

**A LEGAL STUDY OF MARINE ENVIRONMENT
WITH SPECIAL REFERENCE TO CONSERVATION
OF MARINE FISHERIES**

SUMMARY OF THESIS

**SUBMITTED TO THE
BABASAHEB BHIMRAO AMBEDKAR UNIVERSITY
LUCKNOW**



FOR THE AWARD OF THE DEGREE OF

Doctor of Philosophy

SUPERVISOR
PROF. S.K. BHATNAGAR (Retd.)
DEPARTMENT OF HUMAN RIGHTS

SUBMITTED BY
MANINDRA KUMAR SINGH
ENROLLMENT NO.- 323/13

**DEPARTMENT OF HUMAN RIGHTS
SCHOOL OF LEGAL STUDIES
BABASAHEB BHIMRAO AMBEDKAR UNIVERSITY
(A CENTRAL UNIVERSITY)
VIDYA VIHAR, RAEBARELI ROAD
LUCKNOW-226025**

2020

SUMMARY

1. Introduction

“People can be happy only when they marvel at nature, when they marvel at creation and at their surroundings. Whatever they love, they wish to protect.”

Jacques Cousteau, the great oceanographer.

The marine environment has unique characteristics that distinguish it from other elements of nature. Since seas and oceans cover more than two-thirds of the earth, they play a vital role in achieving biological and climatic balance on the planet. The marine environment also plays an important role in human life, since it has plenty of nutritious and industrial resources that directly affect human welfare. It also contains huge amounts of oil and natural gas, which has played a role in the economic prosperity of the world. Moreover, seas are considered a source of freshwater through resorting to desalination of seawater in countries that suffer from a shortage of freshwater resources. In addition, the marine environment is considered an important source of food for human beings and other living organisms.

However, the world's oceans and seas are changing. Marine ecosystems are being damaged by over-exploitation, illegal, unreported and unregulated fishing, destructive fishing practices and marine pollution. Increased sea temperature and rising sea-level, caused by climate change, as well as ocean acidification, pose a further threat to marine life, coastal and island communities, and national economies.

Unsustainable utilization and exploitation of ocean resources, along with the impact of pollutants released into the oceans, are causing the marine environment to deteriorate. This must necessarily be reversed by the prevention and control of activities, which are directly or indirectly causing deterioration of the marine environment. The basic issues which are required to be addressed are

conservation of marine resources; this refers to the protection of living organisms from depletion and the sustainable utilization of species and ecosystems; and the prevention and control of marine pollution. The 'protection of the marine environment' is generally considered to refer to 'protection from pollution.' As one of the most significant threats to marine life, pollution affects the health of the living resources in the oceans.

Therefore, control and prevention of marine pollution is a prerequisite for the conservation of marine species and ecosystems. Control of marine pollution can, therefore, also be a safeguard for the sustainable protection of the marine environment.

2. Scope and Significance of Study

This study outlines the UNCLOS framework and its application to conservation of marine environment, together with specific provisions in UNCLOS and other global and regional agreements that offer options for conservation of marine environment from pollution, overfishing and climate change. It then reviews the adequacy of the existing legal regime conservation of fisheries within and beyond national jurisdiction.

The rationale behind the present study is to make the people aware about the adverse effects of the marine pollution on environment and unsustainable fisheries. Further, the present study intends to trace out the shortcomings in the existing legal instruments which are ratified for the conservation of marine environment and sustainable fisheries.

3. Review of Literature

For the purpose of writing research work, the researcher has reviewed the following books and articles-

- **"International Law and the Environment" Written by Patricia Brinje and Alan, Boyle, (Oxford University press, Second edition 2002).**

This book is divided into 15 chapters. Chapter 7 of the book deals with the Law of Sea and the protection of marine environment. This chapter has demonstrated the extent to an international legal regime for protection of

marine environment from pollution. Chapter 13 of this book discusses about conservation of marine living resources and biodiversity. This book is useful for us to understand role of international environmental law to marine environment.

- **"Research Handbook on International Marine Environmental Law", Edited by Rosemary Rayfuse, (Edward Elgar, Publication, 2015).**

This Handbook examines the current state and the future needs of international law in addressing the key activities that pose threats to the marine environment. Its chapters explore the legal framework for protection of the marine environment, pollution of the marine environment, seabed activities and the marine environment, protection of marine biodiversity, regional approaches to the protection of the marine environment and climate change and the marine environment. This book provides significant insights into contemporary issues surrounding the efficacy of the regime created by the 1982 Law of the Sea Convention and details the further work needed to ensure the design and implementation of effective regulation and management of human activities that affect the marine environment.

