University of Nairobi

School of Law

A Thesis Submitted to The University of Nairobi In Partial Fulfilment of the Requirements for the Degree of **DOCTOR OF PHILOSOPHY (PhD)** in Laws

TOPIC: The International Legal, Policy and Institutional Framework for the High Seas Environment: An Evaluation

By

Akunga Nebat Momanyi
Lecturer, Commercial Law Department
School of Law

SUPERVISORS:

Prof. Francis Situma, Professor of Law,
University of Nairobi

Prof. Albert Mumma, Professor of Law,
University of Nairobi

November 2012

Declaration

I, **Akunga Nebat Momanyi,** declare that this Thesis is my original work and has not been presented or submitted for examination in any other University.

Signature.....

Date.....07 November 2012.....

This Thesis has been submitted with our authority as Co-Supervisors:

PROF. FRANCIS SITUMA, PROFESSOR OF LAW,
UNIVERSITY OF NAIROBI.

Signature.....

Date.....November 08, 2012.....

PROF. ALBERT MUMMA, PROFESSOR OF LAW,
UNIVERSITY OF NAIROBI.

Signature.....

Date.....8 November 2012.....

Dedication

I dedicate this Thesis to my children Max, Daiji, and Matthew, and to all present and future generations who will stand for equity and justice in global affairs.

Acknowledgements

The journey of this research work has been exciting and empowering, and yet arduous, long, and winding. Gratefully, it was not always lonely as I had multitudes of individuals and organizations who guided, inspired and provided help in many different ways. But above all, I thank Almighty God for life, health, knowledge and understanding, and the abundance of His provisions.

I am deeply indebted to my Supervisors and mentors, Prof Francis Situma and Prof Albert Mumma for guiding my hands and thoughts throughout the years of this work, and for helping me to shape up and focus on quality and timely completion. They spent many valuable and exerting days on my successive drafts.

I am also deeply indebted to my employer and sponsor, the University of Nairobi for affording me the opportunity to research while I taught; for waiving my tuition fees in consideration as teaching staff; for granting me financial support towards research through the Deans Committee; and for providing institutional context, physical facilities and location for this research work. I particularly thank the successive Deans at the School of Law and my Chairs of Department and the staff for the facilitation, support and encouragement I received throughout the period. I also express my deepest gratitude to my colleagues at the School of Law and elsewhere in the University of Nairobi, and indeed all other colleagues, friends, and relatives who showed interest and concern, cheered and goaded me along this journey. I make special mention of Prof Charles Odidi Okidi, who took personal interest in my work from the outset, and chided me along, including availing me valuable materials and contacts; Prof Patricia Kameri-Mbote "The Rich Professor" for keeping taps on my research work and keeping me accountable; Prof Mary Getui and Dr Kenneth Ombongi who read earlier drafts of my research proposal; Prof Ezekiel Nyangeri and Dr Wilfred Nyangena for cheering me on; and Dr Edward Ontita for introducing and encouraging me into my "research home;" and the learned Panel of Examiners for reviewing my work and "hearing" me.

I express my deep gratitude to the people and Government of the Federal Republic of Germany who provided a generous research grant through DAAD to enable the completion of this research work. Without that help it could have been exceedingly difficult to complete the research. I also thank the staff at the University of Nairobi's Board of Post graduate Studies (BPS), Finance Department and particularly the Grants Section for ably administering the research grant funds and facilitating my work.

Many of my students at the School of Law and elsewhere also gave me encouragement and support and I thank them profusely. I particularly thank those who, like Brian Murumba, Nannette Miingi, Winnie Jullu and Bilha Musima, worked as my research assistants. My office assistants, Miriam, Deborah, Griffins, Pius, and Jill are also gratefully acknowledged for being "my hands".

I thank my colleague Mercy Macharia for spending long hours in the final edits and formatting of this research work, and thus making it look "well-groomed."

I thank my friends Ellik Adler and Dixon Waruinge who "adopted" me to the UNEP family very early in my research journey and enabled me to access enormous resources both materially and logistically. In the process I became almost an "insider" and understood the mandate and workings of this global environmental programme, particularly as it relates to regional protection of the marine and coastal environment. Over the years I attended numerous international conferences, workshops and other forums on UNEP sponsorship, which all deeply enriched my understanding of the subject of my research. In the process I worked with the Western Indian Ocean Marine Science Association (WIOMSA) and particularly my friend and mentor Dr Julius Francis, as well as the UNEP/GEF WIO LaB Project under Dr Peter Scheren and Dr Johnson Kitheka. I am very grateful to them for their support in various ways.

My research journey took me to various places and many entities and individuals provided me facilitation and conveniences. I am very grateful for the management and staff of various libraries where I researched: the University of Nairobi's Jomo Kenyatta Memorial Library and IDIS Library, and the School of Law Library; and the UNEP Library at Gigiri, Nairobi. I thank the management and staff of many hotels and guest houses where I lived and wrote my various drafts: from Bremen to Johannesburg, Cape Town, Durban, Maputo, Dar es Salaam, Antananarivo, Port Louis, Mahe, Mombasa, Lukenya, and Nakuru. Special gratitude to the

management and staff of St Mary's Pastoral Centre in Nakuru, where most of the final work of the research was done, and which became my "research home."

Finally and most adoringly and fondly, my family loved and encouraged me; prayed for me and with me; understood and excused my long absences and travels; and endured many sagging and often old bags of books and materials back and forth. Thank you Nyaboke, Max, Daiji and Matthew for being mine! My Dad and Mum always prayed and asked whether I had "finished (my) examination" as they were anxious to attend graduation, and I thank them for holding me to account. My church family and many spiritual compatriots who prayed with me and for me, may I say "thank you", the prayers have been answered!

With utmost humility, I take responsibility for any imperfections and errors of form and content for this research work.

Table of Contents

List of Abbreviations

ed	-	Edition
Ed(s)	-	Editor(s)
EEZ	-	Exclusive Economic Zone
FAO	-	Food and Agriculture Organization
IAEA	-	International Atomic Energy Agency
ICJ	-	International Court of Justice
ILM	-	International Legal Materials
IMCO	-	Inter-Governmental Maritime Consultative Organization
IMO	-	International Maritime Organization
IOC	-	Inter-Governmental Oceanographic Commission
ISA	-	International Seabed Authority
IUCN	-	International Union for Conservation of Nature
LOS	-	Law of the Sea (Convention)
MARPOL 73/78	-	International Convention For the Prevention of Pollution from Ships, 1973/1978
OPRC	-	International Convention on Oil Pollution Preparedness, Response and Co-operation
PCIJ	-	Permanent Court of International Justice
RIAA	-	Reports of International Arbitral Awards
RSPs	-	Regional Seas Programmes
SEACAM	-	Secretariat for the Eastern Africa Coastal Area Management.
SOLAS	-	Convention on the Prevention of Marine Pollution from Land-based Sources

UK	-	United Kingdom
UN	-	United Nations
UNCED	-	United Nations Conference for Environment and Development
UNCLOS I, II or III	-	United Nations Conference on the Law of the Sea, I, II, III
UNCTAD	-	United Nations Conference on Trade and Development
UNEP	-	United Nations Environment Programme
UNEP GC	-	United Nations Environment Programme Governing Council
UNESCO	-	United Nations Educational Scientific and Cultural Organization
UNGA	-	United Nations General Assembly
UNTS	-	United Nations Treaty Series
USA	-	United States of America
WCPA	-	World Commission on Protected Areas
WWF	-	World Wide Fund (for Nature)
CBD	-	Convention on Biological Diversity
CITES	-	Convention on International Trade in Endangered Species
CLC	-	Civil Liability Convention
COP	-	Conference of Parties
CRAMRA	-	Convention on the Regulation of Antarctic Mineral Resource Activities
CS	-	Commission on Sustainable Development
ECOSOC	-	Economic and Social Council
GATT	-	General Agreement on Tariffs and Trade
GEF	-	Global Environment Facility
GEMS	-	Global Environmental Monitoring System
GEO	-	Global Environmental Outlook

GESAMP	-	Group of Experts on Scientific Aspects of Marine Pollution
GHG	-	Green House Gas
GPA		Global Programme of Action
HNS	-	Hazardous and noxious substances
ICA		International Court of Arbitration
ICPB	-	International Council for Bird Preservation
ICSOs	-	International Civil Society Organizations
IDIS	-	Institute of Diplomacy and International Studies
ILC	-	International Law Commission
ILO	-	International Labour Organization
INFOTERRA	-	International Referral System
INMARSAT	-	International Mobile Satellite Organization
ISM	-	International Safety Management
ITLOS	-	International Tribunal for the Law of the Sea
ITU	-	International Telecommunication Union
IUPN	-	International Union for the Protection of Nature
LBS	-	Land Based Sources
LRTAP	-	Convention on Long-Range Transboundary Air Pollution
MEAs	-	Multilateral Environmental Agreements
MEH	-	Marine Electronic Highway
MPA	-	Marine Protected Areas
NATO	-	North Atlantic Treaty Organization
NOWPAP	-	North West Pacific Action Programme
OECD	-	Organization for Economic Cooperation and Development
OSCE	-	Organization for Security and Cooperation in Europe
PAH's	-	Polycyclic aromatic hydrocarbons

PCB's	-	Polychlorinated biphenyls
PCDDS	-	Polychlorinated dibenzo P. dioxins
POP's	-	Persistent organic pollutants
ROPME	-	Regional Organization for the Protection of the Marine Environment
RTG's	-	Radioisotope thermoelectric generators
SDR	-	Special Drawing Rights
SIDS	-	Small Island Developing States
SMS	-	Safety Management System
SOLAS	-	International Convention for the Safety of Life at Sea
UNCURR	-	UN Conference on the Conservation and Utilization of Resources
UNDP	-	United Nations Development Programme
USSR	-	The Union of Soviet Socialist Republics (The Soviet Union)
WCED	-	World Commission on Environment and Development
WHO	-	World Health Organization
WIOMSA	-	Western Indian Ocean Marine Science Association
WSSD	-	World Summit on Sustainable Development
WTO	-	World Trade Organization

List of Cases

1. Anglo French Continental Shelf Case (Court of Arbitration: The United Kingdom of Great Britain and Northern Ireland and the French Republic, Decision of 30 June 1977.18.379 (1979)

2. Anglo- Norwegian Fisheries Case (U.K vs. Norway) (1951), ICJ Rep. 116.

3. Barcelona Traction, Light and Power Co. Ltd (Belgium vs Spain) (1970), I C J, Rep., 3.

4. Behring Sea Fur Seals Arbitration (1898) I Moore's International Arbitration Awards, 755 (UK vs USA).

5. Cape horn Pigeon Arbitration (US vs Russia) US Foreign Relations, 1902 Appendix 1 p.451

6. Corfu Channel Case, ICJ Reports (1949) 1

7. Costa Rica Packet Arbitration (1897), 5 Moore 75, p.15 Case

8. Diversion of Water from the Meuse Case (1937) PCIJ Rep., series A/B No. 70.

9. Fisheries Jurisdiction Cases (Germany and UK vs Iceland) (1974) ICJ Rep. 3 and 175.

10. Gabcikovo-Nagymaros Dam Case, ICJ Reports (1997), 7

11. Iceland- Jan Mayen Case (1981) Agreement of 28 May 1980, Overenskomster mid fremmede stater, 912; 20 ILM 797 (1981)

12. James Hamilton Lewis and C.H White (US vs Russia), US Foreign Relations,1902 Appendix 1, p.451

13. Kate and Anne Arbitration (US vs Russia) US Forein Relations, 1902 Appendix 1, p. 451

14. Lac Lanoux Arbitrationl Tribunal (France Vs Spain) 24 I.L.R. 101 (1957).

15. Lotus Case, PCIJ Ser.A, No 10 (1927)

16. North Atlantic Coast Fisheries Arbitration (US vs Great Britain) (1910), Reports of International Arbitral Awards (RIAA) 167

17. North Sea Continental Shelf Cases (Federal Republic of Germany vs Denmark, Federal Republic of Germany vs The Netherlands), ICJ Reports (1969), p. 3

18. Nuclear Tests Cases (Australia and New Zealand vs France) (1974), I C J Rep. 253 and 457.

19. Petroleum Development Limited vs. Sheikh of Abu Dhabi, International Law Reports (1951), p. 144

20. St. Pierre and Muguelon Case, 95 ILR 545

21. Territorial Jurisdiction of the International Commission of the River Oder Case (1929) PCI J., Rep., Series A, No. 23.

22. Trail Smelter Arbitration (Canada vs USA) (1905), 3 RIAA 1907(1941).

23. Tunisia – Libya Continental Shelf Case (Judgement), ICJ Reports,(1982), p.18

Abstract

The seas and oceans of the world, including the high seas, occupy more than 65% of Earth surface. These expansive maritime spaces are in peril due to the deteriorating conditions of the marine environment posing dangers to fisheries, coasts and beaches, coral reefs, species-rich coastal wetlands, other important ecosystems and the open seas and oceans. The main causes of marine pollution and degradation are land based sources and activities, sea based sources and activities, including through atmospheric inputs.

There are legal, policy and institutional responses to contemporary marine environmental problems, including the high seas which are the central focus of this study. The high seas' environment, as a global commons, is arguably the least protected under the current marine environmental law. Therefore, this study seeks to evaluate legal, policy and institutional frameworks for the protection, regulation and enforcement of the high seas' environment.

The specific objectives of the study include; firstly, a discussion on the problem of marine pollution and efforts towards the protection and preservation of the high seas' environment, mainly covered under Chapters 1 and 2. Chapter 1 covers general introductions and statement of the research problem. Chapter 2 discusses the marine degradation and pollution problem, while the historical and ideological foundations of marine environmental law are covered in Chapter 3. The key finding is that marine degradation and pollution problems are not only serious but they are actually increasing in most seas and oceans.

Secondly, a discussion on the perceived weaknesses and shortcomings of the existing legal, policy, and institutional frameworks for the protection of the high seas environment, covered under Chapters 4 and 5. Chapter 4 focuses on the efficacy of the various legal instruments established to tackle high seas' environmental problems while Chapter 5 deals with the efficacy of the existing institutional frameworks. The key finding is that the many legal, policy and institutional frameworks in existence are largely not efficacious to protect the high seas environment, thus necessitating consideration for an international agency for high seas environmental protection.

Thirdly, suggested legal and institutional options and directions for better protection, regulation and enforcement of the high seas' environment, covered under Chapters 6 and 7. Chapter 6 makes a case for the establishment of a global regulatory and enforcement agency for the high seas' environment and seeks to show that international regulation offers the best means of ensuring a generally accepted minimum level of environmental protection. Chapter 7 provides a portrait of the proposed high seas' environmental agency and addresses both the conceptual, structural and operational bases and features of the proposed agency. They key finding is that the proposed high seas agency is not only needed, but is also feasible and worthy of serious consideration.

Key recommendations of the study, covered in Chapter 8 include: need for reform of international environmental governance; better coordination of international environmental organizations; and establishment of the high seas environmental agency.

The study was primarily library and desk top based research with most sources being secondary.

CHAPTER ONE

Introduction and Statement of the Research Problem

1.1 General Introduction

> *"When we talk about the environment, we are not speaking only of ecosystems and resources but about most of the key issues on the international agenda. We are talking about whether we live sustainably or unsustainably; about poverty and inequality; and about peace and security, since the roots of conflict can also be found in competition over land, oil and water. We are talking about democracy, and the involvement of men and women in the decisions affecting their lives. And we are talking, not least, about shared values and goals: working jointly to see that benefits of economic growth and development are shared not only among countries, but among generations as well. Safeguarding the environment is in short, a quintessentially global challenge..."*[1]

The 20th Century may arguably be described as an "environmental century." It witnessed an unparalleled awareness of and interest in the human environment including the water, air and land masses. The most dramatic developments occurred after World War II and coincided with increasing problems of pollution and waste disposal.[2] On the one hand developed countries such as the United States, Canada, Europe and Japan have problems of pollution and waste disposal stemming from heavy industrialization and high consumption. On the other hand, developing countries including Africa, parts of Asia and the Americas have environmental problems stemming from poverty, under development and ignorance. There have been "waste exports" of unwanted and toxic cargoes from the North to the South. "Plague ships" carrying such pollutants and wastes have often sailed though the high seas and other parts of the seas and oceans to their destinations[3].

Environmental challenges for the present and the future seem enormous. Scientists have cautioned that the very survival of the Earth may be threatened by assaults on the atmosphere with "green house" and ozone depleting chemicals; on the land masses with unsustainable

---

1 Kofi Annan Secretary General, United Nations, Statement of the Secretary General of the UN, *United Nations Environment Programme (UNEP) Annual Report 1998* (1999) UNEP Publication Nairobi.

2 See, Gourlay, K: World of Waste, 4/7 *People and Planet*, 1995.

3 Ibid.However, under the auspices of the UNEP, the international community in 1989 enacted the Basel Convention on the Control Transboundary Movement of Hazardous Waste and their Disposal (28 ILM 656).

land- use practices and loss of forest cover; and in the waters with all manner of wastes and pollutants. The oceans and seas of the world, occupying more than 70% of the earth surface, are also in danger. The deteriorating condition of the marine environment poses dangers for important resources such as fisheries, coasts and beaches, coral reefs, species- rich coastal wetlands and other important ecosystems.

The increased accessibility of the seas and oceans, thanks to technological developments, makes the marine environment a truly human environment. Fishing, coastal settlements, tourism, scientific research, military operations, shipping and navigation are some of the familiar human activities, all having a bearing on the marine environment.

One of the important responses to the modern environmental problems and challenges has been legal, policy and institutional. Nations, regions, and the wider international community have sought to establish legal, policy and institutional measures to stem the tide of pollution and waste and to create conditions for a better human environment with varying levels of innovation, detail and success.[4] Environmental protection has turned out to be a profoundly unifying issue among states as evidenced by the numerous bilateral and multilateral treaties and arrangements existing today, which also reflects international interdependence on this issue.[5] For the marine environment, key issues for legal, policy and institutional intervention include ecosystems and biodiversity, marine living resources, land - based sources of pollution, sea-based sources of pollution including shipping, coastal developments and small islands. Although on the whole environmental concerns have previously been rather marginal in the broader scheme of international and legal arrangements, it is arguable that they now occupy an increasingly central place not only in the law, but in economics and development, as well as politics and diplomacy. Thus, it is possible to refer to two disciplines of international law, namely "international environmental law" (including "marine environmental law") and the "international law of the sea." It is also possible to identify and describe institutional arrangements created under these important branches of public international law. A detailed historical discussion of contemporary marine environmental law is done in Chapter Three.

---

4 National environmental legal, policy and institutional developments are beyond the scope of this work. However, the historical developmentsof marine environmental law, is covered in Chapter 3

5 Sands, P: *Principles of International Environmental Law* Cambridge University Press, 2nd ed (2003), p 3. . . See also The Environmental Encyclopedia and Directory 2001, 3rd ed. Europa Publications, p. 3 where it is estimated that as at 2000 there were more than 200 multilateral environmental agreements.

It is apparent that while there is a regime of established legal frameworks for the protection of the high seas environment, there is no corresponding provision for a dedicated high seas environmental institution. Part VII of the 1982 UN Convention on the Law of the Sea[6] is entitled "High Seas." The "high seas" are defined in the Convention as ".... all parts of the sea that are not included in the exclusive economic zone, in the territorial sea or in the internal waters of a state, or in the archipelagic waters of an archipelagic state."[7] Briefly, the Convention makes provision for the "freedom of the high seas,"[8] reservations of the high seas for peaceful purposes, [9] and the conservation and management of the living resources of the high seas.[10] Prior to the adoption of the 1982 UN Convention on the Law of the Sea, the high seas were governed primarily by the 1958 Convention on the High Seas,[11] a product of the First United Nations Conference on the Law of the Sea (UNCLOS 1).

Part XII of the Convention is entitled "Protection and Preservation of the Marine Environment."[12] It is divided into eleven sections, each dealing with a different aspect of the protection and preservation of the marine environment. The thrust of Part XII is the enactment of rules and regulations for the identification of the sources of pollution of the marine environment,[13] the enforcement, safeguards, responsibility and liability for the marine environment. There is a provision for "sovereign immunity" of states,[14] which effectively constitutes an exclusion clause in states' responsibility and liability for the protection and preservation of the marine environment under Part XII of the Convention.

Other parts of the Convention also make provision for the protection and preservation of the marine environment.[15] In addition, the Agreement relating to the Implementation of Part XI of

---

6 United Nations Convention the Law of the Sea, 1982, United Nations Publication, New York (1993); UN/DOC.A/CONF. 62/122; (also in 21 ILM 1261(1982) (English), articles 86-120.

7 Ibid., Article 86 of the Convention.

8 Ibid., Article 87.

9 Ibid., Article 88.

10 Articles 116-120. In the Behring Sea Fur Seals Arbitration (1898), I Moore's International Arbitration Awards, 755, a case concerned with the proprietary and exploitation rights over stocks of fur seals in the Behring Sea beyond the limits of national jurisdiction, the Tribunal affirmed the freedom of exploitation of the resources of the high seas.

11 Convention on the High Seas, done at Geneva on 29th April 1958, UN Doc A/CONF.13/L.50; 450 UNTS 11.

12 Articles 192-237.

13 The term "Pollution of the marine environment" means the introduction by man, directly or indirectly of substances or energy into the marine environment, including estuaries which 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, impairment of quality for use of sea water and reduction of amenities".

14 Article 236.

15 See, for example Part II (Article 21(f)), Part III (Articles 39 (2)(b), 42(i)(b) and 43), Part V (Article 56(i)(b)(iii)), Part IX (Article 123(b)), Part XI (Article 145).

the Convention[16] makes express provisions relating to the protection and preservation of the marine environment in the Area.[17]

On the other hand, the UNEP was established in accordance with Resolution 2997 (XXVII) of the United Nations General Assembly[18] "as a focal point for environmental action and co-ordination within the United Nations (UN) system."[19] The UNEP General Council (GC) has defined this environmental action as encompassing a comprehensive, trans-sectoral approach to environmental problems, which should deal not only with the consequences but also with the causes of environmental degradation.[20] Among the priority areas in which activities were to be developed, the UNEP identified "Oceans."[21] In order to deal with the complexity of the environmental problems of the oceans in an integrated manner, the UNEP GC adopted a regional approach exemplified by its Regional Seas Programmes (RSPs),[22] whose objectives and strategies were adopted at the sixth session of the UNEP GC in 1978.[23] Since 1974, the UNEP has repeatedly endorsed a regional approach to the control of marine pollution and the management of marine and coastal resources, and has urged the development of regional action plans.[24] There are at least thirteen UNEP-initiated RSPs in most of the seas and oceans the world.[25] Over 140 coastal states participate in the foregoing programmes and four other programmes which are outside the framework of UNEP.[26]

---

16 Agreement relating to the implementation of Part XI of the United Nations Convention on the Law of the Sea of 10th December 1982, UNGA Resolution 48/263 of 28th July 1994; also cited at 33 ILM 1309 (September, 1994)(English). Under the Agreement, the provisions of the Agreement on part XI of the Convention shall be interpreted and applied together as a single instrument.

17 Ibid., Preamble, Annex I, paragraph 5(g),(h),(k) paragraph 7, and Section 2 entitled "The Enterprise", Paragraph I(b) and (d) (The Agreement).

18 United Nations General Assembly (UNGA) Resolution 2997(XXVII) of 15 December 1972, reprinted in 12 ILM (1973), 433. For a detailed history and structure of the UNEP, see Birnie, P,Boyle, A. and Redgwell, C: *International Law and the Environment,* Oxford University Press, 3rd ed (2009), p 65-71.

19 Ibid.

20 UNEP; Convention for the Protection, Management and Development of the Marine and Coastal Environment of the Eastern Africa Region and Related Protocols, Introduction, p.1, United Nations, New York (1985) (The Nairobi Convention); UNEP: Convention for Co-operation in the Protection and Development of the Marine and Coastal Environment of the West Central Africa Region and Protocol concerning Co-operation in Combating Pollution in Cases of Emergency, Introduction, p.1, United Nations, New York(1981)(The Abidjan Convention);UNGA Resolution 2997 at II, para. 2(a)-(b).

21 Ibid. The term " Ocean" is used interchangeably and synonymously with "Sea" both in singular and plural.

22 Ibid., See also, FAO/UNEP; Legal Aspects of Protecting and Managing the Marine and Coastal Environment of the East Africa Region: National Reports. UNEP Regional Seas Reports and Studies No.49.

23 See, UNEP GC 6/7, para. 397, approved by GC decision 6/2 of 24 May 1978.

24 FAO/UNEP: Legal Aspects of Protecting and Managing the Marine and Coastal Environment of the East Africa Region, National Reports, UNEP Regional Seas Reports and Studies No. 49, p 1.

25 These include the Mediterranean region (adopted 1975); the Kuwait Action Plan region (1978); the West and Central Africa region (1981); the Wider Caribbean region (1981); the East Asian Seas region (1981); the South East Pacific region (1981); the Red Sea and Gulf of Aden region (1982); the South Pacific region (1982); the Eastern Africa Region (1985); the South Asian region (1987); and the Upper South West Atlantic region. For a brief discussion of the regional seas programmes, see Sands, P: Principles of International Environmental Law, 2nd ed (2003), p.399-415; Birnie, P, Boyle, A and Redgwell,C: *International Law and the Environment,* 3rd ed (2009) p 393-398; .

26 UNEP: Regional seas: A survival strategy for our oceans and coasts, Nairobi, October 2000, p 31. The independent programmes are in the Baltic, Arctic, North East Atlantic and the Antarctica

The RSPs were conceived as action-oriented programmes dealing both with the causes and consequences of environmental degradation and encompassing a comprehensive approach to control environmental problems through the management of marine and coastal areas. Each regional action plan is custom-made according to the needs of the particular region as perceived by the governments concerned. Many of them have regional environmental legislation, usually entailing an umbrella regional frame work convention and associated protocols. They also create institutional arrangements including provision for permanent or interim secretariat; periodicity of inter governmental meetings and the like; and financial arrangements to cater for the budgetary commitments of the respective action plans.[27] However, although the RSPs have been recognized as an important avenue for the implementation of the 1982 UN Convention on the Law of the Sea, and UNEP's role as a "competent international organization" under the 1982 UN Convention on the Law of the Sea is not in doubt,[28] it is argued that the RSPs generally do not adequately address the high seas environmental issues.

On its part, the International Maritime Organization (IMO) (previously International Maritime Consultative Organization (IMCO)[29] has developed conventions, protocols and other instruments on its primary mandate, namely, international shipping and marine pollution control. There are over forty conventions and protocols under the auspices of the IMO.[30] The more prominent among them include the 1973 International Convention for the Prevention of Pollution of the Sea from Ships as amended by its 1978 Protocol (MARPOL 73/78),[31] the 1990 International Convention on Oil Pollution Preparedness, Response and Co-operation (OPRC),[32] the London Convention (1972),[33] and the International Convention for the Safety of Life at Sea (SOLAS).[34] It is apparent that the IMO is in many respects implied by the 1982 UN Convention on the Law of the Sea as a "competent international organization" and its standards are regarded as "generally accepted international standards."[35] The IMO presently

---

27 The Nairobi and Abidjan Conventions, introductory notes, p 2; see also, UNEP: Regional Seas; A Survival Strategy for our Oceans and Coasts, Nairobi, October 2000, p. 5.

28 See, Law of the Sea: Report of the UN secretary General, 1 November 1995 and 6 February 1996; Doc No. A/50/713 and Corr. 1 Paras 78-79.

29 For a brief history, structure and conventional status of the IMO, see United Nations: Multilateral Treaties deposited with the Secretary-General, Vol .2 United Nations, New York, 2000, p 3; Birnie, P Boyle, A and Redgwell,C: *International Law and the Environment*, 3rd ed (2009) . p 75-77.

30 Report of the UN Secretary- General, 1995/96, paragraph 87.

31 International Convention for the Prevention of Pollution from Ships (MARPOL 73/78), 17 ILM 246 (1978).

32 International Convention on Oil Pollution Preparedness, Response and Co-operation (OPRC), 29 November 1990; 30 ILM 733 (1991).

33 Convention on the Prevention of Marine Pollution by Dumping Wastes and Other Matter, 29 December 1972, 1046 UNTS 120.

34 Convention on the Prevention of Marine Pollution from Land-based Sources, 4 June 1974, 13 ILM 352 (1974).

35 Report of the UN Secretary General 1995/96, para. 66. *Year book of the Untied Nations*, Vol 50 (1996), pps 951-973.

acts as the main regulatory and supervisory institution for the international regulation of the environmental risks of transporting oil and other substances by sea.[36]

Other legal and institutional provisions for marine environment protection are to be found in the United Nations Educational, Scientific and Cultural Organization (UNESCO) and the Inter Governmental Oceanographic Commission (IOC), whose principal mandate is marine scientific research; Food and Agriculture Organization (FAO) (fisheries); International Atomic Energy Agency (IAEA) (radio active marine pollution); United Nations Conference on Trade and Development (UNCTAD) (ports and shipping); and the International Labour Organization (ILO) (maritime labour).[37]

1.2 Statement of the Problem

The proposed study seeks to evaluate the existing legal and institutional framework for environmental protection, regulation and enforcement in the high seas. It is clear that there are a large number of conventions and corresponding institutions or arrangements governing this vital global commons. However, there is no single global enforcement agency or authority with a specific mandate for the high seas environment. The current legal and institutional regimes are seemingly weak and inadequate. There is need for the establishment of a global regulatory and enforcement agency to protect this important global commons for the present and for posterity. It also seems that no serious consideration has been previously given to the establishment of such an agency. Infact, regulation of marine pollution was somewhat slower to develop, reflecting the more limited interest of states in this problem and the limitations of scientific understanding of oceanic processes.[38]

The high seas' environment, as a global commons, is arguably the least protected under the current marine environmental law. The principles of the freedom of the high seas and the common heritage of humankind prohibit any state claims to ownership or jurisdiction in the high seas. Although under general international law each state is obliged to take action to

---

36 Birnie, P Boyle, A and Redgwell, C: *International Law and the Environment*, 3rd ed (2009) p. 402

37 Report of the UN Secretary - General 1995/96, paras. 74,76. *Year book of the Untied Nations*, Vol 50 (1996), pps 951-973.

38 Birnie, P, Boyle, A and Redgwell, C: *International Law and the Environment*, 3rd ed (2009), p. 379, citing O'Connell, *The International Law of the Sea*, Oxford University Press (1984)

prevent damage to the environment of the commons, the consequence of default of such obligation is not clearly spelt out under international law.[39]

The 1982 UN Convention on the Law of the Sea is primarily concerned with a global system of international law governing all aspects of the use of the oceans. Its provisions for environmental protection, regulation and enforcement generally, and in the high seas in particular, are extremely generalist and inadequate.[40] The Convention has not established a clear enforcement or even supervisory mechanism or agency for the high seas environment. It has entrusted the primary responsibility of enforcement of its provisions on states parties, which may be coastal states, flag states or port states.[41] It is assumed that states will take individual or group responsibility to enforce the obligations set out in the Convention. Even the exact magnitude of the obligations of the states is not spelt out. On the other hand, Part XII frequently refers to "competent international organizations," "global" or "regional co-operation," "diplomatic conference," without defining what or which they are.

Elsewhere, the Convention has established three new international organizations, namely, the Commission on the Limits of the Continental Shelf,[42] to make recommendations to states on establishing the outer limits of the continental shelf, when it extends beyond 200 nautical miles; the International Seabed Authority (ISA),[43] to administer the resources of the seabed beyond limits of national jurisdiction ("the Area"); and the International Tribunal for the Law of the Sea,[44] for settlement of disputes. It is interesting that the Convention could provide for the establishment of an international seabed authority and yet fail to make similar provision for an equally expansive and critical zone as the high seas. Equally interesting is that in some cases, such as where there is pollution from activities in the Area,[45] the ISA is given jurisdictional responsibility. There seems to be the potential for jurisdictional overlaps and conflicts between various parties or stakeholders contemplated by the Convention.

---

39 See, Situma F.P. "The Efficacy of International Environmental Law: A Personal Reflection", 2/1 ILSA Journal of International and Comparative Law, (1995). pp 87,96. He cites the Spanish Zone of Morocco Claims (Spain vs UK), 2 RIAA 615, 641 (1923), where it was held that " all rights of an international character involve international responsibility.This responsibility entails a duty to make reparation if an obligation is not satisfied…"

40 Birnie,P., Boyle, A and Redgwell, C: *International Law and the Environment*, 3rd ed (2009), p. 389; Dire Tladi: "Ocean Governance: A Fragmented Regulatory Framework", in Pierre Jacquet, Rajendra K. Pachauri and Laurence Tubiana (Editors): *Oceans: The New Frontier* (2011), AFD, IDDRI, ISBN 978-81-7993-402-9, pp 99-109.

41 See, for example, Articles 192, 193, 194-208, 213, 216.

42 Article 76 of the Convention and Annex II to the Convention.

43 Ibid., Article 156.

44 Ibid., Articles 159-160.

45 Ibid., Article 209

The UNEP-RSPs do seem to individually entrust the principal responsibility for enforcement and/or supervision on states parties. It seems that too much emphasis is given to state obligations and undertakings with regard to the prevention and control of marine and coastal pollution.[46] Even assuming that these regional approaches were effective in their respective local jurisdictions, such approaches would not be appropriate or effective in the high seas which are larger and within the realm of the global commons.[47]

The IMO and its conventions and protocols are primarily concerned with international shipping and marine pollution from ships and other vessels, but they do not establish an international enforcement authority for the high seas. Much of the responsibility and liability devolves to coastal states, flag states, and port states. When the flag jurisdiction seemed too imperfectly defined and the coastal states' powers seemed too limited,[48] the MARPOL 73/78 and the 1982 UN Convention on the Law of the Sea addressed the problems by extending the enforcement powers of coastal and port states at the expense of the flag state's exclusive authority, and by redefining and strengthening the latter's obligations towards the protection of the marine environment. The result is a relatively complex structure of authority over maritime activities, which tries to reconcile the effective enforcement of environmental regulations with the primary concern of maritime states' freedom of navigation.[49]

Two important principles of international law come into play, namely the freedom of the high seas[50] and the common heritage of humankind.[51] Both principles have generated a great deal of interest among scholars, and it would be interesting to see how they apply to the high seas environment. A third principle, the precautionary principle, is equally interesting and it would be appropriate to examine the interface between the high seas environment and precaution.

This study will undertake a detailed evaluation of the existing global and regional legal and policy instruments and institutions on the high seas environment. It will also attempt to model a global regulatory and enforcement agency and machinery for the high seas environment.

---

46 See, for example the Nairobi and Abidjan Conventions. See also, Iqbal, M.S: Assessment of the Eastern Africa Action Plan and the Effectiveness of its Legal Instruments, (UNEP Regional Seas Reports and Studies No. 150, 1992), p. 19.

47 For arguments for a regional approach to the high seas environmental protection, see, Okidi, C.O: " Towards Regional Arrangements for Regulation of Marine Pollution: An Appraisal of Options," 4/1 Ocean Development and International Law p. (1997).

48 Birnie, P, Boyle, A and Redgwell, C: *International Law and the Environment*, 3rd ed (2009) p. 400.

49 Ibid.

50 Part VII of the 1982 UN Convention on the Law of the Sea.

51 Part XI of the 1982 UN Convention on the Law of the Sea.

1.3 Research Question

The central research question for the study is as follows: To what extent are the current legal, policy and institutional frameworks for the protection and regulation of the high seas environment effective or efficacious?

1.4 Research Objectives

This research will broadly and extensively evaluate the existing legal, policy and institutional provisions, structures and frameworks for the protection, regulation and enforcement of the high seas environment. Within this broad objective, the study will seek:

i) to discuss the problem of marine environmental degradation and pollution and efforts towards protection and preservation of the high seas environment;
ii) to identify and discuss the perceived weaknesses and shortcomings of the existing legal, policy and institutional framework for the protection, regulation and enforcement of the high seas environment; and
iii) to suggest and discuss possible legal and institutional options and directions in the protection, regulation and enforcement of the high seas environment.

1.5 Research Hypotheses

The theoretical postulates guiding this study are:

i) The existing legal, policy and institutional frameworks for the high seas environment have weak and ineffective regulatory and enforcement machinery.
ii) There is need and justification for the establishment of an effective global regulatory and enforcement agency and machinery for the protection of the high seas environment.

1.6 Justifications for the Study

The international law governing the environment and the seas and oceans has experienced rapid developments in the past few decades. The 1982 UN Convention on the Law of the Sea came into operation as international law in 1994. It was hailed as the cornerstone of a new order in the oceans. The Convention puts to rest previous anticipations of a comprehensive regime of the law of the sea. Therefore, it is timely to examine its provisions, particularly those dealing with marine environmental protection and preservation in the high seas.

This study argues for and anticipates the possible expansion of the RSPs to include the high seas environment under the framework of a global enforcement and regulatory agency. The UNEP has been making efforts to revitalize its RSPs into new frontiers. The UNEP's new vision and framework encompasses, rather than replaces, the traditional programmes' elements of science, management and law. The main components include biodiversity conservation, by which activities to protect marine species and habitats are drawn within the expanding sphere of influence of the Convention on Biological Diversity (CBD)[52] and its partner conventions and "soft laws." The other components are land–based activities, aimed at tackling the main sources of environmental degradation at their sources within the framework of the Global Programme of Action (GPA) for the protection of the marine environment from land based activities; and Integrated Coastal Management, pursuing sustainable development of the coastal zone and utilization of marine resources according to principles developed by regional programmes. The 1982 UN Convention on the Law of the Sea is one of the key conventions targeted for collaboration under UNEP's strategy,[53] thus creating a potentially important convergence for the legal and institutional framework for the protection, regulation and enforcement of the high seas environment.

On the other hand, the IMO's conventions and protocols have over half a century evolved a system for international shipping and marine pollution control. A principal feature of the IMO regime is the emphasis on the responsibility of coastal states, flag states, and port states in marine environmental protection.[54] Yet, as a "competent international organization" under the 1982 UN Convention on the Law of the Sea, questions arise as to how adequately its system addresses the high seas environment. The seeming absence of a clear institutional enforcement structure in the IMO for high seas environment makes a further case for studying this subject. Moreover, it would be imperative to investigate the linkages, if any, between the IMO's structures and those created under the UNEP, the 1982 UN Convention on the Law of the Sea and other relevant conventions and institutions concerned with the high seas environment.

There is an increasing quest for a cleaner human environment in the face of degradation and pollution in the waters, air and on the landmasses. Pollution control and waste disposal have

---

52 The Convention on Biological Diversity, 31 ILM 822 (1992); See also, Yearbook of the UN, Vol 46. (1992) 670-684.

53 UNEP, Regional Seas; A Survival Strategy for our Oceans and Coasts, (Nairobi) UNEP, 2000), p. 6.

54 See for example, the 1990 Convention on Oil Pollution Preparedness, Response and Co-operation (OPRC); the MARPOL 1973/78; Birnie, P,Boyle, A and Redgwell, C: *International Law and the Environment*, p 398-430.

become critical problems of our time,[55] particularly since World War II. Europe and America now produce more waste than they have means to dispose of within their territory.[56] Problems related to waste disposal have led in recent times to "plague ships" carrying unwanted cargoes of toxic waste from the U.S or Europe to Africa, and eventually back again.[57] Often these wastes and heavy pollutants sailed through the high seas to their destinations. Although in the meantime the 1980s witnessed a worldwide effort under the auspices of the UNEP to stem the waste trade, which led to the 1989 Basel Convention,[58] more developments have emerged. The 1982 UN Convention on the Law of the Sea[59] acknowledges various sources of pollution or waste, including from seabed activities. There are also many land based causes of marine pollution. These are new challenges to the marine environment. It would be necessary to re-examine the sources and consequences of pollution and the rules proposed for controlling the same, particularly in the high seas. An evaluation of the existing legal, policy and institutional framework constitutes the substantive beginning point.

Finally, a review of existing literature in this area, covered in the next section, provides further justification.

1.7 Literature Review

Most of the literature available was published prior to the entry into force of the 1982 UN Convention on the Law of the Sea in 1994. A significant volume of the available literature is therefore anticipatory of a legal regime for the seas. On the other hand, there is a large volume of literature on the existing legal, policy and institutional framework for the seas. For purposes of clarity and order, the literature is classified as follows:

i) that which deals with conceptual issues such as the development of the international law of the sea, international environmental law, international institutions, the common heritage of humankind and the global commons;
ii) that which deals with the problem of marine environmental pollution and degradation generally; and

---

55 See, Gourlay, K: "A World of Waste", 4/1 People and Planet, p. (1995).
56 Ibid.
57 Ibid.
58 The Basel Convention on the Control of Transboundary Movement of Hazardous Wastes and their Disposal, done at Basel, 22 March 1989; 28 ILM 656 (1989).
59 Articles 207-211.

iii) that which deals with the development of the legal and institutional framework for the marine environment, and particularly the high seas environment.

(i) Conceptual Issues

This set of literature defines and seeks to trace the evolution and development of the international law of the sea and international environmental law within the broader framework of public international law. In so doing, the importance of the oceans and seas of the world, and the principles governing their access and use, is brought out.

Brownlie[60] discusses the law of the sea as part of the substantive body of public international law. He relies primarily on the 1958 Geneva Conventions which governed the regime of the seas prior to the 1982 UN Convention on the Law of the Sea.[61] He discusses the "freedoms of the high seas" and the exceptions thereto. He also tackles the jurisdiction over ships in the high seas as well as oil pollution casualties. Whilst these are important and relevant issues, the present study will go further and evaluate the legal and institutional framework established under the 1982 UN Convention on the Law of the Sea. It will also argue for a global regulatory and enforcement agency for the high seas environment as a part of the global commons. Brownlie does not seem to discuss international environmental law as such, which also creates a gap this study will seek to fill.

Rajagopalan, (ed)[62] has devoted his work to the study of the common heritage of humankind for the 21st century. The text seeks to re-examine the concept of common heritage after 30 years of operation (1967-1997). This concept is at the root of our argument for a global regulatory and enforcement mechanism for the high seas environment, a point which is not specifically discussed in the text under reference. On the same subject, Baslar[63] has written a very illuminating text which is a very useful contribution to our discussion of the doctrine of common heritage in the context of the marine environment.

Schmidt[64] has produced a book which seeks to explain the USA position on the development of a regime for the deep seabed mining in the 1982 UN Convention on the Law of the Sea.

