



THE LAW OF THE SEA: EMERGING ENVIRONMENTAL ISSUES AND CHALLENGES IN THE 21ST CENTURY

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ABSTRACT

In a civilised world, there exist laws to regulate resources. Every country enforces its laws made by it within its jurisdiction. However, some resources are outside the jurisdiction of all the countries. Here, the role of international collaboration and co-operation comes into view. The United Nations is an example of an international organisation in our world that helps in global co-operation. Oceans are one of those resources that are governed by an international convention. The United Nations Convention on the Law of the Sea (UNCLOS) is the convention that governs the seas. It is the formation of the 20th century. In this article, we shall discuss how efficient it is to solve the contemporary issues.

Keywords: United Nations Convention on the Law of the Sea, BBNJ Agreement, Ocean Warming, Overfishing, Deep Sea Mining, Plastic Dumping.

INTRODUCTION

The Law of the Sea governs the sea and the rights and responsibilities of nations on the world's oceans. The law of the seas is a public international law and different from maritime law, which is a private international law and deals with private maritime disputes. The law of the seas deals with the rights and liabilities related to business, environment, maritime resources, and boundaries. It defines how much area is under the nation's Exclusive Economic Zone and then where the High Sea starts. High Sea belongs to the whole of mankind. In 2023, a progressive step was taken under UNCLOS. It was seen that High Seas was no one's responsibility; its exploitation was happening at a high rate. For the protection of the High Seas, the Biodiversity Beyond National Jurisdiction Agreement, which is also called the High Seas treaty, was signed.

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WHAT IS THE UNITED NATIONS CONVENTION ON THE LAW OF THE SEA?

The United Nations Convention on the Law of the Sea was developed after decades of development. It was signed on 10th December 1982 at Montego Bay, Jamaica, and became effective from 16th November 1994. The reason behind that is that this convention needed to be signed by at least 60 nations to come into effect. It came into effect after 1 year of signing by the 60th nation. India has also signed and ratified this Convention. UNCLOS is also called the Constitution for the Oceans.¹ It is justifiable as it extensively covers every possible facet connected with Oceans. It consists of 320 Articles divided into 17 parts and 9 annexes. The preamble of this convention represents the background of the development of the convention and the commitment of the state parties towards the protection and cooperative regulations of the seas. Before UNCLOS, two UN Conferences on the Law of the Sea had taken place at Geneva in 1958 and 1960. The Third United Nations Conference on the Law of the Sea was convened in 1973 at New York and was opened for signature in 1982. This conference led to the formation of UNCLOS. It was also declared in resolution 2749 (XXV) of 17 December 1970, in which the General Assembly of the United Nations said that the area of the seabed and the ocean floor which is outside the national jurisdiction is open and common to all mankind and must be utilised for the development of all mankind.² The International Seabed Authority, the Assembly, and the Council are formations of UNCLOS.³ The Authority (International Seabed Authority) has the power to govern the area, i.e., the seabed and subsoil thereof⁴, beyond the limits of national jurisdiction and other incidental powers as according in UNCLOS. The assembly consists of all the members of the Authority, and the major work of the Assembly, along with others, is to form general policies in conformity with UNCLOS. The Council is the executive organ of the Authority, consisting of 36 members of the Assembly. It has several powers, some of them are: it would supervise and coordinate the implementation of the provisions of Part XI of UNCLOS and also report non-compliance to the Assembly, it would institute proceedings on behalf of the Authority before Seabed Disputes Chamber in case of non-compliance and it has a significant power of disapproving areas for exploitation by contractors or enterprises if there is substantial evidence that there is risk of serious harm to the marine environment. For the settlement of disputes and advisory opinions Seabed Disputes

¹ 'Oceans and the Law of the Sea' (United Nations) <<https://www.un.org/en/global-issues/oceans-and-the-law-of-the-sea>> accessed 19 April 2025

² United Nations Convention on the Law of the Sea 1982

³ Ibid, Part XI

⁴ Ibid

Chamber of the International Tribunal for the Law of the Sea has been formed. UNCLOS has also formed the International Tribunal for the Law of the Sea (ITLOS) and the Commission on the Limits of the Continental Shelf (CLCS). ITLOS has jurisdiction over disputes relating to the interpretation and application of the convention and all matters provided in an agreement that confers jurisdiction to the tribunal. CLCS is the commission to which the countries submit reports showing the continental shelf area of their country. If the continental shelf is large and the commission approves the report, then the exclusive economic zone is extended and becomes 350 nm.

