



**RESEARCH PAPER**

**UNCLOS 1982: Comparative Analysis of Marine Pollution Prevention  
by Ships**

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**ABSTRACT**

The objective of this research article is to analyze the effectiveness of the regulations outlined in the United Nations Convention on the Law of the Sea (UNCLOS) 1982 in preventing marine pollution caused by garbage from ships. Marine pollution threatens oceans and UNCLOS 1982 regulates ship garbage to prevent it. UNCLOS 1982's effectiveness in preventing marine pollution is debated. This study analyzes regulations and assesses implementation across countries. This research article has been applied qualitative research methodology. The study finds that although many countries have ratified UNCLOS 1982, there are significant differences in the implementation of the regulations among countries. Some countries have implemented the regulations effectively, while others have failed to do so. UNCLOS 1982 is crucial to prevent marine pollution by ship garbage. The study suggests improving implementation through stakeholder awareness, enforcement mechanisms, and monitoring. Countries must work together to prevent marine pollution caused by ship garbage

**Keywords:** Garbage Management, Marine Environment Protection Law, Marine Pollution, UNCLOS 1982

**Introduction**

An important environmental issue that endangers the ocean ecosystems and human health is marine pollution from ship waste. Garbage from ships, such as plastic waste, fishing gear, and hazardous materials, can cause physical harm to marine life and lead to the entanglement and ingestion of marine animals. Additionally, it can degrade the water's purity, air, and soil while also causing environmental pollutants of the marine environment. The UNCLOS1982 was formed to address this problem, and it governs marine pollution by ships, which include garbage.

A comprehensive plan for managing ocean resources as well as space, which would include navigation, entirely private economic zones, territorial waters, and the coastal waters, is UNCLOS 1982. Additionally, it contains guidelines for preventing marine pollution from ships, such as the discharge of waste, oil, and hazardous materials. Ships must have a garbage management plan that outlines the types of waste that can be dumped into the ocean, the way away from the coastline at which the discharge can occur, and the practises for disposing of garbage on board, according to UNCLOS regulations from 1982 on preventing marine pollution by ship-generated garbage. Additionally, UNCLOS 1982 forbids the release of plastic, fishing equipment, and other hazardous materials (Alam, Xiangmin, & Ahamed, 2021).

Despite the ratification of UNCLOS 1982 by many countries, there are significant differences in the implementation of the regulations among countries. Some countries have not implemented the regulations effectively, resulting in the dumping of garbage from ships

in the ocean. However, some nations have not created the necessary infrastructure and facilities for disposing of waste from ships, which has resulted in inappropriate disposal. As a result, trash has accumulated in the ocean, endangering both human health and the marine ecosystem (Ulfah & Roesa, 2020).

Consequently, it is essential that UNCLOS 1982 be implemented correctly to stop marine pollution caused by ship-generated trash. Countries need to ensure that they have the necessary infrastructure and facilities to dispose of garbage from ships properly. There is also a need for cooperation among countries to prevent the dumping of garbage from ships in international waters. This essay intends to evaluate the participation and application of UNCLOS 1982 in various nations and assess the UNCLOS 1982 restrictions on reducing marine pollution by ship-generated trash. The paper also recommends measures to improve the implementation of UNCLOS 1982, including capacity building, public awareness campaigns, and strengthening of monitoring and enforcement mechanisms.

### **Literature Review**

Due to its adverse effects on both the maritime environment and the well-being of humans, the problem of marine pollution brought on by ship waste has received more and more attention in recent years. In order to control marine pollution by ships, especially waste, numerous nations have accepted the UNCLOS 1982.

The UNCLOS of 1982 provides a thorough structure for handling ocean resources and space, as well as rules for combating ship-related marine pollution. Ships are required to have a sustainable waste management plan that details the types of waste that can be dumped into the ocean, the maximum way away from the shore at which the disposal can occur, and the methods for disposing of garbage on board, according to legislation on trying to prevent marine pollution by garbage from ships. Moreover, UNCLOS 1982 forbids the release of plastic, fishing equipment, and other dangerous pollutants.