---

60 Brownlie, I: *Principles of Public International Law*, Oxford University Press, 5th Ed, (1979) and p 177-254.

61 Ibid., p 229-254.

62 Rajagopalan, R. (ed): *Common Heritage and the 21st century: Proceedings of Pacem in Maribus XXV* November 1997, International Ocean Institute, (1998).

63 Baslar, K: *The Concept of the Common Heritage of Mankind in International Law* Martinus Nijhoff Publishers, The Hague/Boston /London (1998).

64 Schmidt, G. M: *Common Heritage or Common Burden? The United States position on the Development of a regime for Deep Seabed Mining in the Law of the Sea Convention*, Clarendon Press, Oxford, (1989).

He wonders whether the resources of the Area are a "common heritage" or "common burden?" This book is particularly important in addressing the basic controversies surrounding the common heritage principle and the freedom of the high seas as they relate to the high seas environment. Schmidt does not deal with an evaluation of the legal and institutional framework for the high seas environment.

Birnie, Boyle and Redgwell [65] have broadly discussed international law as it relates to the environment in all its facets. They discuss the pollution of international watercourses, the law of the sea and the regulation of marine pollution, and the international control of hazardous wastes, international environmental governance, among others. Herein is a useful discussion of the UNEP-RSPs although it is not very detailed. The book is an attempt to assess the present state of international law concerning the protection of the world's natural environment. They adopt a broad definition of "environmental problem," including pollution, sustainable development and conservation of natural resources and eco-systems. This is undoubtedly a very useful textbook for this study. However, the text does not specifically deal with the legal and institutional framework for the protection of the high seas environment.

Sands[66] argues that apart from international human rights law, the development of the content and discipline of international environmental law is one of the most remarkable developments in modern times. It is argued that international environmental law is neither a specialty nor a marginal part of the existing legal order, but rather a substantive and integral part of the general public international law. The book is concerned with a comprehensive overview of those rules of public international law which have as their object the protection of the environment. The book has a huge repository of conventions and instruments relevant to international environmental law from as early ago as 1867. It also has a very large table of cases.

---

[65] Birnie, P,Boyle, A and Redgwell, C: *International Law and the Environment*. Some of the cases cited in this text are important for highlighting judicial intervention in the development of the present marine environment law. These cases include Behring Sea Fur Seals Arbitration (1898) I Moore's International Arbitration Awards, 755 (U.K on behalf of Canada vs. U.S.A); Trail Smelter Arbitration (1905), 3 RIAA (Canada vs. U.S.A); Territorial Jurisdiction of the International Commission of the River Oder Case (1929) PCIJ Rep., Series A, No. 23;Anglo- Norwegian Fisheries Case (1951). ICJ Rep 116. (U.K vs. Norway); Fisheries Jurisdiction Cases (1974) ICJ Rep. 3 and 175 (Germany and U.K vs. Iceland); Nuclear Tests Cases (1974), ICJ Rep. 253 and 457 (Australia and New Zealand vs France); Case Concerning the Barcelona Traction Tractinn Light and Power Co. Ltd (1970), ICJ; 3 (Belgium vs Spain); Diversion of Water from the Meuse Case (1937) PCIJ Rep., series A/B No. 70.

[66] Sands, P: *Principles of International Environmental Law* 2nd ed (2003), Other relevant publications by the same author include; Sands, P (Ed): UNCED and the Development of International Environmental Law 3 *Yearbook of International Environmental Law*, 3 (1992); Sands, P (Ed); *The Effectiveness of International Environmental Agreements: A Survey of Existing Legal Instruments* (1992).

There is no doubt that Sands' is a basic textbook and reference for this study, and especially its chapters on introduction, history, governance (states, international organizations and non-governmental actors, compliance, general principles and rules), oceans and seas, and liability and compensation for environmental damage. However, Sands does not discuss the possibility of establishing a global environment agency for the high seas or indeed a substantive institutional framework for the global commons.

O'Connell[67] primarily deals with the influence of law on sea power. He affirms the seas as the great highways of modern times. He focuses on the strategic importance of the sea as military and political fields of maritime powers. This illuminates one of the key interests of states in the seas which may be at conflict with the protection and preservation of the marine environment of the high seas. However, he does not deal substantively with the legal and institutional framework for the high seas environment.[68]

(ii) Marine pollution

Albaiges[69] makes an important scientific exposition of "marine pollution." He points out that it is problem humankind has been aware of for a long time, but whose scientific basis of assessment are subject to continuous development. He acknowledges that there are still gaps in the existing body of knowledge. The scientific aspects of marine pollution are relevant to our understanding of the marine pollution problem as a whole. However, Albaiges does not say anything of the legal, policy and institutional framework for the high seas environment.

Beynon and Cowell[70] have co-edited a text on ecological aspects of toxicity testing of oils and dispersants which will be useful for our understanding especially in dealing with oil spillages as a cause of marine pollution. On a similar subject, Baker[7176] has also produced a text on marine ecology and oil pollution. Important topics in this text include environmental responsibility (industry, education and research), offshore monitoring and world-oil spillages and toxicity testing of oils, effluents and dispersants.

O'Connell, D.P: *The Influence of Law on Sea Power*, Manchester University Press (1975).

The Nuclear Test Cases (1974) ICJ, demonstrate the strategic and military interests of some countries in the international waters; see also O'Connell, *D.P: The International Law of the Sea*, Oxford University Press (1984).

Albaiges, J (Ed) *Marine Pollution*, Hemisphere Publishing Corporation New York/London (1989).

Beynon L.R and Cowell, E .B (Eds): *Ecological Aspects of Toxicity Testing of Oils and Dispersants*, Applied Science Publishers Ltd, London (1974).

Baker, M.J: *Marine Ecology and Oil Pollution*, Applied Science Publishers Ltd (1976).

Weber[72] discusses a very significant dilemma of our times: depletion of fish resources, the resultant shrinking of fishing jobs, and the depreciation of the marine environment. However, he does not deal directly with the subject of our study. He has not isolated the issues of the environment in the high Seas, the existing policing mechanisms or the relevant provisions in the 1982 UN Convention on the Law of the Sea. He has not canvassed the legal and policy constraints on the existing framework.

Hickling[73] asserts that water is one of the four elements of the Ancients, besides Air, Fire and Earth. The book treats the subject from an ecological perspective, and deals in-depth with the pollution problem and water as an important part of the human environment. It is particularly useful in explaining land-based causes of pollution. It also supports my view that the high seas are a key element in the future survival of humankind.

In addition, there are numerous scientific and technical reports concerning various aspects of the global human environment, including the series of UN/UNEP supported Global Environmental Outlook (GEO);[74] and GESAMP reports.[75] These reports provide analysis and discussions on the state of the global environment, including the marine and coastal environment. They also, in varying degrees, address the governance of the various components of the global environment. They will provide very useful scientific and technical references and validation for the study.

(iii) Legal and institutional framework

Anand[79] views the seas and oceans as storehouses of vast resources and suggests that such resources could be used to feed and clothe the millions of poor people living in less developed countries. He argues for a regime in the deep seabed area based on the principle of "common heritage of humankind." He published during UNCLOS III as the world negotiated the international law of the sea. There is an important convergence between the regimes for the international seabed and the high seas, the latter being the focus of this study.

Rembe[80] focuses on the contribution of Africa to UNCLOS III, which he views as important and critical to the success of the efforts at creating an international treaty regime for the seas.

---

72 Weber, P: "Abandoned Seas: Reversing the Decline of the Oceans": *World Watch Paper*, No. 116, (1993).

73 Hickling, C.F: *Water as a Productive Environment*, CroomHelm, London (1975).

74 For example, GEO- 1, GEO -2 (1998), GEO- 3(2002) and GEO- 4(2007).

75 For example, GESAMP Reports and Studies No 39(1990); 70 and 71(2001).

He argues that UNCLOS III was an effort towards establishing a just and equitable international economic and social order. He also argues that acceptability and respectability of international law will be enhanced if the law reflects and contributes to the solution of present and future political, economic and social problems. Like Anand, Rembe's study is anticipatory of a regime of law governing the sea. It was published in 1980, towards the close of UNCLOS III. However, he does not directly discuss the problem of the high seas environment or its legal, policy and institutional framework.

Sinjela[76] is mainly concerned with the rights and freedoms of access to the seas by land-locked states. He argues that the right of access is critical to the exploration and exploitation of the ocean resources. The book generally covers the regime of the international law of the seas. However, it is especially important in addressing the issues of ocean boundaries and also the freedom of the high seas. Sinjela wrote during the negotiations at UNCLOS III, although quite close to the time of signing the 1982 UN Convention on the Law of the Sea. He does not venture into discussion of the high seas environment even as he tackles the freedom of the high seas.

Brown[77] has published three volumes with a general title: *Seabed Energy and Mineral Resources and the Law of the Sea.* Volume 1 deals with the areas within national jurisdiction while volume 2 deals with the areas beyond national jurisdiction. The latter is particularly important for the present study. Volume 3 is composed of selected documents, tables, and a detailed bibliography and is therefore an important resource and reference book. Volume 2 lacks a detailed discussion of a suitable legal and institutional mechanism for enforcement of high seas environmental standards.

Bowett[78] has authored a very useful handbook on international institutions. It is useful for the present discussion particularly in the aspect of the argument for effective institutional machinery for regulation and enforcement of the high seas environment. However, Bowett does not, apart from a brief outline of the IMCO (later IMO), venture into a detailed discussion of the legal, policy and institutional frameworks for the high seas environment.

---

76 Sinjela, M: *Land Locked States and the UNCLOS Regime*, Oceania Publications, London (1983).

77 Brown, E.D: *Seabed Energy and Mineral Resources and the Law of the Sea*: Volume I: The Areas within the Limits of National Jurisdiction; Volume 2: The Area Beyond the Limits of National Jurisdiction; Volume 3: Selected Documents, Tables and Bibliography, Graham and Trotman, London, (1986)

78 Sands, P and Klein, P: Bowett's *Law of International Institutions*, 5th ed, London, Sweet and Maxwell 2001.

Wilder[79] comes out more directly on the subject of our study. However, the thrust of his article is on the argument that since the 1982 UN Convention on the Law of the Sea came into force in 1994, there is a basis for guarded optimism that this in turn would act as a stimulus for robust national environmental policies among states parties to the Convention. He concludes that entrusting common environmental well-being to the non-obligatory language of the 1982 UN Convention on the Law of the Sea "is a rather large leap of faith".

Situma[80] deals with dispute avoidance and settlement,[81] implementation of international legal instruments in the field of the environment, and liability and compensation for environmental damage. He raises the question as to who are the victims and the perpetrators of environmental damage. He surveys a wide range of environmental treaties and instruments, including those which seek to protect the high seas environment. He makes the point that the global commons are the least protected areas under international environmental law. Those global commons include the high seas environment.

Okidi[82] discusses the question as to what kind of institutional arrangement is suitable for the regulation and control of marine pollution in the areas beyond the limits of national jurisdiction, or whether indeed, there should be any universal numerical delimitation to be adhered to under all circumstances. He identifies two principal interest groups in marine pollution, namely, the international community as a whole, and the coastal states which may suffer the direct consequences of pollution of the marine environment. He discusses three possible options for responding to marine pollution in areas beyond national jurisdiction:- (a) unilateralism (especially by coastal, maritime, port and flag states), which is essentially an open-ended national approach; (b) globalism, which would entail a single agency with the mandate to take comprehensive measures of control, and (c) regionalism, which would entail a regional approach to the problem. He makes strong arguments for and against each of these

---

79 Wilder, R. J: "Law of the Sea Convention as a Stimulus for Robust Environmental Policy: The Case for Precautionary Action"; in Borgesse, E.M *et al*, (Eds) 12 *Ocean Year Book*, The University of Chicago Press (1996), p 207.

80 Situma, F.P: The Efficacy of International Environmental Law: A Personal Reflection, *2/1- ILSA Journal of International and Comparative Law* (1995).

81 See also, Adede, A.O: Avoidance, Prevention and Settlement of International Environmental Disputes in, Sun Lin *et al* (Eds): *UNEP's New Way Forward: Environmental Law and Sustainable Development*, Nairobi (1995); Adede A.O: *The System for Settlement of Disputes under the United Nations Convention on the Law of the Sea*, Martinus Nijhoff Publishers, Dordrecht (1987); Bowman, M: "Environmental Litigation and the International Legal System", *3 Environmental Liability 70* (1995). The latter article suggests the possibility of establishing a broad based international convention concerning environmental protection and for the enhancement of the institutional arrangements within the UN system for the purpose environmental protection, and particularly by launching a new international environmental court.

82 Okidi, C.O: "Towards Regional Arrangements for Regulation of Marine Pollution: An Appraisal of Options," *4/1 Ocean Development and International Law Journal* (1977).

options, but clearly favors the regional approach, which the UNEP itself had taken with respect to the marine environment in establishing the RSPs.

This study will re-examine the various approaches, but it favors a global approach for the global commons. The study will seek to show that the high seas environmental problems do not have significant regional variations or distinctions to justify a regional approach; that there is a strong basis for serious consideration of the nature and scope of a global agency to perform those comprehensive functions. This study views unilateralism and regionalism outside the framework of a global system as a negation of the common heritage of humankind principle, and as potentially marginalizing the bulk of land locked and developing states from participating in decision-making or deriving benefits from the high seas. The place for unilateral or regional participation in global efforts is not to be diminished completely. However, the high seas environment should be served by a global enforcement and regulatory mechanism, which could or may have regional or national centres and focal points for better implementation of its mandate.

In fact, to an extent, Okidi agrees that a global regulatory regime is necessary because the high seas are open to use by all states and thus they should have an equal forum to determine the issues that affect them. According to him the main issue is polluting activities that affect the common environment, for which a global mechanism is considered essential. However, he argues that with regard to the "global character" of marine pollution there are "regional peculiarities" which negate the global approach while favoring the regional approach. He published his work during UNCLOS III, years before the 1982 UN Convention on the Law of the Sea was adopted.

There are also several publications and reports by the UNEP, the IMO and the UN, among others, which are worthy of mention and which form the basis for further investigation.[83] Many other useful articles and texts are listed in the Biographical Section for further study.

The foregoing review demonstrates that there is a substantial volume of literature in the area of study herein. What has been reviewed is hardly exhaustive and points to the richness of

---

[83] Some of these include UN Doc. A/144/461(1989): Report of the UN Secretary General on the Protection and Preservation of the Marine Environment; UNEP: Environmental Law in the UNEP (Nairobi, 1990), UNEP: Achievements and Planned Developments of UNEP's Regional Seas Programme, Nairobi (1982,); IMO/UNEP: Meeting on Regional Arrangements for Co-operation in Combating Major Incidents of Marine Pollution (London, 1985); UNEP: Assessment of UNEP's Achievements in Oceans' Programme Element, (Nairobi, 1985); Holm: A Strategy for the Seas: The Regional Seas Programme, Past and Future, UNEP (1983). See also, Sand, *Marine Environmental Law in the UNEP*, London/Dublin (1988); UNEP: The IMO Policy Regarding the Protection of the Marine Environment, Third Global Meeting of Regional Seas Conventions and Action Plans Doc. No. UNEP (DEC)/RS 3.6.0 (Monaco, 6-11 November 2000).

scholarly interest in the oceans and seas generally, and the marine environment in particular. The text of the study has cited numerous other literature and materials. The foregoing review also shows gaps in the available literature, particularly concerning the environmental governance of the high seas. This study seeks in part to contribute to debate on the subject and supply more literature in this area.

1.8 Theoretical Framework

In constructing a theoretical framework for the present study, a brief outline and comment on the leading schools of legal theory and ideology is necessary. These schools include Positivism, Natural Law Theory, Sociological Theory and Legal Realism.

Legal Positivism views the task of jurisprudence as being simply to identify which rules are made and enforced by the power of the state. There must be identifiable commands enforceable by an established sovereign. Positivism focuses on the mechanisms of the State Power, and according to this theory, "Law is what is." Leading exponents of the theory include John Austin and Hans Kelsen.[84] It was Austin who attempted to distinguish temporal law "properly so- called" from God's law and from those moral values that had a binding force unsupported by the imposition of sovereign power.[85] Kelsen, relatively less rigid than Austin, perceived the task of jurisprudence as the isolation of legal rules from other kinds of commands and requests. Even in explaining the co-ordination between the state and international law (the latter itself a source of controversy among positivists), Kelsen asserts the supremacy and centrality of the state.[86]

The Positivist theory can be faulted for propounding the supremacy of the state in matters of law and social control. It assumes the invincibility of the state and gives primacy to that "Law" which is made and enforced by the state. It also fails to recognize the historical processes and motions underlying legal ideology.[87] In whole, Positivism constrains, rather than expand, the development, applicability and enforcement of international law.

On their part, Natural Law Theories ascribe validity or rightfulness to legal ideologies based on "God, Nature, Reason, Intuition or Recognition." Natural law theories always validate

---

84 See Tigar, E.M; *Law and the Rise of Capitalism*, Monthly Review Press New York and London, 1977, P. 290; Kelsen, Hans; *Introduction to the Problems of Legal Theory* (A Translation of the 1st edition of the Reine Rechtslehre or " Pure Theory of Law", Clarendon Press, Oxford (1992), p.107.

85 Ibid. (Tigar, E.M.).

86 Kelsen; *Introduction to the Problems of Legal Theory*, p. 107. Kelsen is also credited with propounding the famous "Pure Theory of Law"

87 Tigar, E.M: *Law and the Rise of Capitalism*, p. 290.

norms or laws outside and above the legal, social, political or other human system. Among the leading naturalists from the long history of this theory are Kant, Locke and Aquinas.[88] Natural law theories have been criticized for being unverifiable, judgmental, sometimes revolutionary and sometimes static, reactionary or authoritarian.[89] These attacks are mainly in the context of the long controversy between positivism and naturalism. The former is perceived to be secular, empirical and relativist, and concentrates on the law as it is rather than as it ought to be. The latter is often pictured as an idealist system, divine, natural, absolute, fundamental, unchangeable and often unwritten.[90] Exponents of natural law theories believe that natural law is a higher law to which positive, or man- made laws, should conform.

Natural law as a universal system came to the fore with the decline of the Greek city-states and the rise of large empires and kingdoms in the Greek world associated with the conquests of Alexander. After the Greeks came the Roman Empire and the development of *jus gentium*. In the Renaissance (16^{th}-18^{th} centuries) natural law survived but became more secularized, as exemplified by Machiavelli who examined human institutions without regard for divine prescriptions.[91]

The singular importance of natural law to the present discussion is that Grotius and others used it as the foundation of a new international law to regulate the affairs and warfare of the rising national states but it became increasingly secular. Over time, positivists have sought to confine natural law to the sphere of morals and religion.

On the other hand, Legal Realism and Sociological Theories are a reaction to the perceived "positivist rigor" and natural laws' "unverifiability."[92] These theories are relatively new and they emerged in the late 19^{th} and early 20th centuries. Legal Realism has had its principal influence in the Anglo- American system, with its express reliance upon judicial decision and precedence as the means of elaborating legal ideology. Realists were basically responding to a perceived common tendency of the positive and natural law schools to engage in abstract system- building. Realists look for law in the judgments of courts. According to Justice Holmes, a leading Realist, "the prophecies of what the courts will do in fact and nothing more

---

88 See Lloyd, D: *Introduction to Jurisprudence* (with selected texts) 2nd ed, London, Stevens and Sons, (1965), pps 54-104; Tigar, E, M: *Law and the Rise of Capitalism*

89 See Tigar, E.M: *Law and the Rise of Capitalism*, p. 294; Lloyd, D: *Introduction to Jurisprudence*, generally, pps 54-66.

90 Lloyd, D: *Introduction to Jurisprudence* p. 54.

91 Ibid.

92 Tigar, E.M: *Law and the Rise of Capitalism*, p. 296.

pretentious, are what I mean by law."[93] Other leading exponents of Legal Realism include Karl Llewellyn and Judge Jerome Frank.[94]

Perhaps the most important criticism against Legal Realism is that it places such an immense premium on judges, courts and decided cases. Not every legal issue finds its way to judges or the courts or other judicial tribunals. The world of litigation is only a part of a large legal or even real world. It is obviously narrow and unsuited to the concerns and issues raised in the present study. In fact, there is a clear shortage of judicial decisions on matters concerning the high seas environment.

The Sociological School can be distinguished from the Realist School or even Positivism, to the extent that it has undertaken to study law in a broader perspective. It attempts to integrate other disciplines such as sociology, politics, economics, psychology and others, in the study of law. The theory focuses mainly on "social conduct" and "legitimate order." "Social conduct" is defined as that kind of human conduct which is related to the conduct of others and in its course oriented to it. It can be oriented to the idea that there exists legitimate order. The "legitimate order" is characterized by "conventions" (general and moral imperatives which will disapprove irrational or unacceptable conduct) and by "laws" (coercive norms which seek to bring about conformity to the legitimate order or by avenging its violation).[95] Leading Sociological theorists include Max Weber and Max Rheinstein. Some criticisms against this theory of law include Max Weber's claim to be "value- free", and the rather narrow definitions and confinements of "Law "in sociological legal exposition.[96]

The present study proceeds on the theory or concept of "globalism" or "multilateralism." It proceeds on the premise that international law is an expression of the collective voice and strength of the peoples of the world, notwithstanding their races, nationalities, geo-political or other differences. This collective voice is rooted in the peoples of the world who share values as human beings. The human nature itself and all its inherent and intrinsic values are God-ordained. The aspirations, struggles, fears and hopes of humankind on a global scale frequently find expression in international law, in a similar way that people belonging to one

---

93 Quoted by Tigar, E.M. ibid.

94 See, for example, Llewellyn, K.N: " On Reading and Using the Never Jurisprudence " (1940), 40 *Colombia Law Review*, p. 581; Llewellyn, K: N: " Some Realism About Realism: Responding to Dean Pound (1931) *44 Harvard Law Review*, p 1222-1256.

95 Tigar, E.M: *Law and the Rise of Capitalism*, p. 302.

96 Ibid., p 303. See also, generally Rokumoto Kahei (Ed): *Sociological Theories of Law*, Darthmouth Publishing Co. Ltd, Aldershot, Hong Kong/ Singapore/Sydney (1994).

state or another express issues in their national or community laws. International law generally expresses the collective will and aspirations of humankind.

"Globalism," in this context means the attitude or policy of placing the interests of the entire world above those of individual nations. "Globalism" describes the reality or aspiration of being inter-connected, or a world which is characterized by networks of connections that span multi-continental distances. It attempts to understand all the inter-connections of the modern world, and to highlight the patterns that underlie and explain them.[97] According to Nye,[98] "globalism" is a phenomenon with ancient roots, and thus the question is not how old it is, but rather how "thin" or "thick" it is at any given time. According to him, "globalization" is the process by which "globalism" becomes increasingly thick or intense.[99] While "globalism" is the underlying basic framework, "globalization" refers to the increase or decline in the degree of "globalism". "Globalization" focuses on the forces, the dynamism or speed of global change, or the dynamic shrinking of distance on a large scale.[100] Nye identifies four distinct dimensions of "globalism": economic, military, environmental and social.[101] The two dimensions most relevant to us are economic and environmental "globalism". "Economic globalism" involves long distance flows of goods, services and capital and the information and perceptions that accompany market exchange, while "environmental globalism" refers to the long distance transport of materials in the atmosphere or oceans or of biological substances such as pathogens or genetic materials that affect human health and well- being.[102]

Finally, according to Nye, "globalism" does not necessarily imply "universality", as the connections that make up networks to define "globalism" may be more strongly felt in some parts of the world than in others.[103] Similarly, since "globalization" refers to dynamic changes, it implies neither equity nor homogenization; in fact "globalization" perhaps implies more differences.[104]

---

97 Joseph Nye: Globalism Vs Globalization, in "The Globalist: How the World Hangs Together"(The Daily Online Magazine on the global economy, politics and culture), www.google.com, accessed on16.09.2011 2012

98 Ibid.

99 Ibid

100 Ibid.

101 Ibid

102 Ibid.

103 Ibid.

104 Ibid.

1.9 Approach and Methodology

Dube, a leading sociologist, has stated as follows:-

> Meaningful ....research, therefore, would involve asking the right questions, fashioning tools that can find answers to them with economy and precision, and generating ideas characterized by adequacy of explanation and reliability of their diagnosis as well as prognosis. Its principal objectives should be to provide understanding. This understanding would bring into focus problem areas and illuminate alternative paths of action with an estimate of their costs and consequences...(Emphasis supplied).[105]

The foregoing statement seeks to clarify the question as to what kind of research this is, and therefore what methods and tools were employed. This research is essentially analytical of existing legal phenomena, focusing on perceived weaknesses and problems and on alternative paths to confront those problems. After all, a researcher's aim is not to make decisions, like politicians or managers, but to understand and interpret pool(s) of knowledge or concept(s).

The present study was basically library oriented. The nature and scope of the research necessitated a largely secondary sources study. It entailed review and evaluation of existing legal, policy and institutional frameworks concerning a vast global commons, and the high seas as a maritime zone was treated generically. Consideration was also given to the fact that the financial and time resources were limited and could not feasibly accommodate "field" travels which would inevitably have been international.

Textbooks, journals and articles by writers and publicists in this field were of primary importance. Official records of proceedings of UNCLOS I, UNCLOS II and UNCLOS III, as well as various international conferences and meetings on the environment, the Preparatory Commission for the ISA and for the International Tribunal for the Law of the of the Sea, as well as the texts of treaties and conventions, declarations and resolutions were of valuable importance. Official records, publications and information from the UNEP and its RSPs secretariats, the IMO secretariat and its documentation, and other UN organizations were also of valuable importance. Other secondary sources such as magazines, newspaper reports and online sources were also utilized.

---

[105] Dube, S.C. :"Role and Function of Social Sciences", in Sharma, B.A.V *et al* (Eds): *Research Methods in Social Sciences*, Sterling Publishers, Private Road (1989), p 1

However, the researcher also attended relevant forums such as seminars, workshops and conferences both locally and abroad dealing with the high seas and the marine and coastal environment generally. In most cases the researcher was invited and sponsored to attend as a resource person or expert in coastal and marine environmental issues. Among the key meetings attended were an international conference on international environmental law in Bremen, Germany (2002), workshops and conferences held under the auspices of the Nairobi Convention UNEP-RSP (2002-2012). In the latter case, the researcher was required to provide understanding of coastal and marine environmental and governance issues; participate in drafting amended articles of the Nairobi Convention and its protocols, including two new ones; participate in and facilitate the conference of parties (COP) and other decision or policy making or scientific forums. The researcher also participated in a number of meetings hosted by the International Maritime Organization (IMO) (2004-2006) addressing ship based pollution and related issues under its mandate. Many of the meetings attended were expert level and policy/decision making. They all contributed to a deeper understanding of the coastal and marine environmental issues, including scientific, legal, policy and institutional aspects. The researcher also picked mostly grey literature and published materials, as well as perspectives from other experts.

As the physical area of study was wide and international the researcher had to look far and wide for relevant materials including the websites of various organizations. Among the websites visited were those for the secretariat of the ISA in Kingston, Jamaica, the UNEP Headquarters in Nairobi, the secretariats of its RSPs, the UN Tribunal for the Law of the Sea in Hamburg, Germany, the secretariat of the IMO, London (and its Nairobi office), and the secretariats of various conventions such as the biodiversity, climate change and ozone layer conventions.

The researcher obtained data from all these sources on marine environmental degradation and pollution, the existing legal and institutional frameworks, and discussions on important principles such as the common heritage of humankind, freedoms of the high seas, and the precautionary principle, governance of the seas and oceans, among others. The bulk of relevant materials came from the following places:-

i) The University of Nairobi's Jomo Kenyatta Memorial Library, the School of Law Library and the Institute of Diplomacy and International Studies (IDIS);

ii) The UNEP Headquarters and Library at Gigiri, Nairobi;

iii) The Law of the Sea Convention Secretariat, Archives and Library, Kingston, Jamaica (websites);

iv) The International Tribunal for the Law of the Sea, Library and Archives, Hamburg, Germany (particularly on international judicial decisions arising from the 1982 UN Convention on the Law of the Sea) (websites).

Information and materials from all these sources was gathered by the researcher with the help of research assistant(s) in the process of the development of the thesis.

1.10 Conceptual Framework

Brief notes on the working definitions of key concepts and terms are provided below: -

> "High seas" constitute the geographical area or maritime zone covered by this study. They are defined in the 1982 UN Convention on the Law of the Sea[106] as "all parts of the sea that are not included in the exclusive economic zone, in the territorial sea or in the internal waters of a state, or in the archipelagic waters of an archipelagic state."

The other key maritime zones are defined by the 1982 UN Convention on the Law of the Sea, and all of them have their jurisdictions defined, including those of an environmental character. The "territorial sea" is defined as "an adjacent belt of sea" which lies beyond the land territory and internal waters of a coastal State or an archipelagic State or its archipelagic waters in respect of which the concerned State has national sovereignty.[107] Such sovereignty extends to the air space over the territorial sea as well as the sea bed and sub soil.[108] The breadth of the territorial sea is fixed at a maximum of 12 nautical miles measured from baselines determined in accordance with the Convention.[109]

The "contiguous zone" is defined as a "zone contiguous to" the territorial sea of a coastal State, where the coastal state may exercise what may be described as quasi-sovereign jurisdiction or "control necessary to (a) 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

---

[106] Article 86 of the 1982 UN Convention on the Law of the Sea.

[107] Ibid., Article 2(1)

[108] Ibid., Article 2(2)

[109] Ibid. Article 3. Under Article 5 provision is made for "normal baseline" while Article 7 provides for "straight baselines."

sea." [110] The contiguous zone "may not extend beyond 24 nautical miles from the baselines from which the breadth of the territorial sea is measured."[111] Thus, the contiguous zone is really a maximum of 12 nautical miles adjacent to the territorial sea of a coastal State.

The "exclusive economic zone" (EEZ) is the next maritime zone after the territorial sea and contiguous zone of a coastal State or archipelagic State, and connects the two land ward side maritime zones (i.e territorial sea and contiguous zone), with the high seas. It is defined in the 1982 UN Convention on the Law of the Sea as "an area beyond and adjacent to the territorial sea...under which the rights and jurisdiction of the coastal State and the rights and duties of other States are governed under the relevant provisions of (the) Convention."[112] The breadth of the EEZ of the concerned State "shall not extend beyond 200 nautical miles from the baselines from which the breadth of the territorial sea is measured." In reality, therefore the EEZ overlaps the territorial sea and contiguous zone, or strictly speaking, is the balance between the 200 nautical mile outer limit and the 24 nautical mile strip covered by the territorial sea and contiguous zone.

Below the water column covered by the territorial sea, the contiguous zone, the EEZ and parts of the high seas is the realm of the "Continental Shelf" of a coastal State. It is defined as comprising "the sea-bed and subsoil of the sub marine 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."[113] The details concerning delineation, rights of the coastal State and other issues are covered under Part IV of the 1982 UN Convention on the Law of the Sea.

Beyond the continental shelf is the deep ocean floor, also called the International Seabed Area. The "Area" "means the sea-bed and ocean floor and sub soil thereof, beyond the limits of national jurisdiction"[114] and "activities in the Area" are defined to mean "all activities of

---

110 Ibid, Article 33(1)

111 Ibid, Article 33(2).

112 Ibid, Article 55. The rights, jurisdiction and duties of the Coastal State are defined under Article 56 while the rights and duties of other States are defined under Article 58.

113 Ibid, Article 76(1)

114 Ibid, Article 1(1)(1), and Part XI generally

exploration for, and exploitation of, the resources of the Area."[115] This is the maritime zone which underlies the water column called the high seas.

Figure 1 illustrates the various maritime zones relative to each other.

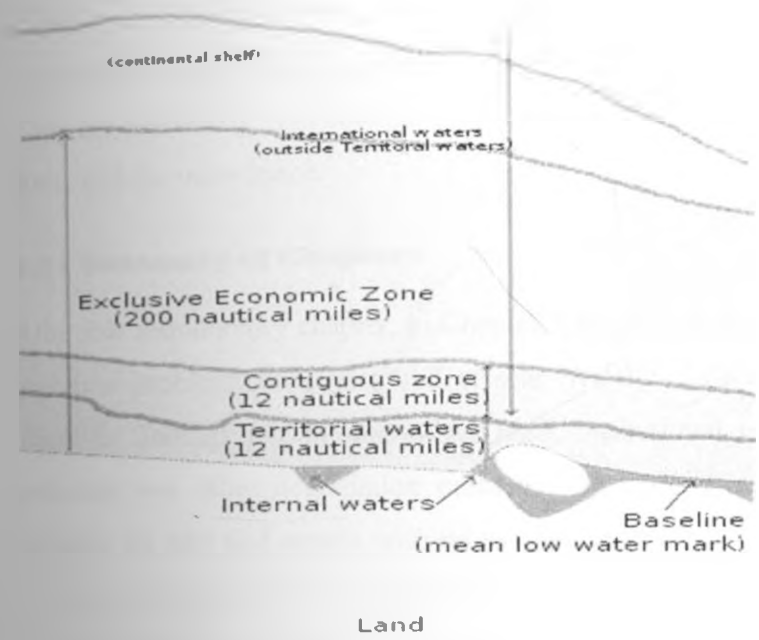

Figure 1: The Key Maritime Zones

For the purposes of this study, "marine environmental protection" generally means the combination of measures of control, regulation, conservation and governance over the natural environment of the seas and oceans, in particular against pollution and degradation from various sources and activities, and such measures include national and international legal, policy and institutional frameworks. The "natural environment" in relation to the seas and oceans includes the fauna and flora (bio diversity), as well as the water column traversing all maritime zones, the superjacent air space, the continental shelf, the Area and other features all forming part of the seas and oceans of the world.

"Pollution or degradation of the marine environment" means 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

[115] Ibid, Article 1(1)(3).

legitimate uses of the sea, impairment of quality for use of sea water and reduction of amenities.[116] This definition will apply herein for all references to "the high seas," subject to the above definition of the "high seas" themselves.

Finally, the "global commons" is a term which refers to shared international resources or areas, or in respect of which the principle of common heritage of humankind applies,[117] or resources or areas which are subject to free access and / or use by the community of nations. They are essentially *"res communis,"* and they include the high seas, the international seabed Area, and the outer space.

1.11 Summary of Chapters

After this introductory chapter, in Chapter 2 we discuss in detail the marine degradation and pollution problem, its causes and effects. We conclude that it is apparent that based on scientific findings, and in spite of the legal, institutional and policy frameworks, the marine pollution and other degradation problems are serious, even critical, and are growing in virtually all seas and oceans with no easy answers in sight. It has been shown that the most prominent high seas environmental problems arise from ship based oil and other pollution; oceanic dumping of wastes; and military activities, nuclear wastes and materials remnant of war. Others are exploitation of marine living resources and sea bed activities. It is clear that there is sufficient, or at least significant scientific knowledge concerning marine pollution generally, and the high seas in particular. Thus the greater question is not the lack of scientific knowledge or basis for action, but the efficacy of existing laws, policies and institutional frameworks.

Chapter 3 deals substantively with the historical and ideological foundations of marine environmental law. It appears from the long history that high seas environmental issues were tackled from early on, though not always directly. In fact, not until 1958 did an international convention dealing with the high seas as such come into being. The 1958 High Seas Convention provisions were largely replicated in the 1982 UN Convention on the Law of the Sea. However, no specific institutional arrangements were provided for in the legal instruments for the high seas as a maritime zone and which exemplified the principle of freedom of the high seas.

---

116 Ibid., Article 1 (1) (4)
117 Ibid., Article 136.

Chapter 4 discusses the efficacy of the various legal and policy instruments which have been established to tackle high seas environmental problems. It is shown that a clearly discernible disparity exists between the scientific reality about the health of our seas and oceans and the plethora of largely well-written legal instruments, whose efficacy as frameworks for the protection of the high seas environment is doubtful. The disparity is even more serious for the high seas as global commons. The high seas face critical and surmounting environmental problems, and yet there is a significant inadequacy of legal, policy and institutional responses to confront the problems.

Chapter 5 addresses the efficacy of existing institutional frameworks. The institutional responses, all shown to be largely inadequate, include those created under the 1982 UN Convention on the Law of the Sea, the UNEP, the IMO framework, and other frameworks. Our thesis is that while there are clearly a large number of international environmental institutions, some with marine environmental mandates, none of them has a specific responsibility for the high seas environment. The absence of dedicated institutional arrangements for regulation and enforcement of the high seas environmental standards could have serious implications on the future of this immense global resource.

Chapters 6 and 7 address the third research objective, namely to suggest and discuss possible legal and institutional options and directions for better protection, regulation and enforcement of the high seas environment. In Chapter 6 we make a case for the establishment of a global regulatory and enforcement agency for the high seas environment. It seeks to show that international regulation- the setting of common standards supervised by international institutions- offers the best means of ensuring a generally accepted minimum level of environmental protection. It has been shown that high seas environmental problems do not have significant regional variations or distinctions to justify a regional approach; that indeed the regional approaches are in any case not adequate; and that there is a strong basis for serious consideration of the nature and scope of a global agency to perform those comprehensive functions.

Chapter 7 provides a portrait of the proposed high seas environmental Agency, as part of the efforts towards the realization of international consensus, and to engender further debate on the matter. An attempt is made to describe and discuss the institutional details and features, and the legal form that could and should be taken towards establishment of the proposed high

seas environmental Agency. This chapter climaxes our thesis by attempting to develop the conceptual and operational bases and features of a global regulatory and enforcement agency for the high seas environment. The core discussions include formulating a conceptual framework for the proposed institution, including fundamental principles and key characteristics, jurisdictional issues, and legal and operational features. This should form a basis for the recommendation made in Chapter 8 for the establishment of a legal and institutional framework for the regulation and enforcement of the high seas environment.

Finally, Chapter 8 covers the summary, conclusions and recommendations of the study. The key recommendations of the study include: the need to reform international environmental governance; the need for better coordination of international environmental organizations; the establishment of a high seas environmental Agency, as well as the need for concerted efforts to achieve universal acceptance of the 1982 UN Convention on the Law of the Sea.

1.12 Limitations of the Study

While this study has sought to be comprehensive on the subject of research, there were several limitations, briefly outlined below, and which necessitate our recommendation of new areas of research that may require further investigation, beyond the scope of the current study.

Firstly, this was an academic research with clear objectives and goals. Its structure and outcome were necessarily constrained by the formal requirements of a post graduate academic research.

Secondly, as in most research projects, there were time and financial constraints, mostly due to the fact that the researcher had to accommodate a heavy teaching and other work load at the host institution, the University of Nairobi where he teaches Law, as well as limited research grants from DAAD and the University of Nairobi.

Thirdly, the study area was global and extensive, with rather sparse and scattered books and other literature dedicated to the subject. This obliged the researcher to look far and wide for the relevant materials, often at considerable cost and the attendant delays.

Consequently, not every aspect connected with the subject matter could possibly be exhausted in the present study. Some of the possible areas of further research include the following: the need for comprehensive review of the 1982 UN Convention on the Law of the Sea; issues

concerning jurisdictions over areas beyond national jurisdictions; high seas biodiversity conservation including marine living resources; maritime security and military uses of the high seas; marine scientific research in the high seas; and shipping and maritime transport in the high seas; the role of regional organizations, particularly in the African Region, in the high seas environment, among others.

CHAPTER TWO

Marine Environmental Degradation and Pollution: Causes and Effects

Vast and awe-inspiring, seemingly limitless and indestructible, the oceans have been the ultimate depositary for humanity's wastes since before the dawn of civilization. For even longer, their waters and coasts have provided an apparently inexhaustible bounty of fish and other resources. And for thousands of years they did indeed seem able to absorb everything that was done to them, though some relatively small areas were overwhelmed. But as the world's population and wealth have increased, as industries have grown, fishing has intensified, and people have crowded to the coasts, the seas have been plunged into crisis. See GESAMP No. 71 (2001)

2.1 Introduction

This chapter will discuss in detail the marine degradation and pollution problem, particularly in the high seas, including its causes and effects. The sources are mostly sea based, land based and through the atmospheric medium, with the most prominent being ship based oil and other pollution; oceanic dumping of wastes; and military activities, nuclear wastes and materials remnant of war. Others are exploitation of marine living resources and sea bed activities. The legal, institutional and policy responses to the international marine degradation and pollution problems include conventions and instruments for the prevention, reduction and control of marine pollution from various sources; and conventions and instruments dealing with responsibility and liability resulting from marine pollution. These various issues will be dealt with in some detail in the following pages.

2.2 Overview of the International Marine Pollution Problem and the High Seas

The international marine pollution problem is hardly new, nor is the distinction between land-based and sea-based sources exactly novel. In fact, these two questions have largely informed and catalyzed the development of relevant international environmental law[1] and the

[1] See generally, Birnie, P, Boyle, A and Redgwell, C :*International Law and the Environment*, 3rd ed (2009), Chapters 7 & 8. .

framework law of the sea[2] over the past few decades. The latter defines "pollution of the marine environment" as follows:

> .....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, impairment of quality for use of sea water and reduction of amenities...[3]

Scientific findings are to the effect that, notwithstanding that general rules concerning the protection of the marine environment against pollution from various sources are well developed globally and regionally, especially since 1972,[4] this has not halted the continual degradation of the marine environment from pollution from various sources, such as land-based sources and activities (including atmospheric pollution); damaging by vessels at sea, off-shore vessels and seabed activities,[5] A recent GESAMP Report states as follows:

> Globally, both the environmental problems of the oceans and coastal areas, and their causes have remained largely unchanged for several decades. Although there have been some notable successes in addressing problems caused by some forms of marine pollution, and in improving the quality of certain coastal areas, on a global scale marine environmental degradation has continued and in many places even intensified.[6]

The largest portion of marine environmental pollution is from land-based sources and activities.[7] The 1990 GESAMP Report indicated that coastal pollution was increasing and was more widespread globally than in 1982.[8] It also reported that although the open seas and oceans were relatively clean, the marginal seas were affected by human activities, primarily from land-based activities including intensive human settlement of coastal zones.[9] The

---

2 The 1982 UN Convention on the Law of the Sea.

3 Ibid; Art 1 (4)

4 See Sands, P.: *Principles of International Environmental Law,, 2nd ed* (2003), p. 391- 392

5 Ibid; see also Elliot A. Norse (Ed): *Global Marine Biological Diversity*, Island Press, Washington D.C. (1993)

6 GESAMP Report No. 71 (2001), p. 1, See also GESAMP Report No. 70 (2001), p.1. Elsewhere, a more recent report notes that "...there are many signs that ocean ecosystems are experiencing unprecedented environmental changes driven by human activities." (UNEP and IOC-UNESCO 2009, An Assessment of Assessments,Findings of the Group of Experts: Start-up Phase of a Regular Process for Global Reporting and Assessment of the State of the Marine Environment including Socio-economic Aspects. ISBN 978-92-807-2976-4, p 27.)