- **"The International Law of the Sea", written by Yoshifumi Tanaka, (Cambridge University Press, 2012).**

This book divided into two parts. Part I titled The Divided Ocean: International Law Governing Jurisdictional Zones. This part contains 6 chapters discussing law of the sea in the aspect of national jurisdiction. Chapter 1: The Law of the Sea in Perspective discusses the international law of the sea from the perspective of the development of international law in general since it was still in the form of customary international law until it successfully codified. This section examines the contents of UNCLOS in 1982 and its main principles therein. Tanaka also provides a comprehensive discussion about the development of international maritime law after the enacted of UNCLOS 1982 and regarding the fundamental changes that occur in the development of UNCLOS 1982. Part II: Our Common Ocean: Protection of Community Interest at Sea. Here, Tanaka discusses about

maritime management in the aspect of international co-operation for protection of the marine environment. This part contains a holistic discussion regarding the community interest in the international law of the sea. The conservation of marine living resources is a significant issue in the law of the sea. This book provides a comprehensive and up-to-date coverage of a central topic in international law. Tanaka's point of view that divided the international law of the sea into two approaches describes how this book successfully discusses the international law of the sea, as the oldest international law, and applied it to a more contemporary issues. According to Tanaka, zonal management approach, which divided maritime area based on national jurisdiction, and integrated management approach must be reconciliated. This new perspective introduces us to a more integrated and comprehensive coverage maritime management.

- **"Governance of marine fisheries and biodiversity conservation", Written by S.M. Garcia J. Rice A. Charles, (Wiley Publication, 2014).**

The governance of fisheries and of biodiversity conservation are themselves complex socio-ecological systems that have evolved with minimal explicit intention to come closer to each other. An analysis of the two governance streams, their parallel evolution and that of their component strands shows incontrovertible signs of increasing overlap and similarities, however. This book describes very succinctly a selection of stream-specific strands in fisheries and biodiversity conservation before identifying 'parallel' strands identifiable in both streams. It analyses the similarities observed, and examines their origin in terms of convergence or co-evolution of the two streams towards sustainability. The chapter focus on conservation in the ocean, some strands begin with a focus on terrestrial systems where most, if not all, of the concepts used in biodiversity conservation governance originated.

- **"Modern Law of Sea", written by David Anderson, (Martinus Nijhoff Publishers, 1983).**

Those collected essays examine different aspects of the modern law of the sea. They address many key provisions in the United Convention on the Law of the Sea, including its historical development, the substantive rules governing navigation, resources, the regime of the high seas, maritime jurisdiction, the protection of the marine environment and the delimitation of maritime boundaries, as well as the settlement of disputes. The essays also review the Implementation Agreement of 1994 concerning deep seabed mining and the Implementation Agreement of 1995 concerning Straddling and Highly Migratory Fish Stocks. The author presents purely personal views on many negotiations and cases in which he participated. The essays, written between 1988 and 2006, will be of interest to everyone involved in the law of the sea.

- **"The International Law of Sea", written by Donald R. Rathwell and Tim Stephens, (Oxford and Portland , Oregon,2016).**

The law of the sea provides for the regulation, management and governance of the ocean spaces that cover over two-thirds of the Earth's surface. This book provides a contemporary explanation of the foundational principles of the law of the sea, a critical overview of the 1982 United Nations Convention on the Law of the Sea and an analysis of subsequent developments including the many bilateral, regional and global agreements.

The second edition of this acclaimed text takes as its focus the rules and institutions established by the Convention on the Law of the Sea and places the achievements of the Convention in both historical and contemporary context. All of the main areas of the law of the sea are addressed including the foundations and sources of the law, the nature and extent of the maritime zones, the delimitation of overlapping maritime boundaries, the place of archipelagic and other special states in the law of the sea, navigational rights and freedoms, military activities at sea, and marine resource and conservation issues such as fisheries.

- **"Protecting the Marine Environment: Understanding the role of International Environmental Law and Policy", Written by Tony George Puthucherril,(Journal of ILI Vol. 57 2015), 48-91.**

In this articles, focus upon the specific global and regional legal efforts to address marine pollution. Thereafter, it assesses the adequacy of existing legal regimes for regulating marine pollution. This articles is useful in understand the nature of marine and its effects on marine environment.

4. Statement of the Problem

The marine environment has unique characteristics that distinguish it from other elements of nature. Since seas and oceans cover more than two-thirds of the earth, they play a vital role in achieving biological and climatic balance on the planet. The marine environment also plays an important role in human life. However, presently the costal and marine ecosystems all over the world stand highly deteriorated, severely polluted and are in crisis. Given the trans-boundary nature of marine and costal ecosystem and the fact-in-issues that affect the health of marine environment impinge human development, well-being and good governance. Therefore the role of international law is particularly significant in solving this fact-in-issue. While the incontrovertible fact is that global environmental problems can only be solved using global solutions.

Fishing practices both within and beyond national jurisdictional are adversely affecting marine biodiversity and the environment. Many fish stocks have plummeted to the brink of collapse due to over- exploitation, illegal, unreported and unregulated fishing and use of destructive fishing practices.

The actual mandates contained in the United Nations Convention on the Law of the Sea divide ocean space into different types of zones, and provide different rules to manage resource use in different zones. In the absence of a mandate for an ecosystem-based integrated ocean management, this division has so far been achieved without any consideration for where marine living resources gather to spawn, feed, and hunt. This lack of ecological considerations in the mandates of the United Nations Convention on the Law of the Sea results in the same resources migrating between or existing in different

marine zones and the management of their exploitation differently in different zones. As a result, disputes have occurred over the inconsistent management of the same resources in different zones.