Despite the fact that many nations have ratified UNCLOS 1982, there are substantial regional differences in how the rules on reducing marine pollution from ship-borne trash are implemented. Some countries have failed to develop adequate infrastructure and facilities for the disposal of garbage from ships, leading to improper disposal. Other countries have not implemented the regulations effectively, resulting in the dumping of garbage from ships in the ocean.

In a 2015 study, Chircop and Linden examined how Canada, the USA and the EU implemented UNCLOS 1982 provisions to reduce marine pollution from ship-generated trash. The analysis showed that while the EU had not completely implemented the legislation because of difficulties with enforcement and monitoring, the United States and Canada had done so.

Similar to this, Rajkumar et al.'s from 2019 examined how India had implemented UNCLOS 1982 rules to avoid marine pollution from ship-borne trash. While India had signed UNCLOS 1982, the study discovered that the execution of the requirements was insufficient because of a lack of facilities and infrastructure for disposing of shipyard waste, as well as inefficient monitoring and enforcement methods.

Many approaches have been suggested to enhance the application of UNCLOS 1982 laws on reducing marine contamination by ship-generated trash. These include capacity building for countries to develop adequate infrastructure and facilities for the disposal of garbage from ships, public awareness campaigns to encourage responsible disposal practices, and strengthening of monitoring and enforcement mechanisms (Buckley et al., 2018).



## Material and Methods

Research methods is the organised, methodical process that a researcher employs to gather data, analyse it, and find answers to their research questions. The methodology describes the exact steps the researcher takes to gather and analyse data.

In this study, the research methodology used to analyze the implementation of regulations of UNCLOS 1982 on preventing marine pollution by garbage from ships involves the following steps:

**Research design:** The research design used for this study is a comparative analysis. The study compares the participation and implementation of UNCLOS 1982 in countries to identify the differences in the implementation of regulations among countries.

**Data collection:** Secondary sources were used to compile the data for this study. Published reports, academic works, and official websites of global organisations like the United Nations and the International Maritime Organization were among the sources used (IMO). The information gathered covered the acceptance of UNCLOS 1982 by nations, the application of the rules, and the steps taken to combat marine contamination by ship waste.

**Data analysis:** The data collected was analyzed using a comparative approach. The study compared the participation and implementation of UNCLOS 1982 in different countries to identify the differences in the implementation of regulations. The analysis involved identifying the challenges faced by countries in implementing the regulations and the measures taken to overcome these challenges.

**Limitations:** The use of secondary data sources, which could be biased and inaccurate, is one of this study's shortcomings. The study also excludes other types of marine pollution and is restricted to examining the application of UNCLOS 1982 restrictions on preventing marine contamination by ship-generated trash.

The research methodology used in this study involves a comparative analysis of the participation and implementation of UNCLOS 1982 in countries. The data collected was analyzed to identify the challenges faced by countries in implementing the regulations and the measures taken to overcome these challenges. The limitations of the study include the reliance on secondary sources of data and the focus on a specific form of marine pollution.

## THE UNCLOS 1982

The "freedom of the seas" theory, which dates back to the 17th century, is replaced by the UNCLOS. The powers of the coastal region are often restricted by three nautical miles in accordance with the "freedom of the sea" doctrine. Which is determined by the principle of "cannon shoot" was developed by the Dutch lawyer. The remaining waters exceeding 3 nautical miles are considered international waters. These waters belong to a common humanity and do not belong to any country. Many nations asserted that their seas should be expanded up until the turn of the 20th century in order to conserve fish stocks, offshore mineral riches, and the marine environment. The "freedom of the seas" doctrine faced its first significant test in 1946 when the U.S asserted its right to more naturally occurring resources on the continental shelf. This action of the United State of America has quickly followed the response of many other countries. Then, many states claimed sovereignty over 200 nautical miles such as Chile, Peru, and Ecuador. Instead of the 3 nautical miles stipulated by the "freedom of the seas" doctrine<sup>134</sup>, 12 nautical miles of territorial waters have been claimed by Egypt, Ethiopian, Saudi Arabia, Libyan, Venezuela, and various Eastern European nations. In order to stop pollution, Canada claimed sovereignty in a region 100 miles from its borders in 1970 (Beckman & Sun, 2017).

