rate of ratification.

Finally, Ocean Fertilization and Marine Geoengineering. The London Protocol is considered an important regulation of this field. At the 2008 meeting, regulations of this field were formulated. However, until the 41st annual meeting in 2019, these regulations have not come into effect yet. Thus, these are still the issues that need to be discussed and resolved in the coming sessions.

Comparing participation and implementation of London Convention 1972 and its Protocol in countries

Among the countries selected for research, the USA was the first country to ratify this Convention in 1974 and entered into force in 1975, while, China and Australia taken part in the London Convention in 1985. With respect to the 1996 Protocol, although the timing of ratification was not the same, For China and Australia, it went into effect at the same time, though. Vietnam still has not ratified the 1996 Protocol as well as the 1972 London Convention. The table below provides a brief description of the involvement in the 1972 London Convention and also the 1996 Protocol.

Tab. 5. 1 Parties to the London Convention 1972 and Protocol 1996

Country / Convention		London Convention 1972	London Protocol 1996
China	Ratification	14 November 1985	29 October 2006
	Entry into force	14 December 1985	29 September 2006
United States	Ratification	29 April 1974	Not yet
	Entry into force	30 August 1975	Not yet
Australia	Ratification	21 August 1985	4 December 2000
	Entry into force	20 September 1985	24 March 2006
Vietnam	Ratification	Not yet	Not yet
	Entry into force	Not yet	Not yet

Source: ECOLEX-The gateway to environmental law

The terms of the 1972 London Convention and also its Protocol have been officially ratified by those nations, and their domestic laws now contain the stipulations of those conventions. The Marine Environment Protection Legislation, the Provisions Concerning Dumping of Waste materials at Sea in 1985, and the Measures for the Enforcement of the P.R.China on the the Dumping of Waste at Sea all flexibly incorporated the terms of the two Conventions in China. The Environment Protection (Ocean Dumping) Laws of 1981 apply to Australia. In the meanwhile, Title I of the Maritime Protection, Studies, and Sanctuaries Act of 1972 (MPRSA), Section 27 of USC Title 33, and Subchapter H of CFR Title 40 implement the rules of this Convention in the US (Tomislav, 2018).

Implementation of London Convention and Its Protocol in Countries

China

The basic regulations to prevent marine pollution by dumping of waste at sea have been incorporated into MEPL. In China, SOA is the agency responsible for this field. SOA is not only responsible for the entire process of licensing, monitoring, designating dumping sites, etc., but is also in charge of submitting yearly reports on the types and amounts of discarded items to the London Convention Secretariat. China swiftly released Measures for the Application of the Rules and regs of the P.R.China on the Dumping of Wastes at Ocean (amendment 2017) and Laws Surrounding Dumping of Wastes at Ocean in 1985 (amendment 2017) in order to enforce and complete the absent clauses of MEPL rules and regs (referred to as 2017 Dumping Measures) (Clarke, C., et al. 2022).

General regulations

Chinese law has a definition of "dumping", which clearly distinguishes between "dumping" and "discharging" waste from the ship's normal operation. According to the regulations of 1985 Dumping Regulation and 2017 Dumping Measures, waste is divided into three main categories corresponding to three types of permits. Waste is broken down into categories based on its toxicity, the presence of dangerous substances, how it affects the marine ecosystem, etc. The disposal of category I waste is absolutely forbidden by applicable legislation and regulations, unless doing so would seriously endanger human health on land and doing so at sea would be the only method to do so; Category II wastes are substances that can be quickly "made harmless promptly," and their disposal needs a special permission in advance; Low-toxic and innocuous wastes are classified as Class III wastes, and their disposal calls for an advance general authorization.

Designate waters area to dump wastes

As per Art. 12 of the MEPL and Art. 5 of the 1985 Dumping Rules, dumping sites shall be chosen and identified in accordance with scientific, rational, economical, and safe criteria. For each sort of trash, SOA is in charge of choosing and designating permanent disposal locations, test dumping sites, and temporary dumping sites. While emergency dumping sites are employed in short-term specific instances, the dumping locations are intended for long-term use. The SOA is in charge of alerting the State Environmental Protection Administration (SEPA) for evaluation and the State Council for formal confirmation when these dumping locations are discovered. SOA also supervises and manages the use of designated waters area to the dumping of waste as well as carry out environmental monitoring. Once the waters area designated for the dumping of waste is no longer in use, the SOA announces the discontinuation and reports to the State Council.