Since no one has the exclusive jurisdiction to protect the environment of the high seas, no one can enforce the law for the conservation of the high seas. It follows that the proper conservation of the high seas should rely on global cooperation and the voluntary participation of all relevant States. Therefore it is now required to review the adequacy of existing international legal framework for the protection of High seas biodiversity vis-à-vis different human activities. It is also required to establish and observe the new Marine Protected Areas on the high seas under existing international law .

However, having a comprehensive international legal framework in place is itself not sufficient. Proper implementation is required. It is the biggest issue faced with respect to many international conventions.

5. Objective of Research Work

- 1.** To explore the various sources of marine pollution and their impact on marine environment.
- 2.** To study the origin and development of law relating to conservation of marine environment and fisheries.
- 3.** To analyse the various international and regional conventions relating to conservation of marine environment and fisheries.
- 4.** To analyse the implementation of international conventions and laws to protect marine environment and fisheries.
- 5.** To study the role played by international organization to conservation of marine environment and fisheries.
- 6.** To suggest the measures of conservation of marine environment and fisheries.

6. Hypothesis

1. The available international, national and regional legal regime is not sufficient for conservation of marine environment.
2. The implementation of available law relating to conservation of marine environment and sustainable fisheries is not effective.
3. There is weak obligation concerning conservation of fisheries in the exclusive economic zone.
4. There is weak obligation concerning conservation of fisheries on the high seas.
5. There is lack of effective monitoring and enforcement measures at the global level.

7. Research Methodology

The methodology of the research shall be primarily doctrinal by using primary and secondary sources. The various conventions, resolution, authoritative text books, International Law Journals, Reports and various articles of national and international authors will be referred by the researcher to find out the legal regime of Conservation of marine with special reference to fisheries.

8. Limitation of the Study

Because of the ever-expanding nature of the law of the marine environment, it is highly difficult to make a detailed examination with regard to each and every issue of the law in one thesis. Thus, this research work has only the modest aim of examining the important issues of the law relating to protection of marine environment including marine fisheries succinctly. It does not discuss maritime law or admiralty law, which is a distinct body of private law governing maritime questions and offences. It does not focus on marine scientific research, lagoons, mangroves and coral reefs. In essence, this thesis addresses the laws of peace, not the laws of war.

9. Framework of Study

Chapter-I Introduction

Chapter-II Origin and Development of Law relating to Conservation of Marine Environment

Chapter III: The Marine Environment: An Overview

Chapter-IV Legal Framework for the Protection of Marine Environment

Chapter-V Legal Framework for the Protection of Marine Fishries

Chapter-VI Role of Organisations in the Protection of Marine Environment

Chapter-VII Conclusion and Suggestions

Chapter-I Introduction

The first chapter is an introduction to various concepts relating to the research work. It includes scope and significance of study, literature review, statement of problem, objectives of the study, hypothesis and research methodology of the research work.

Chapter-II Origin and Development of Law Relating to Conservation of Marine Environment

The Present chapter deal with Origin and Development of the law of sea. The law of the sea extends back to Roman times. These laws were driven by commercial and military concerns and aimed to regulate the passage on maritime area. These laws were built upon a small number of basic principles like the “freedom of the seas” .Originally it was a part of ‘Roman Law’, but was re introduced as a legal doctrine during 1609. Again the book entitled “MARELIBERUM” written by the Dutch Scholar Hugo Grotius, “The Sea is common to all” because it is so limitless that it cannot come under the possession of one and hence this region belongs to whole mankind. By the early 1800 this legal principle was universally accepted by major powers. In addition, this freedom has always been limited by a customary law of territorial seas permitting exclusive national jurisdiction over a narrow marine zone off the coast (generally 3 miles) which is popularly known as the cannon short rule. However in 1930, initial attempts were made by the League of Nations to codify the law of the seas.

After the Second World War, the United States has dramatically challenged the traditional freedom of the seas doctrine. The Truman proclamation has extended the American coastal jurisdiction and control over its natural resources, sea bed of its contiguous continental shelf, fisheries in its coastal waters and the claims of sovereign authority over high seas resources directly off the coast. These extended rights over the seas have eliminated the traditional cannon shot approach (three mile limit) of the territorial seas. This precedent was quickly adopted by other nations laying similar claims, led by Latin American Countries and by 1958 almost 20 countries had declared legal control over their continental shelves. It weakened the freedom of seas doctrine and causing international conflict between coastal states and fishing nations.

Again United Nations Convention on law of the Sea-III, part XII (held in 1982) has been completely devoted towards the protection and preservation of marine environment against all kinds of pollution. The convention is based on two paramount principles, the rule of law and the progressive realization of the public interest. In principle this convention uses two different means of balancing the interests of states in order to establish the required equitable regime of utilization and management of the maritime area. It partitions the maritime areas into different zones in which the competencies of the coastal states decrease in proportion to the distance from the coast. However, states' rights in all zones, including the territorial seas, are not of an absolute nature, but rather functionally limited.