REGULATORY FRAMEWORK ACROSS DIFFERENT ZONES

UNCLOS defines several zones and the high seas. Where the exclusive economic zone of a country ends, the high sea starts. Territorial sea is the sea that is 12 nm from the baseline (determined by the average of the low tides in the preceding years). The Contiguous Zone is 12 nm from the territorial sea. The Exclusive Economic Zone extends from the end of the territorial sea to 200 nautical miles from the baseline. The Extended Continental Shelf extends from the end of the EEZ for at most 150 miles. The territorial sea is under the jurisdiction of a country, and the country has full rights over the sea floor, water, and fishing here. In territorial waters, only the right of innocent passage is there to foreign vessels. In the Contiguous Zone, the coastal state has the power to prevent infringement of its customs, taxation, immigration, and pollution-related laws and regulations. In the Exclusive Economic Zone, foreign ships are allowed to do trade and to lay cables as long as they are not harming the sea state, and the coastal state has the right to explore, use, conserve, manage, and explore the seabed and subsoil.

THE THIRD IMPLEMENTING AGREEMENT OF UNCLOS: BBNJ AGREEMENT

The convention, which was formed in the late 20th century, was made in such a way that it could evolve with time. The 21st century has seen huge development in technology and research and development. With the development of technology, human beings have new capabilities to use the resources, including those in the high seas. This ability to use resources can lead to exploitation due to the desire for more profit and greed by countries and corporations. To prevent overexploitation of the resources of the seas, a regulatory agreement was needed to deal with the contemporary problems. The Agreement, called the United Nations Convention and the Sustainable Use of Marine Biological Diversity of Areas beyond National Jurisdiction (BBNJ Agreement), does this work. This agreement is also called the High Seas Treaty, as it

deals with the High Seas. This agreement is the third implementing agreement to the UNCLOS.⁵ It was adopted on 19 June 2023 by the ‘Intergovernmental Conference on Marine Biodiversity of Areas Beyond National Jurisdiction’.⁶ The BBNJ Agreement is young. It is open for all states and regional economic integration organisations to signature from 20 September 2023 to 20 September 2025.⁷ There are four main objectives of the BBNJ Agreement, which are as follows: marine genetic resources, including the fair and equitable sharing of benefits; measures such as area-based management tools, including marine protected areas; environmental impact assessment; and capacity-building and the transfer of marine technology.⁸ This agreement is significant as it ensures fair and equitable sharing of benefits from marine genetic resources, which works in the benefit of the developing, landlocked, and other disadvantaged countries. It also formulates a framework to create marine protected areas through the Conference of the Parties to protect vulnerable marine ecosystems. This agreement makes it compulsory to conduct Environmental Impact Assessments for activities beyond national jurisdiction and those activities conducted within national jurisdiction that affect the area beyond national jurisdiction to prevent overexploitation of the marine environment. This agreement also encourages sharing the technology with developing countries to catalyse the process of protecting of marine environment. The BBNJ Agreement has taken a significant step towards conserving marine resources. Agreements like these are important as oceans are prone to degradation due to an increase in sea water temperature, plastic waste dumping, and overexploitation.