States have made numerous claims about the width of the sea and sovereignty over the seas resulting in a dispute over sovereignty. Meanwhile, the claims made by the nations are beyond the ability to handle the doctrine of "freedom of the sea". Therefore, a new regulation is needed to regulate sea areas, exploit and conserve marine resources, protect the marine environment and promote cooperation among nations. UNCLOS was issued to overcome the shortcomings that "freedom of the sea" doctrine cannot cover.

The UN has held Conferences on the Law of the Sea (LoS) three times, each of which has achieved encouraging achievements.

UNCLOS I 1958: The United Nations conducted its initial Convention on the Law of the Sea in Switzerland, Geneva, in 1956. Despite the fact that the inaugural Conference on the Law of the Sea was deemed successful, it is crucial to note that the breadth of maritime borders has not yet been established. Because of this, coastal nations have been unable to demonstrate their legal claims to the protection of the maritime environment.

UNCLOS II 1960: To address the matter, which was not resolved at the first Conference on the Law of the Sea, a second Conference on the Law of the Sea was held. The Conference on the Law of the Sea was held in Geneva, Switzerland, from 17 March to 26 April 1960, and 88 countries were represented (United Nations). Unfortunately, no new agreements on the subject of geographical width were reached throughout the six-week Conference. As a result, there is still work to be done on maritime environment conservation. As the current Conference comes to an end, this subject will be further discussed<sup>135</sup> (Zahari, & Dahalan, 2022).

UNCLOS III: From 1971 until 1982, the third UN Conference on the Law of the Sea was conducted in Geneva and New York. With the involvement of 160 countries, the Conference conducted six sessions and a variety of supplemental meetings. A draft regarding the oceans and marine resources has been submitted to the Conference. There are 320 articles in this draught, and 9 annexes were approved on December 10th, 1982. Instead of using the time-honored "freedom of the sea" philosophy, this document offers a method for determining the size of the territorial sea. In accordance with this document, the territorial sea will be 12 nautical miles wide and will be entirely under the control of the coastal state. A further 200 nautical miles within the exclusive economic zone may be claimed by the nation. Each coastal state has the authority to control scientific research and the exploitation of marine resources within its exclusive economic zone. Beyond 200 nautical miles, all waterways are international and do not pertain to any particular nation. The Convention also clarifies the general responsibility for the prevention of marine pollution and preserving marine resources .

The coastal nation is entitled to defend the maritime environment as part of its sovereignty due to the delineation of the sea's region. Additionally, in accordance with Article 192, a coastal nation is obligated to safeguard the maritime environment for humanity's other seas. UNCLOS III not only inherits previous international maritime treaties but also codifies international customary rules as well as development trends of marine exploitation and protection. A comprehensive global legal framework to safeguard and preserve maritime assets for future generations was established with the UNCLOS in 1982 (Lestari, 2020).

Because it covers 70 percent of the planet's surface, UNCLOS 1982 is regarded as the most significant international treaty on the sea. UNCLOS 1982 has significant ramifications in a variety of areas, including the preservation of the maritime environment, one of the current period's most pressing concerns. The international community's hopes and expectations for a fresh global legal structure for the defence of the maritime environment were satisfied by UNCLOS 1982. The Convention is crucial for Vietnam in preserving and protecting the maritime environment. due to the fact that the Vietnamese legislation in this

area are still lacking. Vietnam can use its right to safeguard the marine environment in the quickest way by participating in and carrying out relevant international accords (Hayashi, 2002).