Chapter III: The Marine Environment: An Overviews

This chapter deals with the marine environment: An overviews. The marine environment has unique characteristics that distinguish it from other elements of nature. Since seas and oceans cover more than two-thirds of the earth, they play a vital role in achieving biological and climatic balance on the planet.

Meaning of the Marine Environment

The term 'environment' has a wide meaning but basically it includes air, water and land. Since the Vedic period, it has been the main motive of human kind to protect the environment and to live in harmony. However, in modern

times, the concept of environment has changed and now it is being greatly analysed and interpreted by various scientists, environmentalists and researchers. About seventy percent of the total earth's surface has been taken by the oceans, creating its own biological diversity cycle and contributing in the development process of human life. Presently, over-exploitation and man-made pollution is responsible to a huge extent for the degradation of environment. Due to excessive pollution some species of birds, animals, fishes, plants, corals etc. are already extinct and many are becoming 'rare species'. These types of extinctions cause huge imbalance in the environment. Therefore, immediately it is necessary to take preventive and protective measures for the preservation and conservation of the environment. Humankind has to live in harmony with the environment. There is need for making a balance between environment and development. Currently, it is the main duty of humankind to provide and ensure protection and conservation of the environment and its biodiversity

A. Definition of the Environment

Providing a definition of a thing enables us to know many facts about it and makes it completely clear. A definition also reveals what this thing is, its nature, characteristics and specific components, so that a researcher can distinguish it from other things.

B. Definition of the Marine Environment

The marine environment has become one of the recent concerns in international and national laws. It is part of the international ecosystem and consists of seas, oceans, and their tributaries in addition to what they contain of living organisms, whether plants or animals, and other resources, such as minerals of different kinds.

The importance of the marine environment

The International Community seeks to protect the marine environment from pollution, because this environment is important to human beings and has a direct effect on them. The 1982 UN Convention on the Law of the Sea states that the marine environment is an ecosystem or a number of ecosystems in view of the

contemporary scientific concept of the ecosystem, which is focused on the study of a certain point in time and place, with its living organisms under the physical and climatic conditions, and also the relationship among living organisms and their relationship with surrounding physical conditions.

A. Biological Importance of the Marine Environment:

The marine environment is characterized by a natural free connection that links its parts and allows mutual effect, since the marine environment plays an important role in achieving climatic balance through its high specific heat on surface and its coldness at the bottom.

B. Global Importance of the Marine Environment

The marine environment is an important source of the food for humans and other living organisms. It contains huge amounts of different species of sea living organisms with high nutritional value, the most important of which is fish. Although the fastest and newest means of transport have been invented, the marine environment is still a very useful means of transport in the world. Ships can carry overseas what planes cannot carry. The marine environment contains huge amounts of oil and natural gas, which has played a major role in the economic prosperity of the world. Seas are also a source of freshwater through evaporation and rain. Desalination of seawater is very useful for countries that suffer from shortage of freshwater resources.

Principles of International Marine Environmental Law

There is no generally agreed catalogue of principles governing marine environmental protection. Concerning environmental protection in general, for instance. Sands and Peel identify the following principles:

- (1) States have sovereignty over their natural resources and the responsibility not to cause transboundary environmental damage;
- (2) the principle of preventive action;
- (3) the principle of cooperation;
- (4) the principle of sustainable development;
- (5) the precautionary principle;
- (6) the polluter pays principle; and

(7) the principle of common but differentiated responsibility.

Paradell-Trius further adds the principles of non-discrimination, equitable use and concerted management of natural shared resources, intergenerational equity, and integration of environmental considerations into economic and development project. TUCN's '10 Principles for High Sea Governance" refer to the principles of:

- (1) conditional freedom of activity on the high seas;
- (2) protection and preservation of the marine environment;
- (3) international cooperation;
- (4) science-based approach to management;
- (5) public availability of information;
- (6) transparent and open decision-making processes;
- (7) precautionary approach;
- (8) ecosystem approach;
- (9) sustainable and equitable use; and
- (10) responsibility of States as stewards of the global marine environment.

Scope of the Marine Environment

Accordingly, the marine environment can be categorized into five areas as follows:

1. Coastal Waters

Coastal water is entirely found inside the marine borders of a country, including ports, roadsteads, and shores. The Geneva Convention 1958 defined internal waters as follows: "Waters on the landward side of the baseline of the territorial sea form part of the internal waters of the State."

2. Territorial Waters or Territorial Sea

Territorial sea is the part of the waters adjacent to the coast of a state that is considered to be part of the territory of that state and subject to its sovereignty.

3. Contiguous Zone

Under the 1982 UN Convention on the Law of the Sea, in a zone contiguous to its territorial sea, described as the contiguous zone, the coastal state may exercise the control necessary to prevent infringement of its customs, fiscal,

immigration or sanitary laws and regulations within its territory or territorial sea; and punish infringement of the above laws and regulations committed within its territory or territorial sea.