Fees and permits to the dumping of waste

According to MEPL Article 12, individuals who dispose of rubbish at ocean must pay dumping costs. These payments are only to be applied to the prevention and management of marine pollution.

According to relevant regulation, any person or entity wishing to dump waste must apply to the competent authority. The competent authority (SOA) wills examine the application over a period of 2 months to determine whether the application is accepted or not. The following three fundamental types of permits are used because trash is separated into three

categories based on characteristics including toxicity, poisonous content, and negative effects on the marine ecosystem:

(1) Emergency licenses are issued for emergencies which dumping of waste is prohibited;

(2) Special licenses are issued for dumping of waste in the list of Annex II of the 1985 Dumping Regulation;

(3) For the disposal of low-toxic and non-toxic trash that is not listed in Annexes I and II of the 1985 Dumping Rules, common licences are issued (Zhao & Ortolano, 2003).

All three types of licenses are issued by the competent authority. However, for an "Emergency license" case, it must be either approved by the SOA or licensed directly by the SOA . Besides, each license type must comply with the detailed requirements outlined in Article 14 of 2017 Dumping Measures. Persons or entities that have received a permit must comply with the requirements set out in Articles 12 and 14 of the 1985 Dumping Regulation (Zhao & Ortolano, 2003).

Regulations on Dumping

According to MEPL, no person or unit may dump waste at sea without SOA approval. MEPL also specified, dumping wastes into the sea without obtaining a permit will be imposed a fine no less than 30,000 RMB, but no more than 200,000 RMB. With this provision, the MEPL has created certain difficulties for law enforcement agencies, because it makes different levels of sanctions corresponding to specific cases. Law enforcement units will have to determine the exact level of penalties for illegal dumping of waste. Not only the MEPL, but this is also repeated in Article 20 of the 1985 Regulation. Chinese laws on sanctions have different regulations for the United States and Australian laws. Australian and United States laws impose administrative penalties or imprisonment or a combination of both, while Chinese law does not seem to be strict compared to these countries. Furthermore, Chinese legislation promotes proactive steps such as providing proof of the violation, actively minimising harm to the maritime environment, etc.

China has worked to uphold international agreements and improve the applicable legislation over the years. China's regulations on the disposal of rubbish at sea have improved recently as a result of their ongoing efforts. In order to monitor and control marine environmental pollution caused by dumping rubbish at sea, China has comprehensive rules in place. Yet China is also dealing with issues, and this area of the law still has to be strengthened.

First off, China is a signatory to both the 1996 Protocol and the London Convention of 1972. The articles of this Convention and also its Protocol have been effectively applied in China, according to research into Chinese legal systems. However, there is still provision of the 1996 Protocol that is not yet incorporated into Chinese laws. Although the MEPL or 1985 Dumping Regulation as well as the 2017 Dumping Measures has been amended and supplemented, however, it has not yet incorporated the new provisions of this Protocol. These are the regulations on offshore carbon storage. Therefore, on the one hand, China did not fully implement the 1996 Protocol. On the other hand, if there is an incident related to this issue, Because China lacks explicit laws or regulations governing this conduct, Chinese law enforcement officials will have certain challenges (Zou & Zhang, 2017).

Second, instead of the territorial waters or exclusive economic zones, dumping sites are frequently found in internal seas, according to a 2018 report by the Ministry of Ecology and the Environment. Moreover, according to this Communique in 2018, dumping activities and

the amount of dumping waste at sea also increased compared to previous years. It is a consequence that has been foreseen by the rapid economic development along with the increase in offshore projects. The activity of dumping waste at sea is also expected to increase due to the essential for economic development. Therefore, it is necessary to strengthen the strict management of dumping activities. That is considered a challenge for China in the future (Zou & Zhang, 2017).

Thirdly, another issue when neither the MEPL nor 2010 Regulation clarified the meaning of the term "all other sea areas". Thus, this issue needs to be explained more clearly.

United States

The 1972 London Convention has only been ratified by the United States, but its principles have been integrated into domestic law. The Marine Protection, Research, and Sanctuaries Act (MPRSA), Chapter 27 Ocean Dumping, USC Title 33, and Subchapter H Ocean Dumping, CFR Title 40, all reflect this. One of the significant environmental legislation passed by the US Congress in 1972 was the Marine Protection, Research and Sanctuaries Act (MPRSA), sometimes known as the Ocean Dumping Act. The MPRSA puts the London Convention's obligations into practise. The MPRSA forbids the disposal of materials into the ocean that could harm human health or the aquatic ecosystems or deteriorate the integrity of the marine ecosystem.