7 Ibid, p 1, UNEP and IOC-UNESCO 2009, An Assessment of Assessments,Findings of the Group of Experts: Start-up Phase of a Regular Process for Global Reporting and Assessment of the State of the Marine Environment including Socio-economic Aspects. ISBN 978-92-807-2976-4, p 28; UNEP – Global Programme of Action (GPA) 1995, Washington D.C. which constitutes a major global response to the problem. See also Mostafa Tolba and others: *The World Environment*, 1972-1992, p. 106. The report indicates that ¾ of all marine pollution comes from land-based sources, via drainage and discharges (mainly sewage) into rivers, through outfalls, flowing directly to estuaries, bays and the open coast.

8 GESAMP Reports and Studies No. 39 (1990), jointly sponsored by IMO, FAO, UNESCO, WMO, WHO, IAEA, UNEP and the UN.

9 Ibid

GESAMP Report warned that unless appropriately and timeously checked, the trends would lead to "global deterioration in the quality and productivity of the marine environment."[10] The more serious problems included coastal developments, destruction and alteration of habitats and eutrophication from nutrients and sewage. Urban, industrial and recreational developments have all resulted in large-scale destruction of coastal habitats, especially wetlands, mangroves, salt marshes and sea grasses.[11] Other challenges include large amounts of nitrogen and phosphorous entering the marine environment;[12] microbial contamination of sea food and beaches from the discharge of untreated human sewage, the deposition of plastic and other non-biodegradable solids, litter, the progressive build-up of chlorinated hydrocarbons, and accumulation of tar on beaches from oil spills.[13] The latter problem is particularly serious in the Regional Organization for the Protection of the Marine Environment (ROPME) Sea Area where large oil related operations have seriously affected the marine environment.[14]

The GESAMP Report identified some longer-term marine environmental problems including increased concentrations of toxic substances (particularly arsenic, cadmium, tin and lead), over-fishing, climate change, ozone depletion and 'coral bleaching.'[15]

In addition, some of the waste products of coastal development, augmented by discharges through coastal outfalls and rivers, spread outwards to the world oceans, carried by the atmosphere, currents and ships.[16] Reports indicate that, as a result, during the decades 1972-1992, most commercial stocks of fish were over-exploited and the balance of whole ecosystems was at risk, while contaminants were measurable in the open oceans although their concentrations did not appear high enough to damage marine life.[17] In fact, there was already considerable concern and alarm about the state of the world's oceans during the 1972

---

10 Ibid., p. 1.

11 Sands, P: *Principles of International Environmental Law*, , 2nd ed (2003), p. 392

12 GESAMP: Technical Annexes to the Report of the State of the Marine Environment, No. 114/2, 435 (1990).

13 Sands, P: *Principles of International EnvironmentalLaw*, 2nd ed (2003), p. 393

14 Somer (2003), *State of the Marine Environment Report*: ROPME/GE II/003. Regional Organization for the Protection of the Marine Environment, Kuwait, HQ, 155, p. 4. The ROPME Sea Area is defined as "the area of sea that is surrounded by the eight member states of ROPME: Bahrain, I.R., Iran, Iraq, Kuwait, Oman, Qatar, Saudi Arabia and the United Arab Emirates. The term 'ROPME Sea Area' was coined by the Plenipotentiaries of the member states to denote the area covered by the Kuwait Regional Convention of 1978 (See Article II of the Convention for the geographic dimensions).

15 GESAMP Report No. 39 (1990); Sands, P: *Principles of International Environmental law*, 2nd ed (2003) . p. 393. "Coral Bleaching" is said to take place when coral dies and loses its colour due to the loss of symbiotic algae; it is known to occur when coral is exposed to pollution and my also occur from increased water temperatures (see National Science Foundation US EPA, NOAA: *Workshop on Coral Bleaching, Coral Reef Ecosystems and Global Change: Report of Proceedings*, (1991), Pp. 1-7; cited in *World Resources* 1992-3, P. 178).

16 Mostafa Tolba and Others: *The World Environment 1972 – 1992: Two Decades of Challenge*, UNEP, Chapman and Hull, London, (1992), p. 106.

17 Ibid.

Stockholm Conference,[18] followed by actions in the succeeding years to stop the dumping of polluting wastes at sea to eliminate damaging pollution from ships and to limit discharges from land-based sources and activities. During the two decades between the 1972 Stockholm and Rio (1992), the state of scientific knowledge also improved a great deal.[19] While there were some positive developments, [20] pressures of coastal zone[21] developments were leading to continuing environmental degradation in many parts of the world, and these conditions were likely to be exacerbated by climate change and sea-level rise within the next 50 years or so.[22]

The more recent GESAMP Reports[23] depict the seas and oceans as being in crisis, with the crisis being deepest where the waters are shallowest.[24] Apparently, science informs that the nearer to the land, the greater the hurt is to the seas, their life systems and resources. It is nearest to the landmasses where pollution is at its worst, habitats are most readily destroyed, and much of the depletion of fisheries takes place.[25] According to these reports, although the open seas and oceans suffer some contamination and ecological damage, compared to coastal areas, they are still in a relatively healthy state.[26]

Pressures have been increasing on the seas above the continental shelves, especially as drilling for oil and gas have ventured into deeper waters, and oceanic fisheries have expanded. It is in the near-shore waters, and more so in estuaries and semi-enclosed seas and bays, that the steepest decline occurred during the decade between Rio and 2001.[27] In terms of geographical dispersement, the pressures were particularly severe along the coasts of many

---

18 Ibid; p. 107.

19 Ibid.

20 Ibid. See also GESAMP Reports No. 70, p.1 and No. 71, p.1. GESAMP Report No. 70 states as follows: "The picture is not universally bleak. There has been considerable progress, in some places, in reducing harm to the marine environment. But this is continually being outstripped by the pace and scale of deterioration. More hopefully, perhaps, there is a dawning realization that neither individual problems, nor the crisis of the seas as a whole can be dealt with in isolation. They are intricately interlinked both with themselves and with social and economic development on land. Policy decisions, research, and management programmes are all shifting their focus accordingly". (p.1).

21 "Coastal Zone" is defined as "...the region between the sea ward margin of the continental shelf and the inland limit of the coastal plaint", and it is regarded as among the regions of highest biological productivity on earth. It is also the zone with the greatest concentration of human population (see Mostafa Tolba and Others: *The World Environment 1972 – 1992* p. 106); World Resources 2000 – 2001, *People and Ecosystems. The Fraying Web of Life*, p. 69.

22 Ibid., p. 107

23 In particular, GESAMP Reports and Studies Nos. 70 (January 2001) *A Sea of Troubles*; and No. 71 (January 2001) *Protecting the Oceans from Land-based Activities*.

24 GESAMP Reports and Studies No. 70, p. 1; see also World Resources 2000-2001, p. 77.

25 Ibid.

26 Ibid. However, "with increased changes to the global environment and increased pressure on utilization of new resources, it is likely that these regions will be under greater pressure in the future" (UNEP and IOC-UNESCO 2009, An Assessment of Assessments,Findings of the Group of Experts: Start-up Phase of a Regular Process for Global Reporting and Assessment of the State of the Marine Environment including Socio-economic Aspects. ISBN 978-92-807-2976-4, p 30.)

27 Ibid (GESAMP), p 1.

developing countries, where rapid population growth[28] combined with persistent poverty and where there was little capacity to manage the situations. However, even developed country coastlines were overdeveloped and degraded as more people and businesses demanded oceanfront properties.[29]

The reports indicate that the seas and coasts worldwide are being used more and more to provide the basics of life, and for commerce and recreation. Growing demands are putting increasing pressure on the resources of the oceans. The burden of waste sent out to the seas is growing worldwide, although it has been somewhat lightened in some places and regions by better technologies and practices. The use of agricultural production inputs such as pesticides, fertilizers and other agro-chemicals is rising globally, leading to higher flows of similar substances into the seas. Fisheries are apparently in a shambles, grossly mismanaged and over-exploited everywhere. Coasts are over-developed, habitats are increasingly being destroyed, and the introduction of alien species is taking place on a large scale, often disrupting both ecosystems and economies.[30] The most affected and vulnerable areas and systems include coral reefs, wetlands, sea grass beds, coastal lagoons, mangroves, shorelines, watersheds, estuaries, small islands, continental shelves and semi-enclosed seas.[31]

Over and above the general marine environmental pollution and degradation problems discussed above, the high seas as a global commons suffer environmental problems, which are rather peculiar to this maritime zone. Of course, part of the peculiarity is the legal and institutional arrangements that exist, as well as the practical limitations of superintending and enforcing compliance with the existing environmental rules and standards. The other peculiarity is that the high seas are some of the most important international highways. The efficacy of the existing legal, policy and institutional regimes for the high seas will be discussed in the next chapter. The following discussion focuses on the causes, sources and effects of marine pollution; and various land-based, sea-based and atmospheric sources and activities, which are responsible for high seas pollution and degradation. The latter include oceanic dumping (including hazardous substances); international shipping and oil discharges; exploitation of marine living resources (mainly fisheries); seabed activities; military activities and nuclear tests; and materials remnant of war.

---

[28] See for example, the situation in the ROPME Sea Area, in Somer (2003), State of the Marine Environment Report pps. 83, 180.

[29] Ibid.

[30] Ibid, p. 2

[31] Ibid. See also, GESAMP Reports and Studies No. 71, p. 9; Somer (2003): State of the Marine Environment Report, generally.

Some of the anthropogenic activities above cause alarming levels of noise pollution. Scientific estimates claim that noise levels in some areas have doubled every decade for the past 60 years. There is mounting concern that maritime noise proliferation poses a significant threat to the survival of marine mammals, fish and other ocean life. Direct sources of anthropogenic noise include the use of explosives, oceanographic experiments, geophysical research, underwater construction, ship traffic, intense active sonars and air guns used for seismic surveys for oil exploration and related activities. Many of these happen in the high seas or in adjacent maritime zones.

2.3 Marine Degradation and Pollution: Causes, Sources and Effects

For many decades, concern about the state of the seas has mainly been generated by pollution. However, in recent decades there has been growing awareness and knowledge of other important threats to the marine environment, particularly over fishing and the destruction of habitats, which to an extent tended to overshadow the pollution problem.[32] Marine pollution from whichever source or cause has profound effects both on human and animal health and the environment. For example, sewage pollution, itself nearly as old as civilization,[33] while in moderation quite beneficial to sea life as a source of nutrients is nevertheless dangerous when there is too much of it in a small or confined area. This is the case in many coastal cities and other human settlements, especially in developing countries, causing many inshore waters to become overwhelmed.[34]

Other effects of sewage pollution on the marine environment include aesthetic nuisance, destruction of large areas of fisheries, recreation and tourism, which in turn causes major economic losses. Eutrophication and blooms of algae, usually stimulated by too much nutrition from sewage and agricultural chemicals and wastes, does a lot of harm to coastal and marine waters. Frequent outbreaks of gastro intestinal diseases such as cholera, typhoid and infectious hepatitis caused by contaminated seafood and bathing water are other effects of marine pollution through sewage contamination. For example, a major outbreak of cholera in Latin America between 1991 and 1995, which claimed 10,000 lives, was traced to the coastal

---

32 GESAMP Reports and Studies No. 70, p. 5.

33 Ibid. See also, World Resources 2000-2001, p. 72, 76.

34 Ibid. (GESAMP Reports and Studies No. 7 p. 5)

cities of Peru.[35] An earlier (1973) outbreak of cholera in Naples had come from consumption of contaminated shellfish.[36]

However, newer and larger studies sponsored by GESAMP and the World Health Organization (WHO) indicate that microbiological contamination of the sea has, far from causing merely isolated local problems, precipitated a health crisis with massive global implications.[37] This is manifested by respiratory and intestinal diseases and infections among seawater users, especially bathers. The GESAMP/WHO Study, which was based on global estimates of the number of tourists who bathe, and WHO estimates of the relative risks at various levels of contamination, estimates that bathing in polluted seas causes some 250 million cases of gastroenteritis and upper respiratory disease every year with some of the victims being disabled over the longer term.[38] The GESAMP/WHO Study also estimates that eating sewage-contaminated shellfish raw causes some 2.5 million cases of infectious hepatitis each year. Some 25,000 of these victims die while another 25,000 suffer longer-term disability from liver damage.

Another source of pollution, according to the GESAMP/WHO Reports, is man-made radio nuclides discharged into the sea. However, this category of pollutants is not as worrisome to scientists and policy makers as other categories of marine pollutants. This also applies to heavy metals and even the most dramatic oil spills because their effects are generally localized and containable. Of greater concern, by comparison, is polluting by nutrients and some persistent organic chemicals.[39] According to the GESAMP Report,[40] until recently, most attention was concentrated on pollutants which directly or indirectly poisoned sea life and those which consumed its living resources. Less attention was directed at the potential effects of the persistent organic chemicals, some of which may have subtler, but perhaps more damaging effects. These include changes in the structure and function of communities of marine life through the disruption of reproduction and alteration of behaviour, and effects at molecular level, such as causing cancer or mutations or the disruption of the endocrine systems. However, scientific evidence is as yet inconclusive as to the true effects of pollutants at the current levels. Every risk to human health usually only occurs where pollutant

---

Ibid.
Ibid.
Ibid.
Ibid, p. 6.
Ibid.
Ibid.

cities of Peru.[35] An earlier (1973) outbreak of cholera in Naples had come from consumption of contaminated shellfish.[36]

However, newer and larger studies sponsored by GESAMP and the World Health Organization (WHO) indicate that microbiological contamination of the sea has, far from causing merely isolated local problems, precipitated a health crisis with massive global implications.[37] This is manifested by respiratory and intestinal diseases and infections among seawater users, especially bathers. The GESAMP/WHO Study, which was based on global estimates of the number of tourists who bathe, and WHO estimates of the relative risks at various levels of contamination, estimates that bathing in polluted seas causes some 250 million cases of gastroenteritis and upper respiratory disease every year with some of the victims being disabled over the longer term.[38] The GESAMP/WHO Study also estimates that eating sewage-contaminated shellfish raw causes some 2.5 million cases of infectious hepatitis each year. Some 25,000 of these victims die while another 25,000 suffer longer-term disability from liver damage.

Another source of pollution, according to the GESAMP/WHO Reports, is man-made radio nuclides discharged into the sea. However, this category of pollutants is not as worrisome to scientists and policy makers as other categories of marine pollutants. This also applies to heavy metals and even the most dramatic oil spills because their effects are generally localized and containable. Of greater concern, by comparison, is polluting by nutrients and some persistent organic chemicals.[39] According to the GESAMP Report,[40] until recently, most attention was concentrated on pollutants which directly or indirectly poisoned sea life and those which consumed its living resources. Less attention was directed at the potential effects of the persistent organic chemicals, some of which may have subtler, but perhaps more damaging effects. These include changes in the structure and function of communities of marine life through the disruption of reproduction and alteration of behaviour, and effects at molecular level, such as causing cancer or mutations or the disruption of the endocrine systems. However, scientific evidence is as yet inconclusive as to the true effects of pollutants at the current levels. Every risk to human health usually only occurs where pollutant

---

n. Ibid.
o. Ibid.
p. Ibid.
q. Ibid, p. 6.
r. Ibid.
s. Ibid.

cities of Peru.[35] An earlier (1973) outbreak of cholera in Naples had come from consumption of contaminated shellfish.[36]

However, newer and larger studies sponsored by GESAMP and the World Health Organization (WHO) indicate that microbiological contamination of the sea has, far from causing merely isolated local problems, precipitated a health crisis with massive global implications.[37] This is manifested by respiratory and intestinal diseases and infections among seawater users, especially bathers. The GESAMP/WHO Study, which was based on global estimates of the number of tourists who bathe, and WHO estimates of the relative risks at various levels of contamination, estimates that bathing in polluted seas causes some 250 million cases of gastroenteritis and upper respiratory disease every year with some of the victims being disabled over the longer term.[38] The GESAMP/WHO Study also estimates that eating sewage-contaminated shellfish raw causes some 2.5 million cases of infectious hepatitis each year. Some 25,000 of these victims die while another 25,000 suffer longer-term disability from liver damage.

Another source of pollution, according to the GESAMP/WHO Reports, is man-made radio nuclides discharged into the sea. However, this category of pollutants is not as worrisome to scientists and policy makers as other categories of marine pollutants. This also applies to heavy metals and even the most dramatic oil spills because their effects are generally localized and containable. Of greater concern, by comparison, is polluting by nutrients and some persistent organic chemicals.[39] According to the GESAMP Report,[40] until recently, most attention was concentrated on pollutants which directly or indirectly poisoned sea life and those which consumed its living resources. Less attention was directed at the potential effects of the persistent organic chemicals, some of which may have subtler, but perhaps more damaging effects. These include changes in the structure and function of communities of marine life through the disruption of reproduction and alteration of behaviour, and effects at molecular level, such as causing cancer or mutations or the disruption of the endocrine systems. However, scientific evidence is as yet inconclusive as to the true effects of pollutants at the current levels. Every risk to human health usually only occurs where pollutant

---

[35] Ibid.
[36] Ibid.
[37] Ibid.
[38] Ibid. p. 6.
[39] Ibid.
[40] Ibid.

concentrations are high, or where people are exposed to them in unusual ways such as in the Arctic where fish and seafood form an extremely high percentage of the diet.[41]

A prominent effect of marine pollution through sewage disposal is eutrophication – the excessive growth of marine plant life. This is regarded as potentially one of the most damaging of the many harmful effects of human induced pollution. Eutrophication is caused by the presence of too much nutrients, which causes plant life, mainly phytoplankton or algae, to proliferate. Long-term increases in phytoplankton and their decay near the seabed can deplete oxygen over large areas either periodically or permanently. This may in turn lead to dramatic changes in ecosystems, as for example the "dead zone" each summer off Louisiana in the Gulf of Mexico blamed on excessive nitrogen from agricultural fertilizers flushed down the Mississippi River.[42] Other effects of eutrophication include making the waters less transparent, thus reducing the penetration of sunlight in the sea. Coral reefs, sea grass beds and other ecosystems, which depend on light, suffer the absence of sunlight. Eutrophication is also said to cause explosive blooms of algae, such as "red tides" which cover the surface of the sea. Some of the algae can be toxic or otherwise harmful, which may affect marine life or human health especially through the consumption of shellfish. One such algae explosion is reported to have occurred in Chesapeake Bay, killed thousands of fish and made dozens of people ill, and plummeted sales of crabs, oysters and fish.[43] Other marine life such as whales, dolphins and other marine mammals are also affected by toxic algae, as are tourism, commercial fisheries, and aquaculture.

Agriculture and the release of nitrogen oxides from burning fossil fuels are key avenues for releasing nutrients into the ocean. In rural areas adjacent to the seas, the main culprit is agriculture; in the urban areas, municipal sewage is the more predominant. Worldwide, most nutrients reach the seas down rivers (main route for inshore areas) and by being blown in the winds (atmospheric deposition), which is the main route to the open sea.

2.3.1 Land-Based Sources of Marine Pollution

Land-based sources of marine pollution may be categorized as coastal and upstream point sources and non-point (diffuse) sources respectively and contaminants. The latter include atmospheric deposition; sewage, radioactive substances and radionuclides, metallic

[41] Ibid.
[42] Ibid.
[43] Ibid, p. 8.

concentrations are high, or where people are exposed to them in unusual ways such as in the Arctic where fish and seafood form an extremely high percentage of the diet.[41]

A prominent effect of marine pollution through sewage disposal is eutrophication – the excessive growth of marine plant life. This is regarded as potentially one of the most damaging of the many harmful effects of human induced pollution. Eutrophication is caused by the presence of too much nutrients, which causes plant life, mainly phytoplankton or algae, to proliferate. Long-term increases in phytoplankton and their decay near the seabed can deplete oxygen over large areas either periodically or permanently. This may in turn lead to dramatic changes in ecosystems, as for example the "dead zone" each summer off Louisiana in the Gulf of Mexico blamed on excessive nitrogen from agricultural fertilizers flushed down the Mississippi River.[42] Other effects of eutrophication include making the waters less transparent, thus reducing the penetration of sunlight in the sea. Coral reefs, sea grass beds and other ecosystems, which depend on light, suffer the absence of sunlight. Eutrophication is also said to cause explosive blooms of algae, such as "red tides" which cover the surface of the sea. Some of the algae can be toxic or otherwise harmful, which may affect marine life or human health especially through the consumption of shellfish. One such algae explosion is reported to have occurred in Chesapeake Bay, killed thousands of fish and made dozens of people ill, and plummeted sales of crabs, oysters and fish.[43] Other marine life such as whales, dolphins and other marine mammals are also affected by toxic algae, as are tourism, commercial fisheries, and aquaculture.

Agriculture and the release of nitrogen oxides from burning fossil fuels are key avenues for releasing nutrients into the ocean. In rural areas adjacent to the seas, the main culprit is agriculture; in the urban areas, municipal sewage is the more predominant. Worldwide, most nutrients reach the seas down rivers (main route for inshore areas) and by being blown in the winds (atmospheric deposition), which is the main route to the open sea.

2.3.1 Land-Based Sources of Marine Pollution

Land-based sources of marine pollution may be categorized as coastal and upstream point sources and non-point (diffuse) sources respectively and contaminants. The latter include atmospheric deposition; sewage, radioactive substances and radionuclides, metallic

[41] Ibid.
[42] Ibid.
[43] Ibid, p. 8.

compounds; hydrocarbon compounds, polycyclic aromatic hydrocarbons, nutrients, sediments and litter.

The UNEP-Global Environment Outlook (GEO) (2002)[44] and the World Resources (2002-2004) Reports[45] also have some interesting findings and dimensions. UNEP-GEO 3 confirms other reports that marine and coastal degradation is largely caused by increasing pressure on both terrestrial and marine natural resources, the use of the oceans to deposit wastes, population growth,[46] urbanization and industrialization near or along coastal areas. It asserts that the effects of population are multiplied by both poverty and human consumption patterns. Globally, sewage remains the largest source of contamination, by volume, of the marine and coastal environment; and coastal sewage discharges have increased dramatically in the past (four) decades since Stockholm. Looking backwards three decades, UNEP- GEO 3 concludes that overall, coastal and marine environmental degradation not only continues but has in fact intensified.[47] Pollution of the coastal and marine environment is ubiquitous as a key environmental issue in virtually all regions of the world.[48]

The report notes that progress in protecting the marine and coastal environment over the past three decades has been generally confined to relatively few, mostly developed countries and to a relatively small number of environmental issues.[49] However, significant global, regional and even national policy, institutional and legal responses to marine pollution are noted, and include bans on production and use of some substances, regulations to reduce discharges and the prohibition of ocean dumping, as well as a significant scientific effort to improve the status of knowledge about these pollutants.[50]

International legal instruments in this regard include the 1972 London Convention[51] and its 1996 Protocol;[52] the 1989 Basel Convention on the Control of Transboundary Movement of

---

44 UNEP (2002): Global Environment Outlook, 3: Past, Present and Future Perspectives Earthscan Publications, London (UNEP-GEO 3).

45 UNDP/UNEP/WB/WRI (2003): World Resources 2002-2004: Decisions for the Earth: Balance, Voice and Power, Washington D.C.

46 According to statistics, world population increased from about3.85 billion people in 1972 to 6.1 billion in mid-2000, and is currently growing at the rate of 77 million people a year (UN Population Division [2001]): World Population Prospects 1950-2050 (The 2000 Revision New York, United Nations. See also UNFPA (2001). Population Issues Briefing Kit 2001. United Nations Population Fund: *http://www.unfpa.org/modules/briefkit(Geo-2-278).*

47 UNEP-GEO 3 (2002), Chapter 2, particularly pps. 180-209.

48 Ibid., p. 31.

49 Ibid., p. 180

50 Ibid., pps 180-181.

51 11 ILM (1972), 1294.

52 36 ILM (1997),7.

Hazardous Wastes and their Disposal;[53] and the 1995 GPA.[54] Also noteworthy is that marine pollution is an important focus of UNEP's Regional Seas Programmes (RSPs), which have been established in many parts of the world. Another important policy response was the request by the UNEP Governing Council in 2001, for the conduct of a feasibility study for the establishment of a regular process for global marine assessment.

The UNEP-GEO 3 notes that one of the most serious concerns globally currently relates to persistent organic pollutants (POPs), many of which are transported globally via the atmosphere and are ubiquitous in the oceans. There is growing evidence that long-term, low-level exposures to some POPs is or could be the cause of reproductive, immunological, neurological and other problems in marine organisms, and possibly also in human beings, although the evidence for such widespread ecological or human health impacts at current levels of contamination is inconclusive.[55] Another threat to the environment of the oceans and particularly to marine animals is non-biodegradable litter, which enters the marine environment. For example, each year, large numbers of sea birds, sea turtles and marine mammals are killed by entanglement in or ingesting of non-biodegradable litter.[56] And finally, sedimentation is cited as one of the major global threats to coastal habitats generally and especially to coral reefs, particularly in the Caribbean, Indian Ocean, and South and South East Asia.[57]

The UNEP-GEO 3 Report prefaced, and was in part a strategic preparation for the World Summit on Sustainable Development (WSSD) otherwise known as "RIO + 10", in Johannesburg, South Africa, 26 August – 4 September 2002. Two important outcomes of the WSSD were the "Johannesburg Declaration" and the "Johannesburg Plan of Implementation", both adopted by the Governments and other stakeholders at the Summit. Paragraph 29 of the Plan of Implementation states as follows:

> Oceans, seas, islands and coastal areas form an integrated and essential component of the Earth's ecosystem and are critical for global food security and for sustaining economic prosperity and the well-being of many national economies, particularly in developing countries. Ensuring the sustainable

---

53 28 ILM (1989),657.

54 6 YbIEL (1995), 883.

55 Ibid., p. 182.

56 Ibid., p. 182-183.

57 Ibid., citing Bryant and others (1998): *Reefs at Risk: A Map based Indicator of Threats to the World's Coral Reefs*, Washington D.C., World Resources Institute; Wilkinson, C.R. (Ed), (2000); *Status of Coral Reefs of the World:* (2000), Townsville, Australian Institute of Marine Science.

Hazardous Wastes and their Disposal;[53] and the 1995 GPA.[54] Also noteworthy is that marine pollution is an important focus of UNEP's Regional Seas Programmes (RSPs), which have been established in many parts of the world. Another important policy response was the request by the UNEP Governing Council in 2001, for the conduct of a feasibility study for the establishment of a regular process for global marine assessment.

The UNEP-GEO 3 notes that one of the most serious concerns globally currently relates to persistent organic pollutants (POPs), many of which are transported globally via the atmosphere and are ubiquitous in the oceans. There is growing evidence that long-term, low-level exposures to some POPs is or could be the cause of reproductive, immunological, neurological and other problems in marine organisms, and possibly also in human beings, although the evidence for such widespread ecological or human health impacts at current levels of contamination is inconclusive.[55] Another threat to the environment of the oceans and particularly to marine animals is non-biodegradable litter, which enters the marine environment. For example, each year, large numbers of sea birds, sea turtles and marine mammals are killed by entanglement in or ingesting of non-biodegradable litter.[56] And finally, sedimentation is cited as one of the major global threats to coastal habitats generally and especially to coral reefs, particularly in the Caribbean, Indian Ocean, and South and South East Asia.[57]

The UNEP-GEO 3 Report prefaced, and was in part a strategic preparation for the World Summit on Sustainable Development (WSSD) otherwise known as "RIO + 10", in Johannesburg, South Africa, 26 August – 4 September 2002. Two important outcomes of the WSSD were the "Johannesburg Declaration" and the "Johannesburg Plan of Implementation", both adopted by the Governments and other stakeholders at the Summit. Paragraph 29 of the Plan of Implementation states as follows:

> Oceans, seas, islands and coastal areas form an integrated and essential component of the Earth's ecosystem and are critical for global food security and for sustaining economic prosperity and the well-being of many national economies, particularly in developing countries. Ensuring the sustainable

---

53 28 ILM (1989),657.

54 6 YbIEL (1995), 883.

55 Ibid., p. 182.

56 Ibid., p. 182-183.

57 Ibid., citing Bryant and others (1998): *Reefs at Risk: A Map based Indicator of Threats to the World's Coral Reefs*, Washington D.C., World Resources Institute; Wilkinson, C R. (Ed), (2000): *Status of Coral Reefs of the World:* (2000), Townsville, Australian Institute of Marine Science.

development of the oceans requires effective co-ordination and co-operation, including, at the global and regional levels…

Thus, today, four decades since Stockholm, marine pollution is still an urgent problem with very current efforts being made to stem its tide and the severity of its consequences, without neglecting or diminishing marine and coastal environmental problems and challenges.[58]

Elsewhere. the World Resources 2002-2004[59] introduces a relatively new dimension to the global environment debate, namely environmental governance – how environmental decisions are made and who makes them. It defines the concept of "environmental governance" as "the exercise of authority over natural resources and the environment."[60] It argues that one of the most direct routes to better environmental decisions is to provide easy access to environmental information and to encourage broad participation in environmental decisions.[61] Marine environmental governance issues, especially of the high seas, will be discussed in later chapters of this dissertation.

Land-based activities are the major sources of degradation and pollution problems and threats facing the oceans today, especially the coastal areas, as well as the effects of fishing and the threats posed by global climate change. Admittedly, pollution and degradation is much more severe in the coastal areas compared to the open ocean.[62] The land-based sources and activities may be classified as coastal and upstream point sources, coastal and upstream non-point (diffuse) sources and atmospheric-borne deposits. The major contaminants include sewage, persistent toxic substances and POPs; radioactive substances and radionuclides; metallic compounds, polycyclic aromatic hydrocarbons (PAHs), nutrients, sediments and litter.[63]

Coastal and upstream point sources are usually specific industrial plants, sewage discharges and development sites such as land clearance, excavation and related developments. The contaminants of concern from industrial discharges are nutrients, heavy metals, specific

---

For example, in the Western Indian Ocean Region, a major UNEP/GEF Project was implemented during 2004 – 2009 entitled "Addressing Land-based Activities in the Western Indian Ocean (WIO-LaB) (Project Number: IMIS:GFL/QGL/2328-2731-4792;pms:GF/XG-6030-04-11). It covered the mainland coastal states of Kenya, Mozambique, South Africa and the United Republic of Tanzania, as well as the island states of Comoros, Madagascar, Mauritius and the Seychelles. The executing agencies for the Project were United Nations Office for Project Services (UNOPS) and the Nairobi Convention Secretariat, the UNEP-RSP for the project area.

Supra, note 47.

Ibid, p 2

Ibid.

GESAMP Reports (2001), No. 71, p. 115.

Ibid, pps. 16-26.

organic compounds, radionuclides and associated properties. The constituents of sewage are human pathogens, nutrients, organic carbon, and sometimes oils, greases and industrially derived chemicals that may enter the sewage flow both from household use and storm water runoff. Industrial contributions to sewage include organic-rich wastes from animal processing plants, breweries, canneries and tanneries. Other point sources include development activities that result in discharges of sediment or the interruption of stream flow which sometimes result in the trapping of contaminants.[64] Most, if not all, marine regions identify industrial discharges to rivers and the marine environment as a source of identifiable impact, even if this is frequently localized. This holds true of discharges containing high concentrations of metals, oil, PAHs and nutrients. Therefore, virtually all marine regional areas have evidence of discharges exceeding the capacity of the receiving environment to accommodate them without adverse effect. Examples abound of extreme contamination of the marine environment with such substances as metals in the Arctic, in the vicinity of smelting operations in the Russian North, as well as in places where the marine environment has been used as a repository for mine wastes such as Maarmorilik, Greenland.[65] Another prime example is the impact of oil related industrial works in the ROPME Sea Area.[66]

In geo-economic terms, in developed countries, compared to poorer countries and regions, where the adverse effects of such practices on the marine environment and its resources have been identified, there have been some remedial measures taken to rectify the same, especially through the imposition of source controls. At least the more obvious or extreme cases receive attention, although the more obscure and subtle cases ought to challenge developed countries more seriously.[67]

As a category of point sources, all industrial wastes contain natural and artificial radio nuclides from atmospheric fallout. The major authorized releases of radio nuclides to the sea are those from nuclear fuel cycle installations, particularly spent fuel reprocessing plants. Reprocessing plants that are recognized include at Sellafield (U.K.), La Hague and Marconte (since shut down) (France), Trombay in India and Tokai – Mura in Japan. The seas under direct influence of discharges from Sellafield and La Hague, such as the Irish Sea and the North Sea, have been subjected to comprehensive evaluations for many years. It is also

---

64 Ibid., p. 16

65 Ibid.

66 Somer (2003), *State of the Marine Environment Report*: ROPME/GE II/003, pps. 83-84.

67 GESAMP Reports (2001) No. 71, p. 17.

reported that ongoing scientific studies of larger "downstream" water bodies, such as the Norwegian Current, the Baltic Sea, the Barents Sea and the Arctic Ocean, have provided enough information to identify and quantify public health risks. Apparently, nuclear power reactors, although generally regarded as extremely lethal, actually discharge small quantities of radio nuclides, but which are generally well regulated and safe in normal operating conditions.[68]

A final point source within the coastal marine environment in both developed and developing countries is mariculture facilities. Wastes entering the coastal and marine environment from certain mariculture facilities include faecal matter and unconsumed feeds, both usually containing residues from pharmaceutical and other treatment agents.[69]

The category of coastal and upstream non-point or diffuse sources result from broad-scale activities that may not be easily or readily discriminated as single, point or site-specific discharges. The most obvious and prominent in this category is agriculture, which results in the run-off of crop treatment residues, other inputs, as well as animal wastes. This in turn affects ground water, which finds its way to rivers and coastal waters. Other prominent diffuse sources are wide-scale forestry, which contributes to diffuse source transport of nutrients and soils to the marine environment; major or widespread development activities, which result in increased mobilization of soils. Of greatest concern for diffuse sources are nutrients and particulate materials.[70]

With regard to atmospheric deposition, there are two categories of substances: those with short atmospheric residence times and those with long ones. Short residence materials are usually likely to be deposited fairly close to such sources, for example, releases of metals from metalliferous smelting activities. Long residence time components will usually be widely distributed on regional or even global scales.[71] Among substances of greatest concern in relation to the atmospheric pathway to the marine environment are the more volatile substances such as mercury and lead, and a range of organic substances. Of particular concern are the semi-volatile and persistent substances such as the polychlorinated biphenyls (PCBs), a number of pesticides and some by-products of combustion such as polychlorinated dibenzo

---

68 Ibid.

69 Ibid., citing GESAMP Reports and Studies No. 65 (1997): *Towards Safe and Effective Use of Chemicals in Coastal Aquaculture*, FAO, Rome.

70 Ibid.

71 GESAMP Reports and Studies (No. 71), p. 17.

P. dioxins (PCDDS) and dibenzo furns. All of these are grouped as compounds and classified as "persistent organic pollutants" (POPs) and are sometimes referred as the "dirty dozen."[72] These semi-volatile substances apparently can undergo an interactive process of deposition, remobilization into the atmosphere and re-deposition which explains their prevalence in Polar Regions.[73]

Some studies have been undertaken on the atmospheric input to coastal waters, particularly in North America and Europe. Those studies have revealed, for example, that toxaphene, a POP, extensively used as a pesticide in North and South America, Russia and Asia, causes human and animal health and environmental problems especially in the Polar Regions. It has also apparently become widely distributed within the marine environment.[74] Concerns have also been raised about the input of a wide range of synthetic organic compounds to the coastal oceans, for example, the high input of lindane to the North Sea,[75] other concerned trace metal input such as lead into the North Sea, the Baltic Sea and the Mediterranean Sea. Approximately 20% of lead in the Atlantic inflow to the North Sea is derived from the atmosphere, although dumping is an equally substantial source.[76] Atmospheric deposition or fallout is still a significant pathway of input to land and the ocean for artificial radio nuclides, although this is becoming smaller as the stratospheric reservoir of fission products from atmospheric weapons testing is reduced by radioactive decay. Atmospheric deposition of artificial radio nuclides is important to the supply of some natural radio nuclides such as Beryllium-7 and lead-210, to the earth's surface.[77] However, for many contaminants, a relatively small fraction of the material delivered to estuaries and the coastal zone by rivers makes its way through the near-shore environment to the open seas and oceans. The GESAMP Report states that:

> for the open ocean, atmospheric input for most contaminants is much more important than riverine input.[78]

---

72 Ibid. The twelve famous POPs are pesticides including aldrin, chlordane, DDT, dieldrin, ondrin, heptachlor, mirex and toxaphene; industrial chemicals including hexachlorobenzene (also a pesticide) and polychlorinated biphenyls (PCBs); and unintended by-products such as polychlorinated dibenzo-p-dioxins (PCDOs) and heptachlor-polychlorinated dibenzo-furans (PCDFs).

73 Ibid.

74 Ibid., pp. 17, 18.

75 Ibid.

76 Ibid.

77 Ibid.

78 Ibid., p. 20.

In particular, the category of contaminants called POPs, due to their volatility, can undergo long-range atmospheric transportation and deposition into the ocean. Most POPs of contemporary concern in the marine environment are synthetic compounds produced for the benefit of society, but whose benefits ought to be weighed against their negative effects on human and animal health and the environment.[79] As between POPs and sewage inputs, the latter are not a problem for the open ocean because of its enormous capacity to assimilate oxygen demand and its oligotrophy.[80]

Other categories of largely land-based contamination or pollution of the marine environment are radioactive substances and radio nuclides, as well as litter. A variety of activities and practices invariably and routinely introduce radioactivity into the marine environment. These may include military activities, nuclear fuel cycle operations (mining, milling, conversion, fuel enrichment and fabrication, fuel reprocessing, waste storage, decommissioning, etc) and the use of radioisotopes by research centres, hospitals and industry. The series of nuclear weapon tests carried out in the atmosphere mainly before 1964 and fuel-reprocessing plants are cited as the main contributors to radioactive contamination of the marine environment by a wide variety of artificial nuclides.[81] Atmospheric nuclear weapon tests represent an important scene of global marine environmental contamination, while releases from spent fuel reprocessing plants lead to more localized and regional contamination.[82] Nuclear site accidents, such as the Chernobyl nuclear power plant in 1986, have also resulted in major enhancements in the radioactive contamination of the marine environment.

On the other hand, litter has become more and more of a serious problem in recent times, particularly due to the large amounts of readily available and visible non-biodegradable plastics and other rubbish generated by human settlements, tourism and industry. Litter easily accumulates on beaches and in shallow water habitats. The thousands of tons of plastics discharged into the marine environment constitute a considerably important source of marine contaminants. They affect marine wildlife particularly turtles, mammals and birds, through entanglement and ingestion. Litter also affects coastal tourism adversely as well as human health and well-being. However, combinations of land-based and marine activities are largely responsible for the introduction into the marine environment, of all the litter and debris.

---

[79] Ibid., p. 21.
[80] Ibid.
[81] Ibid., p. 22.
[82] Ibid.

2.3.2 *Sea-Based Sources and Activities Causing Marine Pollution*

By comparison to land based sources and activities, sea based sources and activities account for less marine and coastal pollution and degradation. However, they are by no less means important, as the brief discussion below will confirm.

The most important sea-based sources and activities include ship-based oil and other pollution, dumping of wastes and military, nuclear and commercial (mainly by seabed) activities.

Pollution from ships and other sea vessels is mainly caused by operational discharges from ships or other vessels such as the cleaning of tanks or deballasting, or from accidental discharges of oil and other substances[83] from ships as well as from off-shore structures. This source is estimated to account for about 12% of the total marine pollution but it has relatively high profile due to the visibility, potential or actual severity and obvious environmental consequences of incidents especially oil spills.[84] For example, in March 1967, the **Torrey Canyon,** a 970-foot long tanker registered in Liberia, ran aground on a reef off the Cornish coast as it entered the English Channel and spilled about 60,000 tons of crude oil.[85] She remained on progressive disintegration for 6 weeks until the oil drained. The British Government ordered that the wreck be bombed, after salvage attempts had failed, in an effort to reduce pollution. However, British and French coasts still suffered serious pollution from the oil spills and the detergents initially used to counteract the oil.[86] Other major oil spill incidents were the **Amoco Cadiz** (1978); **Exxon Valdez** (1989);[87] The **Erika** disaster (1999);[88] and the **Prestige** disaster (2002).[89]

Sands, P: *Principles of International Environmental Law,* 2nd ed (2003),p. 394; Birnie, P,Boyle, A and Redgwell,C: *International Law and the Environment* , 3rd ed(2009). p. 438 - 440

Ibid., (Sands, P p. 394; Birnie, P, Boyle, A and Redgwell, C, p 438.)

Smith, J.C: *Torrey Canyon: Pollution and Marine Life* (1970), p. 1. See also, Brownlie, I: *Principles of Public International Law* (5th ed), pp. 247 – 248 (states 60,000 tons) other estimates indicate that 117,000 tons of crude oil were lost (see Sands, P; *Principles of International Environmental Law,* 2nd ed (2003), p. 351, citing the Report of the Home Office, The **Torrey Canyon**, Cmnd 3246 (1967). The IMO puts the figure at 120,000 litres *(http.www.imo.org, accessed 14.04.2011).* For a detailed discussion of the **Torrey Canyon** disaster, see Smith J.C: *Torrey Canyon; Pollution and Marine Life* (1970); Burger Joanna: *Oil Spills*, Rutgers University Press. (1997). p. 35.