4. Exclusive Economic Zone

As defined by the 1982 UN Convention on the Law of the Sea, the exclusive economic zone is an area beyond and adjacent to the territorial sea, subject to the specific legal regime established in this Part, under which the rights and jurisdiction of the coastal State and the rights and freedoms of other States are governed by the relevant provisions of this convention. Under the same Convention, the exclusive economic zone shall not extend beyond 200 nautical miles from the baselines from which the breadth of the territorial sea is measured.

5. Continental Shelf

The 1982 UN Convention on the Law of the Sea states that the continental zone of a coastal state comprises the seabed and subsoil of the submarine areas that extend beyond its territorial sea throughout the natural prolongation of its land territory to the outer edge of the continental margin, or to a distance of 200 nautical miles from the baselines from which the breadth of the territorial sea is measured, where the outer edge of the continental margin does not extend up to that distance. The Convention states that the coastal State shall establish the outer edge of the continental margin wherever the margin extends beyond 200 nautical miles from the baselines from which the breadth of the territorial sea is measured.

Chapter-IV Legal Framework for the Protection of Marine Environment

In this chapter, researcher defines the marine pollution and its kinds. There is no universal definition for the term “Marine.” But the 21st Century Chambers Dictionary says that “it is something related to sea” and marine includes oceans, bay and its marginal seas, which contain salt water.

The Oxford English Dictionary defines pollution as “the action of polluting or conditions of being polluted, defilement, uncleanness or impurity”. Webster’s English Dictionary defines “pollution as the action of polluting or the state of being polluted, defilement, desecration, impurity, uncleanness.”

The term “marine pollution” has received various definitions by different writers. H.A.Cole for instance, considers that it covers “all human activities which may change the environment and so affect the marine fauna and flora, fisheries, public health or amenities”, and includes therefore, the effects of “development along the coast, offshore exploitation of oil and gas and gravel extraction”, as well as those other activities such as “the discharge of sewage and industrial effluents, oil pollution and the discharge of radioactive waste.”

The 1982 United Nations Convention on the Law of the Sea defined Pollution of the marine environment, as ‘the introduction by man directly or indirectly of substances or energy into the marine environment (including estuaries) which results or is likely to result in such deleterious effects as harm to living resources and marine life hazards to human health, hindrance to marine activities including fishing and other legitimate uses of the sea water and reduction of amenities’.

Kinds of Marine Pollution

Marine pollution can be categorized into several kinds. First, According to the characteristics of the pollution, which can be categorized in three categories: biological, physical, and chemical. Second, Based on its source, which can be natural or industrial. Third, Based on its effect, which can be average, hazardous, or destructive. Finally, When considering the geographical scope of pollution, which can be local, transnational, or cross-border.

Kinds of Marine Pollution Based on Its Characteristics

Based on its characteristics, marine pollution can be categorized into three categories:

1. Biological pollution:

Biological pollution is one of the oldest forms of pollution. It is caused by pollutants coming from living organisms, such as viruses and bacteria; if these exist in the marine environment, they can cause harm to man, plants, and animals.

2. Physical or radioactive pollution:

This kind of pollution of the marine environment involves various radioactive pollutants coming from nuclear reactors. The radioactive substances

pose a big risk to man's life and existence. Radioactive pollution is one of the most dangerous kinds of pollution, since it cannot be seen, smelled, or felt. It also causes harm easily to living organisms. In such, radioactive pollution of the marine environment may arise from natural sources, such as the rays coming from space; or may emit from industrial sources, such as nuclear reactors.

3. Chemical pollution:

Chemical pollution of the marine environment is one of the most threatening kinds of pollution due to the increased levels of chemicals currently and the variation of such chemicals.

B. Kinds of Marine Pollution, Based on Its Source

Marine pollution can be categorized as natural pollution and industrial pollution.

1. Natural pollution:

The source of this kind of pollution is nature itself. This kind of pollution changes the natural characteristics of the marine environment and happens without human intervention. Pollutants of this kind include gases and dust thrown by volcanoes in the marine environment, affecting the ecological balance of this environment and threatening some of its natural components.

2. Industrial pollution:

This pollution is caused by human intervention and its source is human different activities, as well as his use of modern life utilities, inventions, industrial wastes, and nuclear blasts, which affect, whether directly or indirectly, the marine environment.

C. Kinds of Marine Pollution, Based on Its Effects

The level of pollution that affects the marine environment undoubtedly differs based on the degree of danger such pollution causes to man's life. Each form of marine pollution does not necessarily cause danger to human health. Therefore, we can categorize three levels of marine pollution: average, dangerous, and very dangerous.

1. Limited pollution:

This is the lowest level of pollution and is not often accompanied by obvious threats to the marine environment. Few areas across world environments are free from non-industrial sources of pollution. Seas have the capability to contain limited pollution. Self-purification of the sea is able to contain pollution, if it is limited. A level of pollution that is not dangerous is accepted in most countries of the world. However, some countries of the world apply penalties regarding this kind of pollution to ensure that it will not be increased.