Two main objectives of the 1972 MPRSA are to control intentional ocean waste discharge and to approve associated research. The Ocean Dumping Act's Title I provides regulations for permits and enforcement that apply to ocean dumping. Title II includes provisions for marine research. The United States has published chapter 27, USC Title 33 v. Subchapter H, CFR Title 40 to implement The MPRSA's rules (Molenaar, 1997).

China assigns the task of managing and supervising the process of the dumping of waste to SOA. While the United States has assigned different agencies to perform the tasks related to the process of the dumping of wastes at sea. The National Oceanic and Atmospheric Administration (NOAA), the Coast Guard, the Environmental Protection Agency (EPA), and the United States Army Corps of Engineers are the four federal agencies in charge under the MPRSA. These organisations will be given distinct duties to complete. Criteria for evaluating and judging permit applications must be established by EPA. All compounds that are disposed of in the ocean are subject to regulation by the EPA, with the exception of surface sediments, which are the responsibility of the US Army Corps of Engineering. While EPA is permitted to conduct research and demonstration operations related to gradually ending the dumping of industrial waste and sewage sludge, NOAA is in charge of conducting long-range studies to investigate the consequences of human-induced modifications to the marine environment. The Coast Guard is responsible for keeping watch over ocean dumping.

Regulating Ocean Dumping

All ocean dumping is prohibited in all ocean waters subject to United States jurisdiction, with the exception of that permitted by permits, in accordance with Title I of the MPRSA, Chapter 27, USC Title 33, and Subchapter H of CFR Title 40. It is prohibited to dump some materials in the ocean, including industrial trash, high-level radioactive garbage, chemical and germ weapons agents, clinical waste, wastewater sludge, and waste from the military. After the relevant authority finds that such dumping won't unreasonably harm or jeopardise human health, happiness, the aquatic ecosystems, eco systems, or economic

potentialities, the EPA may grant permits for the disposal of other materials, aside from dredge debris. The EPA assigns locations for ocean dumping and details each permit's requirements for waste disposal. However, there is a difference between the waters for dumping waste of China and the United States. China controls the dumping of waste at to all waters under its jurisdiction, while the U.S extends only to the 12nm waters. After that, the United States Congress decided to stop licensing dumped operations within 12 nautical miles and expand the control over the dumping of waste to 106 nautical miles offshore (Van Pottelsberghe de la Potterie & Mejer, 2010).

Dredged materials, which are sediments taken from the water's surface to maintain transportation channels and harbours, make up the majority of the waste that is dumped into the ocean. Vessels, seafood wastes, and human body parts are some more things that are discarded. Before dredged sediment components are approved for ocean dumping, they are examined to make sure the dumping won't have a materially negative impact on human health or the aquatic ecosystems. In accordance with the EPA's requirements, the Corps of Engineers gives permits for the disposal of dredged material into the ocean. EPA will issue the required permits based on the situation. The EPA has the authority to grant a variety of permits, including regular, special, and emergency permits. The kind of substance to be dumped of, the quantity to be carried for dumping, the place of the dumpsite, the duration of the permit's validity, and any specific surveillance requirements are all specified in permission granted under the MPRSA. A permit applicant may be required by the EPA Administrator to furnish details required for the review and assessment of the application.

Similar to Chinese law, the United States law also stipulates that any unit wants to dump waste at sea will pay dumping fees. However, there is a difference between the two countries' regulations, China only refers to the phrase "must pay pollutant discharge fees" without a specific fee , while the United States law regulates levels of costs corresponding to specific cases .

Under the provisions of MPSRA and USC Title 33, any violation related to dumped waste at sea will be fined not more than 50,000 USD. Even the United States law also applies civil and criminal sanctions for violations of the dumping of medical waste. Accordingly, any violation of the law prohibiting the disposal of medical waste could result in civil fines of up to 125,000 USD, criminal fines of up to 250,000 USD, five years' imprisonment, or both. These fines and fees are given to the appropriate authorities so they can perform duties relating to managing and preventing marine pollution brought on by garbage disposal (Van Pottelsberghe de la Potterie & Mejer, 2010).