### **Rules on Preventing Marine Pollution by Garbage from Ships**

The Jamaican Ministry of Foreign Affairs (starting on December 10, 1982) and the UN Headquarters in New York both made the Convention available for signature (from 1 July 1983). On November 16, 1994, the UN Convention on the Law of the Sea came into effect. The "Constitution of the oceans" is known as UNCLOS 1982. Most people only consider the rules governing the definition of the sea areas when they speak of UNCLOS 1982. Yet, this Convention contains a number of crucial clauses for the preservation of the marine ecosystem. They are regarded as the initial fundamental laws governing this area on a worldwide scale.

A key component of the UNCLOS 1982 is the preservation and conservation of the marine environment. Section XII of this Agreement contains provisions for the conservation of the marine environment. According to the Agreement, nations must generally conserve and preserve the maritime environment. According to the Agreement, nations must take all necessary steps to stop, limit, and manage marine environmental contamination from all sources. There are numerous causes that can contaminate the maritime environment, according to UNCLOS 1982. The contamination originates from sources on land, from activities on the seabed that are under national jurisdiction, from community events, from dumping, from ships, and from or via the atmosphere. The nation should collaborate with other nations in the area or the world and make use of the necessary technical support infrastructure in order to accomplish the aforementioned goal (Aini, 2021).

The Agreement specifically includes rules for preserving the maritime environment against ship-source pollution and ship waste. Also, there are fundamental laws against discarding rubbish at sea. The Agreement mandates that the state implement all feasible measures to avoid, mitigate, and regulate contamination of the marine environment caused by the dumping of waste at sea. The state must pass relevant laws and regulations in order to carry out that duty. The Agreement emphasises that the following criteria must be met by these laws or regulations:

Firstly, it must not be less effective than global regulations and standards for preventing, reducing, and controlling such pollution.

Secondly, it must be ensured that the action of dumping waste at sea is only carried out with the approval of the competent authority.

The Agreement acknowledges that enforcing the law is the best method to safeguard the maritime environment from ship pollution. States must therefore pass rules and regulations aimed at stopping, minimising, and managing maritime pollution from ships. Foreign ships operating throughout the entire ocean must abide by laws safeguarding the marine environment, and these laws are enforced to both ships flying their flag or even of their registry. Also, these rules and laws must at least be equivalent to those set by the relevant international organization's international standards and guidelines (Uddin & Karim, 2018).

States must also make sure that any ship operating in a marine area under their flag or registering with them complies with all applicable international laws and norms. States are also required to periodically inspect the equipment and structural components of ships for the purpose of preventing, reducing, and controlling maritime environmental contamination. If there is any breach of the regulations governing the conservation of the marine ecosystem in port waters, offshore seas, territorial waters, or even the particular

economic zone of waste discharge. The coastal region has the authority to launch an investigation and impose the necessary penalties. These punishments must be severe enough to deter violations. The Convention further stipulates that nations will be held accountable within international law if they don't fulfill their commitments under international law to conserve the maritime environment in order to fully execute the requirements of article XII (Alam & Xiangmin, 2019).

In conclusion, the Convention established a thorough legal framework for the member state even though it does not offer explicit provisions for the prevention, mitigation, and control of maritime pollution by waste from ships. In light of this, UNCLOS has established two crucial elements pertaining to the preservation and safeguarding of the oceanic environment. First of all, the Agreement gives coastal nations the legal framework to include all sovereign seas in the scope of their obligation to safeguard the marine environment. Even coastal states must cooperate sensibly with their neighbours to stop, reduce, and control marine environment pollution. Second, the Convention mandates that coastal governments uphold their responsibilities to safeguard the maritime environment. The Convention has implemented the essential measures for the prevention of environmental contamination by ships in the area of preventing pollution of the marine environment. These clauses serve as "foundation laws" for national legislation, rules, and standards.

