

Implementation of the International Laws, Policies and Conventions to Protect the World's Marine Biodiversity and Aquatic Habitat from Pollution in an Eco-friendly and Healthy Environment

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Abstract—Life itself arose from the oceans. The ocean is vast and covers 140 million square miles, some 72 per cent of the Earth's surface. The ocean has always been an important source of food for the life it helped generate, and from earliest recorded history, it has also served trade and commerce, adventure and discovery. It has separated and brought people together. The development of the modern law of the sea and the growing concern for the condition of the oceans have given rise to a number of legal regimes addressing problems of the marine environment including pollution, loss of biodiversity, protection of endangered species, and marine mammals. Repetitively, marine pollution occurred in world's ocean can harm by making them less diverse and less able to sustain life. This matter is persisting and strategies have been established at both the national and global standpoints to deal with it. We will look at the efficiency of these legal instruments and some of the encounters in their execution. At the beginning with the historical development of marine pollution laws, we demonstrate how they evolved from national laws with territorial jurisdictions only to worldwide resolutions, viz., The United Nations Conventions on the Law of the Sea (UNCLOS) or The International Convention for the Prevention of Pollution from Ships (MARPOL). The international laws of the sea provide a foundation for continuing progress. The future of marine conservation, however, depends upon the ability and willingness of states to cooperate in these common objectives and the capacity of individual states to prescribe and enforce their own marine conservation laws. The paper concludes by looking into the future trends on horizon. Furthermore, challenges for marine protection include how to draw more on technology and science of regulation, and how tomorrow's regulations must be tailored to meet the future problems.

Keywords— International Laws, Policies, Conventions, Marine Biodiversity, Aquatic Habitat, Pollution, Endangered Species, UNCLOS, MARPOL, Healthy Environment.

I. INTRODUCTION

Because of the growing world progressed, the safeties of the marine habitat and its environment became one of the foremost global concerns among the mankind [1]. For this, the most

noteworthy developments in the field of international law in the latter half of the 20th century was the growing issue for the protection of the marine environment [1, 2]. Outmoded ideas that the oceans were somehow bottomless dumping grounds with limitless assimilative capacity and a ceaseless ability to surrender their resources have been replaced with a new, and more scientifically oriented, awareness of the oceans' environmental and ecological health. The oceans are indeed focal points of this recent and growing environmental consciousness. The environmental degradation of the oceans is by definition a global problem. Overfishing, vessel and land-based pollution, unsustainable and environmentally unfriendly exploitation of mineral resources, as well as the destruction of marine biodiversity are the concerns of all humanity (see Law Regarding Protection of the Environment During Wartime). Climate change reflects in significant environmental changes such as warming, sea level rise, shifts in salinity, oxygen, and other ocean conditions, which is expected to impact marine organisms and associated fisheries [3-7]. These changes directly or indirectly impact on the ecology and physiology of marine fish and fisheries [8, 9] and in future years, the impact of climate change on the marine environment promises to present even further challenges [6, 7]. The various problems of marine conservation are potentially devastating to human beings. The significance of the oceans to industry, nutrition, and the sciences cannot be overstated. The oceans contribute to our food, medicines, energy, transportation, commerce, defense, and even recreation (Fig. 1). Both the shallow coastlines and the murky depths support an intricate and interconnected web of life that is only beginning to yield its secrets. While the importance of the oceans is manifest, so, too, must the international legal order be prepared to address the inevitable conflicts and problems that arise from competing maritime interests. Indeed, the modern law of the sea and international environmental law have given rise to a proliferation of legal instruments that will help countries utilize the oceans in a responsible, significant and worthwhile manner.

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Fig. 1. Contributions of ocean to human food, oxygen, medicines, energy, transportation, commerce, climate regulations defense, recreations etc.

II. LAWS, POLICIES AND CONVENTIONS

To protect aquatic environment from pollution, the following rules, regulations, protocols and conventions have been adopted:

1. **Federal Water Pollution Control Act (1972)** – Establishes uniform nationwide control for each category of major polluting industries.
2. **Marine Protection Research and Sanctuaries Act (1972)** – Regulates ocean dumping and establishes sanctuaries for protection of endangered species.
3. **Ports and Waterways Safety Act (1972)** – Regulates oil transport and the operation of oil handling facilities.
4. **Safe Drinking Water Act (1974)** – Requires minimum safety standards for every community water supply.
5. **Toxic Substances Control Act (TOSCA, 1972)** – Categories toxic and hazardous substances, establishes a research program and regulates the use and disposal of poisonous chemicals.
6. **Clean Water Act 1985, amending the 1972 Water Pollution Control Act** – Sets as a national goal of the attainment of “fishable and swimmable” quality for all surface waters in the United States.
7. **Montreal Guidelines for the Protection of the Marine Environment Against Pollution (1985)** – States have the obligation to protect and preserve the marine environment. In exercising their sovereign right to exploit their natural resources, all States have the duty to prevent, reduce and control pollution of the marine environment.
8. **Environmental Law** – Several environmental laws are established:
 - Offshore Mining and Drilling (1982)
 - Banned and Severely Restricted Chemicals (1984)
 - Marine Pollution from Land-based Sources (1985)
9. **The first successful Agreement of London in 1954** – The treaty was aimed at preventing pollution at sea from oil tankers by prohibiting the discharge of oil mixtures by tankers within prohibited zones.
10. **London Dumping Convention (1990)** – Calls for an end of all ocean dumping of industrial wastes, tank washing effluents and plastic trash.
11. **United Nations Convention of the Law of the Sea (1985)** – Defines the rights and responsibilities of nations with respect to their use of the world's oceans, establishing guidelines for businesses, the environment, and the management of marine natural resources.
12. **Helsinki Convention on the Protection of Marine Environment of the Baltic Sea Area (1992)** – Encompasses various measures for the prevention and elimination of pollution of the Baltic Sea.
13. **Athens Protocol for the Protection of the Mediterranean Sea Against Pollution from Land-Based Sources (1980)** – Sets rules prevent, abate, combat and control pollution of the Mediterranean Sea area by discharges from rivers, coastal establishments or outfalls, or emanating from any other land-based sources.
14. **Convention on Aquatic Pollution (MARPOL, Ramser Convention, 1971)** – In this convention, each contracting party shall formulate and implement their planning so as to prevent the pollution by a number of ways.
15. **United Nations Convention of the Law of the Sea of 10 December 1982** – The treaty outlines general responsibilities towards limiting marine pollution and preserving marine resources.

16. Convention on the Prevention of Marine Pollution by Dumping or Wastes and Other Matter (1972) and the 1996 Protocol (London Convention and London Protocol) –

- Members of the conference attempted to negotiate an agreement in banning the intentional discharges of oil from ship.
- The convention also makes an exception to vessels entitled to sovereign immunity under international law.
- Convention does recognize that individual States may have their own regulations that ban dumping of certain materials from ships flying the flag said State.

17. 1996 Protocol –

- The Protocol shows a distinct evolution from the earlier Convention.
- The Protocol incorporates both the precautionary and polluter pays principles, ideas, which were emergent at the time of the Convention and have gained traction since.

18. Protocol for the Prevention of Pollution of the South Pacific Region by Dumping (1986) –

- The parties shall take all appropriate measures to prevent, reduce and control pollution in the Protocol area by dumping.
- Each party shall apply the measures required to implement this Protocol to all:
 - a) vessels and aircrafts in its territory or flying its flag;
 - b) vessels and aircrafts loading in its territory or territorial seas wastes or other matters, which are to be dumped or incinerated at sea;
 - c) vessels and aircrafts, and their fixed or floating platforms or other man-made structures under its jurisdiction believed to be engaged in dumping or incinerating at sea in areas within which it is entitled to exercise jurisdiction in accordance with international law.

III. INTERNATIONAL ENVIRONMENTAL AGREEMENTS

1. Marine Environment – Global Conventions

- Convention on the Prevention of Marine Pollution by Dumping of Wastes and Other Matter (London Convention), London, 1972.
- International Convention for the Prevention of Pollution from Ships, 1973, as modified by the Protocol of 1978 relating thereto (MARPOL 73/78), London 1973 and 1978.
- International Convention for the Prevention of Pollution of the Sea by Oil, London 1954, 1962 and 1969.
- International Convention on Civil Liability for Oil Pollution Damage (CLC), Brussels, 1969, 1976, 1984 and 1992.
- International Convention on the Establishment of an International Fund for Compensation for Oil Pollution Damage (FUND) 1971 and 1992, Brussels, 1971/1992.
- International Convention on Liability and Compensation for Damage in Connection with the Carriage of Hazardous and Noxious Substances by Sea (HNS), London, 1996.
- International Convention on Oil Pollution Preparedness, Response and Co-operation (OPRC), London, 1990.

▪ International Convention Relating to Intervention on the High Seas in Cases of Oil Pollution Casualties Intervention Convention, Brussels, 1969.

▪ Protocol on Preparedness, Response and Co-operation to Pollution Incidents by Hazardous and Noxious Substances OPRC-HNS Protocol, London, 2000.

▪ United Nations Convention on the Law of Sea LOS Convention, Montego Bay, 1982.

2. Marine environment – Regional Conventions

▪ Convention for Co-operation in the Protection and Development of the Marine and Coastal Environment of the West and Central African Region, Abidjan, 1981.