2. Dangerous pollution:

This kind of pollution represents the level in which pollutants exceed the safe limit and start to adversely affect the elements of natural or human environments in different forms, changing the harmony inherent inside the ecological systems and affecting ecological balance. This dangerous level of industrial pollution has appeared due to industrial developments and the huge amounts of wastes of various characteristics and sources in different ecological systems, especially in the marine environment, in a way that exceeds this environment's self-purification abilities. This level of pollution is widely spread in most industrial countries at the present time.

D. Kinds of Pollution, Based on Geographical Scope

Based on its geographical scope, a marine environment can be categorized as follows:

1. Internal pollution-

The effect of this kind of pollution does not go beyond the marine space of its source. This kind of pollution is also limited, based on its source or effect to a certain area of the marine environment. It can be easily dealt with if the necessary tools for this are available.

The effect of this kind of pollution does not go beyond the marine space of its source. This kind of pollution is also limited, based on its source or effect to a certain area of the marine environment. It can be easily dealt with if the necessary tools for this are available.

2. Transboundary Pollution

This kind of pollution arises inside a province of a country or under a country's control. It causes harm to other areas of the marine environment outside the territorial sovereignty of this country, such as overseas regions. Pollution in such cases does not cross the borders of another country but stretches to reach areas that are not under the territorial sovereignty of a country, according to the regulations of the international common law.

Sources of Marine Pollution

There are five types of marine pollution sources: 1) The most notorious type of these sources is vessel-source pollution,. Vessel-source pollution constitutes about five percent of all marine pollution. 2) Ocean dumping means transporting land-generated wastes by ships or aircraft and disposing them into the marine environment. 3) Land-generated waste includes dredged material, industrial waste, sludge from waste-water treatment plants, and radioactive waste. 4) The main threat to the environment in developing states arises from domestic waste, while in developed states the primary threat comes from industrial waste in the form of effluent. Land-generated emissions carried from and through the atmosphere is a type of pollution that is often associated with land-based pollution. 5) Exploration for and production of offshore natural gas or oil is frequently associated with pollution from the exploitation of the continental shelf, a type of pollution resulting from platform-based or rig-generated works.

United Nations Convention on law of the Sea-III, part XII (held in 1982) has been completely devoted towards the protection and preservation of marine environment against all kinds of pollution. The convention is based on two paramount principles, the rule of law and the progressive realization of the public interest. In principle this convention uses two different means of balancing the interests of states in order to establish the required equitable regime of utilization and management of the maritime area. It partitions the maritime areas into different zones in which the competencies of the coastal states decrease in proportion to the distance from the coast. However, states' rights in all zones,

including the territorial seas, are not of an absolute nature, but rather functionally limited.

By the late 1960s, however, awareness of the serious threat of oil spilling into the marine environment posed by large oil tankers had become widespread. In particular, the 1967 Torrey Canyon disaster exemplified the scale of oil pollution from a modern tanker. This incident raised public awareness of the risk of accidental vessel-source pollution and, as a consequence, the International Convention Relating to Intervention on the High Seas in Cases of Oil Pollution Casualties was adopted in 1969. In the same year, the International Convention on Civil Liability for Oil Pollution Damage was also adopted.

In the 1970s and the 1980s, treaties regulating marine pollution were increasingly concluded. In particular, it is notable that the International Convention for the Prevention of Pollution from Ships was concluded under the auspices of the IMO in 1973. This Convention was subsequently modified by the Protocol of 1978 relating thereto. This Convention, as modified by the 1978 Protocol, is known as, in short form, MARPOL 73/78 (hereafter MARPOL). As will be seen, MARPOL provides the key instrument regulating pollution from ships. In this period, the scope of treaties was further extended to cover the regulation of dumping and land-based marine pollution. Furthermore, many treaties were concluded to protect certain marine areas at the regional level. There is little doubt that the protection of the marine environment is currently one of the most important issues in the law of the sea. Considering this subject, particular attention must be devoted to three points.

First, marine pollution may be transported beyond man-made limits and boundaries through currents and winds. As shipping moves freely between the different jurisdictional zones, pollution from vessels may easily spread beyond maritime delimitation lines. Thus international collaboration between States becomes a prerequisite to regulate marine pollution.

Second, the ecological and physical conditions of the oceans may change with the passage of time. The degradation of the healthy marine environment may also be accelerated by human activities in the oceans. Hence there is a need to

flexibly adapt the rules and standards regulating marine pollution to new environmental situations.

Third, traditionally, compliance with rules of international law has been ensured by self-regulation on the basis of reciprocity, and the same applies to the law of the sea. In essence, the principle of reciprocity seeks to secure the national interests of each State on the basis of the symmetry of rights and obligations. Nonetheless, like human rights treaties, treaties concerning marine environmental protection do not seek to ensure reciprocal engagements and advantages for the mutual benefit of the Contracting Parties. The effectiveness of marine environmental protection cannot be supported by relying exclusively on self-regulation based on the principle of reciprocity. Hence there is a need to explore more institutionalised compliance mechanisms. Noting these issues, this chapter will explore the rules applicable to the protection of the marine environment in the law.