Ibid. Brownlie, I, *Principles of Public International Law,* 5th ed (1998), p.248; Sands, P, *Principles of International Environmental Law,* 2nd ed (2003) 448; Smith J. F. (Ed). pps. 174 - 175

Ibid. (Sands, P, p. 315) The **Amoco Cadiz** disaster occurred just one month after the 1978 MARPOL conference. The vessel **Amoco Cadiz** ran aground off Brittany and caused France's worst oil spill ever. The tanker, filled with 223,000 tons of crude oil, lost its entire cargo, covering more than 130 beaches in oil. Damage affected, included recreational beaches and marine fisheries. It was estimated that in some places, the oil was up to 30cm thick. (For details see NOAA/EPA: *The Amoco Cadiz oil spills.* A preliminary Scie ntific Report (1978); Burger J: *Oil Spills*, Rutgers University Press. (1997), pps.38-42. On the other hand, the **Exxon Valdez** oil spill occurred in 1989 when the vessel ran aground in the north-eastern portion of Prince William Sound in U.S. waters. It was loaded with 1,264,155 barrels of crude oil, and about one-fifth was lost in this incident. It was the largest crude oil spill in the U.S. waters to date, and

The seriousness of these incidents emanates not so much from their frequency as the sheer volume of oil or other pollutants released in one place or at the time of the casualty. Such accidents usually cause great harm and devastation to coastal communities, important resources such as fisheries, wildlife and local ecological systems.[90] In some areas, for example the Arctic and Antarctic, climatic conditions exacerbate both the long-term effects and the difficulty of dealing with pollution of such scale. The primary purpose of legal regulation of accidental pollution incidents is usually to minimize the risk and give coastal states and their communities adequate means of protecting themselves and securing compensation.[91] Indeed, oil tankers and other vessels carrying hazardous and noxious cargoes represent a form of ultra-hazardous risk for all coastal states, requiring international legal moderation and control.[92]

On the other hand, pollution through operational discharges is a matter of persistent concern as it involves the manner in which ships operate. For example, oil tankers traditionally washed their oil tanks and disposed off oil residues in the seas, which caused significant volumes of pollution. Over the years, however, efforts have been made through international regulation to eliminate the need for such discharges, mainly through technical solutions and the provision of shore and port reception facilities. However, operational vessel pollution, also sometimes called "intentional oil discharges from tankers,"[93] has consistently over-shadowed accidents as the major source of ship-related oil pollution.

Oil has been described as the pollutant with the longest history of international attention, with an international conference held as early as 1926 to discuss the problem.[94] Few other environmental problems are as common or ubiquitous.[95]

---

probably the one which gained the biggest media coverage to-date (see *http.www.imo.org, accessed 14.04.2011)*. See also Burger, J: *Oil spills* (1997): pps 47-61.

On December 12 1999, the 37, 238-dot tanker **Erika** broke in two in heavy seas off the coast of Brittany, France with 30,000 tonnes of heavy fuel oil in carriage. About 14,000 tonnes of oil was spilled and more than 100 miles of Atlantic coastline were polluted (See *http.www.imo.org., accessed on 14.04.2011)*.

The **Prestige** tanker oil spill happened in 2002 and led to calls for further changes to MARPOL 73/78. (See *http.www.imo.org, accessed 14.04.2011)*.

See Burger, J: *Oil spills*, Rutgers University Press (1997) Chaps 8, 9, 10, 11, 12. Interestingly it is reported that pollution by the Torrey Canyon was found to have little biological effect except the tragic loss of sea birds. The detergent used to treat the oil away from the coast was not noticeably injurious to marine life except in the extreme surface layers where pilchard eggs and some phytoplankton were affected. However, the direct treatment of polluted areas and shores resulted in the death of a large number of shore organisms of many different kinds. There were all also some expectation of longer-term consequences. ISmith J E: Torrey Canyon; Pollution and Marine Life, pps.174 -175.

Birnie, P, Boyle, A and Redgwell, C: *International Law and the Environment*, 3rd ed(2009) p. 424

Ibid . p. 263 - 264

See Mitchell, R.B: *Intentional Oil pollution at Sea; Environmental policy and Treaty Compliance*, M.T Press (1994), p. 70

Ibid.

Statistical estimates dramatize the problem of international oil discharges. For example, in 1953, the year before nations signed the International Convention for the Prevention of Pollution of Sea by Oil,[96] tankers transported some 250 million metric tons of oil by sea and intentionally discharged some 300,000 metric tons of it into the seas.[97] Since then, as the volume of crude oil transported by sea has grown, this has resulted in greater tonnage of oil spills, with estimates going up to 5 million metric tons a year.[98] The discharges traditionally represent two-thirds of all ship-generated oil pollution, with tanker accidents and discharges from non-tankers making up the rest. However, ships and other sea vessels are estimated to generate only one-third of all oil entering the oceans while the rest comes from land-based sources, natural seeps and off-shore production[99]. Given the large volumes of oil transported yearly through the seas and oceans of the world, even apparently routine, or innocent "discharges" coupled with the rather rare maritime accidents, quickly accumulate into major pollution problems. Tanker cleaning and deballasting are perhaps the most notorious sources of oil from sea vessels.

The oil pollution problem is compounded by the fact that although discharges do not persist indefinitely, they nevertheless remain afloat for considerable amounts of time and distance despite physical, chemical and biological processes that tend to break them down over time. Crude and fine oils which constitute the bulk of sea oil cargo are said to persist for far longer than, say, refined oils which evaporate fairly quickly, causing relatively little maritime pollution.[100] Crude oil and other persistent oils discharged in far-slung places can subsequently appear on coastal beaches, posing serious environmental and aesthetic dangers and threats. Their most visible environmental impact is on sea birds, both on the outside and by ingestion. However, it is also arguable that oil pollution seriously affects fisheries and other forms of marine life.[101]

Burger, J. *Oil Spills*, Rutgers University Press (1997) p. 1.

International Convention for the Prevention of Pollution of the Sea by Oil, 12 May 1954, 327 U.N.T.S. 3; IPE 332. (1954 Oil Pollution Convention).

Mitchell R.B: *Intentional Oil Pollution at Sea* (1994), p. 72.

Ibid.

Ibid., p. 73.

Ibid.

Ibid. For contrary arguments as to the environmental harm posed by oil, see Mitchell: *International Oil Pollution* (1994) citing several authors, including National Academy of Sciences and National Research Council; Oil in the Sea; C.J. Camphusen; Bleached Bird Surveys in the Netherlands 1915-1988: Sea bird Mortality in the Southern North Sea since the Early Days of oil production", Technisch Rapport Vogelbescherming 1(Amsterdam: Werk group Noordzee, 1989); UK Ministry of Transport: *Report of the Committee on the Prevention of Pollution of the Sea by Oil (London: Her Majesty's Stationery Office, 1953); GESAMP Reports and Studies No. 39, The State of the Marine Environment. New York, UN (1990).*

Ocean oil pollution is to an extent an "international commons" problem and therefore sometimes falls prey to a deficit of regulation. Tankers generally discharge oil throughout the seas, causing many states to view the high costs of attempting to control discharges as being greater than the benefits accruing from pollution avoidance. Any states interested in creating effective regulations cannot do so without international action, because none of them has the legal authority or practical ability to control the vast array of transporters responsible for the problems.[102]

Ship-based oil and other pollution is regarded as one of the two major sources of polluting input into the open seas. The other source is atmospheric deposition.[103]

The high seas, which constitute one of the most important global "high ways" carrying an enormous load of goods across the world, connecting ports, regions, economies and people, often suffer ship based and other pollution. As oil and other petroleum products largely run the economic engines of the modern world, these constitute a large segment of maritime cargo, which navigate the seas and oceans and invariably the high seas. There are today more than 3,500 oil tankers in operation.[104] They include the world's largest ships, one of which (The Jahre Viking) can carry more than half a million tons of crude oil at a time. There are many other tankers almost as big. Interestingly, as a ship type, tankers are relatively new[105] and have only gained importance since the onset of the industrial revolution.

Apart from oil tankers, there are also many chemical tankers navigating the seas and oceans. This is mainly a response to developments in the chemical industry over the last 50 or so years. However, the greatest advances made in the chemical industry have been made in the last 25 years and the developments have seen a corresponding rise in the demand for raw materials. This in turn has led to a great increase in the maritime transportation of chemicals and the development of specialized, often very complex ships to carry them. The chemical cargoes often present very difficult environmental and health challenges and constitute a far

---

[102] Ibid; Mitchell: *International Oil Pollution* (1994). p. 74 - 75

[103] McIntyre A.D: "The Current State fo the Oceans", in Wells P.G. and Brewers J.M: (Eds): *Progress and Trends in Marine Environmental Protection*. Vol. 25 Nos. 1-4 (1992) pps 28-31). According to this author, atmospheric inputs is a diverse mixture of most known pollutants such as heavy metal artificial radio nuclides, synthetic organic compounds, nutrients and hydrocarbons, including the products of evaporation.

[104] See http://www.oceanatlas.org/servlet/Cdsserv/et?status, *accessed 14.09 2012*

[105] Ibid.

greater pollution threat than crude oil,[106] although due to stringent international standards for chemical carriage and trade, chemical tankers are in fact among the safest ships afloat.

There are also passenger ships plying the maritime routes. In fact, as late as 1950, passenger ships were the largest, fastest and most glamorous vessels afloat.[107] However, they were soon out competed by aircraft and especially the jetliner, which transformed the time and cost of human transportation.

The by-products of international shipping include accidental and intentional/operational oil discharges, sometimes in catastrophic proportions, chemical discharges and pollution, disposal of litter and sewage. While it may be easier for coastal and port and flag states to deal with such pollution problems under their respective jurisdictions, it is evidently more difficult to enforce environmental requirements in the high seas. In this regard this maritime zone suffers the famous "tragedy of the commons". The main enforcement mechanism is the contracting party itself, which is frequently also the offending party.

Apart from the 1982 UN Convention on the Law of the Sea which provides the main framework for the prevention of marine pollution and degradation generally and ship/vessel based pollution in particular,[108] the most important convention concerning marine pollution by ships or such vessels in the high seas is the 1973/78 MARPOL.[109] As previously stated, this convention covers accidental and operational oil pollution as well as pollution by chemicals, goods in packaged form, sewage, garbage and air pollution. Other important instruments mostly IMO conventions, include the 1969 Intervention Convention[110] which affirms the right of a coastal state to take measures on the high seas to prevent, mitigate or eliminate danger to its coastline from a maritime casualty. On its part the 1990 Oil Pollution Preparedness and Response Convention (OPRC)[111] provides a global framework for international co-operation in combating major incidents or threats of marine pollution by oil.

---

106 Ibid.
107 Ibid.
108 The 1982 UN Convention on the Law of the Sea, Articles 194,195,211.
109 The 1973/78 MARPOL, 17 ILM (1978), 546.
110 The 1969 Intervention Convention, 9 ILM (1970), 25.
111 The 1990 OPRC, 30 ILM (1991), 735.

Its 2000 Hazardous and Noxious Substances(HNS) Protocol[112] covers marine pollution by hazardous and noxious substances other than oil.

The 1974 Convention for the Safety of Life at Sea(SOLAS)[113] and the 1973/1978 MARPOL contain regulations governing the carriage of chemicals by ship. The regulations cover chemicals carried in bulk, on chemical tankers and those carried in packaged form.[114]

Another prominent source of sea based pollution is dumping. Dumping[115] at sea of wastes mainly generated on land and loaded on board specialized dumping ships and other vessels was a major problem posed by industrialized countries prior to the establishment of international rules to prevent or regulate such practices. This problem remained serious at least until the 1972 London Dumping Convention[116] and the 1974 Oslo Convention for the North East Atlantic[117] were developed. Thereafter, there were several other instruments, mainly under the framework of the UNEP-RSPs. Consequently, the unregulated dumping of wastes is now largely halted and dumping is fairly closely controlled.

Ships and other vessels are also sometimes used to dump wastes in the seas. Such disposal of waste poses environmental problems and has been identified as one of the key causes of sea-based marine pollution. It accounts for approximately 10% of pollution of the marine environment.[118] This includes litter and garbage, sewage sludge, soils or sediments arising from harbour and channel dredging. The latter is estimated to account for 1 billion tons every year, about 1/5 of which is disposed off at sea, making up 80- 90% of all marine dumping.[119]

---

112 The 2000 HNS Protocol,(website?)

113 The 1974 SOLAS, 1184 UNTS 2.

114 The 1974 SOLAS chapter VII; 1973/78 MARPOL Annex II and Annex III; See also the International Maritime Dangerous Goods (IMDG) Code adopted by the IMO in 1965. The latter was developed as a uniform international code for the transport of dangerous goods by sea covering such matters as packing, container traffic and stowage, with particular reference to the segregation of incompatible substances. By an amendment to the 1974 SOLAS in 2002, the code was made mandatory as from 1st January 2004. For details on the Code, see *http://www.imo.org/homa.asp.(accessed on 13.04.2011(2012))*.

115 "Dumping" is defined by the 1972 London Dumping Convention and the 1982 Law of the sea Convention, as deliberate disposal at sea of wastes or other matter. This includes disposal of redundant ships, aircraft, oil or gas platforms, including the abandonment or toppling of these and other man-made structures at sea, but does not include discharges occurring in the normal operation of ships or platforms or accidental spillages (See Article 3 (1) of the London Dumping Convention; Article 1 (5) of the 1982 Law of the Sea Convention; Article 2(4) of the 1992 Helsinki Convention). Incineration at sea is also regarded as dumping (see 1972 London Convention; and particularly the 1996 Protocol to the Convention, Articles 1 (4) and (5) and Article 5. The latter provides simply as follows: " Contracting parties shall prohibit incineration at sea of wastes or other matter." (cite source of texts of conventions)

116 London Dumping Convention (1972), 1046 UNTS 120.

117 1974 Oslo Convention

118 Sands, P; *Principles of International Environmental Law*, 2nd ed (2003), p 415-416

119 McIntyre, A.D; "Control of Pollution of the sea, Workshop Keynote Address, in Managing the Marine Environment A World Conference Shetland 1993 (Conference papers)

Fortunately, the great bulk of such spoils or sediments comprise of inert sediment and only about 10% is sufficiently contaminated to demand special treatment.[120]

Dumping of wastes at sea is generally regarded as environmentally unacceptable and is thus a subject of fairly strict regulation. It is subject to the same general restraints in customary law as the discharge of pollutants from land: a duty to avoid unreasonable interference with other uses of the seas such as fishing and or duty to prevent harm to other states or pollution of the marine environment generally.[121] Dumping is addressed by two famous international instruments of global application and several instruments of regional application. The two global instruments are the 1982 UN Convention on the Law of the Sea[122] and the 1972 London (Dumping) Convention,[123] both of which will be discussed below.

The most pressing problems include the dumping of radioactive wastes at sea, the export of wastes for disposal at sea (including industrial waste), sewage sludge, dredged material and incineration at sea. The need to find a safe medium for disposal of radio active waste material is among the more intractable problems of nuclear power. This is mainly because; owing to their potential and actual dangers and hazards they are generally unwelcome in the seas, the Polar Regions, on land and in the atmosphere. Disposal of radio active wastes in the Antarctic is prohibited by treaty,[124] while disposal or reprocessing of such wastes on land is obviously risky for the health and well being of the present and future generations of humankind and even biodiversity. One response to the apparent dilemma of where to take or what to do with radio active wastes has been to dump those wastes at sea, thus making it a matter of international law. Nuclear states such as the UK, USA and Japan have hitherto opted for the seas as disposal sites for their nuclear or radioactive wastes.[125]

Fortunately, since 1983 there was a voluntary moratorium on the dumping of low-level radioactive wastes pending the completion of scientific and technical studies as well as studies on the wider political, legal, economic and social aspects of radioactive waste dumping. When the studies were completed the contracting parties to the 1972 London Convention agreed in

---

120 Ibid.

121 Birnie, P, Boyle, A and Redgwell, C: *International Law and the Environment*, 3rd ed, (2009), p. 466.

122 1982 UN Convention on the Law of the Sea 21 ILM 1261

123 1972 London Dumping Convention 1046 UNTS 120

124 Article 5 of 1959 Antarctic Treaty, Article 2 Annex III of the Antarctic Protocol; see also Recommendation VIII of the 8th Antarctic Treaty Consultative meeting (1975).

125 Birnie, P, Boyle, A and Redgwell,C, *International Law and the Environment*, 3rd ed (2009), p. 468.

1993 to amend Annexes I and II to the London Convention to ban the dumping of all radio-active wastes. This legal prohibition came into force on 20 February 1994.[126] However, Russia, a major nuclear power, objected to the Moratorium and thus it was not binding on her.[127] Moreover, the UK reserved the right to resume dumping of low level radio active wastes.[128] It would therefore appear that radio-active waste disposal at sea is not yet fully prohibited for all states. The Moratorium is set to be reviewed in 2019.

In spite of the relatively small contribution to marine environmental pollution, the major argument against dumping at sea is that it allows a small number of industrialized states, acting for their own selfish or national interests, to impose pollution risks on many others (virtually all non-nuclear states), and perhaps extending to future generations. While, thanks to scientific and technological advancement, there may be fairly accurate or sophisticated prior assessments of risks involved and of the sustainability of sites for dumping or disposal, this may not entirely eliminate scientific uncertainty or risk. Thus, the acceptability of dumping of radio-active wastes today is significantly hinged on the degree of risk, if any, which the international community is willing to accept without any corresponding benefit.[129]

On the other hand, ocean-dumping of industrial waste was, until recently-unlike radio-active wastes- an accepted practice of waste disposal in many regions of the world. In the 1970s the quantity of industrial wastes dumped at sea rose from 11 million to 17 million tons corresponding to an increase of contracting parties from 23 to 43. Since the early 1980s, the quantities decreased and stabilized at about 8 million tons. During the period 1992 – 1995 the total quantity dumped varied between 4.5 – 6 million tons, most of which was dumped by Japan and the Republic of Korea.[130] The overall reduction arose from the switching to alternative disposal methods, re-use of wastes and cleaner production technologies. Reports

---

126 Ibid, p. 423.

127 Resolution LC.5, (16); annex 1 of 1996 Protocol to the London Convention; IMO; Report of the 21st Consultative meeting; LC. 21/13 (1999) para. 6.

128 The UK Government on 23rd May 1989 is reported to have made the following statement in its Parliament, "The Government has decided not to resume sea-disposal of drummed radio – active waste including waste of military origin. Nonetheless, the Government intends to keep open this option for large items arising from decommissioning operations, although we have taken no decisions about how redundant nuclear sub-marines will be disposed of." Hansard, HC Debs, Vol. 153, Col. 464 (1989), cited by P.Birnie and A.Boyle; *International Law and the Environment*, 2nd ed *(Oxford University Press, Oxford, 2002)*,p. 468. However, it is note worthy that in 1998 both Britain and France agreed to terminate their exemption from the ban on radio active waste dumping under Annex II of the 1992 OSPAR Convention (Ibid (P.Birnie and A.Boyle, p. 445).

129 Birnie, P, Boyle, A and Redgwell, C: *International Law and the Environment* 3rd ed. (2009), p. 469 .

130 See, *www.imo.org, accessed on 14. 9.. 2012.*

by contracting parties on dumping permits concerning their respective countries indicated that no permits for dumping of industrial wastes have been issued.[131]

Sewage sludge is yet another pressing dumping problem. In the 1970s the annual amount of sewage sludge dumped at sea increased from 12.5 to 17 million tons, and then decreased to 14 million tons in 1985. From 1986 quantities remained at a steady level of about 20 million tons before falling to 12 million in the early 1990s. This largely was due to the phase –out of this practice by many countries. Between 1992 and 1994 the total quantity dumped rose again from 12.5 – 16.25 million tones.[132] Currently, only three contracting parties dump sewage sludge at sea, that is Japan, Philippines and the Republic of Korea. The main alternatives used to sewage sludge dumping include incineration, deposit on land and agricultural use.[133]

Incineration at sea is defined in the 1996 Protocol to the London Convention as "the combustion on board a vessel, platform, or other man-made structure at sea, of wastes or other matter for the purpose of their deliberate disposal by thermal destruction." However, according to the Protocol, prohibited incineration "does not include the incineration of wastes or other matter on board a vessel, platform or other man-made structure at sea if such wastes or other matters were generated during the normal operation of that vessel, plat form or other man-made structure at sea."[134] This means that certain incineration is permitted, or excluded from the general ban under the London Convention and its Protocol.

Incineration at sea, mostly of liquid chlorinated hydrocarbons and other halogenated compounds, started in the late 1960s, and comprised mainly of wastes from Western Europe and the USA. From the mid-1970s to the late 1980s the annual amount of wastes incinerated at sea was about 100,000 tons. Since 1987 a steady decline has been observed mainly as a result of decisions and actions in the late 1980s.[135] This practice was phased out in early 1990s followed by the decommissioning of the last incineration vessel.[136]

Dredged material, which accounts for the largest portion of dumped material, varies in annual volume due to variations in maintenance dredging and new works associated with shipping

---

131 Ibid.

132 Ibid.

133 Ibid.

134 Article 1 (5), (2) and (2) of the 1996 Protocol to the London Convention. 36 ILM (1972), 7.

135 These decisions and actions included, 2nd North Sea Conference Declaration, para. 24; re affirmed in the 3rd North Sea Conference Declaration, Para. 23; LDC Resolutions 35 (11) 1988 and 38 (13) 1990; OSCOM Decision 88 (1) (1988), and 90/2 (1990)

136 See www.imo.org,accessed on 14.09.2012

activities, or with exceptional projects. Fortunately, up to about two-thirds of the material is connected with routine maintenance operations to prevent silting up of harbours, rivers and other waterways. Only about 10 % of the dredged material is moderately to heavily contaminated from a variety of sources such as shipping, industrial and municipal discharges and land run-off.[137]

Other, less problematic, dumping problems include pollution from sea-bed activities,[138] inert geological materials such as mine tailings (varying between 1.5 – 7 million tons annually), decommissioned vessels of all kinds and sizes, and fish waste (about 50,000 – 100,000 tons annually).[139]

The high seas environment also suffers from dumping of wastes and other matter. This is more likely given their relative remoteness and vastness and the practical limitations of any enforcement machinery existing presently.

Dumping occurs through run-off and land-based discharges (44%), land based discharges through the atmosphere (33%), and maritime transportation (12%). Offshore productions contribute 1%.[140] Many of these inputs, especially the land-based ones, find their way to the high seas through the momentum of waves and by direct deposition. The main substances dumped include industrial waste, sewage sludge, incinerated material, dredged material, radioactive waste, inert geological material, decommissioned vessels of all kinds and sizes and fish waste.[141]

While the 1982 UN Convention on the Law of the Sea also creates the general framework for preventing marine pollution generally and dumping in particular,[142] the 1972 London Convention and its 1996 London Protocol are specific and detailed instruments for the global action against oceanic dumping. Related instruments in this regard include the 1989 Basel Convention,[143] the 1991 Bamako Convention,[144] 1973/78 MARPOL,[145] and the 1995 GPA.[146]

---

137 Ibid.

138 Under the 1996 Protocol to the London Dumping Convention, dumping includes " any storage of wastes or other matter in the seabed and the subsoil thereof from vessels, aircraft, platforms or other man-made structures at sea," and "any abandonment or toppling at site of platforms or other manmade structures at sea, for the sole purpose of deliberate disposal (article (4) (3) and (4) sea bed activities generally account for only one percent of pollution of the marine environment (See Sands. P: *Principles of International Environmental Law* vol. 1, p. 330).

139 See *www.imo.org accessed on 14.09..2012*

140 See *http://www.londonconvention.org/London_Convention.htm.*

141 Ibid.

142 The 1982 UN Convention on the Law of the Sea, Articles 194,195,210 and 216.

143 The 1989 Basel Convention, 28 ILM (1989), 657.

In 1989, the IMO, through resolution A.672 (16), adopted Guidelines and Standards for the Removal of Offshore Installations and Structures on the Continental Shelf and the EEZ. The latter prescribes that any installations or structures which are abandoned or disused shall be removed to ensure safety of navigation and to prevent any potential effect on the marine environment.

By far the most detailed instrument on oceanic dumping is the 1996 London Protocol, which is designed to supersede the 1972 London Convention. It prohibits dumping of any wastes, except those which are listed in its Annex I.[147]

Another important source category of sea-based sources of marine environmental pollution is military activities, materials remnant of war and nuclear wastes. In particular, modern nuclear technologies create unavoidable risks for all states, whether or not they choose to use this form of energy. Invariably, each state, and the global environment, is potentially or actually affected by the possibility or incident of radio-active contamination, the spread of toxic substances derived from nuclear energy and the long term health hazards consequent on exposure to radio active substances. On the other hand, war and armed conflict, ever so common in modern times, has also serious environmental consequences.[148]

Military and nuclear activities whether in peace or wartime necessarily generate wastes which could be environmentally hazardous, judged by their volume or levels of radio-activity or toxicity. Some of these wastes enter the marine environment intentionally or accidentally or as a result of a combination of intentional and accidental action or omission.

The seas have long been used as an arena for warfare, especially for naval engagements. More recently, they have been used for the development of ballistic missile sub-marines and other devices such as acoustic arrays, to detect them.[149] Moreover, apart from the debris from past conflicts especially ships that litter the ocean floor, the seas have also been used for very long

---

The 1991 Bamako Convention,30 ILM (1991), 775.

The 1973/78 MARPOL, 17 ILM (1978), 546.

The 1995 GPA, 6 YbIEL (1995), 883.

This includes dredged material; sewage sludge; fish waste or material resulting from industrial fish processing operations; vessels and platforms or other man-made structures at sea; inert; inorganic geological material; organic material of natural origin; and bulky items primarily comprising iron,steel,concrete and similar harmless materials for which the concern is physical impact and limited to those circumstances where such wastes are generated at locations such as small islands and isolated communities, having no practicable access to disposal options other than dumping.

Environmental Encyclopedia, Vol. 3 (edited by Marci Bortman *et al*, Third edition, p. 1465. This source notes that "in addition to having awful consequences for people and their civilizations, modern warfare also causes terrible environmental damages."

GESAMP Reports and Studies No. 71, p. 36.

as dumping grounds for waste munitions; and marine charts are able to show commonly used ammunition dumpsites.[150] The sea has also been used as a disposal site for chemical weapons. For example, about one million tons of munitions were dumped in the Irish Sea in post World War II years including high explosives, incendiary devices, and weapons containing arsenic phosgene, mustard gas and uncertain amounts of nerve gas (tabun/sarin) recovered from Germany at the end of World War II.[151] Some of these materials are apparently being washed up on the coastlines where their environmental effects are clearly hazardous.[152]

In past years the former Soviet Union raised concern by the dumping at sea of low-level liquid and solid wastes and obsolete nuclear vessels, especially reactor assemblies containing spent fuel and entire sub marines with some containing fuelled reactors.[153] This led, in 1998, to an assessment[154] by the International Atomic Energy Agency (IAEA) to ascertain the likely threats and risks to human health and marine organisms. Fortunately, the assessment indicates that such threats, while quite serious, are not as great as might have been previously perceived. However, in the case of Russia, while she has since stopped the dumping at sea of such noxious wastes, she is apparently facing difficulties in decommissioning of some of her military vessels, and particularly nuclear submarines from her Northern Fleet. This would still pose marine environmental challenges, although Russia's problems are apparently receiving priority attention through a combination of bilateral, multilateral and other international programmes.[155]

There have been four recent reports of accidents involving nuclear powered and nuclear-armed vessels. For instance, five nuclear propelled sub-marines have been lost since 1963 at various sites in the Atlantic Ocean. The depths of the sites of the accidents, usually more than 1,500 metres have not permitted recovery of the reactors, thus the number of nuclear-armed weapons associated with these sub-marine hulls is not known accurately. Also, a number of nuclear materials used in the construction of nuclear weapons have been lost at sea following the loss of military aircraft and rockets.[156] For example, significant local plutonium

---

150 Ibid.

151 Ibid.

152 Ibid

153 Ibid

154 IAEA (1998): Radiological Conditions of the Western Kara Sea: Assessment of the Radiological Impact of the Dumping of Radioactive Waste in the Arctic Sea; *Radiological Assessment Report Series*, IAEA Vienna, 124pp.

155 *SEARP Reports and Studies*, No. 71 (2001), p. 36.

156 Ibid., and particularly Table 1,p. 37; see also IAEA (1999) Inventory of Accident and Losses at Sea Involving Radio active Material, draft TECDOC IAEA, Vienna (Mimeo), 65 pp.

contamination occurred in Palo Mares, Spain, following the jettisoning of nuclear weapons from an aircraft in 1966, and also at Thule Greenland, when a B-52 Bomber carrying 4 nuclear weapons crashed on sea-ice in 1968. A merchant vessel, the Mont Louis, sank in coastal waters 20 km off Zeebouggle in 1984, but luckily its load of uranium hexafluoride was recovered before any leakage had occurred. In 1997, a container ship, the Carla, sank about 70 miles off the Azores with three sealed 137Cs sources on board and the material was never recovered.[157]

Apart from the above accidents, five nuclear – powered spacecraft have been reported lost at sea. Four of them contained radioisotope thermoelectric generators (RTGs) powered by 238 pu. Of these spacecraft, one RTG was recovered (Nimbus B-1) without any release to the environment and two others (Apollo – 13 and Mars – 96) are still apparently at the bottom of the sea. Another space craft (Transit 5 BN-3) was vaporized during re-entry to the atmosphere causing worldwide low-level contamination. The fifth vessel (Cosmos 1402) containing an enriched uranium reactor re-entered the atmosphere due to a malfunction, possibly disintegrating into small fragments, which fell to the bottom of the South Atlantic Ocean.[158]

For many years nuclear weapons testing have taken place in the seas and oceans of the world and mainly in the South Pacific Ocean. In earlier years, there was little objection to such tests as it was generally believed that nuclear power benefits outweighed the risks. In the1950's the main reservations about these tests concerned the disruption of local populations and interference with high seas freedoms.[159] Fortunately, at least three nuclear powers recognized the threats to health and environment and helped establish the 1963 Test Ban Treaty.[160] However, France and China continued tests, which led to protests from other countries during the 1972 Stockholm Conference on Environment and Development, as well as in the UN.[161] Australia and New Zealand proceeded to court against France to challenge the legality of the latter's atmospheric and underground nuclear tests in the South Pacific. The ICJ did not declare the said tests illegal in the famous **Nuclear Tests Cases.**[162] This led to the creation, in

---

GESAMP Reports and Studies No. 71(2001), p. 36.

Ibid.

Birnie, P, Boyle, A and Redgwell,C: *International Law and the Environment*,3rd ed (2009), p. 468.

1963 Treaty Banning Nuclear Weapons Tests in the Atmosphere, in Outer Space and Under Water, Moscow, 480, UNTS 3 (1964) Cmnd 2245; 14 UST 1313, TIAS 5433.

Birnie, P, Boyle, A, and Redgwell, C; *International Law and the Environment*, 3rd ed (2009), p. 468.

Nuclear Tests Cases (Australia vs. France) ICJ Rep. 1973, 99 (Interim measures); ICJ Reports (1974), 253 (Jurisdiction); (New Zealand vs. France) ICJ Rep. (1973), 135 (Interim measures); ICJ Rep. (1974), 457(Jurisdiction).

1985 of a South – Pacific Nuclear free zone by the Raratonga Treaty.[163] The prohibition among the parties of the Raratonga Treaty of nuclear tests or the dumping or radio-active wastes at sea within this zone demonstrated the growing strength of regional and international opposition to such activities on environmental grounds.[164] This led to the establishment, in 1996, of the Comprehensive Test Ban Treaty.[165] Following the establishment of this treaty, a complete prohibition of all nuclear tests and a strong scheme of international verification are expected to ensue. Officially, all five permanent members of the UN Security Council, which are also nuclear powers, have ceased tests, but India, Pakistan and North Korea are still apparently active.

Fortunately oceanic dumping of nuclear waste had been partially banned in 1972, suspended entirely in 1983 and banned outright in 1996 via the 1996 Protocol to the London Convention.[166]

With particular regard to the high seas, these have for centuries been theatres of military activities, nuclear tests and often the dumping of materials remnant of war. In fact the major marine powers have traditionally, over the centuries, used the high seas, due to the age-old freedom of the high seas, for their military and naval operations. The current era has similar scenarios. The navies of major powers such as the USA, UK, former Soviet Union and France have always used the oceans for military activities of various types and also for testing of ballistic missiles. These countries have also used atolls in the Pacific for the atmospheric testing of nuclear bombs. As late as 1996, when activity was "suspended" France was conducting underground nuclear tests in the volcanic atolls of French Polynesia.[167] In 2003, North Korea was reported to have engaged in missile testing in the Sea of Japan.[168]

These military and nuclear activities have had grievous environmental consequences, more so during the tension and competition engendered by the Cold War. The threats to the marine

---

163 1985 South Pacific Nuclear Free Zone Treaty (Raratonga), 24 ILM (1985), 1442. (The treaty came into force on 11 December 1986). In 1995 a related instrument was established: 1995 South Pacific Regional Convention on Hazardous wastes (Waijani Convention).

164 Birnie, P, Boyle, A, Redgwell, C: *International Law and the Environment*, 3rd ed(2009), p. 490.

165 Comprehensive Test Ban Treaty, 35 ILM (1996), 1443.

166 1996 Protocol to the London Dumping Convention, 36 ILM (1997), 7; See also Birnie, P, Boyle, A, and Redgwell, C: *International Law and the Environment*, 3rd ed. (2009), p. 494.

167 Van Dyke, J.M. et al (Eds) *Freedom for the Seas in the 21st Century; Ocean Governance and Environmental Harmony*, Island Press, Washington D.C (1993),p.407, See also Yearbook of the UN (1996) Vol. 50,pps 454-455.

168 See *The Daily Nation* (Kenya), 11th March 2003.

environment continue in spite of the end of the cold war era, and the legal issues raised by the unrestrained military activity on the high sea are complex and challenging.[169]

The compelling motivations for high seas military and nuclear activity are doubtless national and sometimes regional security needs and imperatives.[170] These frequently overshadow any environmental or ecological concerns or complaints from the rest of the international community as the countries involved are also the most powerful nations of the world. Unfortunately, the high seas happen to be the only part of the earth's surface in which national boundaries do not inhibit the movement of military forces or other military or nuclear activities.

Moreover, there is increased maritime military activities due to the so called "ocean enclosure movement" or "creeping jurisdiction", which has claimed nearly one-third of the global ocean space since Grotius time.[171] The most recent and remarkable example of "creeping jurisdiction" are the 12 nautical mile territorial waters, 24 nautical mile contiguous zone and the 200 nautical mile EEZ, all provided for under the 1982 UN Convention on the Law of the Sea. As states seek to protect their respective maritime zones or "enclosures", there are increased fleets of ships, maritime patrol craft and even surface combatants and surveillance operations. The high seas remain an important realm for most naval states as they can use these expansive global commons to project or threaten naval power against perceived or actual adversaries. The superpower competition of the cold war years provided the major impetus for the overall militarization of the seas, and even an upsurge of nuclear weapons in the marine areas

The largest and most serious environmental threat posed by military and nuclear activities is the thousands of nuclear weapons and reactors at sea.[172] Apart from the threat or possibility of actual use, nuclear weapons and reactors pose environmental dangers when they are lost at sea, or are decommissioned and dumped or are disposed of.[173] Fortunately, in the post cold

---

168 Van Dyke et al (Eds): *Freedom for the Seas in the 21st Century* (1993) p. 407.

169 Andrew Mark describes the national security needs as "security dilemma, which arises when nation – states seek to maximize their security via policies of peace through strength which entails creating a military capability that will enable them to defeat (either alone or in concert with allies), any opponent bent an aggression. He argues that the global system in which states seek security by increasing their military might via-a vis potential or actual opponents is prone to arms race and is inherently unstable (Andrew Mark: "Security Regimes for the Oceans; The Tragedy of the Commons, the Security Dilemma, and Common Security," in Van Dyke et al: *Freedom for the Seas in the 21st Century* (1993), p. 410.

170 Ibid. p. 412.

171 Joshua Handler, "Denuclearizing the Seas," in Van Dyke et al (Eds) *Freedom for the Seas in the 21st Century* (1993), p. 420.

172 Ibid. This author points out that in spite of relatively low arms race at sea during the cold war almost one-third of the world's nuclear weapons were still available to naval forces. Apparently, by 1991, approximately 13,900 nuclear weapons were assigned to the US and former Soviet navies and another 600 to

war era, reduced budgets and tensions have led to the shrinking of fleet sizes and numbers of nuclear weapons and reactors at sea,[174] as well as nuclear tests at sea. Nevertheless, there are still accident-prone nuclear powered vessels continuing to roam the high seas, thanks to the age-old freedom of the seas. Overall, the risk of nuclear pollution from the operations of naval vessels including bomb testing and ballistic missile tests is generally slight compared to merchant ships or oil tankers. This is due to the fact that there are relatively few nuclear powered ships in the world's navies, their accident rate has been quite low; and even in accident all but the most catastrophic accidents would have little effect on the natural ocean environment.

There are various legal responses to the environmental problems of military and nuclear activities on the high seas. On the whole, however, these instruments seem to leave the countries and their militaries a great deal of space to operate, thus creating very weak and ineffective controls. For example, the 1982 UN Convention on the Law of the Sea, while creating broad framework rules for the protection of the marine environment from various sources virtually permits 'waivers" or "exemptions" for military or war ships. While Part VII covers the high seas particularly and provides their key freedoms (Article 87) as well as their "reservation for peaceful purposes" (Article 88), Article 95 thereof provides the following immunity: "warships on the high seas have complete immunity from the jurisdiction of any state other than the flag state."

Besides warships, ships owned or operated by a state and used only on government, non-commercial service are also subject to complete immunity (Article 96). Elsewhere, under Part XII dealing generally with the protection of the marine environment, the 1982 UN Convention on the Law of the Sea provides as follows at Article 236:

> The provisions of this Convention regarding the protection and preservation of the marine environment do not apply to any warship naval auxiliary, other vessels or aircraft owned

---

the British, French and Chinese navies. U.S naval nuclear weapons were routinely carried into all of the world's oceans and into the ports of the dozens of countries. The majority of naval nuclear weapons, approximately 9,100, were based on long-range missiles carried by the 106 strategic missile sub-marines operated by all five navies. The remaining 5,400 nuclear war heads were non-strategic weapons encompassing nuclear torpedoes and anti-submarine rockets carried by ships and sub-marines; nuclear surface to air missiles carried by ships and sub-marines; nuclear surface-to-air missiles carried by ships; nuclear dept and strike bombs for delivery by ship and land-based aircraft; and long-range nuclear land attack sea-launched cruise missiles. Approximately 660 ships and sub-marines were able to deliver non-strategic naval nuclear weapons (pps. 421-423).

Ibid. According to this source, five nuclear powered sub-marines with seven nuclear reactors and some thirty eight nuclear was heads have sunk in the Atlantic due to accidents. Another sixteen damaged nuclear reactors (one US and fifteen Soviet) have been deliberately dumped in the sea (p 431). Elsewhere GESAMP Reports indicate that some of the common materials remnant of war or military actives which are accidentally lost or deliberately dumped include used ship wastes, radioactive effluents, conventional explosives, nuclear war heads and chemical and biological warfare agents including entire aircraft ships and sub-marines, sometimes complete with nuclear reactors (GESAMP Reports and Studies No. 70, 2001).

or operated by a state and used for the time being, only on government non-commercial service. However each state shall ensure by the adoption of appropriate measures not impairing operations or operational capabilities of such vessels or aircraft owned or operated by it, that such vessels or aircraft act in a manner consistent so far as is reasonable and practicable with this convention.

While the efficacy of such provisions and like instruments shall be discussed in greater detail in later sections, suffice to state here that these provisions are so weak as to virtually fail or refuse to protect the high seas environment from the military activities and operations of the countries, based on the principle of "sovereign immunity." National security imperatives generally seem to override global environmental considerations.

On its part, the 1996 Comprehensive Nuclear Test Ban Treaty obliges each state party to undertake not to carry out any nuclear weapon test explosion or any other nuclear explosion and further to prohibit and prevent any such nuclear explosion at any place under its jurisdiction or control (Article 1). Further, each party undertakes to refrain from causing, encouraging or in any way participating in the carrying out of any nuclear weapon test explosion or any other nuclear explosion. This invariably, albeit not directly, covers the high seas environment and other global commons. France and China were apparently the last to conduct such tests in the sea in 1996 before the treaty was adopted. The treaty's preamble also stated the overall environmental value of the instrument.

The UN General Assembly at its December 1996 session, through resolution 50/245, adopted the 1996 Comprehensive Nuclear Test Ban Treaty and called upon the countries of the world to sign and ratify it.[175] The UNGA since 1996 also considered a convention for the banning of the use of nuclear weapons but has not been able to reach agreement on such a convention.[176] A few soft law instruments, mainly political and security declarations, have sought to mitigate the apparent large absence of protection of the high seas environment from the adverse effects of military and nuclear activities and operations. These include the 1994 Guidelines for Military Manuals on the Protection of the Environment in times of Armed Conflict,[177] the

---

See the *Yearbook of the UN* (1996) Vol. 50, p. 454.

See the *Yearbook of the UN* (2003) vol. 57. pps 551-552.

Annex to Report of the UN Secretary General, UNGA A/49/323, reproduced in Burhenne W.E and Robinson N.A (Eds): *International Protection of the Environment; Conservation in Sustainable Development* (Vol. 1) Oceans Publications, Inc. Dobbs Ferry, New York (2001) booklet 19.08.94/1. Paragraph II thereof provides as follows: "care shall be taken in warfare to protect and preserve the natural environment. It is prohibited to employ methods or means of warfare which are intended, or may be expected to cause widespread, long-term and severe damage to the natural environment and thereby prejudicing the health or survival of the environment".

1995 Linkoping Document,[178] and the 1995 Linkoping Declaration.[179] However, none of these instruments specifically covered the effect on high seas environment from military activities or nuclear tests as such.

Elsewhere, under the auspices of the IAEA, two conventions have been adopted on the safety of radioactive waste management: the 1994 Convention on Nuclear Safety,[180] and the 1997 Joint Convention on Radioactive Waste Management.[181] Both conventions concern non-military or civil nuclear power or energy and take a conservative approach to the regulations and management of nuclear risk by clearly limiting IAEA's powers over civil nuclear power, including management of nuclear wastes. Thus, apparently the responsibility for the future development of international nuclear safety and waste management remains in the hands of IAEA member states acting outside the framework of the two nuclear safety conventions.[182] This may mean that even if for the first time the conventions give binding treaty status to some of the IAEA's most fundamental standards of nuclear safety concerning nuclear reactors, radio-active waste management and spent fuel disposal and re-processing, its own limited role in the enforcement and oversight of these standards portends actual or potential dangers to the high seas environment and other global commons.[183]

However, to their credit, the two conventions are the first global treaties to commit states to control the risks of nuclear energy for environmental objectives and more so with regard to the commons as opposed to the national environment. The only clear exceptions appear to be military uses of nuclear power in respect of which nuclear /naval powers are seemingly jealously nationalist and protectionist.