▪ Convention for the Protection and Development of the Marine Environment and Coastal Region of the Mediterranean Sea Barcelona Convention, Barcelona, 1976.

▪ Convention for the Protection and Development of the Marine Environment of the Wider Caribbean Region, Cartagena de Indias, 1983.

▪ Convention for the Protection, Management and Development of the Marine and Coastal Environment of the Eastern African Region (Nairobi Convention), Nairobi, 1985.

▪ Convention for the Protection of the Marine Environment and Coastal Area of the South-east Pacific, Lima, 1981.

▪ Convention for the Protection of the Marine Environment of the North-east Atlantic OSPAR Convention, Paris, 1992.

▪ Convention for the Protection of the Natural Resources and Environment of the South Pacific Region, Nouméa, 1986.

▪ Convention on the Protection of the Black Sea against Pollution, Bucharest, 1992.

▪ Convention on the Protection of the Marine Environment of the Baltic Sea Area 1992 Helsinki Convention, Helsinki, 1992.

▪ Conventions within the UNEP Regional Seas Programme.

▪ Framework Convention for the Protection of the Marine Environment of the Caspian Sea.

▪ Kuwait Regional Convention for Co-operation on the Protection of the Marine Environment from Pollution, Kuwait, 1978.

▪ Regional Convention for the Conservation of the Red Sea and the Gulf of Aden Environment, Jeddah, 1982.

3. Marine Living Resources

▪ Agreement on the Conservation of Albatrosses and Petrels.

▪ Agreement on the Conservation of Cetaceans in the Black Sea, Mediterranean Sea and contiguous Atlantic area (ACCOBAMS), Monaco, 1996.

▪ Agreement on the Conservation of Small Cetaceans of the Baltic, North East Atlantic, Irish and North Seas (ASCOBANS), New York, 1992.

▪ Convention for the Conservation of Antarctic Marine Living Resources (CCAMLR), Canberra, 1980.

- Agreed Measures for the Conservation of Antarctic Fauna and Flora
- Convention for the Conservation of Antarctic Marine Living Resources
- Convention for the Conservation of Antarctic Seals
- Protocol on Environmental Protection to the Antarctic Treaty
- Convention on the Conservation of Migratory Species of Wild Animals (CMS), Bonn, 1979.
- International Convention for the Conservation of Atlantic Tunas (ICCAT), Rio de Janeiro, 1966.
- International Convention for the Regulation of Whaling (ICRW), Washington, 1946.

4. Inland and Freshwater resources

- Convention on Civil Liability for Damage Caused during Carriage of Dangerous Goods by Road, Rail, and Inland Navigation Vessels (CRTD), Geneva, 1989.
- Convention on the Protection and Use of Transboundary Watercourses and International Lakes (ECE Water Convention), Helsinki, 1992.
- European Agreement Concerning the International Carriage of Dangerous Goods by Inland Waterways (AND), Geneva, 2000.

IV. RECOMMENDATIONS AND CONCLUSIONS

The sea is encountering continuous degradation from daily human activities especially waste dumping and weak enforcement.

The problem:

- **Daily Neglect:** Everyday choices, like improper waste disposal, contribute to ocean pollution.
- **International Instruments:** Current international agreements may have loopholes or weak enforcement mechanisms, hindering effective ocean protection.
- **Waste Dumping:** Dumping waste, including everyday items, into the sea has severe consequences for marine life and ecosystems.

The Solution:

- **Increased Awareness:** Individuals need to be more mindful of their waste disposal habits and the impact on the ocean.
- **Strengthened International Cooperation:** International organizations must work together to enforce existing regulations and improve international instruments.
- **Individual Responsibility:** It's the collective responsibility of all to act to preserve and protect the ocean for the future.

Specific Actions:

- **Reduce Waste:** Reduce consumption, reuse items, and recycle responsibly.
- **Proper Disposal:** Dispose of waste properly, avoiding dumping into waterways.
- **Support Ocean Conservation:** Engage in conservation efforts, such as beach cleanups.
- **Advocate for Change:** Support policies and regulations that protect the ocean.

In addition, a collaborative effort is needed, including individual responsibility, to protect and preserve the ocean. This research can help us develop effective strategies for addressing these challenges and protecting our ocean for future generations.

Ultimately, protecting our ocean requires a global effort, with individuals, organizations, and governments all working together to address the threats facing marine ecosystems. By taking action to reduce our impact on the ocean and supporting efforts to protect it, we can help ensure that the ocean continues to play its vital role in supporting life on Earth. So, let us all come together on this World Ocean Day to raise awareness about the importance of our ocean and take action to protect them.

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