Research and Coastal Water Quality Monitoring

Two forms of study are permitted by Title II of the MPRSA, Chapter 27, USC Title 33: general research on ocean resources, which falls within NOAA's purview, and EPA research pertaining to the phase-out of ocean disposal activities. NOAA is mandated to conduct an extensive, long-term study programme on how human activities—including pollution, exploitation, and ocean dumping—affect the ocean ecosystems. As well as research on alternative solutions to ocean disposal, EPA also conducts "investigations, experiments, mentoring, demonstrations, surveys, and studies" to reduce or eliminate the dumping of wastewater and industrial waste. In order to carry out the aforementioned goals, MPRSA formed nine regional marine development boards with the responsibility of creating extensive

marine research plans, taking into account water quality and ecosystem circumstances and research, and keeping track of regional priorities and goals. A national effort to monitor coastal water quality was also started by MPRSA. It mandates the implementation of a long-term programme by EPA and NOAA to gather and evaluate scientific data concerning the environmental integrity of coastal habitats.

Uncontrolled disposal of garbage and other items into the water harms human health and damages marine and natural resources. Nonetheless, chapter 27 of USC Title 33 and subchapter H of CFR Title 40 have restricted the dumping of many hazardous items into the sea thanks to the MPRSA's prohibitions. The government agencies (EPA, NOAA, the US Coast Guard, and Military Leadership of Engineers) have tried to minimise harmful effects on human health, the aquatic ecosystems, and other legal uses of the water (fishing, navigation), as well as to reduce ocean dumping generally (Van Pottelsberghe de la Potterie & Mejer, 2010).

Australia

The Australian Government provided the Environment Protection Act 1981 to enforce the London Convention 1972 with 1996 Protocol (referred to as Act). This unique protection of the environment regulation was brought about by the disposal of garbage. The London Convention and also its Protocol were carefully followed by this Legislation. The Act was passed in 1981, went into effect in 1989, and had its most recent modification in 2019.

According to the Act, anyone or any group that wants to dump items at sea must apply for a permission and wait for the federal government's approval. The Act restricts the disposal of waste at ocean to ensure minimal environmental damage and forbids the dumping of waste that is judged too dangerous to the marine ecosystem in accordance with the regulations of the two treaties. In other instances, dumping was only permitted under specific conditions following agreement with the appropriate agencies (Carr, 2007).

Foreign ships, airplanes, and structures in Australian waters as well as Australian ships, planes, and platforms wherever on the ocean are covered by the Act. In general, a permission is necessary if garbage is transferred by a platform, ship, or aeroplane for disposal in an Australian marine region. The Dept. of the Environment, Cultural Heritage, Water, and the Arts (DEHWA) is responsible for enforcing the Act. With the exception of the Great Barrier Reef Marine Park, DEHWA is currently in charge of issuing licences and overseeing all operations linked to the disposal of garbage in all Australian waterways. The Great Barrier Reef Marine Park Act will be in charge of handling any garbage that is dumped inside the confines of the GBRMP.

All Australian seas are subject to the Act's provisions. However waterways that are located within a State's or the Northern Territory's borders are not covered by this Act. This is stated as follows: Section 9 of the Act permits Counties or the Northern Territory to enact legislation to regulate the disposal of waste at ocean within three nautical miles of their territorial waters, provided that the legislation is compliant with both Federal law and also the London Convention. The 1979 Offshore Legislative Agreement—a pact between both the federal government and state governments that granted states complete autonomous authority three nautical miles out from their shorelines—was the cause of this (Carr, 2007).

You can apply for a marine dumping permission at the GBRMPA or Department of the DEHWA. The kind of substance planned for disposal, the site of the disposal site, and any potential effects on the marine ecosystem should all be taken into account by DEHWA or the

GBRMPA before deciding whether to issue a permit. If the intended dumping area will have the least amount of environmental damage and the garbage includes little pollution, the dumping will follow the regulations, and the Federal Government Minister may issue a permit. However, this permit is not necessary in the case of being called force majeure , because of the dumping of waste to secure safety for life at sea. Permits may allow for multiple dumping but must always comply with the dumping time, dumping site, other environmental instructions and specify the amount of material to be dumped. Besides, detailed information on the permitting process for dredge spoils can be found in the 2009 National Ocean Disposal Guidelines. The 2009 Guidelines have the goal to provide transparency about the evaluation and approval process and to offer some direction for long-term strategy development. In accordance with this Act and the London Protocol, these Guidelines should be. If the terms of this Agreement are broken, severe consequences will be assessed (Carr, 2007).