---

178 UNEP/MIL/3, 30 June 1995, reproduced in Burhenne W.E and Robinson, N.A (Eds, ibid, (vol. 2), Booklet 30-06-95/1, The Linkoping meeting stressed "the importance in the interest of present and future generations of protecting human beings and the environment against the adverse environmental effects of military activities." And the meeting also recognized " the need for further action to promote environmental protection in connection with military peace time activities at the global, regional and national levels." It gave way to the October 1995 Sofia Meeting which produced the Sofia Declaration.

179 See Burhenne W.E and Robinson N.A (Eds) (ibid), Booklet 25-10-95/3. This was a declaration by the Ministeris of Environment of the Region of the United Nations Economic Commission for Europe (UNECE) made on 25 October 1995. It concerned, inter-alia, declarations on environmental and nuclear issues particularly against the backdrop of 10 years since the 1986 Chernobyl nuclear disaster.

180 The 1994 Convention on Nuclear Safety 33 ILM (1994) 1518 (in force 24 October 1996).

181 The 1997 Joint Convention on the Safety of Spent Fuel and Radioactive Waste Management, 36 ILM (1997),1436 (in force 18 June 2001).

182 See Birnie, P, Boyle, A. and Redgwell, C; *International Law and the Environment,* 3rd ed. (2009), p 496.

183 The efficacy of the existing IAEA regime will be discussed in some detail in the next chapter.

Apart from the global IAEA regime, several regional agreements also prohibit all nuclear weapons testing in Latin America, South Pacific, South–East Asia and Africa,[184] adding weight to the general international opposition to all forms of deliberate radio-active pollution of the global commons including the high seas.

Finally, in the Nuclear Tests Cases (1973/74),[185] the ICJ addressed the question as to whether the deposit of radioactive particles on the territory of another state, or on the high seas constitutes serious harm or interference with the high seas freedoms. Years later, in a 1996 Advisory Opinion, the Court held as follows:

> States must take environmental considerations into account when assessing what is necessary and proportionate in the pursuit of legitimate military objectives. Respect for the environment is one of the elements that go to assessing whether an action is in conformity with the principles of necessity and proportionality.[186]

Earlier, in 1992, the UNGA had passed Resolution 47/37[187] which stated that "destruction of the environment not justified by military necessity and carried out wantonly is clearly contrary to existing international law." In support of its Resolution, UNGA cited the 1907 Hague Conventions, the 1949 Geneva Conventions and their 1977 Additional Protocols as well as the 1976 Convention on Prohibition of Military or Other Hostile Environmental Modification Techniques.[188]

2.4 Exploitation of Marine Living Resources (mainly Fisheries and Mammals)

As an open access regime clear with the freedoms articulated under Article 87 of the 1982 UN Convention on the Law of the Sea, the high seas are open to exploitation by any and all nations, of their living resources and especially fisheries. The 1982 UN Convention on the Law of the Sea establishes provisions for conservation and management of the living

---

[184] See, for example, the 1985 Raratonga Treaty (South Pacific); 1967 Tlateloco Treaty for the Prohibition of Nuclear Weapons in Latin America (Tlateloco) 22 U.S.T 762, T.I.A 7137; 6 I.L.M (1967), 521. (in force 22 April 1968); 1996 ASEAN Nuclear Weapons-Free Zone Treaty (Article 3); and the 1996 African Nuclear-Free Zone Treaty (Articles 5).

[185] *Nuclear Tests Cases (Australia vs. France)(Interim Measures)* ICJ Reports (1973) 99; (Jurisdiction) I.C.J Reports (1974) 253; *Nuclear Tests Cases (New Zealand Vs. France) (Interim Measures)* ICJ Rep. (1973), 135; (Jurisdiction) ICJ Reports (1974), 457.

[186] *Nuclear Weapons Advisory Opinion ICJ Reports* (1996), 266.

[187] See *Yearbook of the UN* (1992) Vol. 46, p. 991.

[188] The 1907 Hague Convention III Relative to the laying of Automatic Submarine Contact Mines (The Hague), 18 October 1907, (in force 26 January 1910), 3 Martens (3rd) 580. The 1907 Hague Convention IV Concerning the Laws and Customs of War on land (The Hague) 18 October 1907 (in force 26 January 1910), 3 Martens (3rd) 461; 1949 Conventions I, II, III, & IV, 12 August 1949 (in force 2, October 1950) 75 UNTS 287; 1977 Additional Protocols I and II to the 1949 Geneva Conventions, 8 June 1978 (in force 7 December 1978), 16 I.L.M (1977), 1391; 1976 Convention on the prohibition of military or any other Hostile use of Environmental Modification Techniques (Geneva), 31 UST 333 TIAS 9614, 16 I.L.M (1977), p. 88; (in force 5 October 1978).

resources of the high seas,[189] but this includes the right of 'all states' to fish in the high seas.[190] On the other hand, the 1946 Whaling Convention[191] regulates whaling internationally.

High seas fisheries and the exploitation of permissible marine mammals is big business especially for the developed countries and other maritime states. Such competitive business comes along with adverse environmental impact, including the disposal of the by-products of fishing such as fish wastes and by-catch, old and discarded nets and other fishing fear, rubbish dropped by fishing fleets and crews, sewage and other waste.

The most remarkable provisions to deal with this type of pollution are to be found under the 1973/78 MARPOL, which seeks to eliminate and reduce the amount of garbage being dumped into the sea from ships. Annex V of the 1973/78 MARPOL defines garbage as including all kinds of food, domestic and operational waste, but excluding fresh fish, which is generated during the normal operation of the vessel and is liable to be disposed of continuously or periodically. This annex totally prohibits the disposal of plastics anywhere in the sea, and severely restricts discharges of other garbage from ships into coastal waters and "Special Areas".[192]

2.5 Seabed Activities

Seabed activities also account for high seas environmental pollution and degradation, albeit with a small contribution, estimated at one percent. Pollution and degradation is mainly caused by the release of harmful substances arising directly from the exploration, exploitation and processing of seabed materials.[193] The International Seabed Area lies directly below the high seas and environmental harm below almost invariably affects the water mass above. The most famous activities include deep-seabed polymetallic nodule exploration.[194] Seabed activities are governed under Part XI of the 1982 UN Convention on the Law of the Sea. Article 145 thereof provides for seabed activities outside of national jurisdiction, primarily the International Seabed Area. Under the latter article, the International Seabed Authority (ISA) is

---

189 The 1982 UN Convention on the Law of the Sea, Articles 116-120.

190 Ibid., Article 116.

191 The 1946 Whaling Convention, 161 UNTS 72.

192 The "Special Areas" under the Annex include the Mediterranean Sea, Baltic Sea Area; Black Sea Area, Red Sea Area; Gulf Area; North Sea Area; Wider Caribbean Region; and the Antarctica Area.

193 Sands, P. *Principles of International Environmental Law* 2nd ed (2003), p. 445

194 Seabed nodule attention has so far been focused on exploration since actual mining of these deposits is probably decades away. Polymetalic modules were discovered at the end of the 19th century in the Kara Sea and in the Arctic Ocean off Siberia around 1968.They are also called manganese nodules.

to adopt rules, regulations and procedures for the seabed and ocean floor and sub-soil beyond the limits of national jurisdiction (the Area) for: -

(a) The prevention, reduction and control of pollution and other hazards to the marine environment, including the coastline, and of interference with the ecological balance of the marine environment, particular attention being paid to the need for protection from harmful effects of such activities as drilling, dredging, excavations, disposal of waste, construction and operation or maintenance of installations, pipelines and other devices related to such activities.

(b) The protection and conservation of the national resources of the Area and the prevention of damage to the flora and fauna of the marine environment.

The ISA has since inception in 1994 kept environmental protection as one of its top priorities. Two workshops in 1998 and 2001[195] dealt in particular with the development of environmental guidelines concerning deep seabed polymetallic nodule exploration and the standardization of environmental data and information respectively.[196] In 2000 the Authority adopted its Regulations on Prospecting and Exploration for Polymetallic Nodules in the Area, a comprehensive legal regime for monitoring and protecting the marine environment in the Area. These regulations are binding on all entities that have contracted with the Authority to explore the Area for these minerals. Contractors have, *inter-alia,* the obligation to take necessary measures to prevent, reduce and control pollution and other hazards to the marine environment arising from its activities in the Area as far as reasonably possible utilising the best technology available to such contractor. On the other hand, the regulations provide that in the case of serious harm to the marine environment caused by a contractor's activities, the Secretary General of the ISA may take immediate temporary measures to prevent, contain and minimize the harm; and the ISA Council may follow up with emergency orders, including orders to suspend or adjust operations and may act on its own or through others if the contractor does not comply immediately.[197] Apart from polymetallic nodules exploration, the ISA is also beginning to give attention to other categories of resources, and particularly

---

Deep seabed Polymetalic Nodule Exploration: Development of Environmental Guidelines, Proceedings of the International Seabed Authority's workshop held in Sanya Hainan Island, People's Republic of China (1-5 June 1998), 289pp; Standandisation of Evironmental Data and Information: Development of Guidelines, Proceedings of the 2001 International Seabed Authority's Workshop held in Kingston, Jamaica (25-29 June 2001), 539 pp.

Ibid,see http://www.isa.org.jm/en/seabedarea/techbrochures/ENG4.pdf,accessed on 13.092012

Ibid

polymetallic sulphides and cobalt rich crusts, whose exploration is likely to raise different and perhaps even more acute environmental issues.[198]

Other legal instruments concerning seabed activities include the 1992 OSPAR Convention, several UNEP RSP Conventions and their protocols,[199], but these are of secondary importance as they usually deal with areas within national and regional jurisdiction. Moreover, in 1982 the UNEP adopted guidelines on offshore mining and drilling[200] within areas of national jurisdiction.

2.6 Conclusion

The preceding discussion has covered the international marine pollution problem, and particularly as it concerns the high seas. Both land based and sea based sources and activities causing pollution and degradation, together their effects, have been covered. It is apparent that based on scientific findings, the marine pollution and other degradation problems are serious, even critical, and are growing in virtually all seas and oceans with no easy answers in sight. Land-based sources, activities and other causative factors are the most problematic, with sewage, POPs and litter/solid waste and agricultural inputs being quite prominent. However, no less serious are sea-based sources and activities including vessel-based oil spills and discharges, dumping of wastes, hazardous and noxious substances and military and nuclear wastes carried or dumped on the seas and oceans. Even atmospheric depositions are not insignificant.

It has been shown that the most prominent high seas environmental problems arise from ship based oil and other pollution; oceanic dumping of wastes; and military activities, nuclear wastes and materials remnant of war. Others are exploitation of marine living resources and sea bed activities

It is clear that there is sufficient, or at any rate significant scientific knowledge concerning marine pollution generally, and the high seas in particular. As noted in the preceding

---

198 Ibid. It is noted, moreover, that the ISA has identified three types of activities with potential for environmental impacts: (1) exploration for commercial deposits(2) small scale and proto-type tests of commercial recovery mining systems; and (3) metallurgical processing, if it occurs in the Area. The exploration already begun or contemplated is not expected to cause serious environmental harm. Mining system tests and commercial mining are not anticipated for many years, and metallurgical processing is unlikely to take place in the Area in the foreseeable future.

199 For example, the 1976 Mediterranean Convention (amended); the 1989 Kuwait Exploration protocol); the 1992 Bucharest Convention; and the 1992 Baltic Sea Convention.

200 UNEP (1982); Environmental Law Guidelines and Principles No. 4: Offshore Mining and Drilling (Conclusions of the Study of Legal Aspects concerning the Environment related to Offshore Mining and Drilling within the Limits of National Jurisdiction, Decision 10/14/VI of the G.C of UNEP 31 May 1982).

discussion, the environmental problems of the marine zones including the high seas are growing rather than diminishing. This is so in spite of the vast array of laws and corresponding institutional and policy instruments which have been established over several decades. Thus the greater question is not the lack of scientific knowledge or basis for action, but the efficacy of existing laws, policies and institutional frameworks.

Chapter Three will discuss the historical developments of marine environmental law, before giving way to a discussion, in Chapter Four, of the efficacy of the various legal and policy instruments which have been established to tackle marine environmental problems, and Chapter Five which will deal with the efficacy of existing institutional frameworks.

discussion, the environmental problems of the marine zones including the high seas are growing rather than diminishing. This is so in spite of the vast array of laws and corresponding institutional and policy instruments which have been established over several decades. Thus the greater question is not the lack of scientific knowledge or basis for action, but the efficacy of existing laws, policies and institutional frameworks.

Chapter Three will discuss the historical developments of marine environmental law, before giving way to a discussion, in Chapter Four, of the efficacy of the various legal and policy instruments which have been established to tackle marine environmental problems, and Chapter Five which will deal with the efficacy of existing institutional frameworks.

CHAPTER THREE

Historical Foundations of Marine Environmental Law

3.1 Introduction

The present regime of marine environmental law[1] is an important and integral part of the broader international environmental law and the contemporary law of the sea. The modern international environmental law may in turn be traced directly to the general development and growth of public international law, including the law of the sea, particularly in the latter part of the 19th century and throughout the 20th century. This chapter attempts to retrace the historical developments of the present marine environmental law.

3.2 Overview of Early Developments and Underpinning Principles

The need for an international legal regime for the seas and oceans was recognized as early as the code of Hammurabi 4000 years ago.[2] However, the most dramatic developments are fairly recent responses to new scientific and technological capabilities, growing demands for marine resources, and realization of the potential for new conflicts among states. The growing incidences of marine environmental degradation and pollution also contributed to the need for development of the law of the sea. However, the content of the many rules that have evolved over the years to make up the content of the law of the sea varied enormously with the passage of time, perhaps reflecting the shifts in the balance or reconciliation of interests.[3]

In classical times, the Greeks and the Romans treated the seas as *res nullius*, belonging to no one, and therefore open to claim. However, some Roman thinkers like Gaius and Justinian were already developing the notion of *res communis*, belonging to everyone, and therefore open to use but not appropriation[4]. State practice after the fall of classical civilization inclined

---

1 The term "marine environmental law" is loosely defined to mean (international) law governing the marine environment in all the principal geographical zones i.e territorial seas, exclusive economic zones (EEZs), continental shelf, international seabed Area and the high seas. It is used to distinguish the reference elsewhere to "international environmental law" which is more encompassing of the world's environmental systems.

2 Wickeremeratne: S: The *Law of the Sea and the Indian Ocean*, (UNEP, International Ocean Institute, 1991) p. 3.

3 Bowett, D.W. *The Law of the Sea* (Manchester University Press, USA Oceania Publications Inc. 1967) p.1.

4 Ibid

towards the *res nullius* interpretation with states claiming either specific jurisdiction or complete sovereignty over parts of the sea.[5] As early as the 9th century Byzantium claimed jurisdiction over fishery and salt resources and by the 15th century quarantine regulations and limits were quite common. Venice claimed the Adriatic Sea and various states laid claims to the Baltic, largely on the basis of local naval power. This process culminated in 1493-1494 when Spain and Portugal divided up most of the world's oceans between themselves on the basis of a Bull pronounced by Pope Alexander VI. Reaction against the Portuguese and Spanish claims became visible and English and Dutch naval powers challenged this hegemony over the oceans.[6]

By the early years of the 17th century, jurists in Spain were already questioning the closed sea, *mare clausum* doctrine and in 1609, Hugo Grotius published his famous treatise *mare liberium* attacking the closed sea concept.[7] The increasing use of the sea by many states was in any case making the extravagant closed sea claims of Spain and Portugal untenable. The high seas reverted in theory and practice to an open sea, *mare liberum* regime. The closed sea concept was confined to a belt of "territorial sea" bordering a state's coast. By end of the 17th century the distinction between the high seas and the territorial seas was firmly established. Alongside the evolution of the territorial sea belts was the issue of the breadth seawards from the coastal states. However, the marine league of approximately three miles was becoming the generally accepted common limit of coastal state jurisdiction.

The compromise provided a stable legal regime for over 200 years. Except for the long established 4- mile territorial sea claims of Norway, Sweden and Iceland and the 6- mile claim made by Portugal in 1885, the 3- mile territorial sea was almost universally recognized.[8] It was a sufficient boundary to protect the interests of most coastal states, and since the activities of man had not yet noticeably strained the seemingly inexhaustible resources of the ocean, freedom of the seas seemed to be an ideal regime.

On the other hand, international environmental law may be said to have evolved over at least four distinct historical epochs, reflecting developments in scientific knowledge, the

---

5 Buzan, B: *Seabed Politics*, p. 252 (Praeger Publishers, New York/Washington/London, 1976) 1.

6 Ibid.

7 Hugo Grotius. *Mare Liberium*, 1609 (English translation by Magoffin, 1916). This work was originally written as Chapter 12 of De Jure Praedae Commentarius, 1604-1605 English translation by G.L. Williams and H. W. Zeydel, published in 2 volumes as Number 22 in "The Classics of International Law Series", Carnegie Endowment. 1950; Bowett, D.W: *The Law of the Sea*, p. 2.

8 Ibid (Bowett, D.W: *The Law of the Sea*, p.2)

application of new technologies and an understanding of their impacts, changes in political consciousness and the changing structure of the international legal order and institutions.[9] These four epochs, which also interweaved with key developments in the law of the sea, include, firstly, the period from the early 19th century to 1945, coinciding with the creation of new international organizations headed by the UN. Secondly, the period between 1945 and 1972, the latter being the year when the UN Conference on the Human Environment was held in Stockholm. During this period, several international organizations with environmental competencies were created and legal instruments were created at the regional and global levels.

Thirdly, the period between June 1972 Stockholm Conference and the June 1992 United Nations Conference on Environment and Development (UNCED). This period saw the UN's attempts to establish a system for coordinating responses to international environmental issues. The fourth epoch, beyond the 1992 Rio Summit (UNCED) to the present, may be characterized as a time of integration when important themes such as law and policy, sustainable development and other global themes are increasingly integrated.[10]

The principles of international environmental law over the historical periods described above reflect certain philosophical underpinnings. Three principal view points deserve mention, namely the "anthropocentric", the "biocentrism" and "ecocentricism."[11] The "anthropocentric" view holds that humankind is inherently separate from the rest of nature and that natural resources are to be exploited for the benefit of humankind. The welfare and interests of humankind are of primary importance in any regime for environmental protection. According to this view conservation of natural or environmental resources is justified on the basis of "stewardship," that is, present generations hold environmental assets in trust for future generations of humankind.

The "biocentric" view point argues that in any scheme for environmental protection, animals and other living resources should have rights which are equal to those of human beings. Animals are not at the service of humankind, but rather, they co-exist with humans in nature and are deserving of protection and conservation in their own right and for their own sake.

---

9. Sands, P. *Principles of International Environmental Law*, 2nd ed (2003) p. 25
10. Ibid p 26
11. Thornton, J. *Environmental Law*, Sweet and Maxwell, London (1997) p. 16.

On the other hand the "eco-centric" view adopts a holistic approach to the environment and holds that humans, animals and plants have value only as part of an ecological system. This view holds that the natural ecosystems have intrinsic value irrespective of the existence of animals and humans. However, this does not overlook the capacity and tendency of humans to intervene in nature if there was reasonable justification. The eco-centric view defines a human responsibility to participate in conserving and preserving the well-being of the environment.[12]

Historically, the anthropocentric view was the earliest, and early environmental laws tended towards placing the interests of humankind above the environment itself. Modern environmental law is now characterized by a shift away from the protection of individuals and human communities *per se,* to the prevention of environmental pollution and degradation generally. The shift is more towards bio-centric and eco-centric approaches, and a central theme is the challenge of balancing the need for environmental protection with the need for economic development both for the present and future generations and for posterity.[13]

3.3 Early 19th Century to 1945: Developments up to the Establishment of the UN

Following the research efforts of scientists in the late 18th and early 19th centuries,[14] international legal developments began to take shape.[15] At that time legal attention focused on the exploitation of natural resources mainly in the context of emerging and growing industrialization in Europe and elsewhere. A number of bilateral treaties were signed dealing with specific resources mainly fisheries, but pollution and other ecological issues were not dealt with. However, the adoption of the treaties was clearly *ad-hoc,* sporadic and limited in scope. Nevertheless, they were significant to the extent that they recognized that co-operation between states was crucial to the sustainable and peaceful exploitation of natural resources, especially those which were shared among nations.

As early as 1893, a dispute arose between the United States of America (U.S.A) and the United Kingdom (UK) over the exploitation[16] of seals for fur. The dispute was submitted to

---

12 Ibid, p. 17

13 Ibid.

14 Some of these scientists included court Buffon; Fabre and Surrell; de Saussure and Von Humbolt. (Goudie, A: The Human Impact : Man's Role in Environmental Change (1981), p.2,cited by Sands, P: *Principles of International Environmental Law*, 2nd ed (2003), p. 26.

15 For a detailed historical account, see generally, Sands,P: *Principles of International Environmental Law*, Vol 1, Chapter 2; Thornton J: *Environmental Law*, Chapter 2.

16 The Pacific Fur Seals Arbitration (1893), I Moore's International Arbitration Awards. p. 755.

international arbitration. The Tribunal held that states did not have the right to assert jurisdiction over natural resources which were outside their territory in order to ensure their conservation. This principle is an important part of the modern environmental law, and has direct implications on the protection of the environment of global commons. The absence of national jurisdiction over natural resources beyond national territory necessitates the establishment of an international regime for the protection of such resources.

Other early developments concerned the conservation of birds, whales and other wild life. In 1872, Switzerland proposed an international regulatory commission for the protection of migratory birds. This led to the 1902 Birds Convention[17] which adopted regulatory techniques such as the grant of absolute protection to certain birds; a prohibition on their killing or the destruction or taking of their nests, eggs or breeding places; and the use of certain methods or means of capture or destruction, and these are still valid to-date. Some of the exceptions in the 1902 Birds Convention, such as scientific research and repopulation, continue to be reflected in more recent Conventions such as the 1979 Berne Convention[18] and the 1992 CBD.[19] In 1916 the first bilateral treaty for the protection of migratory birds was established between the USA and UK.[20] On the institutional front, in 1922, the International Committee (later Council) for Bird Protection (later Preservation) (ICPB) was founded to strengthen and accompany the substantive rules. This was clearly an early recognition of the need for trans-national and international institutional arrangements for the protection of the environment and natural resources.

Elsewhere, early efforts to conserve the whale led to the first convention on whaling in 1931.[21] However, efforts at protecting wildlife at least in particular regions bore the first treaty in 1900.[22] The Convention sought to ensure the conservation of wildlife in the African colonies of European states, including the use of trade restrictions on the export of certain skins and furs.[23]

- The Convention Protect Birds Useful to Agriculture, Paris, 19 March 1902,iv I.P.E 1615.
- Convention on the Conservation of European Wildlife and Natural Habitats, (Berne) 19 September 1979, UKTS 56 (1982), Cmnd 8738.
- Convention on Biological Diversity, (Rio de Janeiro) 5 June 1992, 31 ILM (1992) 822.
- Convention Between the United States and Great Britain For the Protection of Migratory Birds in the Untied States and Canada Washington, 7 December 1916, IV I.P.E 1638.
- Convention For the Regulation Whaling, Geneva, 24 September 1931, reprinted in VII I.P.E 3466; 155 LNTS 351.
- Convention Destinee a Assurer la Conservation des Di verses Especes Animals Vivant a L' Etat Sauvage en Afrique qui sont Utiles a" Illomme ou Iinoffensive, London 19 May 1900 iv I.P.E 1607.
- Ibid., art. II.

The 1900 Convention was later replaced by a 1933 Convention[24] which was in turn superseded by a new Convention, in 1968[25] following the process of decolonization of hitherto African colonial territories. Characteristic of the early conventions, neither the 1900 Convention nor the 1933 Convention created any institutional arrangements for administering its provisions, monitoring compliance, or ensuring implementation.

In 1940 another regional convention for the protection of wildlife was created for the Americas.[26] The following year, a dispute arose between Canada and the USA over the emission of sulfuric fumes from a Canadian smelting works which caused damage to crops, trees and pasture in the USA. The pollution incident and the case it engendered have been described as a "crystallizing moment for international environmental law."[27] The dispute was referred for international arbitration and became the famous Trail Smelter Case.[28] The Tribunal held that under international law:

> no state has the right to use or permit the use of its territory in such a manner as to cause injury by fumes in or to the territory of another or of the properties or persons therein, when the case is of serious consequence and the injury is established by clear and convincing evidence.[29]

On prevention of pollution *per se* the 1909 Water Boundaries Treaty[30] between the USA and Canada was the first to commit its parties to prevent pollution. Under the auspices of the Treaty's International Joint Commission a draft Treaty on Pollution Prevention was drawn up in 1920, but was not adopted.[31] Another draft instrument prepared in this period, which was also not adopted, sought to prevent oil pollution of the seas.[32] Other early treaties related to

---

Convention on the Preservation of Fauna and Flora in their Natural State, London, 8 November 1933, 172 LNTS 242.

African Convention on the Conservation of Nature and Natural Resources, Algiers, 15 September 1968, 1001 UNTS 3.

Convention on Nature Protection and Wildlife Preservation in the Western Hemisphere, Washington 12 October 1940, 161 UNTS 193.

Sands, P: *Principles of International Environmental Law;* 2nd ed (2003), p. 30

Trail Smelter Arbitration (Canada vs. USA)(1941), 3 RIAA 1905.

Ibid

1909 Water Boundaries Treaty, X1 I.P.E 5704

Sands, P: *Principles of International Environmental Law,* 2nd ed (2003), p. 28.

Final Act and Draft Convention of the Preliminary Conference on Oil Pollution of Navigable Waters Washington, June 1926 XIX, I.P.E 9585; Draft Convention and Draft, Final Act on Pollution of the Sea by Oil, 21 to 25 October, XIX, I.P.E 9597.

the adoption of measures to limit the spread of phylloxera[33] and epizootic diseases,[34] as well as the prevention of damage from corrosive and poisonous substances.[35]

During the period before the creation of the UN in 1945, developments relating to the creation of international environmental institutions were limited in comparison to the relatively larger body of substantive rules created in various conventions and treaties.[36] Some of the initiatives at institutional developments did not survive World War 1, while others seemingly did not gain widespread support and recognition during the League of Nations era. The League of Nations itself was a weak and lack lustre institution with little substantive achievements during its short lifespan. The onset of World War II which led to the collapse and death of the League of Nations, eroded further any slight gains which may have been made on the international institutional developments for the environment.

It is also noted that most initiatives for substantive legal and institutional arrangements for the international environment came from or were inspired by the efforts of private individuals, scientists, environmental organizations in Europe and the USA, and to a limited extent, by lawyers.[37] This inevitably led to the rather incoherent, piece meal and haphazard developments in international environmental laws and institutions during that era.[38] As noted, the principal areas of concern were fisheries, wildlife (including birds) and whales, as well as pollution prevention. However, the Pacific Fur Seal Arbitration[39] and the Trail Smelter Cases[40] together with the treaties and the organizations attempted, made valuable early foundations for the future developments in international environmental law and institutions.

The period between the 17th Century and the late 19th Century has been characterized as the era of the great arbitration which settled the freedom of the seas.[41] For example, the Costa Rica Packet Arbitration (1897)[42] distinguished jurisdictions on the high seas from those within the so-called range of cannon. Earlier, in the Behring Sea Fur Seals Arbitration

---

- International Phylloxera Convention, with a Final Protocol, Berne, 23 June 1882, IV I.P.E 1571.
- Convention Designed to Remove the Danger of Epizootic Diseases in the Territories of Austria – Hungary and Italy, Rome, 7 December 1887, IV I.P.E 1586.
- Convention between the Riverine states of the Rhine Respecting Regulations Governing the Transport of Corrosive and Poisonous substances, Mannheim, 11 May 1900, XXV I.P.E 214
- Sands, P.: *Principles of International Environmental Law*, 2nd ed (2003),p 31.
- Ibid
- Ibid
- Pacific Fur Seal Arbitration (USA vs Britain) (1893) Awards I Moore's International Arbitration Awards P. 755.
- Trail Smelter Arbitration (Canada vs USA) 1941, 3 RIAA 1905
- Costa Rica Packet Arbitration (1897), 5 Moore 75,p. 15.
- Behring Sea Fur Seals Arbitration (1895) 1 Moore 75, p. 15.

(1895).[43] the Arbitrators held that the USA did not have any right of protection or property in the fur seals frequenting the islands of the USA in the Behring Sea, when such seals were found outside the ordinary three mile limit. In this case, the facts briefly were that British subjects were engaged in taking fur seals in the Behring Sea beyond American territorial waters. This had the effect of diminishing the stock which was accustomed to breed in American territory. USA officers seized British sealers on the high seas and the resultant dispute was referred to arbitration. Among the arguments canvassed by the USA were the necessity for fishery conservation and the exclusion of fur seals from the category of fish for the purpose of formulating the freedom to fish. An effort was being made to assimilate seals to domesticated animals.

This arbitration was therefore significant for re-asserting the territorial claims of coastal states to be within the three mile limit. That in effect meant that beyond the three mile limit was the high seas, and the resources of the high seas did not belong to any nation or state. The resources of the high seas and of the international seabed therefore remained free of appropriation and national claims.

The Behring Sea Arbitration[44] was followed by an arbitration between the USA and Russia in the Cape Horn Pigeon Arbitration (1902);[45] Kate and Anne Arbitration (1902);[46] and James Hamilton Lewis and C.H White (1902).[47] In all the three cases, the seizure by Russia of American fishing vessels outside territorial waters was held to be illegal. This fortified the principle of the freedom of the high seas, while at the same time demonstrating the rising interests in marine living resources, especially fisheries.

In 1910, the Permanent Court of Arbitration in the North Atlantic Coast Fisheries Arbitration (1910)[48] dealt with a dispute between the USA and UK over some North Atlantic fisheries which arose out of failure to agree on the accepted limits of territorial jurisdiction. Apparently, at this time, the conventionally accepted territorial sea limit was the three- mile limit. However, with growing technology and accessibility of the seas and oceans, national

---

43 Ibid.

44 Cape Horn Pigeon Arbitration (US-Russia), US Foreign Relations, 1902 Appendix 1. p. 451.

45 Kate and Anna Arbitration (US-Russia) US Foreign Relations , 1902 appendix 451 I, p. 451.

46 James Hamilton Lewis and C.H . White (USvs Russia), US Foreign Relations, 1902 appendix 1, p. 451.

47 North Atlantic Coast Fisheries Arbitration (USvsGreat Britain) (1910) 1, Reports of International Arbitral Awards. (RIAA) 167.

48 Anglo-Norwegian Fisheries Case (UK vs Norway) ICJ Reports 1951, p. 116.

claims were challenging the limit and penetrating territories that were considered to be within the realm of the high seas.

The lessons learnt during this period included a growing awareness of the exhaustibility of natural resources, the problem of pollution engendered by industrialization and technological developments, and the need for international measures and collaboration to confront environmental problems and challenges.[49]

3.4 1945-1972–The Establishment of the UN to the Stockholm Conference

This was the second important historical period for the development of international environmental law and institutions. It began with the establishment in 1945 of the UN as the most important international institutional development in the wake of World War II.[50] The UN provided an institutional framework within which to pursue the development of international environmental law and specialized institutional arrangements. Although the UN charter does not refer explicitly to the protection of the international environment, its mandate in practice has proved wide enough to accommodate environmental matters.[51] The UN has since emerged as the main forum for the creation of international legal rules and has played a significant role in the development of international environmental law and institutional arrangements.[52]

This period was marked by some important features: firstly, the development of international organizations and institutional arrangements both at the regional and the global levels to address environmental issues, and secondly, the increased range of environmental concerns. Thirdly, there was as yet a limited recognition of the relationship between economic development and environmental protection.[53] A significant development happened in 1948: Governments and non-governmental partners established the first major international organizations to address environmental issues. With the assistance of UNESCO, a major international conference was held which established the international Union for the Protection of Nature (IUPN) (later IUCN/World Conservation Union). Its mandates included the

---

- Sands, P.: *Principles of International Environmental Law* 2nd ed (2003),p. 30
- Charter of the United Nations San Francisco 26 June 1945, in force 24 October 1945, I UNTS, XVI.
- Thornton, I: *Environmental Law* (1997), p. 30 ; Sands P: *Principles of International Environmental Law*,2nd ed (2003), p. 30.
- Ibid (Thornton J. *Environmental Law*, p. 30.)
- Sands, P: *Principles of International Environmental Law*, 2nd ed(2003), p. 31

promotion of the preservation of wild life and the natural environment, public knowledge, education, scientific research and legislation.[54] The most remarkable achievement of the IUCN has been its important role in the development of treaties to protect wildlife and conserve natural resources.[55]

Earlier, in 1947, an important resolution was passed by the Economic and Social Council (ECOSOC) of the UN, which solidified inter –governmental environmental action. The ECOSOC Resolution No. 32 (IV) (1947) clearly reflected a growing awareness of the need for international action to deal with management and conservation of natural and shared resources. It was this resolution which determined the competence of the UN over the environmental matters and ultimately resulted in the 1972 Stockholm Conference, the 1992 UNCED as well as other UN actions on the environment.[56] The ECOSOC resolution convened an important international Conference in 1949. Some of the issues dealt with by the UN Conference on the Conservation and Utilization of Resources (UNCCUR) which took place in New York State in the USA, included: minerals, fuels and energy water, forests, land and wild life and fish.[57] Some of these topics were similarly addressed by the UNCED many decades later and continue to be important environmental concerns to-date.

Thus, even as early ago as 1949, the relationship between conservation and development was an apparently central theme, and discussions focused on the relationship between conservation and use; on the need to develop standards to ensure conservation and sustainability.[58] Beyond the 1949 UNCCUR, the UN and its specialized agencies addressed issues relating to the conservation of flora and fauna.[59]

Meanwhile, with regard to developments in the law of the sea, the period between 1945 and 1950 witnessed the first national claims to the sea, hitherto not considered to be appropriate. This trend was mainly triggered by the so-called Truman Proclamation in which the USA President Truman, on 28th September 1945, claimed "the natural resources of the subsoil and seabed of the continental shelf beneath the high seas but contiguous to the coasts of the USA

---

54 See the 1977 Statutes of the IUCN, XVIII I.P.E 8960 (The IUPN was renamed IUCN in 1956).

55 Sands P. *Principles of International Environmental Law* 2nd ed (2003), p. 31

56 Ibid. p. 32

57 Ibid., For a Summary of Specific Topics Covered at the UNCCUR (1949), See *Year book of the UN* (1948-9), pp – 481-2.

58 Ibid.

59 Sands, P. *Principles of International Environmental Law*, 2nd ed (2003), p. 32

as appertaining to the USA and subject to its jurisdiction and control."[60] The Truman Proclamation was an important landmark as it showed that advancing technology was bringing seabed mineral resources within the realm of economic accessibility and also it was the first claim by a major maritime power to jurisdiction over the continental shelf beyond the territorial sea. Soon, several other states followed suit.

The unilateral continental shelf claims and the protestations that followed the Truman Proclamation and the steady trickle of unilateral extensions of the territorial sea, that had been going on since the 1930's finally provoked responses at both regional and international levels. The International Law Commission (ILC) at its first session in 1949 chose the law of the sea as one of the three subjects to which it would give immediate priority. The ILC was attempting to create a sufficiently acceptable and uniform international law of the sea.

The work of ILC led directly to the first United Nations Conference on the Law of the Sea (UNCLOS 1), although in the years between 1951 and 1958 about 28 more states unilaterally extended their maritime jurisdictions. The stage then shifted to UNCLOS I (1958) and UNCLOS II (1960). UNCLOS I, attended by 86 states considered all aspects of the law of the sea and came up with four conventions on the subject. These were the Convention on the Territorial Sea and the Contiguous Zone;[61] the Convention on the Continental Shelf;[62] the Convention on the High Seas;[63] and the Convention on Fishing and Conservation of the Living Resources of the High Seas,[64] all done at Geneva on 29th April 1958. UNCLOS II (1960) was really a continuation of UNCLOS I and dealt mainly with the contentious questions of the breadth of the territorial sea and of coastal state jurisdiction over fisheries neither of which had been settled in 1958. UNCLOS II was unable to find consensus on either question and did not produce any convention.

All the 1958 Conventions were passed by very large majorities, and taken together they represented a substantial codification of the pre – existing rules of international customary law on the subject. However, they did not settle the problem of the limits of the coastal state jurisdiction over fisheries or in the territorial sea and left un resolved definitions of inner and

---

60 Presidential Proclamation 2667, September 28, 1945 Natural Resources of the Sub-soil and Sea-bed of the Continental Shelf, 10 Federal Register 12303 (1945). See also Bishop, W.W: *International Law: Cases and Materials* 3rd ed,Little, Brown and Company, Boston and Toronto (1971), p. 637.

61 A/CONF.13/L./52(1958), UNCLOS Iand II Official Records 132, 516 UNTS 205.

62 A/CONF.13/L./55(1958), UNCLOS 1,11 Official Records 142, 499 UNTS, 311.

63 A/CONF.13/L./53(1958), UNCLOS 1,11 Official Records 135, 450 UNTS, 82.

64 A/CONF.13/L./54(1958), UNCLOS 1,11 Official Records, 599 UNTS, 285.

outer limits of the continental shelf. Other issues like piracy and the determination of baselines were settled. The many unresolved issues largely justified the convening of UNCLOS III in the early 1970s.

Earlier, in 1954, the UN General Assembly (UNGA) convened a major Conference on the Conservation of Living Resources of the Sea.[65] The Conference led to the conservation rules adopted in the 1958 Geneva Conventions.[66] For the first time UNGA gave attention to the effects of atmospheric nuclear tests and oil pollution.[67] This led to an expansion of areas of focus beyond flora and fauna, to products and processes associated with industrial and military activity.[68] In 1955, the UNGA adopted the first of a series of resolutions on the use of atomic energy and the effects of atomic radiation,[69] which led to the adoption of the Test Ban Treaty (1963),[70] and provided the political context for Australia and New Zealand to file actions at the ICJ calling on France to halt all atmospheric nuclear tests.[71]

Specifically on the marine environment, in 1954 under the auspices of the IMO, the first global convention for the prevention of oil pollution was adopted.[72] This was followed years later by other IMO Conventions dealing with civil liability for oil pollution damage;[73] intervention in the high seas in cases of oil pollution casualties;[74] and the creation of an oil pollution compensation fund.[75] These conventions were mainly activated by specific incidents resulting in large-scale oil pollution which caused severe damage or injury to the marine

---

65 Ibid.; see also UNGA Res. 900(IX)(1954) The Conference Report is at VIII I.P.E 3969.

66 These Conventions were as follows:- Convention on the Territorial Sea and Contiguous Zone (Geneva), 29 April 1958, 516 UNTS 205; Convention on the Continental Shelf (Geneva) 29 April 1958 499 UNTS 311; Convention on Fishing and Conservation of the Living Resources of the High Seas (Geneva) the High Seas (Geneva) 29 April 1958, 540 UNTS 82.

67 Sands, P. *Principles of International Environmental Law*, 2nd ed (2003), p. 33.

68 Ibid.

69 The resolutions included UNGA res.912(X)(1955); Res913 (X)(1995);Res.1147(XII)(1957);Res 1252(XIII)(1958); Res 1379(XIV) (1959);Res 1402 (XIV) 1959 Res 1649(XVI)(1961).

70 Treaty Banning Nuclear Weapon Tests in the Atmosphere, in Outer Space and Under Water (MOSCOW) 5 August 1963, 480 UNTS 43.

71 Sands, P. *Principles of International Law*, 2nd ed (2003), p. 33.

72 International Convention for the Prevention of Pollution of the Sea by Oil, London, 12 May 1954, 327 UNTS p. 3. This was subsequently amended in 1962, 1969 and 1971.

73 International Convention on Civil Liability for Oil Pollution Damage, 29 November 1969, 973 UNTS 3.

74 International Convention Relating to Intervention on the High Seas in Cases of Oil Pollution, Damage, (Brussels) 29 November 1969, 9 ILM (1970), 25.

75 International Convention on the Establishment of an International Fund for Compensation for Oil Pollution Damage, 1971 (Brussels) 18th December 1971,11 ILM (1972), 284. The 1971 Fund was later followed by the 1992 Fund. The 1971 Fund was established in October 1978. It operates within the framework of two International Conventions: the 1969 International Convention, on Civil Liability and the 1971 International Convention on the Establishment of an International Fund for Compensation for Oil Pollution Damage. The 1971 regime was amended in 1992 by two protocols producing two amended conventions. the Civil Liability Convention (1992) and the Fund Convention (1992) both of which entered into force on May 1996. The 1992 Fund Convention was set up under the 1992 Fund Convention, when the latter entered into force. The various IMO Conventions will be discussed in Chapter 2, infra. The 1971 Fund was expected to cease to be in force on 24th May 2002 when its membership fell below 25.

environment and to people and property.[76] Another important development for the marine environment came soon after the 1972 Stockholm Conference itself, and this was the London Convention (1972).[77] It should be recalled that the 1958 Geneva Conventions and especially the High Seas Fishing and Conservation[78] and the High Seas Conventions[79] made important provisions on conservation of marine living resources and the prevention of oil pollution and dumping of radio- active wastes respectively. In 1971, hardly a year before the Stockholm Conference, the Ramsar Convention[80] was adopted as the first environment treaty which dealt with a specific type of ecosystem- wetlands.

There were also important regional developments during the period under consideration. They included the 1959 Antarctic Treaty[81] which committed parties to under take peaceful activities in the Antarctic and prohibited nuclear explosions or the disposal of radio-active wastes. In Europe, despite the absence of express environmental provisions in the 1957 Treaty of Rome,[82] the European Community (EC) in 1967 adopted its first environmental act on the packaging and labelling of dangerous goods.[83] In early 1972, just before the Stockholm Conference, the Oslo Dumping Convention[84] was established as the first treaty to prohibit the dumping of a wide range of hazardous substances at sea. There were also instruments to protect European rivers against pollution.[85] In Africa, the 1968 African Nature Convention[86] expanded wildlife conservation from the mere conservation of fauna and flora and included the conservation, utilization and development of ecosystems.

Meanwhile, in the period 1961-1967 there were some developments that tended to undermine the Geneva Conventions (1958) as a stable basis for a law of the sea regime. Firstly, the Conventions were slow to come into force as they did not quickly attract ratification by a majority of states in the international system. Secondly, there was an influx of new states,

---

Sands, P: *Principles of International Environmental Law*, 2nd ed (2003), p. 33

Convention on the Prevention of Marine Pollution by Dumping of Wastes and Other Matter, (London), 29 December 1972, 1046 UNTS 120.