Chapter-V Legal Framework for the Protection of Marine Fisheries

This chapter laid down legal framework for protection of marine environment. The traditional legal framework for the management of the fisheries resources of the oceans was based on the principle of free access to the living resources. The doctrine associated with this approach was the freedom of the high seas, which was proclaimed by Hugo Grotius.

The Geneva Convention on the Conservation of the Living Resources on the High Seas 1958(High Seas Conservation Convention) was a half-hearted attempt to address this conservation issue. The Convention affirmed that "all States have the right for their nationals to engage in fishing on the high seas", subject to their treaty obligations, the rights and interests of Coastal States, and an obligation to co-operate for the purposes of conservation.

UNCLOS III was held in 1982. One of the most fundamental results of the UNCLOS III negotiations and the State practice generated by it, has been the emergence of a new international law of marine fisheries. The treaty sources of this customary law regime are to be found in Part V of the Law of the Sea Convention (LOS Convention) setting out the exclusive economic zone (EEZ)

concept and Part VII, section 2 entitled “Conservation and Management of the Living Resources of the High Seas.”

In the 1990s the international community responded to the inadequacies of the Law of Sea (LOS) Convention framework for sustainable fisheries management in two ways:

(a) Adoption of legally binding instruments to fill the gap in the LOS Convention, and (b) Elaboration of non-binding policy instruments to provide guidance in the implementation of the LOS Convention regime.

The problem of vessels reflagging was addressed by FAO in 1993 when it adopted The Agreement to Promote Compliance with International Conservation and Management Measures by Fishing Vessels on the High Seas (Compliance Agreement). The preamble to this agreement recognises that while all States have the right to fish on the high seas, this right is subject to relevant rules of international law and the duty to exercise effective flag State control in taking ‘such measures for their respective nationals as may be necessary for the conservation of living resources of the high seas’

The sixth session of United Nations Conference on Straddling Fish Stocks and Highly Migratory Fish Stocks, held in New York from 24 July to 4 August 1995, adopted the Agreement for the Implementation of the Provisions of the United Nations Convention on the Law of the Sea of 10 December 1982 relating to the Conservation and Management of Straddling Fish Stocks and Highly Migratory Fish Stocks (UN Fish Stocks Agreement). The UN Fish Stocks Agreement complements the LOS Convention and provides an innovative and comprehensive regime for the conservation and management of straddling and highly migratory fish stocks.

The Declaration of Cancun called upon FAO to draft, in consultation with relevant international organizations, an international Code of Conduct for Responsible Fishing. The Code of Conduct, which was adopted in October 1995, and it was the first of a generation of voluntary international fisheries instruments, has been described as representing ‘the most complete and up-to-date expression of the principles of sustainable fisheries management and

development and is likely to have substantial impact on fisheries management at both national and international levels.’

Chapter-VI Role of Organisations in the Protection of Marine Environment

In This chapter, researcher explores the role of organization in the protection of marine environment. Repeated marine pollution incidents and the awareness about the protection and preservation of the earth’s ecology have exposed the need for the establishment of the international organization for the protection and preservation of the marine environment. Accordingly the earliest organization is International Council for the Exploration of the sea in 1902. However, this organization was scientific organization having no regulatory powers and confined only to North Atlantic and Baltic seas.

I. International Maritime Organisation (IMO)

Geneva Convention 1948 has established the Intergovernmental maritime consultative organization (IMO), to develop and maintain a comprehensive regulatory frame work for safety shipping. IMO Convention has been designed carefully and attached with numerous reservations. IMO confined itself to a consultative, advisory and administrative role in matters of a technical nature. However the Inter-governmental maritime consultative organization did not enter in to full force until 1958. IMO finally held its first assembly in 1959 and since that year has been directly and indirectly concerned with the problem of vessel source pollution, despite the fact that the IMO constitution does not specifically confer jurisdiction over pollution issues on the organization.

2. United Nations Environmental Programe (UNEP)

UNEP was conceived at the Stockholm Conference on the Human Environment and created by the UN General Assembly. UNEP became the agency of United Nations with the specific environmental agenda. The prime objects of UNEP are to facilitate international co-operation in the field of environment, to review the environmental problems of international significance and to promote the acquisition, assessment and exchange of environmental knowledge.

3. Ospar Commission

OSPAR commission was established to administer the OSPAR convention. Initially, the commission's task was to regulate and control the dumping at sea of industrial wastes, sewage sludge and dredged material and the incineration at sea. The following are the duties of the commission-

- To supervise the implementation of the convention
- To review the condition of the maritime area, the effectiveness of the measures being adopted, the priorities and the need for any additional or different measures
- To draw up in accordance with the general provisions of the convention, programmes and measures for the prevention and elimination of pollution.