In particular, sections 4A and 4B regulate in detail the overlapping waters between Australia and Papua New Guinea, Australia and Indonesia. Accordingly, all actions that allow to dumping of waste, or prohibit to dumping of waste into the overlapping waters of these countries, shall be carried out only with the consent of other State or the Australian government must fulfill its obligation of notification, consult with Papua New Guinea or Indonesia nations prior to making any decision to enforce the ship's dumping of waste into the marine environment (Aust, 2010).

The Commonwealth Protection Of the environment (Ocean Dumping) Act 1981 and the National Assessment Procedures for Dredging 2009 both incorporate the provisions of the 1972 London Convention and the 1996 Protocol, as can be seen from the assessment above. Australia has a broad legislative structure to regulate the dumping of waste at ocean with those legislation combined with the current Australian regulations, such as the Great Barrier Reef Marine Park Act 1975 (GBRMP Act) and the Environment Protection and Biodiversity Conservation Act 1999 (EPBC Act). Yet there continues to be a problem with Australian law (BRIEF, A. D., et al, 2013).

A significant Convention to safeguard the maritime environment under human impact is the London Convention of 1972. For the present and future well-being of humans, a healthy marine ecosystem is essential. As a result, nations like China, the US, and Australia joined and successfully put the London Convention and also it's Protocol into practise. The legislation of those nations plainly reflect this. These laws help to safeguard and preserve the maritime ecosystem that supports humankind. Unfortunately, neither the London Convention nor its Protocol include Vietnam as a member. Although Vietnamese legislation also contains restrictions on garbage disposal, the study above shows that there are still a number of issues that need to be resolved (BRIEF, A. D., et al, 2013).

Challenges in the Implementation of the Regulations

The implementation of regulations is a complex process, and the London Convention and its Protocol are no exception. Despite the significant strides made in preventing marine pollution, several challenges continue to hinder the effective implementation of these regulations.

Compliance with the regulations

One of the most significant challenges in implementing the regulations of the London Convention and its Protocol is ensuring that countries comply with the regulations. Compliance

involves meeting the requirements of the regulations, such as submitting reports, obtaining permits, and following guidelines for the dumping of waste. Non-compliance can result in significant harm to the marine environment and marine life, leading to health hazards for humans and animals. However, enforcing compliance can be challenging, especially for developing countries that may lack the necessary resources or political will to enforce the regulations.

Compliance with the regulations can manifest in several ways, including:

1. Reporting: Countries must submit regular reports on their implementation of the regulations of the London Convention and its Protocol. These reports should include information on the dumping of waste, measures taken to prevent pollution, and any accidents or incidents that occurred.
2. Obtaining permits: To dump waste at sea, countries must obtain permits that outline the type and quantity of waste that can be disposed of and the location of the dumpsite.
3. Following guidelines: The regulations of the London Convention and its Protocol provide guidelines on the dumping of waste at sea, which countries must follow to prevent marine pollution. These guidelines include measures such as using ships that are specially designed for dumping waste and avoiding dumping in areas with sensitive ecosystems.
4. Monitoring and enforcement: Countries must have monitoring and enforcement mechanisms in place to ensure compliance with the regulations. This includes conducting regular inspections of ships to ensure they meet the requirements and penalizing non-compliant ships.
5. Collaboration: Compliance also requires collaboration among countries to share information and coordinate efforts to prevent marine pollution. The regulations of the London Convention and its Protocol encourage international cooperation to achieve this goal (Pribyl, 2023).

Overall, compliance with the regulations of the London Convention and its Protocol is essential to prevent marine pollution and protect human health and the environment. Countries must take measures to ensure compliance, including reporting, obtaining permits, following guidelines, monitoring and enforcement, and collaboration. This will help achieve the goals of the regulations and ensure that the marine environment is protected for future generations.

Lack of capacity and resources

Implementing the regulations of the London Convention and its Protocol requires significant capacity and resources, including monitoring and enforcement infrastructure, scientific and technical expertise, and financial resources. However, many developing countries may lack the necessary resources to implement these regulations effectively. The lack of resources can result in weak enforcement of regulations, inadequate monitoring and reporting, and limited technical capacity to implement and comply with the regulations.

For example:

1. Inadequate infrastructure: Developing countries may lack the necessary infrastructure, such as waste treatment plants, to manage and treat the waste generated from ships.
2. Limited technical capacity: Many countries may lack the scientific and technical expertise needed to develop and implement regulations, monitor compliance, and assess the environmental impact of dumping.