Convention on Fishing and Conservation of the Living Resources of the High Seas (1958), 559 UNTS 285.

Convention on the High Seas (1958), 450 UNTS 82.

The Ramsar Convention (1971), 996 UNTS 245

The Antarctic Treaty (1959), 402 UNTS 71.

The Treaty of Rome (1957), 2989 UNTS 11.

E.E. Environmental Act (1967).

The Oslo Dumping Convention (1972), 932 UNTS 3

For example, Protocol Concerning the Constitution of an International Commission for the Protection of the Mosel Against Pollution (Paris), 20 December 1961, UNTS 940 211, Agreement Concerning the International Commission for the Protection of the Rhine Against Pollution (Berne), 29 April 1963, UNTS 914, 1.

African Convention on the Conservation of Nature and Natural Resources, (1968), 1001 UNTS 3.

mostly African, into the international system following de-colonization of hitherto colonized territories. All of these new members were developing states and few of them felt much commitment to a system of international law that had been erected without their participation and which reflected the dominance of former colonial maritime powers. Thirdly, the Soviet Union (USSR) steadily emerged as a full maritime state and it consequently shifted its interests to a position more in line with that of the traditional maritime powers.[87] Fourthly, there was the continued expansion in the use of the oceans combined with intensification, particularly in the USA, of research and development in marine science and technology.[88] Moreover, this period was also marked by a natural lull in international activity on the law of the sea following the concentrated efforts of the 1958 and 1960 conferences. Initiative in ocean affairs was once again in the hands of individual states. International law on the seabed beyond the continental shelf was ambiguous and therefore controversial and the emerging marine technology appeared to be on the brink of nullifying the concept of "inability to occupy" that underlay the *res communis* interpretation of the high seas including the sea-beds.[89]

The prospects of the occupation of the international sea beds in turn raised the prospects of conflict amongst states. This in turn led to a re- opening of the seabed question and, indeed, of the whole law of the sea.[90]

Elsewhere, there was massive expansion of fishing and shipping activities beginning in the 1950s and continuing unabated in the 1960s. Indeed, the passing in 1958 of the Geneva Convention on Fishing and Conservation of the Living Resources of the High Seas[91] reflected the international community's awareness that developments in the fishing technology posed a threat of over exploitation of the living resources of the sea.[92] The establishment of exclusive fishery zones in the 1960s and 1970 were in part a response to the threat to national fisheries presented by the new, highly efficient factory- fishing fleets developed for distant water fishing.[93] Similarly, the growing awareness of the economic and technical feasibility of the deep sea mining of polymetallic nodules would in any event have demanded the establishment

---

87 Buzan, B. *Seabed Politics*, Praeger Publishers, New York/Washington/London, (1976) p. 15

88 Ibid.

89 Ibid., p. 58.

90 Ibid.

91 559 UNTS 285.

92 Brown E.D. *The International Law of the Sea, Volume 1. Introductory Manual*, Dartmouth Publishing Co. Ltd, Aldershot, (1994), p. 9.

93 Ibid.

of a new regime for the Area beyond the limits of national jurisdiction.[94] Oceans were also being used as the ultimate dumping ground for sewage, industrial and nuclear wastes. Problems of saturation and hazardous use also began to arise in this area and the marine environment was under serious threat of pollution.

By 1967, the cumulative effects of legal, political, technological and economic actions by states, had reached a level sufficient to propel the whole law of the sea back on the agenda of the UN.[95] The UN-ECOSOC passed Resolution 1112 of March 1996[96] touching on seabed resources, and UNGA passed Resolution 2172 of December 1966.[97] Both resolutions established the needs and interests of the developing states as an important factor in the new economic interest in the oceans. They also set the stage for a major UN role in the emerging international controversy on the law of the sea.

Then came Ambassador Pardo's 17th August 1967, proposal for declaring seabed resources the common heritage of humankind.[98] The proposal was a solo move designed to stimulate action on internationalization of the deep seabed before advancing technology made exploitation possible and resulted in the proliferation of even larger national claims. The proposal prompted a major shift in the future direction of the debate on the sea-beds and the law of the sea as a whole. Ambassador Pardo's proposal immediately led to UNGA Resolution 2340 of 18th December 1967,[99] by a vote of 99:0:0 establishing a 35–state *Ad Hoc* Sea-bed Committee to study the peaceful uses of the sea-bed and the ocean floor beyond the limits of national jurisdiction. The *Ad Hoc* Sea- bed Committee[100] work had the long- term effect of increasing the momentum toward the re-opening of other law of the sea questions supposedly closed by the 1958 Geneva Conventions. From the *Ad Hoc* Seabed Committee, the debate moved to UNGA which in turn established a Permanent Seabed Committee of 42 members through Resolution 2467 A of 21st December 1968.[101] By the end of 1968, it was clear that a new sea bed regime was not going to be quickly created. Indeed there was a great

---

94 Ibid.

95 Ibid., 60-61.

96 See, 20 *Year Book of the United Nations* (1966), Office of Public information, United Nations, New York.

97 Maltese Note Verbale of 17 August, 1967 to the UN Secretary General, UN DOC. A/6695,(1967). See also Dr. Pardo's Speech in the General Assembly's First Committee on 1 November 1967; UNDoc.A/C/1PV.1515,(1967).

98 UNGA Resolution 2340 XXII of 18 December 1967, 21 *Year Book of the United Nations* (1967), Office of Public Information, United Nations, New York p. 48-49.

99 UNGA Resolution 2172 of December 1967, 20 *Year Book of the United Nations* (1967) Office of Public Information, United Nations New York pp. 48-49.

100 A/7230, Report of Ad Hoc Committee to Study Peaceful Uses of Seabed and Ocean Floor beyond Limits of National Jurisdiction (UNGA 23rd Session, 1968). For a summary of the report, see 22 *Year Book of the United Nations*, (1968), Office of the Public Information, United Nations, New York, p. 70-80

101 UNGA Resolution 2467 A (XXII) of 21 December 1968, 22 *Year book of the United Nations* (1968), Office of Public Information, United Nations, New York p 80-81.

debate on sea bed issues, particularly in the USA, during the period between 1966 and 1970.[102]

From 1969-1970, there was a perceptible trend indicating a swing towards a broader discussion of all the law of the sea issues and a corresponding lapse in the priority of the international sea bed regime and machinery which the Permanent Seabed Committee was mandated to pursue.[103]

Subsequently, a group of developing states led by Brazil, Jamaica and Trinidad and Tobago requested for a new conference covering all aspects of the law of the sea, and not just the continental shelf boundary agenda favoured by Malta and most of the Western states. The developing states urged that the essential unity of ocean issues made it impossible to deal with the seabed in isolation from other aspects of the law of the sea. Seventeen developing states co-sponsored a draft agenda which was broad- based for discussion in the Seabed Committee. They were determined to undertake a thorough re- examination of the entire law of the sea. The developing states had numerical voting power to counter the increasing economic and technological power of the developed states.[104]

As a result, UNGA Resolution 2574A[105] established the idea of a comprehensive conference on the law of the sea, and by the end of 1970 the focus was more on broader ocean issues. According to Buzan,it was the numerical strength of the developing states that ensured the passing of the so- called "Moratorium Resolution" (UNGA Resolution 2574 A).[106]

A number of judicial pronouncements also contributed to the development of current marine environmental law during the period between 1945 and 1972. In 1949, the International Court of Justice (ICJ) in the Corfu Channel Case confirmed every state's obligation not to allow knowingly its territory to be used for acts contrary to the rights of other states.[107] This holding of the court contributed significantly to the emergence of Principle 21 of the Stockholm Conference.[108] In 1957 the Lac Lanoux Arbitral Tribunal affirmed some important principles

---

102 Ogley, R. *Internationalizing the Seabed,* Gower Publishing Company Ltd., (1984), p.1.

103 Buzan, B. *Seabed Politics,* p. 90..

104 Ibid..

105 UNGA Resolution 2574 A of 15 December 1969. 23 *Year Book of United Nations* (1969), Office of public Information, United Nations, New York p. 67.

106 Buzan , B: *Seabed Politics,* p. 211.

107 Corfu Channel (UK vs. Albania), 1949 ICJ Rep. 4.

108 Sands, P: *Principles of International Environmental Law,* 2nd ed (2003), p. 34

concerning limitations on the right of states in their use of shared rivers.[109] Another case during the period was the Case Concerning Barcelona Traction Light and Power Company Ltd.[110] where the majority of judges implicitly recognized the possibility of what might be considered to be an *actio popularis* under international law where an obligation exists *erga omnes*.

The ICJ also dealt with delimitations of the territorial sea in the Anglo-Norwegian Fisheries Case.[111] The bone of contention was a Norwegian Decree of 1935, which delimited Norway's 'fishery zone' (or its territorial sea) along almost 1000 miles of coastline. The distance was measured from the straight baseline and not from the low water- mark at every point along the coast as was the normal practice. By using the straight baseline method, Norway enclosed waters within its territorial sea that would have been high seas and hence open to foreign fishing if she had used the low water mark line. Norway justified her method on the grounds that she had well- established titles of right, on the (unique) geographical conditions prevailing on the Norwegian coast, and on the safeguard of what she deemed vital interests of the inhabitants of the northern most part of the country.

The UK challenged the legality of Norway's straight baseline system and the choice of certain baselines used in applying it. British fishing interests in the region were at stake as her vessels had been subjected to Norwegian enforcement machinery.

The ICJ found in favour of Norway. It held that for purposes of measuring the breadth of the territorial sea, it was the low water mark as opposed to the high mark or the mean between the two tides which had generally been adopted in the practice of states. It found the criterion to be the most favourable and agreeable to both parties although they differed as to its application. The court also found that the ten- mile rule advanced by the UK had not acquired the authority of a general rule of international law as other states had applied different limits. In particular, the rule was inapplicable to Norway as she had consistently rejected it.

The ICJ further established general criteria to provide adequate basis for decisions on the territorial seas. These criteria included the close dependence on the territorial sea upon the land domain and the close relationship existing between certain sea areas and the land

---

[109] Lac Lanoux Arbitral Tribunal (France vs Spain) 24 ILR. 101 (1957).

[110] Case Concerning the Barcelona Traction Light and Power Ltd (1970) ECJ 3. (Belgium vs. Spain).

[111] Anglo-Norwegian Fisheries Case, ICJ Reports (1951), p 116.

formations dividing or surrounding them. Lastly, certain economic interests peculiar to a region, the reality and importance of which were clearly evidenced by long usage, was held on be one of the criteria for deciding on delimitations of territorial seas. In effect, the court justified Norway's position and held that she had not contravened international law.

This case significantly demonstrated the tension between coastal state territorial sea claims and the freedom of the high seas motivated primarily by the pursuit of economic gains from the seas and oceans. Fishery claims were particularly important for the maritime states of the time. In spite of the attempt by the court to establish criteria for delimiting territorial sea claims, it was obvious that this tension would continue until an acceptable international legal regime was established. The 1982 UN Convention on the Law of the Sea [112] puts the territorial sea at twelve nautical miles.

Prior to adjudicating in the Anglo-Norwegian Fisheries Case, [113] the ICJ gave an opinion in a dispute involving the UK and Albania in the Corfu Channel Case (Merits) (1949). [114] The facts of this case briefly were that on 15 May and 22 October 1946, two British cruisers while passing southward through the North Corfu Channel were fired at by an Albanian battery. The UK Government at once protested to the Albanian Government stating that innocent passage through straits was a right recognized by international law. There ensued diplomatic correspondence in which the British Government asserted that foreign warships and merchant vessels had the right to pass through Albanian territorial waters without prior notification to and the permission of the Albanian authorities. The UK sent two warships through the North Corfu strait on 22 November 1946 raising tension and uncertainty. The matter was subsequently referred to the ICJ for an opinion.

The ICJ was of the opinion that it was generally recognized and in accordance with international custom that states in time of peace had a right to send their warships through straits used for international navigation between two parts of the high seas without the previous authorization of a coastal state, provided that the passage was innocent. Unless otherwise prescribed in an international convention there was no right for a coastal state to prohibit such passage through straits in time of peace. The rights of transit passage and innocent passage through international straits were incorporated into the 1982 UN Convention

---

[112] The 1982 UN Convention on the Law of the Sea, Article 3.

[113] Articles 38.39 and 45

[114] Corfu Channel Case (Merits) (UK vs. Albania) ICJ Reports 1949, p.4

on the Law of the Sea.[115] The Corfu Channel Case[116] was useful in developing the rights or freedom of transit passage along or across international straits. In the Abu Dhabi Arbitration (1951)[117] Lord Asquith, dealing with the existing law in relation to the continental shelf, found that the law had not as yet assumed the "hard ligaments or the definitive status of an established rule of international law." The law needed to develop in this area. This was perhaps an explicit admission that the existing law of the sea was incomprehensive and inadequate. UNCLOS I attempted to codify this law in the Geneva Convention on the Continental Shelf (1958).[118] The 1982 UN Convention on the Law of the Sea sets out the current law governing the continental shelves.[119]

The ICJ in the North Sea Continental Shelf Cases (1969)[120] found itself adjudicating on the principles and rules that were applicable to the delimitation between parties of the areas of the continental shelf in the North Sea. These were the (Federal Republic of) Germany, Denmark and The Netherlands. A number of bilateral agreements had been made drawing lateral or median lines delimiting the North Sea continental shelves of adjacent and opposite states including two bilateral agreements between the Netherlands and Germany (1964) and Denmark and Germany (1965). The agreements were not comprehensive enough and further agreement proved impossible. The parties referred the matter by consent to the ICJ and the Court combined the two cases. Denmark and the Netherlands argued that the "equidistance special circumstances" principle in Article 6(2) of the Geneva Convention of the Continental Shelf (1958)[121] applied. Germany denied this and proposed the 'doctrine of the just and equitable share.'

The Court rejected the German proposition although it also found that Germany was not a state party to the 1958 Geneva Convention on the Continental Shelf[122] and therefore was not bound by it. Denmark and the Netherlands were parties. The questions therefore became whether the equidistance principle advanced by Denmark and the Netherlands, had come to be regarded as a rule of customary international law so that it would be obligatory for

---

115 499 U.N.T.S 311.
116 Corfu Channel Case , ICJ Reports , (1949) p. 4.
117 Petroleum Development Ltd Vs Sheikh of Abu Dhabi (1951), International Law Reports, (1951), p. 144.
118 499 UNTS 311
119 The 1982 UN Convention on the Law of the Sea, Articles 76-85
120 North Sea Continental Shelf Cases (Federal Republic of Germany Vs Denmark, Federal Republic of Germany Vs The Netherlands) ICJ Reports (1969), p. 3.
121 499 UNTS 311.
122 Ibid.

Germany, as for other states which had accepted it. The Court found that the 1958 Geneva Convention was not in its origins or inception, declaratory of a mandatory rule of customary international law enjoining the use of the equidistance principle for the delimitation of continental shelf areas between adjacent states. Neither did its subsequent effect constitute such a rule. Moreover, state practice up-to-date had equally been insufficient for the purpose.

The importance of this decision was that the law in this area was still unsettled and controversial. In spite of the Geneva Convention there were still gaps that needed to be bridged to constitute a comprehensive and universally acceptable regime.

By 1972 a significant body of international environmental law both regional and global had been established. International institutional arrangements to address environmental issues were also being established. International concern was no longer focused only on the conservation of flora and fauna but also on entire ecosystems, oil pollution and the effects on the atmosphere of nuclear tests. Limitations were being placed on states' freedoms to utilize their natural resources. However, the legal and institutional developments were emerging in a piecemeal and un-coordinated manner.[123]

The 1972 Stockholm Conference was the first international conference on the environment and it marked a major turning point in the development of international environmental law.[124] The Conference provided an opportunity to formulate a coherent analysis of global environmental problems and challenges, and to discuss appropriate legal, policy and institutional responses in a coordinated and systematic manner. The 1972 Stockholm Conference itself was preceded by, and is traceable, to the 1968 Biosphere Conference.[125] The latter Conference considered the human impact on the biosphere, including the effects of air and water pollution, over grazing, deforestation, and the drainage of wetlands. It adopted twenty recommendations[126] reflecting themes which featured at the 1972 Stockholm Conference. In its final report, the 1968 Biosphere Conference observed in part:

> Until this point in history the nations of the world have lacked considered, comprehensive policies for managing the environment. Although changes have been taking place for a long time, they seem to have reached a threshold recently that has made

123 Sands, P: *Principles of International Environmental Law*, 2nd ed (2003) p. 33.
124 Thornton J: *Environmental Law*, p. 31.
125 International Conference of Experts on the Scientific Basis For Rational Use and Conservation of the Resources of the Biosphere (Convened by UNESCO),(1968).
126 Sands, P: *Principles of International Environmental Law*, 2nd ed (2003), p. 33.

the public aware of them. This awareness is leading to concern, to the recognition that to a large degree, man now has the capability and the responsibility to determine and guide the future of his environment and to the beginnings of national and international corrective action. It has become clear, however, that earnest and bold departures from the past will have to be taken nationally and internationally if significant progress is to be made.[127]

The UNGA acted promptly and convened the 1972 Stockholm Conference, in 1968.[128] This was preceded by the adoption in July 1968 of an ECOSOC resolution, first proposed by Sweden noting the "continuing and accelerating impairment of the quality of the human environment" and recommending to the UNGA the convening of such a conference.[129] Two months earlier ECOSOC had noted a report by the World Health Organization (WHO) on environmental pollution and its control and the report by UNESCO and FAO on the conservation and rational utilization of the environment.[130] The latter was the outcome of the 1968 Biosphere Conference.

The Stockholm Conference was hosted by Sweden at Stockholm from 5-16 June 1972. Besides representatives of 114 states, a large number of international organizations and non-governmental observers were in attendance.[131]

The outcomes of the Conference were three non-binding instruments: a Declaration containing 26 Principles; an Action Plan containing 109 recommendations; and a Resolution on institutional and financial arrangements.[132] Some of the innovations of the Stockholm Conference, generally acknowledged as successful, included the redefinition of international issues, the rationales for co-operation, the approach to international responsibility and the conceptualization of international organizational relationships.[133] According to Thornton,[134] the Principles of Stockholm "may be regarded as the foundation of modern international environmental law." This is to the extent that the principles have formed the basis of

---

- See, *Year book of the UN* (1968), p. 958.; UNESCO: Use and Conservation of the Biospheres: Proceedings of the Inter- Governmental Conference of Experts on the Scientific Basis For Use and Conservation of the Resources of the Biosphere (1970).
- Ibid., also quoted by Sands P: *Principles of International Environmental Law*, 2nd ed (2003), p. 35.
- UNGA Res 2398 (XXIII)(1968).
- ECOSOC Res 1346(XLV)(1968); ECOSOC Res. 1310 (XLIV) (1968)
- Sands, P: *Principles of International Environmental Law*, 2nd ed (2003), p.36
- See, Report of the UN Conference on the Human Environment UN doc. A/CONF. 48/14 at 2-65, and Corr. 1 (1972); 11 ILM (1972) 1416.
- See for example, Sohn L.B: "The Sockholm Declaration on the Human Environment", 14 Harvard International Law Journal 423, (1973); Caldwell, L.K: *International Environmental Policy*, 2nd end. (1990), p. 32; Sands, P: *Principles of International Environmental Law*, 2nd ed (2003),p. 34; Thornton, J: *Environmental Law*, p. 31.
- Ibid. (Thornton J: *Environmental Law*, p. 31.)

numerous subsequent conventions. The recommendations for the creation of new institutions and the establishment of coordinating mechanisms among existing institutions (the Action Plan); the definition of a framework for future action to be taken by the international community (the Recommendations); and the adoption of a set of general principles (the Principles), could clearly be distinguished as important legal developments and outcomes from the Stockholm Conference.[135]

The institutional and financial arrangements proposed included the following four components:- an inter governmental Governing Council for Environmental Programmes, to provide policy guidance for the direction and coordination of environmental programmes; an Environment Secretariat headed by an Executive Director; an Environment Fund to provide financing for Environmental programmes; and an inter agency Environmental Coordinating Board to ensure co operation and coordination among all bodies concerned with the implementation of environmental programmes in the UN system.[136] There were also proposals for the establishment of environmental assessment mechanisms including the establishment of Earth watch which was to include a Global Environmental Monitoring System (GEMS) and an International Referral System (subsequently INFOTE RRA).[137]

The Stockholm Principles were intended to provide a common outlook and common principles to inspire and guide the peoples of the world in the preservation and enhancement of the human environment. The principles reflected a compromise between those states which believed that the principles would stimulate public awareness of the concern over environmental issues, and those states which wanted the Declaration of Principles to provide specific guidelines for future governmental and inter-governmental action.[138]

Specific principles which carried more legal meaning included 21, 22, and 24. Principle 21 affirmed the responsibility of states to ensure that activities within their jurisdiction or control did not cause damage in other states or beyond national jurisdiction such as outer space or on the high seas. Principle 22 required states to cooperate in developing international environmental law. Principle 23 limited the role of international regulation and suggested that certain standards would have to be determined nationally on the basis of value systems

---

135 Ibid.

136 Sands P: *Principles of International Environmental Law*, 2nd ed (2003), p. 37

137 See, Report of the UN Conference on the Human Environment (1972); Sands, P: *Principles of International Environmental Law*, 2nd ed (2003),p. 37

138 Ibid. (Report of the UN Conference on the Human Environment (1972); Sands P: *Principles of International Environmental Law*, 2nd ed (2003), p. 35)

applying in each country and their social costs and in accordance with the need for different environmental standards in different countries. Principle 24 called for international cooperation for effective control, prevention, reduction and elimination of adverse environmental effects resulting from activities conducted in all spheres while taking into account the sovereignty and interests of all states. It called for international organizations to play a coordinated, efficient and dynamic role.

In summary, the other principles addressed the following range of themes:- general guidelines for the safeguarding of the natural resources of the earth for the benefit of present and future generations, and for the maintenance, restoration and improvement of vital renewable resources and the non- exhaustion of non-renewable resources (Principles 3 and 5); identification of specific environmental threats; recognition of the special responsibility of humankind to safeguard and wisely manage the heritage of wildlife and habitats, halt the discharge of toxic and other substances and heat which cause serious or irreversible damage to the ecosystems; and prevention of pollution of the seas or harm to living resources and marine life (Principles 4,6 and 7). Other themes included environment and development, by which the Conference recognized the relationship between economic and social development and the environment (Principles 8-15); and appropriate national policies, instruments and institutions and other supporting mechanisms such as education, scientific research and development or appropriate technologies (Principles 16-20).

The Report of the Stockholm Conference was considered and adopted by the UNGA at its 27th session (1972).[139] The outcome of UNGA was eleven resolutions dealing with various issues. Note worthy among them were resolution 2994 (XXVII), which noted with satisfaction the Conference Reports; and resolutions 2997-3004 which addressed institutional and financial arrangements for international environmental co-operation including the creation of the UNEP and the UN Environment Fund. The UNEP was conceived as a body to guide the future development of international environmental law while the Fund[140] was for signatory states to make financial contributions for the advancement of the well-being of the international environment.[141] In retrospect, the UNEP, as a coordinating body between states,

---

139 Sands P. *Principles of International Environmental Law*, 2nd ed (2003), p. 40

140 *Year Book of the UN*, 1972. 330-337.

141 Ibid.

has greatly stimulated and advanced the development of international environmental law in the nearly four decades since its inception.[142]

The 1972 Stockholm Conference is considered as marking the birth of international environmental policy as it was the first occasion on which environmental issues were discussed at global level.

3.5 1972-1992 – The Aftermath of the 1972 Stockholm Conference to the Rio Summit

The two decades which constitute the third important historical epoch in the development of marine environmental law witnessed very interesting developments. The period coincided in part with the most important developments in the modern international law of the sea, the Third United Nations Conference on the Law of the Sea (UNCLOS III). UNCLOS III was convened in 1973. Its first session took place in New York (1973-1974); the second session in Caracas and then in Geneva (1974-1975); and thereafter in New York and Geneva.[143] In all UNCLOS III took eleven sessions spanning 93 weeks of negotiations, spread over more than eight years,[144] culminating in the signing of the Final Act in Montego Bay, Jamaica in December 1982. Many states participating in UNCLOS III indicated their willingness to support the conference as the best road to a new international law of the sea. Eventually, UNCLOS III bore the 1982 UN Convention on the Law of the Sea,[145] in spite of spirited opposition from a few developed states led by the USA. The Convention was clearly motivated by the desire among nations to balance multi faceted and competing interests and create an orderly and peaceful system for the seas and oceans of the world.

This period was marked by an increase in international environmental organizations (including those established by treaty) and greater efforts by existing institutions to address environmental issues; the development of new resources of international environmental obligations from acts of such organizations; new environmental norms established by treaty; the development of new techniques for implementing environmental standards, including environmental impact assessments and access to information; and the formal integration of

---

142 Thornton J: *Environmental Law*, p. 32.
143 Buzan, B: *Seabed Politics*, p. 211.
144 Ibid.
145 1982 UN Convention on the Law of the Sea, UN/DOC. A ICONF. 62/122; 21 ILM (1982), 1261.

environment and development particularly in relation to international trade and development assistance.

It has been observed that the 1972 Stockholm Conference set the scene for international activities at the regional and global levels and influenced legal and institutional developments throughout the two decades up to the 1992 Rio and beyond.[146] In this regard, the creation of the UNEP and the adoption of Principle 21 and the other principles were perhaps the most significant achievements of the Stockholm Conference.[147] Most of the several hundred bilateral and multi-lateral environmental agreements between states were concluded under the auspices of the UNEP and in the context of Principle 21 and other Principles of the Stockholm Conference. Some of the notable achievements of UNEP were the establishment and implementation of the Regional Seas Programme (RSPs) to protect the marine environment; and the establishment of global treaties addressing ozone depletion, trade in hazardous wastes and biodiversity.[148]

In the period closely following the Stockholm Conference, several other treaties were adopted outside the auspices of UNEP but within the UN framework. They included the London Convention (1972);[149] the Convention on International Trade in Endangered Species (CITES) (1972);[150] MARPOL73/78;[151] the World Heritage Convention (1972);[152] and the 1982 UN Convention on the Law of the Sea.[153] In the wake of the 1972 Stockholm Conference, there were also important regional developments. These included the establishment of EC Environmental

Protection rules;[154] the creation of an Environment Committee at the Organization for Economic Cooperation and Development (OECD);[155] the 1979 Bonn Convention[156] for the protection of migratory species, and the 1979 Berne Convention[157] for the protection of

---

146 Sands, P: *Principles of International Environmental Law*, 2nd ed (2003), p 40

147 Ibid

148 Ibid

149 London Convention (1972), 1046 UNTS 120.

150 CITES (1973), 993 UNTS 243.

151 MARPOL 73/78 17 ILM (1978), 246.

152 Convention for the Protection of the World Cultural and Natural Heritage (Paris) 16 November 1972, 11 ILM 1972) 1358

153 The 1982 UN Convention on the Law of the Sea, 21 ILM (1982), 1261

154 Sands P: *Principles of International Environmental Law*, 2nd ed (2003), p.41; see also p 732-795.

155 Ibid., p. 41; see also p 102-104.

156 Convention on the Conservation of Migratory Species of Wild Animals, (Bonn) 23 June 1979, 19 ILM(1980), 15.

157 Convention on the Conservation of European Wildlife and Natural Habitats (Berne), 19 September 1979, UKTS 56 (1982), Cmnd. 8738

habitats; the 1979 Convention on Long-Range Transboundary Air Pollution (LRTAP) Convention and protocols[158] for the prevention of transboundary air pollution; the 1988 Convention on the Regulation of Antarctic Mineral Resource Activities (CRAMRA)[159] and the 1991 Environmental Protocolto the 1959 Antarctic Treaty[160] for the regulation and prohibition of commercial mineral activities in the Antarctic; and the 1989 Lome Convention[161] on environmental co-operation between developed and developing states. Others which addressed new areas were the 1991 Espoo Convention[162] for environmental impact assessment; the 1992 Industrial Accidents Convention,[163] addressing transboundary impacts of industrial incidents; and the 1997 Water Courses Convention,[164] on the protection and use of international water courses.

On the other hand, there were important institutional responses to environmental needs especially among UN economic and financial institutions. This culminated in the establishment of the Global Environment Facility (GEF) in 1991 by the World Bank, UNEP and the United Nations Development Programme (UNDP), to provide financial resources to support projects which benefited the global commons.[165] At the same time, the impacts of acts of international organizations were beginning to be felt. These organizations played an important facilitative and cataclysmic role in the development of international environmental law by adopting binding or non-binding decisions, resolutions, recommendations or other actions which afforded fora for discussion, adoption, and implementation of new environmental laws.[166]

There were also several non-binding instruments which were adopted under the auspices of inter-governmental and non-governmental organizations. These included the 1978 UNEP

---

158 Convention on Long-Range Transboundary Air Pollution (Geneva) 13 November 1979, 18 ILM (1979), 1442. and its Protocols of 1985, 1988, and 1981.

159 Convention on the Regulation of Antarctic Mineral Resources Activities, (Wellington) 2 June 1988, 27 ILM (1988).Protocol on Environmental Protection to the Antarctic Treaty (Madrid) 4 October 1991, 30 ILM 1461 (1991)

160 Protocol on Environmental Protection to the Antarctic Treaty (Madrid) 4 October 1991, 30 ILM 1461 (1991)

161 African Caribbean and Pacific State –European Economic Community: Fourth Lome Convention,(Lome) 15 December 1989, 29 ILM (1990), 783.

162 Convention on Environmental Impact Assessment in Transboundary Context (Espoo) 25 February 1991, 30 ILM (1991), 802.

163 UN/ECE Convention on the Transboundary Effects of Industrial Accidents Helsinki 17th March 1992, 31 ILM (1992), 1330.

164 Sands, P: *Principles of International Environmental Law*, 2nd ed (2003), p.42

165 Ibid.

166 Ibid.

draft Principles;[167] the 1981 Montevideo Programme;[168] and the 1982 World Charter for Nature.[169]

The immediate context of the 1992 Rio Summit was the famous Brundtland Report (1987). The World Commission on Environment and Development (WCED), which was responsible for the Brundtland Report, was established as an independent body, linked to but outside the control of governments and the UN system. It had three objectives:- to re-examine critical environmental and development issues and formulate realistic proposals for dealing with them; to propose new forms of international co-operation on these issues; and to raise levels of understanding and commitment to action of individuals, organizations, governments and other actors.[170] The Brundtland Report catalyzed the 1992 UNCED and its outcomes. It provided support for expanding the role of sustainable development; proposed a UN programme on sustainable development and identified key legal and institutional issues.[171] On international collaboration and institutional responses, the Brundtland Report tackled the international economy, management of the global commons, the relationship between peace, security, development and the environment, and institutional and legal changes.[172]

An Experts Group on Environmental Law was established alongside UNCED.[173] The Group proposed a set of Legal Principles and Recommendations on Environmental Protection and Sustainable Development,[174] which were designed to reflect the basic obligations of states based on assessment of treaties, soft law instruments and state practice. The publication of the

---

Principles of Conduct in the Field of the Environment for the Guidance of States in the Conservation and Harmonious utilization of Natural Resources shared by Two or more States." 17 ILM (1978) 1097. The draft principles were the result of work by an inter-governmental working group established by the UNEP in 1976 pursuant to a request by the UNGA (UNGA Res 3129 (XXVIII) 1973) It comprises of fifteen principles to govern the use of " shared resources."

Programme for the Development and Periodic Review of Environmental Law (Montevideo Programme) Report, UNEP/GC. 10/5/Add. 2, Annex Chap 11 (1981). This was an outcome of an ad-hoc meeting of senior government officials expert in environmental law held Montevideo in 1981 under the auspices of the UNEP. The Programme was adopted by the UNEP Governing council in 1982 and influenced UNEP'S legal activities during the period 1982–1992, resulting in the development of regional and global treaties and "soft law" instruments (See, Sands P: *Principles of International Environmental Law*, 2nd ed (2003), p. 44-45.

World Charter for Nature, UNGA res 37/7, 28 October 1982; 23 ILM (1983),455. This was adopted at UNGA by a vote of 111 in favour, 18 abstentions and 1 against (USA) as a set of principles of conservation by which all human conduct affecting nature was to be guided and judged. It was essentially an ecological instrument.

The World Commission on Environment and Development (WCED), chaired by Norwegian prime minister Gro Harlem Brundtland was established in 1983 by the UNGA and its report ("Brundtland Report") was published in 1987(See UNGA Res. 42/187(1987).

See Sands, P: *Principles of International Environmental Law*, 2nd ed (2003), p. 49.

Ibid.

Sands P: *Principles of International Environmental Law*, 2nd ed (2003), p. 50.

For reprint, see Munro, R.D and Lammers J.G. (eds): *Environmental Protection and Sustainable Development* (1987), p. 7.

Brundtland Report led to growing pressure for further international action on the environment which eventually led to the Rio Summit in June 1992.[175]

Besides the Brundtland Report, in 1987, the UNGA adopted a resolution on "Environmental Perspective to the year 2000 and Beyond"[176] as a framework to guide national action and international co-operation in policies and programmes aimed at achieving environmentally sound development. The Perspective was the work of a UNEP inter-governmental preparatory committee pursuant to a request from the UNGA.[177] It focused on the same six sectoral issues addressed by the WCED which produced the Brundtland Report: population; food and agriculture; energy; industry; health and human settlements; and international economic relations. The UNGA Perspective identified four additional issues which were considered to be of global concern: oceans and seas; outer space; biological diversity; and security and environment.[178] The Perspective identified key areas for legislation and development of environmental laws: hazards relating to chemicals, treatment and international transport of hazardous wastes; industrial accidents; climate change; protection of the ozone layer; protection of the marine environment from pollution from land-based sources; and the protection of biological diversity. Also identified was the need to establish legal regimes at international, regional and national levels to improve the environmental management of rivers, lakes and forests.[179] Finally, the Perspective anticipated the possibility of a "global convention on the protection and enhancement of the environment," talked of the "progressive emergence of general environmental norms and principles and the codification of existing agreements". It also suggested that environmental disputes could be peacefully settled by such international judicial institutions as ICJ, the International Court of Arbitration (ICA) and other regional mechanisms.[180]

In 1988, on the strength of the Brundtland Report (1987) and its own Environmental Perspective (1987), the UNGA adopted a resolution[181] calling for a UN Conference on Environment and Development. In December 1989 the UNGA convened UNCED for June

---

175 Sands P: *Principles of International Environmental Law*, 2nd ed (2003), p. 48-50; Thornton J: *Environmental Law*, p. 32.

176 Ibid. (Sands P: *Principles of International Environmental Law*, 2nd ed (2003), p.50; Thornton . J: *Environmental Law*, p. 32.)

177 UNGA Res. 42/186, 11 December 1987.

178 UNGA Res 38/161, 19 December 1983

179 Sands, P: *Principles of International Environmental Law*, 2nd ed (2003), p.50

180 UNGA Res. 42/186. 11 December 1987, Annex, 38 (paras, 100-2); Sands P: *Principles of International Environmental Law*, 2nd ed (2003), p.50

181 UNGA Res. 43/196(1988). See also UNEP Governing Council Decision 15/3 (1989); ECOSOC Res. 1989/87 (1989); Report of the Secretary-General, UN Doc. A/44/256-E/1989/66(1989).

1992 in Rio de Janeiro, Brazil.[182] The primary purpose of UNCED was stated to be to "elaborate strategies and measures to halt and reverse the effects of environmental degradation in the context of strengthened national and international efforts to promote sustainable and environmentally sound development in all countries."

As the world prepared for UNCED, there was already a discrete and large body of international law called "international environmental law,"[183] both at the global and regional levels. New institutions had been created to address global and regional environmental issues, and existing institutions were beginning to integrate environmental considerations into their activities.[184] The world had clearly made substantive and impressive achievements in the two decades since the Stockholm Conference with regard to the development establishment, and implementation of international environmental law.

The UNCED, popularly called the Earth or Rio Summit, was held in Rio de Janeiro, Brazil from 3-14 June 1992. It was attended by 176 States, more than 50 inter-governmental organizations and several thousand non –governmental organizations.[185] One author has argued that the Earth Summit had the effect of starting an "environmental revolution," which, if it succeeded, would rank with the Agricultural and Industrial Revolutions of yester- years as one of the great economic and social transformations in human history.[186] The immediate outcomes of the Earth Summit were three non-binding instruments ("soft laws") and two global treaties. The three instruments were: the Rio Declaration on Environment and Development,[187] which reflected current global consensus on values and properties in environmental and development; Agenda 21,[188] which was a global action plan for all states on environment and development; and the Forests Principles.[189] The two legal instruments opened for signature at the Earth Summit were: Convention on Biological Diversity (CBD),[190] and the UN Framework Convention on Climate Change.[191]

UNGA Res 44/228 (1989)

UNGA Res 44/228 (1989)

Ibid., para.3.

Sands, P: *Principles of International Environmental Law*, 2nd ed (2003), p. 52

Brown, L.R.: *An Environmental Revolution*, cited by Thornton. J: *Environmental Law*, p. 32.

A/CONF.151/6/Rec .1 13 June 1992.

Ibid. For a brief discussion of Agenda 21 and the Rio Declaration; see Sands P: *Principles of International Environmental Law*, 2nd ed (2003), p.54-63

Non-Legally Binding Authoritative Statement of Principles for a Global Consensus on the Management Conservation and Sustainable Development of all Types of Forests, A/CONF. 151/6/Rev I. 13 June 1992.

31 ILM 822 (1992 CBD)

31 ILM 849 (1992 Climate Change)

In spite of the enthusiasm and momentum generated for and by the Rio Summit in the advancement and development of international environmental law, it has been argued that the summit was "the beginning of the decline of international environmental law as an autonomous branch of international law."[192] This may well be so, considering that since UNCED'S endorsement of "sustainable development"' it has been apparently difficult to extricate "environmental law" *per se* from "economic and social development." In fact, the 2002 World Summit on Sustainable Development (WSSD) held in Johannesburg, South Africa in 2002, whilst being declared to be a 10 –year review of progress made since the Rio Summit,[193]was clearly moving away from being primarily an environmental conference to one encompassing the now famous and rather amorphous theme of " sustainable development."

On further judicial developments during this period, between the judgment in the North Sea Continental Shelf Cases (1969)[194] and the adoption of the 1982 UN Convention on the Law of the Sea, three further maritime disputes were settled. The first of these was the Anglo-French Continental Shelf Case (1977).[195] This decision was perhaps the second judicial landmark in the development of the rules on delimitation between neighbouring states. It was the first case between parties to the Geneva Convention on the Continental Shelf (1958).[196] In this case, the Court of Arbitration was asked to determine the course of the continental shelf boundary between France and the UK in part of the English Channel. The court unanimously held, *inter alia*, that the 1958 Convention was a treaty in force and whose provisions were applicable between France and the UK. The Court, nevertheless, acknowledged the evolving customary law on the subject. Article 6 of the 1958 Convention was applicable between the parties although this did not preclude relevant or emergent customary law. The appropriateness of the equidistance method or any other method for the purpose of effecting and equitable delimitation was a function or reflection of the geographical and other relevant circumstance of each particular case. The court also ruled that France's reservation were true and admissible, and proceeded to draw the continental shelf boundaries between the parties.

- Pallemaerts, M, "International Environmental Law from Stockholm to Rio: Back to the future ?," in Sands, P: (Ed), *Greening International Law*, Earthscan, London (1992). Sands argues that this "has not been borne out by subsequent developments." (Sands, P: *Principles of International Environmental Law*, . p. 53).
- UNGA Res. A/RES/55/199, 20 December 2000.
- North Sea Continental Shelf Cases ICJ (Reports), (1969), p. 3.
- Court of Arbitration; The United Kingdom of Great Britain and Northern Ireland and the French Republic; Delimitation of the Continental Shelf, Arbitration Agreement of 10th July 1975. Decision of 30 June 1977.18 379(1979).
- The 1958 Convention on the Continental Shelf, 499 UNTS 311.

The second case was the Iceland – Jan Mayen Case (1981)[197] which involved an agreement on the continental shelf delimitation between Iceland and Jan Mayen, signed on 22 October 1981. On 20 May 1980, the Government of Iceland and Norway concluded an Agreement concerning fishery and continental shelf questions. The preamble to the agreement recognized that Iceland should have an sea economic zone in accordance with its law of 1 June 1979. During negotiations of the Agreement Iceland advanced the view that she was entitled to a continental shelf area extending beyond the 200 mile economic zone. Since no agreement was reached on this question during the negotiations, the parties agreed to refer it to a Conciliation Commission. The Commission submitted that Jan Mayen was an island within the meaning of Article 121 of the Draft Convention on the Law of the Sea of August 1980. Jan Mayen was entitled to a territorial sea, an economic zone and a properly delimited shelf. Both parties were entitled to delimitation of their territorial zones.

The third case was the Tunisia-Libya Continental Shelf Case (1982)[198] which dispute between Libya and Tunisia on the delimitations of their continental shelf boundaries. In the latter case the parties requested the Court to declare what principles and rules of the international law must be applied for the delimitation of each party's Continental Shelf and to clarify the practical method of their application. The Court found that there was just one continental shelf common to both states, and thus the extent of the continental shelf area appertaining to each could not be ascertained from the criteria of natural prolongation. However, the court held that the delimitation was to be effected in accordance with equitable principles and taking account of all relevant circumstances.

3.6 Beyond UNCED to the Present (Rio+20)

In the immediate after math of the historic Earth Summit, the UNGA at its 47th Session at the end of 1992 adopted five follow-up resolutions to UNCED. These established a negotiating committee to elaborate a convention on drought and desertification;[199] convened a global conference on the sustainable development of small island states;[200] noted the Report of UNCED; endorsed the Rio Declaration and the Forests Principles and called for effective follow-up action and the implementation of all commitments, agreements and

---

197 The Iceland –Jan Mayen Case (1981) Agreement of 28 May, 1980. Overenskomster mid fremmede stater, 912. See also, 20 ILM 797 (1981).