INCREASE IN SEA WATER TEMPERATURE

An increase in Sea Water Temperature is one of the issues that is standing in the way of humanity. The increase in sea water temperature can also be called ‘Ocean Warming’. Most of the sunlight that enters the Earth’s atmosphere is not reflected. It gets absorbed by the sea, increasing its temperature. The trend of increasing rate of warming of sea temperature that we witness is a result of human activities such as the emission of greenhouse gases and the burning of fossil fuels. The heat produced by these activities gets absorbed by the ocean and leads to an increase in the sea’s temperature. It has been observed that about ninety percent of global

⁵ ‘Agreement on Marine Biodiversity of Areas beyond National Jurisdiction’ (United Nations) <<https://www.un.org/bbnjagreement/en>> accessed 19 April 2025

⁶ Ibid

⁷ Ibid

⁸ Ibid

warming is happening in the ocean.⁹ Due to increasing ocean temperature, ice sheets are melting, which further leads to many problems like an increase in sea level, reduction of freshwater resources, destruction of the ecosystem in the polar region, and changes in ocean circulation. Ocean warming also causes coral bleaching, intensified cyclones, and changes in ocean health and biochemistry.¹⁰ The scientists have warned that the surface of the ocean is warming four times faster than it was 40 years ago¹¹. The rate of increase in temperature of the sea surface was 0.06 degrees Celsius in the 1980s, and now it has increased to 0.27 degrees Celsius.¹²

PLASTIC WASTE DUMPING IN OCEANS

Plastic is a cause of pollution on both land and oceans. Plastics take millions of years to decompose, and even after that, they convert into microplastics, which are harmful to living organisms as they can enter the bodies of organisms and enter into food chain. Today, plastic is dumped in the seas, and the fisheries, that people ultimately consume, get the microplastic into their bodies. This microplastic can cause several health problems, from enzymatic to hormonal. Plastic enters the oceans through several ways, like rivers that flow into them, bringing plastic with them, and the plastic that is dumped by tourists on the beach gets carried into the ocean through sea waves. Improper waste management can lead to plastic into the ocean. Once it enters the ocean, it becomes very difficult to get it out, especially when it reaches deep seas. UNCLOS puts an obligation on the states to take steps towards the conservation of marine life¹³. There exists a law to prevent plastic waste dumping into oceans by ships including a convention called The Prevention of Marine Pollution by Dumping of Waste and Other Matter (London Convention and its Protocol) and The International Convention for the Prevention of Pollution from Ships MARPOL Annex V. Evidently, these laws did not prove to be sufficient to prevent the dumping of plastics in the ocean. The major problem can be witnessed in the implementation of these international laws. Plastic pollution has been a major subject of discussion in the United Nations Environment Assembly. In 2022, during UNEA-5.2, 175 countries adopted the resolution 'End plastic pollution: towards an international

⁹ 'Ocean Warming' (NASA, December 2024) <<https://climate.nasa.gov/vital-signs/ocean-warming/?intent=121>> accessed 19 April 2025

¹⁰ Ibid

¹¹ James Ashworth, 'Ocean temperature rise accelerating as greenhouse gas levels keep rising' (Natural History Museum, 28 January 2025) <<https://www.nhm.ac.uk/discover/news/2025/january/ocean-temperature-rise-accelerating-greenhouse-gas-levels-rising.html>> accessed 19 April 2025

¹² Ibid

¹³ United Nations Convention on the Law of the Sea 1982, s 2 part VII

legally binding instrument'. This historic resolution has started the formation of a legally binding instrument to end plastic pollution by the Intergovernmental Negotiating Committee (INC). INC had aimed to develop this instrument between 2022 to 2024. Till now, four sessions of INC have taken place, and the second part of the fifth session is scheduled to take place from 5 to 14 August 2025 in Geneva, Switzerland.¹⁴ It gives hope for ending plastic pollution as it would include provisions related to preventing plastic pollution in the marine ecosystem.

OVEREXPLOITATION OF MARINE RESOURCES

Marine resources include marine life and resources at the seabed. Overexploitation of marine resources refers to such disturbance as caused by extraction to such an extent that it leads to the destruction of the ecological system of the ocean. We will discuss two aspects of the overexploitation of marine resources, namely overfishing and excessive deep-seabed mining.