3. Limited financial resources: Developing countries may lack the necessary financial resources to invest in infrastructure, training, and monitoring programs. This can result in weak enforcement of regulations, inadequate monitoring, and limited capacity to implement and comply with the regulations.
4. Inadequate human resources: The implementation of the London Convention and its Protocol requires trained personnel to manage and monitor the process. However, many countries may lack the human resources needed to implement these regulations effectively.
5. Limited access to technology: The development and implementation of regulations require access to technology, such as remote sensing and monitoring equipment, which may be costly and out of reach for many developing countries (Pribyl, 2023).

All of these factors can contribute to the lack of capacity and resources, which can hinder the effective implementation of the regulations of the London Convention and its Protocol. Addressing these challenges requires investments in infrastructure, training programs, capacity building, and technology transfer to enable developing countries to implement and comply with the regulations effectively.

Other challenges

Apart from compliance and lack of resources, there are other challenges that countries face in implementing the regulations of the London Convention and its Protocol. One significant challenge is the lack of political will, which can undermine the implementation of the regulations. Some countries may prioritize economic interests over environmental protection, leading to weak enforcement of regulations. Another challenge is the lack of awareness among stakeholders, including industries and the general public, about the importance of preventing marine pollution and the role of the London Convention and its Protocol in achieving this goal. Insufficient data collection and sharing, coordination and communication among stakeholders, and inadequate capacity building and training are other significant challenges in implementing these regulations.

Other challenges in the implementation of the regulations of the London Convention and its Protocol may include:

1. Lack of political will: Some countries may lack the political will to enforce the regulations due to competing priorities, conflicting interests, or corruption.
2. Complexity of the regulations: The regulations of the London Convention and its Protocol can be complex, making it difficult for countries to understand and implement them effectively.
3. Inadequate communication and information sharing: Effective implementation of the regulations requires collaboration and information sharing among countries, stakeholders, and the public. However, inadequate communication and information sharing can hinder the implementation process.
4. Emergencies and accidents: Accidents and emergencies, such as oil spills and shipwrecks, can create challenges in the implementation of the regulations, as they require immediate action to prevent and mitigate environmental damage.
5. Emerging threats: The emergence of new threats to the marine environment, such as microplastics and other emerging pollutants, can create challenges in the

implementation of the regulations, as they require updated regulations and monitoring mechanisms to address these new threats (Pribyl, 2023).

To overcome these obstacles, creative strategies and solutions are needed. To solve these issues and guarantee that the London Convention but also its Protocol are effectively implemented in order to prevent marine pollution and maintain the marine environment, nations, stakeholders, and the global community must collaborate. The London Convention and also its Protocol's implementation faces a number of difficulties, notably compliance, a lack of resources and capacity, a lack of political will, and inadequate stakeholder knowledge. Governments, businesses, civil society organisations, and other stakeholders must work together to address these issues in order for the restrictions to be effective in safeguarding both human health and the marine environment.

Conclusion

In conclusion, the regulations of the London Convention and its Protocol are essential for preventing marine pollution by the dumping of waste and other matter from ships. However, the implementation of these regulations faces significant challenges, including compliance issues, lack of capacity and resources, and other challenges such as political will, complexity, communication, emergencies, and emerging threats. Despite these challenges, progress has been made in implementing the regulations, and many countries have taken steps to comply with the guidelines. To ensure effective implementation of the regulations and address the challenges, future research could focus on several areas. Firstly, research could explore innovative approaches to compliance, such as the use of technology and partnerships between countries, stakeholders, and the private sector. Secondly, research could examine capacity-building initiatives to improve the ability of countries to implement the regulations effectively. Thirdly, research could investigate the role of international collaboration and information sharing in achieving compliance and preventing marine pollution.

Furthermore, future research could also explore emerging threats to the marine environment and the need for updated regulations and monitoring mechanisms to address these new challenges. Finally, research could evaluate the effectiveness of the regulations and their impact on preventing marine pollution and protecting the marine environment, providing insights into how the regulations can be improved and strengthened.

Moreover, effective implementation of the regulations of the London Convention and its Protocol is critical for preventing marine pollution and protecting the marine environment. Overcoming the challenges in the implementation of the regulations requires collaboration, innovation, and capacity-building initiatives. Future research could play a vital role in addressing these challenges and strengthening the regulations to ensure that the marine environment is protected for future generations.

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