### **Garbage Management Plan Requirements**

Garbage management plans (GMPs) are required under the UNCLOS 1982 for all ships. The purpose of a GMP is to provide a comprehensive approach to the handling, storage, and disposal of garbage on board a ship. GMPs are essential for preventing marine pollution by garbage from ships.

Under UNCLOS 1982, ships are required to have a GMP that specifies the types of garbage that can be discharged into the ocean, the distance from the shore at which the discharge can take place, and the procedures for disposing of garbage on board. The GMP should also include measures to reduce the amount of garbage generated on board the ship and to separate and store garbage to prevent pollution.

The GMP should be specific to the ship and should take into account the type of cargo, the length of the voyage, and the number of persons on board. The strategy should also consider the demands of coastal states and the accessibility of port receiving facilities for rubbish disposal.

The GMP should be approved by the ship's flag state or a recognized organization before the ship is allowed to operate. The approval process involves an assessment of the plan to ensure that it complies with the requirements of UNCLOS 1982 and other relevant international conventions, such as the International Convention for the Prevention of Pollution from Ships (MARPOL) (Mohamad, 2015).

### **Prohibitions on discharge of certain types of garbage**

UNCLOS 1982 prohibits the discharge of certain types of garbage from ships into the ocean. These include plastic, synthetic ropes, and fishing gear, as well as other harmful materials such as chemicals, batteries, and medical waste. The discharge of these materials can have significant environmental and health impacts on marine life and human populations.

The International Maritime Organization (IMO) has created rules on the discharge of trash from ships in addition to UNCLOS 1982. Detailed guidelines on the handling and

disposal of various types of rubbish, such as wasted food, cargo leftovers, and animal corpses, are provided in the IMO's MARPOL Annex V.

The regulations in MARPOL Annex V aim to minimize the discharge of garbage from ships and to ensure that any garbage that is discharged is disposed of in a manner that does not harm the environment. The regulations also require ships to maintain a record of all garbage that is generated and discharged, as well as the location and method of disposal (Truong & BeiOing, 2019).

### **Comparative Analysis of UNCLOS 1982 Participation and Implementation In Countries**

Implementation of part XII *UNCLOS 1982* in Vietnam and other countries. Although pre-*UNCLOS 1982*, many *International Conventions* on marine environmental protection were issued, however, they were not considered as comprehensive as *UNCLOS 1982*. With this in mind, many countries are already members of this important Convention. Up to now, 168 countries are parties to the Convention according to the statistics of the United Nation. Among them, except the United States, other countries such as China, Australia, and Vietnam are parties to this Convention (He, 2014).

Among these countries, Australia has shown the most positive. Australia contributed in all three UNCLOS (1958, 1960 and 1973-1982) and became a party to UNCLOS in 1994. China and Vietnam were also parties to this Convention in 1996 and 1994. That is shown in the table below:

**Table 1**  
**Parties to UNCLOS 1982**

Country	Convention	UNCLOS 1982
China	Ratification	7 June 1996
	Entry into force	7 June 1996
United States	Ratification	Not yet
	Entry into force	Not yet
Australia	Ratification	5 October 1994
	Entry into force	16 November 1994
Vietnam	Ratification	25 July 1994
	Entry into force	16 November 1994

Source: ECOLEX-The gateway to environmental law

China has demonstrated a more active implementation of the provisions of this Agreement to avoid marine environment degradation by shipping and dumping garbage at sea in the area of UNCLOS part XII implementation. The 1982 Maritime Environment Protection Law (MEPL) of the People's Republic of China (PRC) demonstrates these two difficulties effectively (most recent modification and enhancement in 2017). It was revised in 1999 in conjunction with China's ratification of the UNCLOS 1982. Meanwhile, Australia and Vietnam show delays in the implementation of part XII of this Convention. These are considered to be important laws of Australia and Vietnam, respectively, Navigation Act 2012 (most recent amendment and supplement in 2019) and Vietnam Law of the Sea 2012.