198 Tunisia –Libya Continental Shelf Case, (Judgment) ICJ Reports, (1982) p. 18.

199 UNGA Res 47/188 (1992).

200 UNGA Res 47/189 (1992).

recommendations[201], established new institutional arrangements to follow up on UNCED commitments, including the Commission on Sustainable Development (CSD);[202] and convened a Conference on straddling and highly migratory fish stocks.[203]

Several new instruments have been negotiated and adopted during the period since UNCED, partly as a follow up to it, and partly as a logical progression from the momentum and enthusiasm created for and by UNCED, as well as the specific out puts from the Summit. For example, 1992 Ospar Treaty[204] consolidated and replaced the 1972 Oslo Dumping Convention[205] and the 1974 Paris LBS Convention.[206] Others include crucial changes to IMO Conventions such as the 1969 Civil Liability Convention (CLC)[207] and the 1971 Fund Convention,[208] which adopted protocols[209] introducing important legal changes.

On the marine environment in particular, the UNEP has continued to expand its RSPs to new places while existing frameworks, such as Mediterranean,[210] Caribbean[211], South-East Asia[212] and Western Indian Ocean[213] have made remarkable changes in their legal, policy and institutional regimes. In addition "soft laws" such as the 1995 GPA and the Jakarta Mandate[214] have been equally remarkable developments in the period since UNCED.

The World Summit on Sustainable Development (WSSD), (informally nicknamed Rio+10) took place in Johannesburg, South Africa in 2002 with the goal of again bringing together leaders from government, business and NGOs to agree on a range of measures toward similar goals.[215] At Rio+10, sustainable development was recognized as an overarching goal for

---

201 UNGA Res 47/190 (1992)

202 UNGA Res 47/191 (1992)

203 UNGA Res 47/192 1993. See also Sands P: *Principles of International Environmental Law*, p 63-64.

204 Convention for the Protection of Marine Environment of the North East Atlantic (Paris) 22 September 1922, 32 ILM (1993), 1068.

205 Convention for the Prevention of Marine Pollution by Dumping from Ships and Aircraft (Oslo) 15 February 1972, 932 UNTS 3.

206 Convention for the Prevention of Marine Pollution from Land-based Sources (Paris) 4 June 1974 13 ILM (1974), 352.

207 1969 Civil Liability Convention 973 UNTS 3.

208 1971 Fund Convention 11 ILM (1972), 284.

209 The 1976 protocol 19 November 1976 16 ILM (1977), 617; 1984 Protocol 25 May 1984, 23 ILM (1984), 177; 1992 protocol 27 November 1992 IMO LEG /CON. 9/151.

210 Previously, the 1976 Barcelona Convention for the Protection of the Mediterranean Sea Against Pollution, Barcelona, 16 February 1976 (in force 12 February 1978), 15 ILM (1976), 290 (1976 Barcelona Convention), now amended 1995.

211 1983 Cartagena Convention for the Protection and Development of the Marine Environment of the Wider Caribbean Region, Cartagena, 24, March 1983 (In force 11 October 1986), 22 ILM (1983),221 (1983 Cartagena Convention).

212 1981 Lima Convention for the Protection of the Marine Environment and Coastal Areas of the South-East Pacific, Lima,12 November 1981 (in force 19 May 1986),JELM. T 981:85 (1981 Lima Convention).

213 See *www.unep.org/NairobiConvention/, accessed 24.09.2012*

214 Declaration on the Protection of the Marine Environment from Land Based Activities (Washington), 6 *YbIEL* (1995).

215 See, Sands, P: *Principles of International Environmental Law*, 2nd d (2003), p 66-69; Birnie, P, Boyle, A and Redgwell, C: *International Law and the Environment*, 3rd ed (2009), p 52-53.

institutions at the national, regional and international levels. There, the need to enhance the integration of sustainable development in the activities of all relevant United Nations agencies, programs, and funds was highlighted. The discussion also encompassed the role of institutions in stepping up efforts to bridge the gap between the international financial institutions and the multilateral development banks and the rest of the UN system. Major outcomes of that conference include the Johannesburg Declaration and numerous other international environment and development commitments.[216]

The Rio+20 Conference was held in Brazil in June 2012.[217] The call by the UN was ambitious. It invited States, civil society and citizens to "lay the foundations of a world of prosperity, peace and sustainability," with three topics on the agenda: 1). strengthening the political commitments to sustainable development; 2) reviewing the progress and difficulties associated with their implementation; and 3) responses to the new emerging challenges of societies. Two questions, closely related, were placed at the heart of the summit: 1) a green economy in the perspective of sustainability and poverty eradication; and 2) the creation of an institutional framework for sustainable development.[218]

The Rio+20 'Conference could go down in history as the 'Summit of the Seas'. According to the global forum, the greatest threats to the high seas are said to be "overfishing and destructive fishing practices such as bottom trawling on seamounts".[219]

3.7 Conclusion

It appears from the long history presented in this chapter that high seas environmental issues were included from early on in the development of the relevant legal and policy frameworks though not always directly. In fact, not until 1958 did an international convention dealing with the high seas as such come into being. The 1958 High Seas Convention provisions were largely replicated in the 1982 UN Convention on the Law of the Sea. However, no specific institutional arrangements were provided for in the legal instruments for the high seas, which exemplified the principle of freedom of the high seas.

---

216 Bald (Sands, P. *Principles of International Environmental Law*, 3rd ed (2003 p 66-67)

217 See www.uncsd2012.org/; www.earthsummit2012.org/; www.un.org/en/sustainablefuture/

218 Ibid.

219 Ibid.

Moreover, throughout the historical evolution of the present marine environmental law, case law played a significant role in the development of the rules and principles that constitute the present regime. However, it is apparent that marine environmental issues did not feature in most of the disputes reviewed above. There was greater interest with territorial and proprietary issues concerning various maritime zones and resources than with matters of environment generally or the high seas in particular.

The next chapter will focus on the efficacy of existing legal and policy instruments for the protection of the high seas environment.

CHAPTER FOUR

The Efficacy of Existing International Environmental Legal and Policy Instruments

4.1 Introduction

There are various legal instruments that seek to respond to the various marine environmental problems, including over the high seas. They include those which are for the prevention, reduction and control of marine pollution from various sources, including both land based and sea based sources and activities; and those dealing with responsibility and liability resulting from marine pollution. This chapter undertakes a description and analysis of those instruments and their relative efficacy in confronting the high seas environmental problems. These legal and policy instruments are both global and regional, and together constitute a large mass of law and policy for the protection of the international marine environment.

However, our thesis is that these various instruments, though laudable in many respects, and not least as the prevailing legal framework for marine environmental protection, nevertheless fall short of what is needed to effectively protect the environment of the high seas. Their main shortcoming is the lack of or inadequacy of institutional machinery for enforcement and regulation of the high seas environment.

4.2 Conventions and Instruments for the Prevention, Reduction and Control of Marine Pollution from Various Sources

A large number of global and regional instruments, both hard and soft laws govern the prevention, reduction and control of marine degradation and pollution from land, sea and the atmosphere. In this part we shall briefly review these instruments.

4.2.1 Global Instruments Concerning Land-based Sources and Activities

As stated previously, land-based sources and activities (including through the atmosphere) contribute the largest share of marine pollution and environmental degradation, in comparison to sea-based sources and activities. Key categories of land based sources and activities, as discussed in Chapter Two, are coastal and upstream point sources and non point (diffuse)

sources, activities and contaminants. There are a number of global and regional legal instruments, both conventions and soft law, which seek to respond to this serious threat to the health of the oceans and seas. They include the 1982 UN Convention on the Law of the Sea,[1] the 1985 Montreal Guidelines,[2] the 1995 Washington Declaration UNEP-GPA[3] and several regional instruments.

Articles 194, 207 and 213 of the 1982 UN Convention on the Law of the Sea are specific on land-based sources and activities causing marine pollution and environmental degradation. While Article 194 refers also to other sources of marine pollution and environmental degradation, it provides for measures by states to minimize to the fullest possible extent... the release of toxic, harmful or noxious substances, especially those which are persistent, from land-based sources, from or through the atmosphere or by dumping..."[4] However, Article 207 only deals with international rules and national legislation to prevent, reduce and control pollution of the marine environment. It provides, *inter alia*, as follows:

1. States shall adopt laws and regulations to prevent, reduce and control pollution of the marine environment, from land-based sources, including rivers, estuaries, pipelines and outfall structures, taking into account internationally agreed rules, standards and recommended practices and procedures.
2. States shall take other measures as may be necessary to prevent, reduce and control such pollution.
3. States shall endeavour to harmonize their policies in this connection at the appropriate regional level.
4. States acting especially through competent international organizations or diplomatic conference shall endeavour to establish global and regional rules, standards and recommended practices and procedures to prevent, reduce and control pollution of the marine environment form land-based sources.

The laws, regulations, measures or other instruments established thus should be designed to minimize to the fullest extent possible, the release of toxic, harmful or noxious substances, especially those which are persistent, into the marine environment.

---

1. 1982 UN Convention on the Law of the Sea, 21 ILM (1982),1261.
2. 1985 Montreal Guidelines on Land Based Pollution, UNEP GC Decision 13/18 (II) (1985).
3. Declaration on the Protection of the Marine Environment from Land Based Activities (Washington), 6 *YbIEL* (1995).
4. Art. Article 207(5).

Article 207 of the 1982 UN Convention on the Law of the Sea clearly provides the framework for the establishment of global, regional and national instruments such as the 1985 Montreal Guidelines, 1995 Washington Declaration/ UNEP/GPA, and land-based sources and activities provisions in regional seas conventions and their LBS protocols as discussed below. Article 213 on its part concerns enforcement with respect to pollution from land-based sources. It provides as follows:

> States shall enforce their laws and regulations adopted in accordance with Article 207 and shall adopt laws and regulations and take other measures necessary to implement applicable international rules and standards established through competent international organizations or diplomatic conference to prevent, reduce and control pollution of the marine environment from land-based sources.

Thus the 1982 UN Convention on the Law of the Sea established the general framework for the establishment of global, regional and national rules and other instruments on land-based sources and activities. One of its key environmental objectives is to prevent, reduce and control marine pollution from various sources, while the other objective is to conserve and manage marine living resources. The inherent weaknesses of the provisions aside, it has been held by leading authors that they do provide and reflect rules of customary international law in this regard.[5] As previously stated, their glaring weakness is their generalist and framework nature, which falls short of creating effective mechanisms for combating marine pollution and degradation, including of the high seas, from land based sources and activities. The other, even more fundamental weakness is the lack or inadequacy of international institutional frameworks to ensure effective enforcement and regulation.

Moreover, when it became apparent that there were serious sticky issues of disagreement particularly concerning Part XI of the 1982 UN Convention on the Law of the Sea, and that these differences were inevitably going to under mine the expeditious entry into force of the Convention, the Secretary General instituted an informal consultation process to seek a way out of the impasse. The report of the Secretary-General of the UN on the results of the informal consultations among States held from 1990 to 1994 on outstanding issues relating to Part XI and related provisions of the Convention culminated in the UNGA Resolution 48/263 of 28 July 1994 adopting the Agreement relating to the Implementation of Part XI of the 1982

---

5 See for example, Sands, P: *Principles of International Environmental Law*, 2nd ed (2003) p. 396; Birnie, P Boyle, A and Redgwell, C: *International Law and the Environment*, 3rd ed (2009), p. 390.

UN Convention on the Law of the Sea ("The 1994 Agreement").[6] The 1994 Agreement came into force on 28 July 1996. Although primarily concerned with the International Seabed Area and its commercial resources, the 1994 Agreement also made some references to the protection of the marine environment. Its Preamble *inter alia* reaffirmed the principle of common heritage of humankind, the importance of the Convention for the protection and preservation of the marine environment and of the growing concern for the global environment, and sought to facilitate universal participation in the Convention. Elsewhere in its core provisions and its annexes, it makes various generic statements to the protection and preservation of the marine environment.

Under Article 2(1) of the 1994 Agreement, the provisions of the Agreement and Part XI of the 1982 UN Convention on the Law of the Sea shall be interpreted and applied together as a single instrument. In the event of any inconsistency between the Agreement and Part XI, the provisions of the Agreement shall prevail. Consequently, the 1994 Agreement sought to fundamentally change the make up and effect of Part XI of the Convention. However, it does not make any specific references to the protection of the high seas environment, or indeed to the causes of high seas environmental pollution or degradation.

On its part, the 1985 Montreal Guidelines[7] were developed by the UNEP-GC in 1985 as a flexible recommendatory and broad framework for the development of regional LBS agreements, and possibly a global convention. It was prepared from common elements and principles drawn from existing arrangements and practical experiences derived from the preparation and implementation of those arrangements.[8] The 1985 Montreal LBS Guidelines, and especially their annexes, are quite detailed and comprehensive in their subject content. They clearly foreshadowed some of the regional and other instruments developed after their adoption. Paragraphs 2 and 3 of the Guidelines declare the basic obligations of states to protect and preserve the marine environment and their duty to ensure that discharges from land-based sources within their territories do not cause pollution to the marine environment of other states or of areas beyond the limits of national jurisdiction.

Paragraph 4 thereof calls for the adoption of measures to prevent, reduce and control pollution from land-based sources including to the fullest possible extent toxic, harmful or noxious

---

6 28 Year book of the UN (1994)

7 http://www.google.co.ke/#hl=en&sclient=psy-ab&q=1985+montreal+guidelines&oq=1985+Montreal&gs_l=, accessed 14.10.2012

8 See Sands P. Principles of International Environmental Law, 2nd ed (2003), p. 346.

substances especially those which are persistent. Other provisions deal with establishment of specially protected areas and development of a comprehensive environment management, approval as well as provisions on monitoring and data management, environmental assessment; notification, information exchange and consultation; assistance to development countries; and recourse to the provision of prompt and adequate compensation or other relief for damage caused by pollution of the marine environment.[9]

The Montreal Guidelines, while clearly a commendable effort to provide a framework for dealing with the most serious causes of marine pollution, are nevertheless limited in several respects with regard to the high seas environment. Firstly, as stated, they were designed as recommendatory and broad to guide the development of regional land based sources and activities protocols under the UNEP/RSP system. Therefore they lacked binding nature, and only provided guidance in the development of binding instruments. Secondly, while to their credit a number of land based sources and activities protocols ensued in various RSPs, there was no international convention on the subject as might have been anticipated. To date there is no other international legal instrument specifically on land based sources and activities, apart from the 1995 UNEP GPA, which is a soft law instrument.

Secondly, the 1985 Montreal Guidelines really said nothing new, as they relied on existing instruments and frameworks. Thirdly, and more importantly, their focus was not on the high seas environment as such. Like the 1995 Washington Declaration/ UNEP GPA highlighted below. the Montreal Guidelines mainly focused on upstream, land ward, coastal and near shore issues, and did not address high seas environmental problems as such, making it rather ineffective or even inappropriate as an instrument to combat pollution and degradation of the high seas.

The 1995 Washington Declaration[10] which established the UNEP-GPA is perhaps the latest global effort at specifically cutting back the debilitating effects of marine pollution and environmental degradation from land-based sources and activities. This soft law instrument adopted in Washington on 1 November 1995 was the outcome of a high-level segment of the International Conference to Adopt a Global Programme of Action for the Protection of the Marine Environment from Land-based Activities. The Washington Declaration seeks to

9 The 1985 Montreal LBS Guidelines, Paragraphs, 5, 7,9,11,12,13,15 and 17.
10 6 YbIEL (1995),883; www.gpa.unep.org, accessed on. 14.10. 2012)

address these issues against the backdrop of the 1992 Rio outcomes particularly Agenda 21. Its preamble, *inter-alia,* recognizes the inter-dependence of human populations and the coastal and marine environment, and the growing and serious threat from land-based activities to both human health and well being and the integrity of coastal and marine ecosystems and biodiversity. It also recognizes the importance of integrated coastal area (and river basin) management (ICARM) and "the catchments- area-based approach" as means or vehicles to confront marine degradation from land-based activities which emanate from economic and social development programmes.

The Washington Declaration then adopts the UNEP-GPA and makes numerous declarations on land-based activities and sources ranging from identification of the 9 key priority areas (pollutant nodes); development of national action plans; international and regional co-operation; financial arrangements; involvement of national, regional and international institutions; and pertinent actions to reverse marine environmental pollution and degradation by land-based sources and activities.[11]

Today, the UNEP-GPA is arguably a vibrant programme that has touched virtually all the major seas and oceans in all the regions of the world.[12] However, as designed, the programme mainly focuses on upstream, land ward, coastal and near shore issues, and does not address high seas environmental problems as such, making it yet another ineffective or even inappropriate instrument to combat pollution and degradation of this vast global commons.

4.2.2 Regional Instruments Concerning Land Based Sources and Activities

The regional legal and policy instruments relating to land based sources and activities causing marine degradation and pollution may be categorized into four key geo-political regions for convenience of review. These regions include the Eastern Seas and Oceans; Western Seas and Oceans, Northern Seas and Oceans and Southern Seas and Oceans. Most of the regional legal and policy instruments belong to the extensive network of UNEP RSPs and other similar arrangements.

The Eastern Seas and Oceans cluster of regional legal and policy instruments comprises of those which relate to the seas and oceans east of the Greenwich Meridian but north of 30°

---

11 The 1995 Washington Declaration, Paragraphs 1 – 18.

12 See, generally, its website, *www.gpa.unep.org.*

South latitude and south of 30° North Latitude. This includes the bulk of the Indian Ocean, Arabian Sea, Red Sea, Philippine Sea and parts of East Pacific Ocean, parts of East China Sea; South China Sea, Java Sea, Timor Sea and Coral Sea.

It is noteworthy that among the Eastern Seas and Oceans, three regional Conventions exist: The 1978 Kuwait Convention;[13] the 1982 Jeddah Convention;[14] and the 1985 Nairobi Convention.[15] Each of these Conventions makes reference to land-based sources and activities and obliges contracting parties to take measures to prevent and abate pollution caused by discharges from land reaching the sea area whether water-borne, air – borne or directly from the coast including outfalls and pipelines.[16] In addition, the preamble of the 1982 Jeddah Convention states that the contracting parties are "conscious of the need to ensure that the process of urban and rural development and resultant land-use activities should be carried out in such a manner as to preserve, as far as possible, marine resources and coastal amenities and that such development should not lead to deterioration of the marine environment."

It is also noteworthy that there is no convention yet for the East – Asian Seas RSP, although the region has had an Action Plan since 1981.[17] All the other regions have action plans and at least one of them has an LBS Protocol additional to its Convention: the 1990 Kuwait LBS Protocol.[18]A new LBSA Protocol additional to the 1985 Nairobi Convention was adopted on 1 April 2010,[19] while the 1982 Jeddah Convention has none apart from its Emergency Protocol.

The 1990 Kuwait LBS Protocol[20] is quite detailed and notes in its preamble that existing measures to prevent, abate and combat pollution from land-based sources need to be strengthened on a national and regional basis. It defines "land-based sources" under Article I as follows:-

---

13 1978 Kuwait Regional Convention for Co-operation on Protection of the Marine Environment from Pollution (Kuwait) 24 April 1978 (In force, 1 July 1979), 1140 UNTS 133

14 1982 Regional Convention for the Conservation of the Red Sea and Gulf of Aden Environment (Jeddah), 9 EPL 56 (1982)

15 Convention for the Protection, Management and Development of the Marine and Coastal Environment of the Eastern African Region (1985 Nairobi Convention), 21 June 1985, IELMT 985; 46-48.

16 The 1978 Kuwait Convention, Article VI; The 1982 Jeddah Convention, Article VI; The 1985 Nairobi Convention, Article 7.

17 Paragraph 50 of the Action Plan for the East Asian Region states that the feasibility of the development and adoption of a suitable legal framework, consisting of a convention and relevant protocols for the action plan will be explored.

18 1990 Protocol for the Protection of the Marine Environment against Pollution from Land-based Sources (Kuwait), 20 February 1990 (in force 2 January 1993); (1990 Kuwait LBS Protocol)

19 See *www.unep.org/NairobiConvention/, accessed 14.09.2012*

20 Ibid.

Municipal, industrial or agricultural sources, both fixed and mobile on land, discharges from which reach the marine environment as authorized in Article III of this Protocol.

Article III on its part defines the source of land-based pollution as including discharges from outfalls and pipelines discharging into the sea, discharges through rivers, canals or other water course including underground water courses; discharges from fixed or mobile offshore facilities other than those for exploration and exploitation of the sea bed and other discharges from any other land-based sources within the territories of contracting parties, including through water, the atmosphere or directly from the coast.

Other pertinent provisions deal with source control (Article IV); joint and or combined effluent treatment (Article V); regional and local regulations and permits for release of water (Article VI); monitoring and data management Article (VII) as well as environmental impact assessments (Article VIII).

The main weakness of the regional instruments for the Eastern Seas and Oceans is that their scope does not extend or cover the high seas as such. It is their nature and scope to apply primarily to the areas of national jurisdiction covered by the contracting parties. Thus their efficacy as instruments for the protection of the high seas is clearly in doubt. This is notwithstanding that they have a secondary or indirect application to the high seas to the extent that they generally apply to and protect maritime zones which are adjacent to the high seas, on the land ward or near shore side.

The Western Seas and Oceans cluster covers the seas and oceans west of the Greenwich Meridian and above 30° South latitude and below 30° North latitude. They include parts of the North Atlantic Ocean, South Atlantic Ocean, Pacific Ocean and the Caribbean Sea.

At least three Regional Conventions under the framework of the UNEP-RSPs exist in this zone: The 1981 Abidjan Convention;[21] the 1981 Lima Convention;[22] and the 1983 Cartagena Convention.[23] These conventions all have framework provisions on land-based sources with the details left to relevant protocols.[24] However, only the 1983 Cartagena Convention has an

---

[21] 1981 Abidjan Convention for Co-operation in the Protection and Development of the Marine and Coastal Environment of the West and Central African Region (1981 Abidjan Convention), Abidjan, 23 March 1981 (In force 5th August 1984), 20 ILM (1981),756

[22] 1981 Lima Convention for the Protection of the Marine Environment and Coastal Areas of the South-East Pacific,Lima,12 November 1981 (in force 19 May 1986), IELMT 981:85 (1981 Lima Convention)

[23] 1983 Cartagena Convention for the Protection and Development of the Marine Environment of the Wider Caribbean Region, Cartagena, 24, March 1983 (In force 11 October 1986), 22 ILM (1983), 221 (1983 Cartagena Convention)

[24] See Article 7 of the 1981 Abidjan Convention; Article 4 and 5 of the 1981 Lima Convention; and Article 7 of the 1983 Cartagena Convention.

established LBS Protocol: the 1999 Aruba LBS Protocol, which, though not yet in force, is detailed and has several technical annexes.[25] Its definition of "land-based sources and activities" includes atmospheric depositions originating from sources within the protocol area.[26] Part of its novelty compared to previous LBS protocols, arises from the fact that it was developed in the aftermath of the 1992 Rio outcomes and particularly Agenda 21, chapter 17, as well as the 1995 Washington Declaration and the adoption of the UNEP-GPA.

The Protocol provides *inter-alia* for general obligations of the contracting parties, which include taking measures to prevent, reduce and control pollution of the Protocol Area from land-based sources and activities and using in this regard the best practicable means at their disposal and in accordance with their capabilities. They are also to use the most appropriate technology and management approaches such as ICARM in the development and implementation of their plans, programmes and measures.[27]

Like the regional instruments for the Eastern Seas and Oceans, and though many for a single region, these instruments also lack primary scope for high seas environmental protection. In addition, they lack any effective coordinating and implementing mechanism. Consequently, they are also largely unsuited as the framework for the protection of the high seas environment, even within the oceans and seas that they cover. The Northern Seas and Oceans cluster includes all those above 30° N Latitude and on both sides of the Greenwich Meridian. Among these are: Arctic Ocean, Barents Sea, Beaufort Sea, North Atlantic Ocean, parts of North Pacific Ocean, Mediterranean Sea, Black Sea, Baltic Sea, Caspian Sea, Aral Sea, North Sea, Norwegian Sea, Kara Sea, Laptev Sea, East Siberian Sea, Chukchi Sea, Sea of Japan, Sea of Okhotsk and parts of East China Sea. This region broadly covers the Arctic Region, most of North America, the entire European Continent, Northern Asia, and a bit of northern Africa. Some of the seas and oceans under the broad framework of RSPs both under the UNEP and independents include the Mediterranean, North Sea, North East Atlantic, Black Sea, Baltic Sea, Caspian Sea and the Arctic.

The oldest and most developed regional agreements regarding the northern seas and oceans are those applicable to the North-East Atlantic and the Baltic. However, other conventions

---

25 Technical Annexes to the 1999 Aruba LBS Protocol include: Annex 1 on Source Categories, Activities and Associated Pollutants of Concern; Annex II on Factors to be used in Determining Effluent and Emission Source Controls and Management Factors; Annex III on Domestic Waste-water; and Annex IV on Agricultural Non-point Sources of Pollution.

26 Article 1 (d) of the 1999 Aruba LBS Protocol.

27 Ibid., Article III.

and protocols cover the Black Sea, Caspian Sea, the Mediterranean and the North Sea. Moreover, the older conventions for the North- East Atlantic and the Baltic were negotiated after the 1992 Rio Summit and the new Paris and Helsinki Conventions entered into force in 1998 and 2000 respectively.[28] It is noteworthy that these treaties do not follow the UNEP-RSP model and are not confined to land-based sources only.[29] While both of these conventions affirm the duty of parties to prevent and eliminate land-based marine pollution, they do not quite prescribe detailed standards for doing so.

The 1992 OSPAR Convention includes a rather novel definition of "land-based sources."[30] It also significantly addresses "pollution from land-based sources" as the first among various sources of marine pollution. Article 3 thereof provides that contracting parties "shall take individually and jointly all possible steps to prevent and eliminate pollution from land-based sources in accordance with the provisions of the Convention, in particular as provided for in Annex I." Annex 1 on its part, apparently in lieu of an LBS protocol to this Convention, provides an obligation of the contracting parties when adopting programmes, to use best available techniques for point sources and best environmental practice for point and diffuse sources including, as appropriate, clean technology.[31] The annex also provides that states should take preventive measures to minimize the risk of pollution caused by accidents.[32]

The OSPAR Commission is empowered to draw up plans for the reduction and phasing out of substances that are toxic, persistent and liable to bioaccumulate arising from land-based sources, as well as programmes and measures for the reduction of inputs of nutrients from urban municipal, industrial, agricultural and other sources.[33]

On its part, the 1992 Helsinki Convention[34] which covers the Baltic Sea Area also introduces an innovative definition of "land-based sources."[35] It also introduces, under Article 6,

---

28 See Birnie, P, Boyle, A and Redgwell, C: *International Law and the Environment* ,3rd ed,(2009) p. 455.

29 Ibid.

30 1992 Paris Convention for the Protection of the Marine Environment of the North Sea Atlantic (Paris) 22 September 1992 (in force 25 March 1998), 32 ILM. 1993, 1072; 3 YbIEL (1992), 759(1992 OSPAR Convention.). Article 10 thereof defines "land-based sources as follows: ".. means point and diffuse sources on land from which substances or energy reaching the maritime area by water, through the air, or directly from the coast. It includes sources associated with any deliberate disposal under the sea-bed made accessible from land by tunnel, pipeline or other means and sources associated with man-made structures placed in the maritime area under the jurisdiction of a contracting party other than for the purpose of off shore activities.

31 Annex 1, Article 1 Para. 1.

32 Ibid., Para. 3.

33 Ibid., Article 3.

34 1974 Helsinki Convention for the Protection of the Marine Environment of the Baltic Sea Area13 ILM 546 (1974), 546, Helsinki, 22 March 1974 (in force 3 May 1980) (1974 Helsinki Convention).

"Principles and obligations concerning pollution from land-based sources" which include application of "best environmental practice for all sources and best available technology for point sources;" co-operation; exclusion of introduction of harmful substances except as may be authorized by prior special permits issued by appropriate national authorities and action and measures in case of transboundary watercourses.

Like Annex 1 of the 1992 OSPAR Convention,[36] Annex III of the 1992 Helsinki Convention[37] provides additional technical details to better define and elaborate the land-based sources provisions.

The Black Sea Region is governed by the 1992 Bucharest Convention and protocols, including its 1992 Bucharest LBS Protocol.[38] The Convention lays out the framework provisions[39]and leaves the technical details to the LBS Protocol and its annexes.[40] The latter instrument has been under review and is expected to yield a substantially improved revised Bucharest LBS Protocol in due course.[41]

The Caspian Sea Region is governed by the Framework Convention for the Protection of the Marine Environment of the Caspian Sea.[42] Its preamble attributes the deterioration of the marine environment of the Caspian Sea, *inter-alia,* to various pollution sources and activities including those from land. It also acknowledges "the need to ensure that land-based activities do not make harm for the marine environment of the Caspian Sea."

- Article 2(2) thereof provides that it "means pollution of the sea by point or diffuse inputs from all sources on land reaching the sea waterborne, airborne or directly from the coast. It includes pollution from any deliberate disposal under the sea bed with access from land by tunnel, pipeline or other means.
- 1992 Paris Convention for the Protection of the Marine Environment of the North Sea Atlantic (Paris) 22 September 1992 (in force 25 March 1998), 32 ILM. 1993, 1072; 3 YbIEL (1992), 759(1992 OSPAR Convention).
- 1974 Helsinki Convention for the Protection of the Marine Environment of the Baltic Sea Area13 ILM 546 (1974), 546, Helsinki, 22 March 1974 (in force 3 May 1980) (1974 Helsinki Convention).
- 1992 Bucharest Convention on the Protection of the Black Sea Against pollution, Bucharest, 21 April 1992 (in force 15 January 1994), 32 ILM (1992), 1101 (1992 Black Sea Convention); 1992 Protocol on the Protection of the Black Sea Marine Environment against Pollution from Land-Based sources, Bucharest 21 April 1992 (in force 15 January 1994), 32 ILM (1993) 1110 (1992 Black Sea Protocol);1992 Protocol on Co-operation in combating pollution of the Black Sea Marine Environment by oil and other harmful substances in emergency situations, Bucharest 21 April 1992 (in force 15 January 1994), 32 ILM (1993), 1110 (1992 Black Sea Emergency Protocol; 1992 Protocol on the protection of the Black sea Marine Environment against Pollution by Dumping, Bucharest, 2 April 1992 (in force 15 January 1994) (1992 Black Sea Dumping Protocol).
- Article VII of the 1992 Bucharest Convention.
- See, for example Articles 4, 5, 6 and 7 of the 1992 Bucharest LBS Protocol; Annex 1 (Hazardous Substances and Matter); Annex II (Noxious Substances and Matter); and Annex III (Wastes).
- A draft revised Bucharest LBS Protocol (September, 2004) introduces several additional articles, bringing the total to 24 up from 7, and also increases the number of technical annexes to six, Annex 1 on Activities and Substances of Concern; Annex II on Diffuse Sources of Pollution from Agriculture and Forestry; Annex III on Pollution Transported through the Atmosphere; Annex IV on Authorisations for Discharges; Annex V on best Available Techniques and Best Environmental Practice; and Annex VI on High Priority Sites.
- See www.helsconvention.org; *www.caspianenvironment.org//convention-frameworkconvention, accessed on 14.10.2012*

The Convention also defines "pollution from land based sources."[43] Its objective (Article 2) includes protection of the Caspian environment from "all sources of pollution" and its scope also categorically covers land –based sources and activities (Article 3). Article 7 contains detailed provisions on pollution from land based sources including obligations to take all appropriate measures" to prevent, reduce and control such pollutions, as well as the development of appropriate protocols to augment the Convention.[44]

The Mediterranean Sea Region is governed by its framework 1995 Barcelona Convention[45] and its 1996 (Syracuse) LBS Protocol.[46] The 1995 amendments to the previous 1976 Barcelona Convention and the 1980 Athens LBS Protocol came into force on 9 July 2004 and 11 May 2008 respectively. Article 8 of the 1995 Barcelona Convention provides as follows:

> The contracting parties shall take all appropriate measures to prevent, abate, combat and to the fullest possible extent eliminate pollution of the Mediterranean Sea Area and to draw up and implement plans for the reduction and phasing out of substances, that are toxic, persistent, and liable to bio accumulate arising from land-based sources. These measures shall apply:-
>
> (a) to pollution from land-based sources originating within the territories of the parties, and reaching the sea:
>
> - directly from outfalls discharging into the sea or through coastal disposal;
> - indirectly through rivers, canals or through run-off;
>
> (b) to pollution from land-based sources transported by the atmosphere.

On its part, the 1996 Syracuse LBS Protocol provides detailed rules on the protection of the Mediterranean Sea environment from land-based sources and activities. They include an acknowledgement of the rapid increase in human activities in the Mediterranean Sea Area (Preamble); and the key obligation to take "all appropriate measures to prevent, abate, combat

---

[43] Ibid. The Convention defines "pollution from land based sources"as "pollution of the sea from all kinds of point and non-point sources based on land reaching the marine environment, whether water-borne, airborne or directly from the coast, or as a result of any disposal of pollutants from land to the sea by way of tunnel, pipeline or other means". (Article 1). (In addition the Caspian Sea states have nearly completed the development and adoption of a Protocol on land based sources and activities.)

[44] Ibid, Article 7. This Article, perhaps one of the most detailed in a regional convention, specifies some of the things to be provided by protocol: use of low and non-waste technology for the prevention, control or reduction of pollutants; licensing of waste water discharges by competent national authorities; promotion of the use of environmentally sound technology in licensing waste water discharges; application of stricter requirements as appropriate; application of various treatments for municipal waste water; use of best available environmentally sound technology in order to reduce organic substances inputs from industrial and municipal sources; best environmental practices for substances from non-point sources including agriculture; and measures on conservation and full liquidation of certain persistent sources of pollution.

[45] Previously the 1976 Barcelona Convention for the Protection of the Mediterranean Sea Against Pollution, Barcelona, 16 February 1976 (in force 12 February 1978). 15 ILM (1976), 290 (1976 Barcelona Convention). See, *www.unep.ch/regionalseas/regions/med/t_barcel.htm; www.unep.org/regionalseas/programmes/.../mediterranean/default. as, accessed on 14.10.2012*

[46] 1980 Athens Protocol for the Protection of the Mediterranean Sea Against Pollution from Land-based Sources (Athens, 17 May 1980 (in force 17 June 1983), 19 ILM (1980), 869 (1980 Athens LBS Protocol).The 1996 Syracuse LBS Protocol has since replaced the 1980 Athens LBS Protocol.

and control pollution of the Mediterranean Sea Area which may be caused by discharges from rivers, coastal establishments or outfalls," or those emanating from any other land-based sources within their territories.[47] Other provisions included elaborate, in greater detail, together with technical annexes, the obligations to deal effectively with Mediterranean LBS issues, apart from other usual provisions.[48] Finally, as stated, the North West Pacific Region (NOWPAP) has an Action Plan but does not yet have its legal instruments, including those on land based sources and activities.

However, like the regional instruments for the other regions already reviewed, and though also many and fairly well established for a single region, these instruments also lack primary scope for high seas environmental protection. Moreover, they also, like the other regional frameworks, lack any effective coordinating and implementing mechanism. Consequently, they too are largely unsuited as the framework for the protection of the high seas environment, even within the oceans and seas that they cover.

The Southern Seas and Oceans category covers all the seas and oceans below 30° South Latitude and on both sides of the Greenwich Meridian. However, they also include several islands to the east and north east of Australia, well above 30° South Latitude. They include parts of the South Atlantic Ocean, Indian Ocean and South Pacific Ocean, Scotia Sea, Tasman Sea; and the Antarctic associated seas such as Ross Sea and Weddell Sea (Southern Ocean).

The expansive Southern Seas and Oceans have instruments such as the 1986 Noumea Convention[49] for the South Pacific Coast; and the Antarctic Treaty Regime.[50]

The 1986 Noumea Convention does not have an LBS protocol yet but its article 7 spells out the obligation of the contracting parties as to pollution from land-based sources. The Article states that the Parties "shall take all appropriate measures to prevent, reduce and control pollution in the Convention Area caused by coastal disposal or by discharges emanating from

---

47 Article 1 of the 1996 Syracuse LBS Protocol.

48 See for example, ibid, Articles 4,5,6,7,8,9,10,11,12 and 13 of the Protocol; Annexes I,II, and III . See also, generally, Syracuse LBS Protocol.

49 1986 Noumea Convention for the Protection of the Natural Resources and Environment of the South Pacific Region (Noumea), 25 November 1986 (in force 18 August 1990) 26 ILM (1987), 38 (1986 Noumea Convention).

50 The 1959 Antarctic Treaty (Washington, December 1959), 402, UNTS 71; 1964 Agreed Measures for the Conservation of Antarctic Fauna and Flora, misc. 23 (1965) (Cmnd 2822;*www.Antarctica.ac.uk/ About Antarctica;*The 1972 Convention on the Conservation of Antarctic Marine Living Resources (Canberra 20 may 1980) 19 ILM (1980), 841;The 1980 Convention on the Conservation of Antarctic Marine Living Resources (Canberra, 20 May 1980) 19 ILM (1980),841; The 1988 Convention on the Regulation of Antarctic Mineral Resources Activities (Wellington, 2 June 1988), Misc. 6 (1989), cmnd.634; 27 ILM (1988),868 (not in force). The 1991 Protocol to the Antarctic Treaty on Environmental Protection (Madrid, 2 June 1991), 30 ILM (1991), 146.

and control pollution of the Mediterranean Sea Area which may be caused by discharges from rivers, coastal establishments or outfalls," or those emanating from any other land-based sources within their territories.[47] Other provisions included elaborate, in greater detail, together with technical annexes, the obligations to deal effectively with Mediterranean LBS issues, apart from other usual provisions.[48] Finally, as stated, the North West Pacific Region (NOWPAP) has an Action Plan but does not yet have its legal instruments, including those on land based sources and activities.

However, like the regional instruments for the other regions already reviewed, and though also many and fairly well established for a single region, these instruments also lack primary scope for high seas environmental protection. Moreover, they also, like the other regional frameworks, lack any effective coordinating and implementing mechanism. Consequently, they too are largely unsuited as the framework for the protection of the high seas environment, even within the oceans and seas that they cover.

The Southern Seas and Oceans category covers all the seas and oceans below 30° South Latitude and on both sides of the Greenwich Meridian. However, they also include several islands to the east and north east of Australia, well above 30° South Latitude. They include parts of the South Atlantic Ocean, Indian Ocean and South Pacific Ocean, Scotia Sea, Tasman Sea; and the Antarctic associated seas such as Ross Sea and Weddell Sea (Southern Ocean).

The expansive Southern Seas and Oceans have instruments such as the 1986 Noumea Convention[49] for the South Pacific Coast; and the Antarctic Treaty Regime.[50]

The 1986 Noumea Convention does not have an LBS protocol yet but its article 7 spells out the obligation of the contracting parties as to pollution from land-based sources. The Article states that the Parties "shall take all appropriate measures to prevent, reduce and control pollution in the Convention Area caused by coastal disposal or by discharges emanating from

---

47 Article 1 of the 1996 Syracuse LBS Protocol.

48 See for example, ibid, Articles 4,5,6,7,8,9,10,11,12 and 13 of the Protocol; Annexes I,II, and III . See also, generally, Syracuse LBS Protocol.

49 1986 Noumea Convention for the Protection of the Natural Resources and Environment of the South Pacific Region (Noumea), 25 November 1986 (in force 18 August 1990) 26 ILM (1987), 38 (1986 Noumea Convention).

50 The 1959 Antarctic Treaty (Washington, December 1959), 402, UNTS 71; 1964 Agreed Measures for the Conservation of Antarctic Fauna and Flora, misc. 23 (1965) (Cmnd.2822;*www.Antarctica.ac.uk/ About Antarctica;*The 1972 Convention on the Conservation of Antarctic Marine Living Resources (Canberra 20 may 1980) 19 ILM (1980), 841;The 1980 Convention on the Conservation of Antarctic Marine Living Resources (Canberra, 20 May 1980) 19 ILM (1980),841; The 1988 Convention on the Regulation of Antarctic Mineral Resources Activities (Wellington, 2 June 1988), Misc. 6 (1989), cmnd.634; 27 ILM (1988),868 (not in force); The 1991 Protocol to the Antarctic Treaty on Environmental Protection (Madrid, 2 June 1991), 30 ILM (1991), 146.

rivers, estuaries, coastal establishments, outfall structures, or any other sources in their territory."

Similar arguments can be made for the regional instruments for the Southern Seas and Oceans, as for the other oceanic and seas regions above. Thus, in sum the regional legal and policy frameworks are not adequate, effective or suitable for the protection of the high seas environment. Moreover, they apparently lack effective institutional machinery for enforcement and regulation of the marine environment.

Elsewhere, in making provision for land-based sources and activities causing marine pollution and other environmental degradation, most conventions and related protocols include the atmospheric medium, in many cases categorically. This is because a large proportion of pollution from or through the atmosphere generally originates from land-based sources and activities. For example, Article 212 of the 1982 UN Law of the Sea Convention provides as follows:

1. States shall adopt laws and regulations to prevent, reduce and control pollution of the marine environment from or through the atmosphere.
2. States shall take other measures as may be necessary to prevent, reduce and control such pollution.

Several regional instruments also make like provisions but specific to land-based sources and activities. They include the 1974 Paris Convention;[51] and the 1992 OSPAR Convention;[52] The 1992 Bucharest Convention;[53] The1980 Athens LBS Protocol;[54] The 1983 Quito LBS Protocol;[55] The 1985 Nairobi Convention;[56] and the 1990 Kuwait LBS Protocol.[57] The 1980 Athens LBS Protocol goes further: in 1991 its contracting parties adopted a new Annex IV to

---

1974 Paris Convention for the Prevention of Marine Pollution from Land-Based Sources (Paris), 4 June 1974 (in force 6 May 1978), 13 ILM (1974); 352; UKTS 64 (1978), Cmnd. 7251(1974 Paris Convention), Article 3 (C) (IV) (as amended).

1992 Paris Convention for the Protection of the Marine Environment of the North Sea Atlantic (Paris) 22 September 1992 (in force 25 March 1998), 32 ILM. 1993, 1072; 3 YbIEL (1992), 759(1992 OSPAR Convention.). Article (a); Article 3 and Annex II.

1992 Bucharest Convention on the protection of the Black Sea Against pollution, Bucharest, 21 April 1992 (in force 15 January 1994), 32 ILM (1993), 1110 (1992 Black Sea Convention) Article XII.

1980 Athens Protocol for the Protection of the Mediterranean Sea Against Pollution from Land-based Sources (Athens, 17 May 1980 (in force 17 June 1983), 19 ILM (1980), 869 (1980 Athens LBS Protocol) Article 4(1)(b).