Overfishing

Overfishing is a situation where fishing is done to such an extent that the marine animals do not get time to reproduce at that rate. Overfishing today is a major problem that threatens marine biodiversity. If it were not stopped, then it would eventually affect the fisheries industry, too. Fishing has been carried out as an occupation for hundreds of years, but since the 19th century, we have witnessed cases of overfishing, and hence the danger of the extinction of certain species.¹⁵ The difference today is that these cases are at a global level, in contrast to earlier times (19th century), when these cases were regional. Due to the development of technology and the extension of subsidies by national governments, overfishing is happening to such an extent that signs of destruction of marine biodiversity are visible. Since the population of fish decreased in the upper surface of the sea, the commercial vessels started fishing at a deeper level, which is called 'fishing down'. This activity of fishing is harmful in many ways. As the fish-catching tools are sent to the deeper levels of the sea, they harm the coral reefs present there and disrupt the ecology. Due to overfishing, the population of fishes go down, as this, the whole balance of the marine ecology gets disrupted, reason being, fishes act as the predators of the algae on the coral reef. This keeps reefs clean. In the absence of that

¹⁴ 'Intergovernmental Negotiating Committee on Plastic Pollution' (UN Environment Programme) <<https://www.unep.org/inc-plastic-pollution>> accessed 19 April 2025

¹⁵ Amy McKeever and National Geographic Staff, 'How overfishing threatens the world's oceans—and why it could end in catastrophe' (National Geographic, 7 February 2022) <<https://www.nationalgeographic.com/environment/article/critical-issues-overfishing?loggedin=true&rnd=1745092326895>> accessed 19 April 2025

whole ecological setup gets negatively affected. Also, due to a drastic decrease in the population of fish, a fear of extinction looms. It has been said by scientists that if overfishing is not stopped, then all the fisheries will collapse by 2048.¹⁶ Overfishing also harms other marine animals, which suffer because of being bycatch. It includes turtles, sharks, dolphins, and sea birds. In 2021, World Trade Organisation Director urged the countries to reach an agreement concerning formation of an agreement to limit the amount of subsidies government provide to the fishing industry and contended very rightly that, “a failure to do so would jeopardise the ocean’s biodiversity and the sustainability of the fish stocks on which so many depend for food and income.”¹⁷

Excessive Deep Seabed Mining

With the development of technology, we have come up with ways to mine on the seabed. This practice needs to be limited as excessive seabed mining raises significant environmental concerns, such as potential habitat destruction, displacement of marine life, and disruption of the deep-sea ecosystem. The process of mining the seabed, including the extraction of minerals and subsequent dumping of waste, can create sediment plumes that travel for miles, suffocating marine life and harming filter-feeding species. Furthermore, the noise and light pollution generated by mining activities can affect deep-sea creatures, including whales, and even those creatures whose existence we are not even aware of. This issue is covered through the Environmental Assessment report provision of the BBNJ Agreement. But the problem is, how can these reports cover and measure the harm that will be caused to the marine environment when we are not aware of the flora and fauna species completely?

CONCLUSION

In this article, we have discussed the major guiding authority over the seas, i.e., the Law of the Sea, and the major problem of degradation of seas, which humanity faces due to an increase in sea temperature, plastic waste dumping, and overexploitation of marine resources. UNCLOS, BBNJ Agreement, and UNEP’s attempt to make a legally binding international instrument are structures and direction-givers. It remains the work of the governments to implement these conventions and treaties in their jurisdiction, and it is the responsibility of the corporations to comply with the treaties, which can be ensured by making strict regulations by the flag states.

¹⁶ Ibid

¹⁷ Ibid

Without compliance, these international instruments would be a dead letter. There is a need to use these instruments as a base to develop solutions to the contemporary issues and challenges faced at the global level in the conservation of the seas. International cooperation between countries can create a high scope for the conservation of resources. Seas have a complex biodiversity, and hence their conservation is of utmost importance. There are millions of species in the seas that have not been discovered yet. Due to the exploitative activities of human beings and ocean warming, there is a risk of extinction of those species that have not been discovered yet. The deep sea is the most known zone of the seas, mining can harm the sea creatures living there. And since we are not aware of the species living there, we cannot ascertain the loss of biodiversity happening there. It shows the high need for more exploration and research by scientists in the deep sea before their exploitation happens.