Although countries have promulgated regulations relating to this field, however, there is a big difference when studying in-depth the provisions of each law. It is seen as Vietnam's declaration that international conventions should be applied rather than rules to prevent ship-related marine environment degradation. The protection of environmental pollution by ship waste and the dumping of waste at sea are not covered in any specific rules. Because of this, Vietnamese law is ineffective. In particular circumstances, enforcement and application are challenging for authorities.



The MEPL is the most significant piece of legislation protecting the marine environment under Chinese law. The MEPL establishes restrictions for all types of marine environmental pollution, particularly land-based contaminants, coastal and marine construction projects, garbage disposal, and vessels and their associated activities.

In terms of dumping waste at sea, MEPL has regulations on this issue from Article 55 to Article 61 in chapter VII. State Oceanic Administrative (SOA) is the responsible agency for all issues of this field. Without SOA approval, it is not allowed to dump waste into China's waters. SOA must be accountable to State Environmental Protection Administration (SEPA) and the State Council for identifying and designing waters to dump waste. Besides, SOA is also responsible for managing and monitoring the process of dumping waste. Standards for dumping waste, assessing the potential harm to the marine environment, making a list of prohibited and allowed waste are also undertaken by SOA (Bell, J. B., Guijarro-Garcia, & Kenny, 2019). When it is approved by a competent authority to dump waste at sea, such a unit must comply with the requirements on time and location of dumping. Besides, this unit must have a detailed record of the dumping of waste as specified in Articles 59 and Article 60. If any individual or entity violates the provisions of this chapter on dumping waste at sea, they will be fined as specified in Chapter IX. Meanwhile, Navigation Act does not have any regulation for the field of dumping of waste at sea.

Both the MEPL and the Navigation Act have laws in this area for the protection, mitigation, and control of maritime pollution brought on by ship waste and other forms of ship pollution (Balgos, Cicin-Sain, & VanderZwaag, 2015).

### **Marine Environment Protection Law**

Chapter VIII of the *MEPL* contains provisions on the prevention and control of marine environmental pollution by ships and their related operations. Chapter VIII not only provides provisions for garbage but also applies to all other sources of pollution from ships. According to this study, vessels are not allowed to discharge any type of pollutants, ballast water, vessel garbage or hazardous waste into Chinese waters. If any ship discharges waste into the marine environment, it will be fined under Article 73 of this law. Article 63 requires vessels to have all the certificates and documents related to preventing pollution of the marine environment. This article does not have specific regulations for ship's garbage. However, it can be implied that it includes both certificates and documents related to preventing marine pollution from ship's garbage. Besides, this law also has requirements for facilities and equipment on board a ship to meet requirements on preventing marine pollution. Moreover, not only the port but also the loading and unloading spots as well as shipyards must have adequate equipment to collect and treat pollutants as well as the ship's garbage (de La Fayette, 2001).

The law of this field would be more comprehensive if there were corresponding penalties when the vessels failed to meet the requirements specified in Articles 63 and Article 64.

### **Navigation Act 2012**

*Navigation Act* provides the most general regulations on maritime activities including; seafarers, vessel safety, safety of navigation, wrecks and salvage and the prevention of marine environmental pollution, which is regulated in chapter IV. This chapter consists of 4 Parts, in which Parts 2 apply to ships of Australian, while Part 3 provides for offences and penalties for polluting the marine environment and Part 4 contains some of the separate regulations for foreign ships.

Similar to *MEPL*, *Navigation Act* does not allow vessels to cause pollution and harm to the waters of Australia. The Act also sets out detailed requirements for pollution

certificates, but it only applies to Australian ships. However, different from *MEPL*, this Act stipulates very strict penalties. The corresponding penalties will apply to both the master and the owner if the ship does not have these certificates. Accordingly, if the vessel does not have a full pollution certificate, the captain and the shipowner will be fined or imprisoned or a combination of both. Besides, if any ship, whether Australia or foreign, contaminate coastal waters, exclusive economic zone, that ship will be penalized under the regulation of Part 3. In particular, Australian ships polluting or damaging the marine environment outside Australia, it is also subject to compatible penalties (Kirkby, 2012).