4. The Role of Non State Actors in the Protection and Preservation of Marine Environment

Under the traditional views of public international law only states have the rights and responsibilities. Non-governmental organizations, industries and sub national governments are not allowed to participate in nor are they subjects of international law. However this traditional approach of international law has ignored the active role of non state actors in modern international environmental law. Normally the non state actors include the NGOs, multilateral corporations etc.

Chapter-VII Conclusion and Suggestions

Conclusion

The environmental problems are many, the world is struggling with boundless questions regarding environment and the harm we have done to the earth's ecosystem. Environmental problems demonstrate our vulnerability and we need to cooperate across national boundaries to deal with them. It is time we understood that the problems in one country are also the problems of other countries. The International community have already come together to address the issue by which measures are taken to protect the environment a number of treaties have been entered into. International environmental law has expanded by a plethora of legally binding international agreements, which encompass a wide

variety of issues from terrestrial marine, atmospheric pollution, to wildlife and biodiversity protection.

Traditionally international law with regard to the conservation of marine fisheries resources was dominated by the zonal management approach and the species specific approach; however, it has become apparent that the traditional approaches to conservation of marine living resources comprise limitations in three respects particularly:

- the lack of ecological consideration,
- difficulties with regard to the conservation of migratory species,
- weakness of obligations to conserve Marine Fisheries resources in the EEZ and high seas.

In response, new concepts and approaches are increasingly enshrined in binding and non-binding international instruments, in this respect, the concept of sustainable development, the ecosystem approach and the precautionary approach are of particular importance.

Suggestions

On the basis of above conclusion, the researcher has laid down some suggestions:-

1. There is need of immediate development and implementation of collaborative agreements for managing the world's oceans, which include all stakeholders on equal terms and which aim to arrive at management decisions that will be implemented, either through global legal agreements or through self-regulatory commitments,
2. There should be urgent priority given to more effective national, regional and global monitoring of the oceans, especially now when change is happening faster than we can even begin to understand and grasp the existing baseline situation;
3. The ecosystems approach should be mandatory applied in the legal regime of conservation of marine fisheries. The ecosystem approach seeks to protect marine ecosystem and the ecological conditions surrounding them within ecologically meaningful boundaries as a whole. In so doing, this

approach can be considered as a useful means to enhance the effectiveness of conservation of marine species,

4. There should be more importance given to understanding ocean-atmosphere interactions and raising the level of awareness that how these interactive areas of our planet drive the entire biogeochemical planetary system;
5. Stronger emphasis and financial support at the regional level to develop and implement ocean and coastal management at the level of Large Marine Ecosystems,
6. The concept of sustainable development seeks in essence to reconcile the need for development with environmental protection. The principle of sustainable development must be applied in conservation of marine fisheries,
7. A holistic approach should be applied to address climate change impacts on marine fisheries taking into account other sectors and socio-economic factors,
8. The application of the precautionary approach should be applied in the rule making process at the global, regional and national level for the conservation of marine fisheries resources. The application of this approach strengthens the environmental dimension of international law governing conservation of marine fisheries resources,
9. The flag State has the primary responsibility to ensure compliance with rules with regard to the conservation of marine living resources on the high seas by vessels flying its flag. In reality, however, the effectiveness of the flag State responsibility is seriously undermined by the practice of flags of convenience, re-flagging and IUU fishing. In response, non-flag State measures are adopted by some regional fisheries organs. Such measures comprise at-sea inspection and port inspection of contracting and non- contracting party vessels. There will be a need to enhance the legitimacy of conservation measures. Regional fisheries organs invite all non-contracting parties which have interests in the regulatory areas to

participate at meetings to adopt conservation measures as a cooperating party,

- 10.** There will be need of scientific research in the field conservation of marine fisheries. Fisheries research should focus on determining to what extent changes in the physiologies and ecosystems of commercially important fish species are caused by climate change and how the species have responded to climate change,
- 11.** There will be need to strengthening Institutional Framework for conservation of marine fisheries,
- 12.** There is urgent need of fixed Total Allowable Catch Limits. It is an attempt to balance two competing concerns in fisheries management- protection of stocks and harvesting. The size of any given fish stock is a function of natural and anthropogenic factors. A number of juvenile fish are recruited into the stock annually and a number of fish die through natural causes such as predation, disease and age,
- 13.** To explicitly prevent trade in threatened fish stocks. Countries could immediately list overfished stocks as candidate species for "threatened" or "endangered" status under the CITES and prevent trade of threatened fish,
- 14.** There should be increase in fine and broaden liability for violators. Countries could also consider broadening the scope of liability and strengthening criminal and civil penalties against those illegally harvesting and importing threatened fish stocks,
- 15.** To pursue trade measures against flag states sponsoring unsustainable fishing. Member states to RFMOs could pursue trade penalties and sanctions against flag states sponsoring IUU operations, fishing outside of RFMO requirements, or importing illegal fishery products,
- 16.** The laissez-faire treatment of the living resources of the sea in the high seas has been replaced by a recognition of a duty to have due regard to the rights of other States and the need of conservation for the benefit of all and
- 17.** There is need to establish global governance body for effective regulation of conservation and management of marine fisheries.