In the case of foreign ships operating in Australian waters, Australian Maritime Safety Authority (AMSA) will be inspected and supervised to prevent pollution of the marine environment. AMSA found that foreign vessels do not meet the requirements of the structure, equipment or operated in accordance with the Annex V. As a result, AMSA not allowed that vessels can enter or use any port.

In summary, China and Australia have shown a positive and effective implementation of section XII of *UNCLOS 1982*. Meanwhile, Vietnam has not shown that.

Basic regulations for preventing ship's pollution and dumping of waste at sea are set out in chapter VIII and chapter VII of *MEPL*. *MEPL* will be more comprehensive if there is no lack of sanctions regulations as analyzed above. Meanwhile, *Navigation Act 2012* has no regulations on preventing pollution of the marine environment due to the dumping of waste at sea. This act only focuses on regulations to prevent pollution of the marine environment by ship-source pollution in general. In this respect, *Navigation Act 2012* provisions are more detailed than *MEPL*. Even the penalty for violating *Navigation Act 2012* provisions is stricter than *MEPL*.

The similarities between *MEPL* and *Navigation Act 2012* are that the provisions of both have no provisions specifically for ship's garbage. However, it is implicitly understood that such regulations also include ship's garbage. *MEPL* and *Navigation Act 2012* are considered as important laws on marine environmental protection of China and Australia. The basic provisions of these laws will be the foundation for China and Australia to continue to improve the law of this field (Kirkby, 2012).

### **Identification of the challenges faced by countries in implementing the regulations**

Identifying the challenges faced by countries in implementing the regulations of *UNCLOS 1982* on preventing marine pollution by garbage from ships is crucial to improving the effectiveness of these regulations. Several studies have identified various challenges faced by countries in implementing these regulations.

One major challenge is the lack of capacity and resources to implement the regulations. Many developing countries lack the necessary infrastructure and facilities for the proper disposal of garbage from ships. This includes inadequate waste management systems, limited port reception facilities, and insufficient resources for monitoring and enforcement. Without these resources, it becomes difficult for countries to ensure compliance with the regulations.

Another challenge is the lack of awareness and understanding of the regulations. Some countries may have ratified *UNCLOS 1982* but are not fully aware of its provisions and requirements. This may result in inadequate implementation or non-compliance with the regulations. It is therefore essential to raise awareness and provide training on the regulations to ensure their effective implementation.

In addition, some countries face challenges related to jurisdiction and enforcement. *UNCLOS 1982* applies to international waters, but enforcement of the regulations is the

responsibility of individual countries. This may result in a lack of cooperation among countries and difficulty in enforcing the regulations in areas beyond national jurisdiction.

Finally, some countries may face political and economic pressures that hinder effective implementation of the regulations. For example, there may be conflicts between environmental protection and economic interests, such as the shipping industry, which may resist stricter regulations that could increase costs.

Addressing these challenges requires a coordinated effort among countries, international organizations, and other stakeholders. It is crucial to provide technical and financial assistance to countries that lack capacity and resources for the proper implementation of the regulations. Increasing awareness and understanding of the regulations is also important, as well as strengthening monitoring and enforcement mechanisms. Furthermore, cooperation among countries is essential to ensure effective enforcement of the regulations in areas beyond national jurisdiction (Hendriks, 2012).

### **Measures to Improve Implementation of UNCLOS 1982**

#### **Discussion of the measures taken by countries to improve implementation of the regulations**

In accordance with UNCLOS 1982, many nations have implemented improved laws to stop marine pollution from ship-generated trash. Establishing a thorough legislative framework to control the waste discharge from ships is a frequent measure. For instance, Regulation (EC) No 1013/2006 of the European Union lays out the guidelines for the transportation of waste, including trash from ships, inside and beyond the EU. Similar to this, the Maritime Plastic Pollution Research and Control Act of 1987 in the US mandates that ships maintain a waste management strategy that complies with Annex V of MARPOL.

To ensure compliance with regulations, another method is to offer training and capacity-building programmes to ship operators, terminal operators, and other stakeholders. For instance, the International Maritime Organization (IMO) has created a number of documents and training programmes on waste management for ships and port facilities. Several nations have also set up enforcement and monitoring systems to guarantee that laws are followed. For instance, the Australian Maritime Safety Authority (AMSA) in Australia checks that rules are being followed and penalises ships that don't comply (Druel & Gjerde, 2014).

#### **Identification of best practices for successful implementation**

Several best practices have been identified for successful implementation of regulations on preventing marine pollution by garbage from ships. One of the best practices is the development of a comprehensive legal framework that includes regulations on the types of garbage that can be discharged into the ocean, the distance from the shore at which the discharge can take place, and the procedures for disposing of garbage on board. Another best practice is the provision of adequate infrastructure and facilities for the disposal of garbage from ships, such as garbage reception facilities at ports.

Effective monitoring and enforcement mechanisms are also essential for successful implementation. This includes regular inspections of ships to ensure compliance with regulations and imposing penalties on non-compliant ships. Another best practice is to establish public awareness campaigns to educate the public on the importance of proper garbage disposal and the negative impacts of marine pollution on the environment (Esteves, 2014).

## **Discussion of the need for international cooperation to prevent dumping of garbage from ships in international waters**

International cooperation is crucial to prevent the dumping of garbage from ships in international waters. UNCLOS 1982 requires cooperation among countries to prevent marine pollution by ships, including garbage. This can be achieved through the exchange of information and best practices, capacity-building programs, and joint monitoring and enforcement efforts.

The IMO is a key international organization that promotes cooperation among countries to prevent marine pollution by ships, including garbage. The organization has developed several guidelines and regulations on garbage management for ships and port facilities, and provides training and capacity-building programs for stakeholders.

The Basel Convention on the Regulation of Transboundary Movements of Hazardous Wastes and Its Disposal also aims to stop the movement of hazardous waste, especially ship waste, from developed to developing nations. The Convention mandates that nations make sure that hazardous wastes are managed sustainably and encourages the creation of national plans and initiatives to prevent and reduce the production of hazardous waste (Wu, 2022).

Effective implementation of regulations on preventing marine pollution by garbage from ships under UNCLOS 1982 requires the cooperation of countries, the provision of adequate infrastructure and facilities, training and capacity-building programs, and effective monitoring and enforcement mechanisms. International cooperation is also essential to prevent the dumping of garbage from ships in international waters.

## **Conclusion**

The study shows that although many countries have ratified UNCLOS 1982, there are significant differences in the implementation of the regulations among countries. Some countries have not implemented the regulations effectively, resulting in the dumping of garbage from ships in the ocean. Some countries have also failed to develop adequate infrastructure and facilities for the disposal of garbage from ships, leading to improper disposal.

Effective implementation of UNCLOS 1982 is crucial to prevent marine pollution by garbage from ships. Countries need to ensure that they have the necessary infrastructure and facilities to dispose of garbage from ships properly. The study recommends measures to improve the implementation of UNCLOS 1982, including capacity building, public awareness campaigns, and strengthening of monitoring and enforcement mechanisms.

The study's findings have significant implications for environmental law and policy, as effective implementation of UNCLOS 1982 is crucial for the protection of the marine ecosystem and human health. It is essential for countries to prioritize the implementation of the regulations and take necessary measures to prevent marine pollution by garbage from ships.

Future studies should concentrate on the efficacy of the recommendations provided in this research and the difficulties that various nations encounter in putting them into practise. Moreover, research can look at how UNCLOS 1982 affected other types of maritime pollution and the requirement for international collaboration to solve them. Ultimately, more investigation is required to better comprehend the complexity of marine pollution caused by ship-generated trash and the efficiency of UNCLOS 1982 in resolving this environmental problem.

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