1983 Quito Protocol for the Protection of South-East Pacific Against Pollution from Land-based Sources, Quito, 22 July 1983 (in force 23 September 1986) IELMT 982 : 54 (1963 Quito LBS Protocol), Article II

Convention for the Protection, Management and Development of the Marine and Coastal Environment of the Eastern African Region (1985 Nairobi Convention), 21 June 1985, IELMT 985; 46-48, Article 9. For the recently Amended Nairobi Convention (2010), see *www.unep.org/nairobiconvention/*, accessed on 24.09.2012

1978 Kuwait Regional Convention for Co-operation on Protection of the Marine Environment from Pollution (Kuwait) 24 April 1978 (In force, 1 July 1979), 1140 UNTS 133,Article III (d).

the protocol[58] which defines the application of the Protocol to land-based sources of pollution transported through the atmosphere.

The above provisions, and especially those under the 1982 UN Convention on the Law of the Sea, are pertinent as concerns identification of the atmospheric medium in the pollution of the high seas. However, they lack an effective implementation or enforcement mechanism, making them weak or ineffective as instruments for the protection of the high seas environment.

4.2.3 Global Instruments Concerning Sea-Based Sources and Activities

There are several global instruments concerning sea-based sources and activities. Such sources and activities include vessel-based pollution, dumping at sea, and pollution from seabed activities. The various instruments are briefly outlined below.

Global instruments concerning vessel-based pollution include the 1982 UN Convention on the Law of the Sea,[59] the 1973/78 MARPOL[60] and other IMO Conventions.

Article 211 of the 1982 UN Convention on the Law of the Sea provides an obligation on contracting parties, "acting through the competent international organization or general diplomatic conference," to establish international rules and standards for the prevention, reduction and control of pollution of the marine environment from vessels, and also to promote routing systems designed to minimize the threat of vessel accidents. States are also to enact laws and regulations for the prevention, reduction and control of pollution of the marine environment from vessels flying their flags or their registry. Such laws and regulations are to have at least the same effect as that of generally accepted international rules and standards established through the competent international organization or diplomatic conference. Coastal states are given wide discretion to expand the regime of protection of the marine and coastal environment from vessel-based pollution.[61]

Enforcement provisions for vessel-based pollution in the 1982 UN Convention on the Law of the Sea include Articles 217 (enforcement by the states); Article 218 (enforcement by port states); and Article 219(measures relating to sea worthiness of vessels to avoid pollution).

---

58 2 YbIEL 128,136 (1991).

59 1982 UN Convention on the Law of the Sea, 21 ILM (1982),1261.

60 The 1973/78 MARPOL, 17 ILM (1978), 546

61 See, Article 211 Paras (1) – (6) of the 1982 UNLCOS.

Others include Article 220 (enforcement by coastal states); Article 221 (measures to avoid pollution arising from maritime casualties);[62] and Article 222 (enforcement with respect to pollution from or through the atmosphere). The competent international organization under the above provisions is usually taken to be the IMO.

On its part, the 1973/78 MARPOL[63] is the main international convention regulating operational or accidental pollution from vessels. The original treaty[64] was established in 1973 at the International Conference on Marine Pollution to replace the 1954 Oil Pollution Convention. It was subsequently modified by a 1978 protocol,[65] thus becoming 1973/78 MARPOL. The 1973 MARPOL covers all the technical aspects of pollution from ships, except the disposal of waste into the sea by dumping, and applies to ships of all types, but it does not apply to pollution arising out of the exploration and exploitation of sea bed natural resources.

The 1973/78 MARPOL has at least six (6) technical annexes which contain regulations for the prevention of various forms of pollution.[66] States must accept Annexes I and II, but all the other Annexes are optional. These annexes provide elaborate details in their respective areas of coverage, and have been together the subject of numerous amendments, thus maintaining a dynamic outlook.

Among the important rules set out in Annex I, include that operational discharges of oil from tankers are allowed only when all of the following conditions are met: the total quantity of oil which a tanker may discharge in any ballast voyage whilst under way must not exceed 15,000 tons of the total cargo carrying capacity of the vessel; the rate at which oil may be discharged must not exceed 60 litres per mile travelled by the ship; and no discharge of any oil whatsoever must be made from the cargo spaces of a tanker within 50 miles of the nearest land. In addition, an oil record book is required in which must be recorded the movement of

---

62 "Maritime Casualty" is defined under Article 221 (2) as "a collision of vessels, stranding or other incident of navigation or other occurrence on board a vessel or external to it resulting in material damage or imminent threat of material damage to a vessel or cargo."

63 1973 International Convention for the Prevention of Pollution from Ships, London, 2 November 1973, 12 ILM (1973),1319,1434(1973 MARPOL).

64 Sands P: *Principles of International Environmental Law*, 2nd ed (2003), p. 440

65 1978 Protocol relating to the 1973 International Convention for the Prevention of Pollution from Ships, London,17 February 1978 (in force 2 October 1983), 17 ILM. (1978) 546 (1978 MARPOL).

66 These are Annex I on Prevention of Pollution by Oil (in tonnage terms, oil by far is the most important vessel-based pollutant), Annex II on Control of Pollution by Noxious Liquid Substances; Annex III on Prevention of Pollution by Harmful Substances Carried in Packaged Form, or in Freight Containers or Portable Tanks or Road and Rail tank Wagons; Annex IV on Prevention of Pollution by Sewage; Annex V on Garbage ; and Annex VI(or 1997 Protocol) on Regulations for the Prevention of Air pollution from Ships. The latter Annex sets limits on sulphur oxide and nitrogen oxide emissions from ship exhausts and prohibits deliberate emissions of ozone depleting substances, such as halogens and chlorofluorocarbons (CFCs)(entry into force for Annex VI was 19 May 2005).

cargo oil and its residues from lading to discharging on a tank by tank basis. This annex also introduces a novel idea of "special areas" defined as "sea area where for recognized technical reasons in relation to its oceanographical and ecological condition and to the particular character of its traffic the adoption of special mandatory methods for the prevention of sea pollution by oil is required."[67] "Special areas" are identified to include the Mediterranean Sea Area, the Baltic Sea Area and the Gulf Area.[68] The latest revised Annex 1 entered into force on 1st January 2007.

Annex II on its part contains detailed rules on the discharge, criteria and measures for the control of pollution by noxious liquid substances carried in bulk. Some 250 substances are included in its list. The discharge of their residues is allowed only to reception facilities until certain concentrations and conditions (which vary with the category of substances) are complied with. In any event the annex prohibits any discharge of residues containing noxious substances within 12 miles of the nearest land. In addition, there are more stringent restrictions applied in the Baltic and Black Sea areas which are regarded as "special areas" under Annex II.[69] This annex's latest revisions also entered into force on 1 January 2007.

Annex III, one of the four optional annexes to the 1973/78 MARPOL, contains general requirements for the issuing, or detailed standards for packing, marking, labelling, documentation, towage, quantity limitations, exceptions and notifications for preventing pollution by harmful substances.

Annex IV, dealing with sewage from ships, also contains important rules, considering the global problem of sewage discharges into the marine and coastal environment. It provides, *inter-alia*, for the type of ships to which the provisions apply (Regulation 1); surveys required of every ship covered under the annex (Regulations 4, 5, 6 & 7). Others are discharge of sewage (Regulation 8) and reception facilities (Regulation 10) the latter of which are to be provided by contracting parties at their ports and other terminals. A revised Annex IV was adopted in 2004.

Finally, Annex V deals with prevention of pollution by garbage from ships. It identifies and deals with different types of garbage and specifies the distances from land and the manner in

---

[67] Annex I to the 1973/78 MARPOL Regulation 1 Para. (10).

[68] Ibid., Regulation 10, which also defines the respective seas' areas which are considered "special."

[69] Annex II to the 1973/78 MARPOL Regulation 1 Para. (7).

which the different types of garbage may be disposed of. The requirements are much stricter in a number of its "special areas" but perhaps the most significant feature of this annex is that it completely bans the dumping into the sea of all types or forms of plastic.

On the whole, the 1973/78 MARPOL established very detailed and specific international regulation to implement the objective of completely eliminating the intentional pollution of the marine environment by various pollutants as outlined above, and minimizing accidental discharges. Such a high ideal has obviously not been achieved, although the substantive obligations are among the most precise and comprehensive in any international environmental agreement.[70] Nevertheless, its enforcement and jurisdictional mechanisms are sufficiently defined, although perhaps rather deficient in terms of application.[71] The most outstanding limitation of these frameworks is that they overly rely on the vessel owning or operating nation for implementation in good faith, and fail to create an independent international mechanism to oversee and enforce the provisions. This makes it difficult to assert that the provisions are effective legal instruments for the protection of the marine environment in general and the high seas in particular.

To a lesser extent the 1969 Intervention Convention[72] is relevant to vessel-based pollution, although it is more relevant to marine pollution emergencies and will be discussed below under that topic. However, it should be recalled that this Convention was motivated by the **Torrey Canyon** disaster of 1967 and questions as to the extent to which a coastal state could take measures to protect its territory from pollution where a maritime casualty threatened that state with oil pollution, and especially if the measures necessary were likely to affect the interests of foreign ship owners, cargo owners and even flag states. The Convention affirms the right of a coastal state to take measures on the high seas as may be necessary to prevent, mitigate or eliminate danger to its coastline or related interests from pollution by oil or the threat thereof, following upon a maritime casualty.[73]

See Sands, P. *Principles of International Environmental Law*, 2nd ed (2003), p. 440

For detailed discussions on jurisdictional issues covering vessel pollution, see Birnie, P, Boyle, A and Redgwell, C: *International Law and the Environment* 3rd ed (2009), p 390-423 .

1969 International Convention Relating to Intervention on the High Seas in Cases of Oil Pollution Casualties (1969), 29 November 1969 (entry into force 6, May 1975), 9 ILM (1970), 25(1969 Intervention Convention).

Ibid , Preamble, Article III.

The key global instruments regulating pollution by dumping at sea are the 1982 UN Convention on the Law of the Sea[74] and the 1972 London Convention[75] and its 1996 Protocol.[76] The latter is intended to replace the London Convention, and its provisions and annexes set out the detailed regulations. Under Article 210 of the 1982 UN Convention on the Law of the Sea, states are required to adopt laws and regulations and other measures to prevent, reduce and control marine pollution by dumping. Such national laws and regulations are not to be any less effective than global rules and standards. States are also obliged, acting through "competent international organizations or diplomatic conference," to establish global and regional rules, standards and recommended practices and procedures. In addition, dumping within the territorial sea and the EEZ or on the continental shelf shall not be carried on without the express prior approval of the coastal state, which has the right to permit, regulate and control such dumping. Even then, the respective coastal state is also obliged to consult other states which by reason of their geographical situation may be affected adversely by dumping in the territorial sea, EEZ or continental shelf of the coastal state.[77]

The enforcement with respect to pollution by dumping is provided for by Article 216 of the 1982 UN Convention on the Law of the Sea. There are three levels of responsibility of enforcement: by the coastal state with regard to dumping within its territorial sea or its EEZ or continental shelf; by the flag state with regard to vessels flying its flag or vessels or aircraft of its registry; and by any state with regard to acts of loading of wastes or other matter occurring within its territory or at its off-shore terminals.[78]

The 1972 London Convention applies in all marine waters. Its main objective is to "prevent the pollution of the sea by the dumping of waste and other matter that is liable to create hazards to human health to harm living resources and marine life, to damage amenities or to interfere with other legitimate uses of the sea."[79] It acknowledges in its preamble that the capacity of the seas to assimilate wastes and render them harmless or to regenerate its natural resources "is not unlimited." It also recognizes that marine pollution through dumping is taken through the medium of the atmosphere, rivers, estuaries, outfalls and pipelines, and further that "it is important that states use the best practicable means to prevent such pollution

---

74 1982 UN Convention on the Law of the Sea, 21 ILM (1982), 1261.

75 1972 Convention on the Prevention of Marine Pollution by Dumping from Ships and other Matter (London), 11 ILM (1972), 1294.

76 Protocol to the London Dumping Convention, 36 ILM (1997), 7.

77 See Article 210, Paras (1) – (6).

78 Article 216, Para (1).

79 1972 Convention on the Prevention of Marine Pollution by Dumping from Ships and other Matter (London),11 ILM (1972), 1294., Article 1.

The key global instruments regulating pollution by dumping at sea are the 1982 UN Convention on the Law of the Sea[74] and the 1972 London Convention[75] and its 1996 Protocol.[76] The latter is intended to replace the London Convention, and its provisions and annexes set out the detailed regulations. Under Article 210 of the 1982 UN Convention on the Law of the Sea, states are required to adopt laws and regulations and other measures to prevent, reduce and control marine pollution by dumping. Such national laws and regulations are not to be any less effective than global rules and standards. States are also obliged, acting through "competent international organizations or diplomatic conference," to establish global and regional rules, standards and recommended practices and procedures. In addition, dumping within the territorial sea and the EEZ or on the continental shelf shall not be carried on without the express prior approval of the coastal state, which has the right to permit, regulate and control such dumping. Even then, the respective coastal state is also obliged to consult other states which by reason of their geographical situation may be affected adversely by dumping in the territorial sea, EEZ or continental shelf of the coastal state.[77]

The enforcement with respect to pollution by dumping is provided for by Article 216 of the 1982 UN Convention on the Law of the Sea. There are three levels of responsibility of enforcement: by the coastal state with regard to dumping within its territorial sea or its EEZ or continental shelf; by the flag state with regard to vessels flying its flag or vessels or aircraft of its registry; and by any state with regard to acts of loading of wastes or other matter occurring within its territory or at its off-shore terminals.[78]

The 1972 London Convention applies in all marine waters. Its main objective is to "prevent the pollution of the sea by the dumping of waste and other matter that is liable to create hazards to human health to harm living resources and marine life, to damage amenities or to interfere with other legitimate uses of the sea."[79] It acknowledges in its preamble that the capacity of the seas to assimilate wastes and render them harmless or to regenerate its natural resources "is not unlimited." It also recognizes that marine pollution through dumping is taken through the medium of the atmosphere, rivers, estuaries, outfalls and pipelines, and further that "it is important that states use the best practicable means to prevent such pollution

---

74 1982 UN Convention on the Law of the Sea, 21 ILM (1982), 1261.

75 1972 Convention on the Prevention of Marine Pollution by Dumping from Ships and other Matter (London), 11 ILM (1972), 1294.

76 Protocol to the London Dumping Convention, 36 ILM (1997), 7.

77 See Article 210, Paras (1) – (6).

78 Article 216, Para (1).

79 1972 Convention on the Prevention of Marine Pollution by Dumping from Ships and other Matter (London), 11 ILM (1972), 1294., Article 1.

and develop products and processes which will reduce the amount of harmful wastes to be disposed of. Its definition of dumping (Article 3) is similar to the 1982 UN Convention on the Law of the Sea (Article (1), Para. 1). However, the definition of dumping does not include the disposal at sea of wastes or other matter[80] incidental to, or derived from the normal operations of man-made structures and their equipment at sea, other than wastes or other matter transported by or to man-made structures at sea operating for the purpose of disposal of such matter or related to off-shore activities arising from exploitation, exploration or processing of sea bed mineral resources, nor does dumping include placement of matter for a purpose other than the mere disposal thereof, as long as such placement is not considered to be contrary to the aims of the Convention.[81]

Of particular interest are the provisions of the 1972 London Convention which prohibit or regulate dumping of waste. It establishes three categories by separate annexes, each of which is subject to specific obligations. It prohibits the dumping of certain hazardous wastes and other matter (Annex 1); requires a prior special permit for the dumping of certain wastes or other matter (Annex II); and requires a prior general permit[82] for the dumping of all other wastes or matter (Annex III).

However, dumping prohibitions or permissions under Article IV of the Convention "shall not apply when it is necessary to secure the safety of human life or of vessels, aircraft, platforms or other man-made structures in case of *force majeure* caused by stress of weather" or in cases where there is danger to human life or a real threat to such vessels," if dumping appears to be the only rational way of saving the situation. Also, where there are emergencies posing unacceptable risk to human health and admitting no feasible alternative, a special permit may be issued, in lieu of the absolute prohibition of dumping of Annex 1 wastes and other matter.[83] Even then, there should be due consultations with countries likely to be affected and with the International Maritime Organization (IMO).[84] The dumping prohibition under Annex I[85] does not apply to Annex 1 substances which are rapidly rendered harmless by physical,

---

80 Article 3 (4) of the 1972 London Convention defines "wastes and other matter" as "material and substance of any kind, form or description."

81 Ibid., Article III (1) (b).

82 Special permit" means permission granted specifically on application in advance and in accordance with Annex II and Annex III; "General permit" means permission granted in advance and in accordance with Annex III (Article III (5 and (6)).

83 Ibid., Article V (I) and (2).

84 Ibid.

85 Wastes and other materials in this annex include organohalogen compounds, mercury and mercury compounds; cadmium and cadmium compounds; persistent plastics and other persistent synthetic materials e.g. netting and copes; crude oil and its wastes, refined petroleum, products and others; radio

nical or biological processes in the sea, as long as they do not make edible marine anisms unpalatable or endanger human health or that of domestic animals.[86] It also does apply to trace contaminants.[87]

wever, incineration at sea[88]of industrial waste[89] and sewage sludge is prohibited while the neration at sea of any other material requires a special permit.[90]

nex II wastes and other matter,[91] as stated already, are subject to special permits and uire "special care". Annex III on its part contains provisions to be considered in ablishing criteria governing the issue of permits for the dumping of matter at sea, and they lude: characteristics and composition of the matter; characteristics of the dumping site(s) l method of deposit; and other general considerations and conditions. The grant of dumping other permits, whether "special" or "general," must comply with Annex III.[92] National horities are also obliged under the 1972 London Convention to keep detailed records of all tter permitted to be dumped; monitor the condition of the seas and report this and other ormation to the IMO, besides other enforcement measures.[93] International co-operation is uired in the development of procedures for the effective application of the Convention articularly on the high seas" and this includes procedures for the reporting of vessels and craft observed dumping in contravention of the Convention.[94] As Sands correctly observes, theory this should allow the international community to determine what is being dumped. fortunately, in practice, the reporting requirements are not fully complied with and there is nsiderable evidence of large-scale unauthorized dumping by nationals of contracting parties

---

active wastes and other radioactive matter and materials in whatever form (solids, liquids, gases etc) produced for biological or chemical warfare; and industrial wastes.

See Annex 1, Para.. 8 of the 1972 London Convention.

Ibid., Annex 1, Para. 10.

"Incineration at sea" defined as the deliberate combustion of wastes or other matter on marine incineration facilities for the purpose of their terminal destruction. However, activities incidental to the normal operation of vessels are excluded from the scope of this definition(Annex 1, Para. 10(d) (ii)) See also the 1996 Protocol to the 1972 London Convention, infra, note 500, Article 5 (1) (2).

"Industrial wastes" means waste materials generated by manufacturing or processing operations and does not apply to: dredged materials, sewage sludge, fish waste or organic materials resulting from industrial fish processing operations; vessels and platforms or other manmade structures at sea which are free from any materials capable of creating floating debris or other pollutants; uncontaminated inert geological materials the chemical constituents of which are unlikely to be released into the marine environment; and uncontaminated organic materials of natural origin (Annex 1, Para 11).

Annex 1 Para. 10.(a) and (b).

They include wastes containing significant amounts and compounds of: arsenic, beryllium, chromium, copper, lead, nickel, vanadium, Zinc, organosilicon compounds, cyanides, fluorides and pesticides and their by products not covered under Annex 1. Others include containers, scrap metal and other bulky wastes liable to sink to the sea bottom which may present a serious obstacle to fishing or navigation; and materials which, though of a non –toxic nature may become harmful due to the quantities in which they are dumped, or which are liable to seriously reduce amenities (Annex II, Paras. (a), (b) and (d).

See 1972 London Convention, Article IV (2); Article VI (3).

Ibid., articles VI and VII generally.

Ibid., Article VII (3). For detailed discussion, see chapter 5, infra.

in breach of the 1972 London Convention.[95] This weakens the efficacy of these provisions as legal instruments for the protection of the high seas environment.

Other provisions in the 1972 London Convention concern collaboration between parties on training, research and monitoring and methods for disposal and treatment of waste, development of procedures to assess liability and the settlement of disputes and the promotion of measures to protect the marine environment against pollution from specific sources.[96]

The 1996 Protocol to the 1972 London Convention[97]affirms the achievements of the latter, and especially "the evolution towards approaches based on precaution and prevention;" the contribution made by relevant regional and national instruments; and also re-affirms the value of "a global approach" to the protection of marine pollution by dumping, which is exemplified by the 1982 UN Convention on the Law of the Sea, the 1972 London Convention and its 1996 Protocol itself.[98]

As stated already, the latter protocol is expected to supersede and replace the 1972 London Convention. Once it comes into force it therefore seeks, in its letter and intent, to supersede and go beyond the Convention. Its provisions largely restate, albeit in a reorganized form, the provisions of the Convention, but also add new provisions. To this extent it represents a major change of approach to the question of how to regulate the use of the sea as a depository for waste materials. One of the most important innovations is the introduction of the "precautionary approach", which requires that appropriate preventative measures are taken when there is reason to believe that wastes or other matter into the marine environment are likely to cause harm even when there is no conclusive evidence to prove a causal relation between inputs and their effects."[99] It also introduces the "polluter pays principle", as well as the obligation that pollution should not simply be transferred or transformed from one type of environment or form to another.[100]

Elsewhere, the 1996 Protocol expands the objective of the instrument to include the prevention, reduction and possible elimination of pollution "caused by dumping or

---

95 Ibid.

96 See 1972 London Convention, Articles IX, X, XI, and XII.

97 The 1996 Protocol to the Convention on the Prevention of Marine Pollution by Dumping of Wastes and Other Matter, 1972, 36 ILM (1997), 7 (The 1996 Protocol to the 1972 London Convention as amended) (not in force).

98 Ibid., Preamble.

99 Ibid., article 3, Para. 1.

100 Ibid., Article 3 Para. (2) and (3).

incineration at sea of wastes and other matter"[101] thus bringing the problem of incineration at sea to the forefront of this legal regime.

The 1996 Protocol is also apparently much more restrictive than the 1972 London Convention and its Annexes. Article 4 (1) of the Protocol states as follows:

> Contracting parties shall prohibit the dumping of any wastes or other matter with the exception of those listed in Annex 1.

Annex 1 to the 1996 Protocol lists wastes or other matter which "may be considered for dumping": dredged material; sewage sludge; fish waste or material resulting from industrial fish processing operations; vessels and platforms or other man-made structures at sea; inert, inorganic geological material; organic material of natural origin, and bulky items primarily comprising iron, steel, and concrete which have largely physical impact. However, in all cases they should not contain unacceptable levels of radioactivity, and as appropriate, they should not include floating debris and not be serious obstacles to fishing or navigation.

In any event, the dumping of wastes or other matter listed in Annex 1 shall require a permit, and contracting parties are to adopt administrative or legislative measures to ensure that such issuance of permits and permit conditions comply with the provisions of Annex 2 to the Protocols.[102]

The Protocol specifically prohibits incineration at sea.[103] This follows amendments to the 1974 London Convention, adopted in 1993.[104] It also disallows the export of wastes or other matter to other countries for dumping or incineration at sea.[105] This follows concern in recent

---

[101] Ibid., Article 2.

[102] Ibid, Article 4, Para. 2. Annex 2 to the 1996 Protocol contains provisions as to assessment of wastes or other matter that may be considered for dumping. These include waste prevention audit; consideration of waste management options; chemical, physical and biological properties; national Action Lists; Dump site selection; assessments of potential effects; monitoring", and permit and permit conditions

[103] Ibid., Article 5

[104] The amendments were adopted on 12 November 1993 and entered into force on 20.02.1994. They banned the dumping into sea of low-level radio-active wastes; phased out the dumping of industrial wastes by 31.12.1995 and banned incineration at sea of industrial wastes were both adopted by consensus (Resolution LC. 49 (16) adopted on 12 November 1993 concerning phasing out sea disposal of industrial wastes. Earlier, owing to scientific realities and changing perspectives since the adoption of the 1972 London Convention, the Contracting Parties to the 1972 London Convention had adopted a moratorium on the sea dumping of low level radio active wastes. Subsequently other resolutions called for the phasing out of industrial waste dumping and an end to the incineration at sea of noxious liquid wastes. The resolutions to end dumping and incineration of industrial wastes were both adopted by consensus (Resolution LC.49(16)adopted on 12 November 1993 concerning phasing out sea disposal of industrial wastes; Resolution LC. 50 (16) adopted on 12 November 1993 concerning the prohibition of incineration at sea of industrial wastes and sewage sludge; and Resolution LC. 51(16) adopted on 12 November concerning the prohibition of dumping radio active wastes and other radio active matter.

For a short list of key amendments to the 1972 London Convention and other Key decisions under resolutions both legally binding and otherwise . See *http://www. London convention.org/documents/LC72/LC amendmentsoverview.doc*, assessed on 14.09.2012; see also *http://www.london convnetion.org* assessed on 14. 09.2012

[105] The 1996 Protocol to the 1972 London Convention, Article 6.

years over the practice of exporting wastes which could not be legitimately dumped under the 1972 London Convention to non-contracting parties for purposes of dumping or incineration at sea, thereby subverting the intent or effectiveness of the Convention.

However, under Article 8 of the 1996 Protocol to the 1972 London Convention,[106] there are exceptions to the prohibitions on dumping and incineration at sea: in cases of *force majeure* caused by stress of weather or in any case which constitutes a danger to human life or a real threat to vessels, aircraft or platforms or in emergencies "posing an unacceptable threat to human health, safety or the marine environment "and where there is clearly no rational or feasible alternative or solution."

The key weaknesses of the above legal instruments, which are admittedly quite detailed, include that they apparently lack an effective institutional enforcement framework, thus making their implementation rather problematic. They are also not specific to the high seas, as they were designed to apply generally to the marine areas. The efficacy of the IMO as the primary institutional framework against oceanic dumping will be discussed in the next chapter.

As previously discussed, pollution from sea-bed activities is usually caused by the release of harmful substances arising directly from the exploration, exploitation and processing of sea-bed materials and resources. It is said to account for only one percent of pollution of the marine environment, although in particular regions such as the Gulf Area, the proportion is considerably higher due to oil exploration activities.[107]Moreover, international laws and regulations are generally underdeveloped, except the basic framework established under the 1982 UN Convention on the Law of the Sea.[108] Apart from the latter, a few regional instruments exist in the North East Atlantic, North Sea and the Arabian Gulf. Various articles deal with pollution from sea bed activities under the 1982 UN Convention on the Law of the Sea. Article 208, dealing with pollution from seabed activities subject to national jurisdiction, obliges coastal states to adopt laws, regulations and other measures to prevent, reduce and control pollution of the marine environment arising from seabed activities under their respective jurisdictions and from artificial islands, installations and structures under their jurisdiction. Such laws, regulations or other measures are to be "no less effective" than

---

- 1972 Convention on the Prevention of Marine Pollution by Dumping from Ships and other Matter (London),11 ILM (1972), 1294
- Ibid

international practices and procedures. Under this Article, states are also obliged "acting especially through competent international organizations or diplomatic conference," to establish global and regional rules, standards and recommended practices and procedures to deal with pollution from sea-bed activities.[109] There are also provisions as to enforcement of the obligations of Article 208 under the Convention.[110]

With regard to pollution from the Area,[111] Article 209 of the 1982 UN Convention on the Law of the Sea provides that international rules, regulations and procedures shall be established in accordance with Part XI of the Convention to prevent, reduce and control pollution of the marine environment from activities in the Area, and such instruments are to be subject to re-examination from time to time.[112] In addition, states are to enact national instruments to deal with pollution of seabed activities involving vessels, installations, structures and other devices flying their flags or of their registry or operating under their authority.[113] There are corresponding enforcement provisions under Article 215 of the Convention.

Elsewhere, under Part XI of the 1982 UN Convention on the Law of the Sea, necessary measures are to be taken in accordance with the Convention, by the International Sea bed Authority (ISA) to adopt appropriate rules, regulations and procedures, for, *inter-alia:*

> (a) the prevention, reduction and control of pollution and other hazards to the marine environment, including the coastline, and of interference with the ecological balance of the marine environment particular attention being paid to the need for protection from harmful effects of such activities as drilling, dredging, excavation, disposal of waste, construction and operation or maintenance of installations, pipelines and other devices related to such activities."
>
> the protection and conservation of the natural resources of the Area and the prevention of damage to the flora and fauna of the marine environment.

Other necessary institutional and regulatory arrangements concerning pollution from seabed activities are to be discussed in later chapters, and are provided under Article 162 of the 1982 UN Convention on the Law of the Sea.

---

109 1982 UN Convention on the Law of the Sea, Article 208 Para. 5.

110 Ibid., Article 214.

111 Ibid., Part XI generally; the definition of Area under Article 1 is as follows" the seabed and ocean floor and subsoil thereof, beyond the limits of national jurisdiction.

112 Ibid, Article 209 Para 1.

113 Ibid, Article 209 Para. 2.

Again, the main limitations of the legal instruments above include the lack of an effective international enforcement or implementation mechanism, including monitoring; the remoteness and vastness of the affected environment; and the fact that they are not specific to the high seas as such. Moreover, as noted previously, the international laws and regulations on this subject are relatively under developed, leaving the framework 1982 UN Convention on the Law of the Sea as the primary law in this regard. And yet the actual and potential risk of environmental damage of the high seas from sea bed activities cannot be underestimated.

4.2.4 Regional Instruments Concerning Sea Based Sources and Activities

Apart from global instruments, there are various regional instruments regulating sea-based pollution and other degradation of the marine environment from vessel-based pollution, dumping, sea-bed activities, as well as through the atmospheric medium. As for vessel based pollution, these include the 1985 Nairobi Convention;[114] the 1982 Jeddah Convention;[115] and the 1978 Kuwait Convention[116]all in the Eastern Seas and Oceans; the 1981 Abidjan Convention;[117] the 1983 Cartagena Convention;[118] The 1981 Lima Convention and its 1989 Paipa Radioactive Contamination Protocol;[119] the 2002 Antigua Convention for the North East Pacific (Article 6(1)(b)), all in the Western Seas and Oceans. Others are the 1976 Barcelona Convention and its Hazardous Wastes Protocol;[120] the 1992 Bucharest Convention;[121] the 1992 Helsinki Conventions;[122] the 1992 OSPAR Convention,[123]all in the

---

114 Convention for the Protection, Management and Development of the Marine and Coastal Environment of the Eastern African Region (1985 Nairobi Convention); 21 June 1985, IELMT 985; 46-48. Article 5; *www.unep.org/nairobi/convention/, accesed on 24.09.2012*

115 1982 Regional Convention for the Conservation of the Red Sea and Gulf of Aden Environment (Jeddah); 9 EPL 56 (1982);Article IV.

116 1978 Kuwait Regional Convention for Co-operation on Protection of the Marine Environment from Pollution (Kuwait) 24 April 1978 (In force, 1 July 1979), 1140 UNTS 133, Article IV.

117 1981 Abidjan Convention for Co-operation in the Protection and Development of the Marine and Coastal Environment of the West and Central African Region (1981 Abidjan Convention), Abidjan, 23 March 1981 (In force 5th August 1984), 20 ILM (1981), 756; 1981, Article 5.

118 1983 Cartagena Convention for the Protection and Development of the Marine Environment of the Wider Caribbean Region, Cartagena, 24, March 1983 (In force 11 October 1986), 22 ILM (1983), 221 (1983 Cartagena Convention);Article 5.

119 1981 Lima Convention for the Protection of the Marine Environment and Coastal Areas of the South-East Pacific,Lima,12 November 1981 (in force 19 May 1986), IELM T 981:85 (1981 Lima Convention); Article 4 Para. (6);col); and 1989 Paipa Protocol for the Protection of the South East Pacific against Radio active Contamination, Paipa, 21 September 1989 (in force 25 January 1995) IELMT 989:70 (1989 Paipa Radioactive Contamination Protocol, generally.)

120 1976 Barcelona Convention for the Protection of the Mediterranean Sea against Pollution, Barcelona, 16 February 1976 (in force 12 February 1978), 15 ILM (1976), 290 (1976 Barcelona Convention, as amended 1995), Article 6; 1996 Protocol on the Prevention of Pollution of the Mediterranean Sea by Transboundary Movement of Hazardous Wastes (not in force) (1996 Mediterranean Hazardous Wastes Protocol), generally.

121 1992 Bucharest Convention on the Protection of the Black Sea Against Pollution, Bucharest, 21 April 1992 (in force 15 January 1994), 32 ILM (1993), 1110 1992 Black Sea Convention),Articles VI, VII and XIV; annex I and II.

122 1992 Helsinki Convention on the Protection of the Marine Environment of the Baltic Sea Area. 13 ILM 546 (1974), 546, Helsinki, 22 March 1974 (in force 3 May 1980) (1974 Helsinki Convention), Articles 5 and 8; Annex I.

123 1992 Paris Convention for the Protection of the Marine Environment of the North Sea Atlantic (Paris) 22 September 1992 (in force 25 March 1998), 32 ILM 1993, 1072; 3 YbIEL (1992), 759(1992 OSPAR Convention) Article 7.

Northern Seas and Oceans, and the 1986 Noumea Convention[124] in the Southern Seas and Oceans.

All these instruments are typically similar in key respects and impose a general obligation on contracting parties to take all appropriate measures to prevent, reduce and combat pollution caused by intentional or accidental discharges from vessels (ships). In particular, they are to help develop and ensure effective implementation of the applicable international rules and standards as may be established by "the competent international organization."

With regard to their efficacy as legal instruments for the protection of the high seas environment, it should be noted that being regional instruments, they are limited *ipso facto*. Their scope was intended to be regional and basically within the areas of national jurisdiction of the contracting parties. In this regard, it may be safely concluded that the high seas, as international commons, are beyond their scope and jurisdiction. Secondly, their multiplicity also militates against their relative effectiveness, considering that they do not in any event have an effective coordinating mechanism among them. Thirdly, viewed separately, these conventions together with their protocols generally cover different, specific and rather narrow aspects of the marine pollution problem. In other words, they are not designed as all encompassing instruments to cover any and all types of pollution and degradation, and certainly not over the high seas. As for the other global and regional legal and policy frameworks already reviewed, they lack any effectiveness also largely due to absence or inadequacy of international enforcement and regulatory mechanisms for the high seas environment.

On the other hand, several regional legal instruments regulate dumping at sea in most of the seas regions.[125] Some of the conventions notably the 1992 Helsinki Convention,[126] and the

---

124 1986 Noumea Convention for the Protection of the Natural Resources and Environment of the South Pacific Region (Noumea), 25 November 1986 (in force 18 August 1990) 26 ILM (1987), 38 (1986 Noumea Convention), Article 6.

125 See, for example The 1985 Nairobi Convention Article 6; The 1982 Jeddah Convention, Article V; The 1978 Kuwait Convention, Article V; The 1981 Abidjan Convention, Article 6; The 1983 Cartagena Convention, Article 6; The 1981 Lima Convention, Article 4 Para (a)(iii); The 1976 Barcelona Convention, Articles 5; the 1992 Bucharest Convention, Article X; The 1992 Helsinki Convention, Article 11; 2003 draft Framework Convention for the Caspian Sea, Article 10; The 1992 OSPAR Convention, Article 4; the 1986 Noumea Convention, Article 10; the 2002 draft Antigua Convention for the North-East Pacific; Article 6 (i) (iii).

126 1992 Helsinki Convention on the Protection of the Marine Environment of the Baltic Sea Area. 13 ILM 546 (1974), 546, Helsinki, 22 March 1974 (in force 3 May 1980) (1974 Helsinki Convention), Article 10.

1992 OSPAR Convention[127] contain provisions specifically on incineration at sea, in terms similar with the 1972 London Convention framework.[128]

The legal instruments also include, in certain regions, "dumping protocols" to the regional conventions. Examples of these are the 1976 Barcelona Dumping Protocol for the Mediterranean Sea Region;[129];the 1986 Noumea Dumping Protocol for the South Pacific Region;[130] and the 1992 Black Sea Dumping Protocol for the Black Sea Region.[131]

As to their efficacy as legal instruments for the protection of the high seas environment, just like for the previous category, it should be noted that being regional instruments, they are limited *ipso facto*. Their scope was also intended to be regional and basically within the areas of national jurisdiction of the contracting parties. In this regard, it may be safely concluded that the high seas, as international commons, are beyond their scope and jurisdiction. Secondly, considering that they do not in any event have an effective coordinating mechanism among them, their effective implementation or enforcement relative to the high seas environment would be in doubt. Thirdly, as for the previous category, viewed separately, these instruments generally cover different, specific and rather narrow aspects of the marine pollution problem. In other words, they are not designed as all encompassing instruments to cover any and all types of pollution and degradation. In this case, they deal with dumping as a source category of marine pollution, and not other sources. As for the other global and regional legal and policy frameworks already reviewed, they also lack any effectiveness largely due to absence or inadequacy of international enforcement and regulatory mechanisms for the high seas environment.

Most regional conventions also specifically provide for measures to control, reduce or prevent pollution from seabed activities,[132] thereby underpinning the importance of this source of

---

[127] 1992 Paris Convention for the Protection of the Marine Environment of the North Sea Atlantic (Paris) 22 September 1992 (in force 25 March 1998), 32 ILM 1993, 1072; 3 YbIEL (1992), 759(1992 OSPAR Convention.), Article 4.

[128] 1972 Convention on the Prevention of Marine Pollution by Dumping from Ships and other Matter (London),11 ILM (1972), 1294; 1996 Protocol to the London Dumping Convention. 36 ILM (1997), 7

[129] 1976 Barcelona Protocol for the Prevention of Pollution of the Mediterranean sea by Dumping from Ships and Aircraft, Barcelona, 16 February 1976 (in force 12 February 1978), 15 ILM (1976) 306 (The 1976 Barcelona Dumping Protocol);

[130] 1986 Protocol for the Prevention of Pollution of the South Pacific Region by Dumping (Noumea) 25 November 1986 (in force 18 August 1990 IELMT 986: 87A (1986 Noumea Dumping Protocol)

[131] 1992 Protocol on the Protection of the Black Sea Marine Environment against Pollution by Dumping, Bucharest, 2 April 1992 (in force 15 January 1994) (1992 Black Sea Dumping Protocol).

[132] See for example, The 1985 Nairobi Convention, Article 8; The 1982 Jeddah Convention, Article VII; The 1978 Kuwait Convention, Article VII; The 1981 Abidjan Convention, Article 8; The 1983 Cartagena Convention, Article 8; The 1981 Lima Convention, Article 4; The 1976 Barcelona Convention, Article 7; the 1992 Bucharest Convention, Article 7; The 1992 Helsinki Convention Article 12, and Annex VI thereof; the 2003 draft framework Convention for the Caspian Sea, Article 8; The 1992 OSPAR Convention, Article 5 and Annex III thereof; The 1986 Noumea Convention, Article 8.

marine pollution and environmental degradation. They typically provide an obligation on the parties to ensure that they take measures to prevent, reduce and combat marine pollution resulting directly or indirectly from activities the seabed and its subsoil which mainly include the exploration and exploitation of oil and other resources.

As to their efficacy, the arguments made above with regard to the limitations of the regional legal instruments also apply here.

Finally, most of the global and regional legal instruments concerning sea-based pollution and environmental degradation also recognize that some of this pollution is transmitted through or by the atmosphere, largely by aircraft or sea vessels. The 1982 UN Convention on the Law of the Sea requires states to take measures to "minimize to the fullest possible extent" the release of toxic, harmful or noxious substances especially those which are persistent, *inter-alia,* from or through the atmosphere[133]and, as previously stated, Articles 212 and 222 thereof, cover specifically pollution from or through the atmosphere. Under the 1972 London Convention and its 1996 Protocol,[134] it is recognized that dumping and discharges from or through the atmosphere constitutes a matter of concern for the marine environment, requiring states to use the best practicable means to prevent such pollution and develop products and processes which could reduce the amount of harmful wastes to be disposed of.

Indeed, the definition of "dumping" includes deliberate disposal at sea of wastes or other matter from "vessels" and "aircraft."[135] Among the key obligations of states is to co-operate in the development of procedures for the effective application of the London Convention" "particularly on the high seas," including mechanisms for reporting of vessels and aircraft observed dumping in contravention of the Convention.[136] As noted previously, the greatest limitation on these otherwise well intended provisions is the difficulty in the effective implementation or enforcement of the standards spelt out.

However, prior to the 1982 UN Convention on the Law of the Sea, the most important international instrument for the protection of the marine environment from atmospheric

---

Article 194, Para. 3 (a)

36 ILM (1997),7

"Vessels and aircraft" are defined under the 1972 London Convention to mean "water borne or airborne craft of any type whatsoever." (Article III (2).

Ibid., Article VII(3) of The 1996 London Protocol Article 10 Para. (3).

nuclear tests was the 1963 Nuclear Test Ban Treaty,[137] Elsewhere, as indicated, regional conventions provide a general obligation on states to take all appropriate measures to prevent, reduce and combat pollution resulting from or through discharges into the atmosphere from activities under their jurisdiction.

4.3 Conventions and Instruments Concerning Marine Pollution Emergencies

Marine pollution incidents constituting emergencies are a special category of pollutants particularly because of their dramatic and enormous impact especially in those areas which are immediate casualties. In most cases, they are about massive oil spills such as the **Torrey Canyon** (1967), **AMOCO Cadiz** (1978), **the Exxon Valdez** (1989) and the **Erika** (1999).

4.3.1 Global Instruments Concerning Marine Pollution Emergencies

Most of the instruments cover general obligations of states, specific provisions on coastal state powers of intervention, notification by vessels and offshore installations, and salvage. Perhaps the earliest of these conventions is the 1969 Intervention Convention,[138] whose momentum was set by the **Torrey Canyon disaster**. This massive accident, which caused extensive damage to the coasts of Britain and France, involved a ship registered under the flag of Liberia. The accident itself occurred outside the territorial sea of Britain, raising the question as to whether the coastal state could intervene to address a pollution incident occurring in areas beyond national jurisdiction and especially if the measures necessary were likely to affect the interests of foreign ship owners, cargo owners and even flag states.

The general consensus was that there was need for a new regime of law which, while recognizing the need for some state intervention in the high seas in cases of grave emergency, also clearly restricted that right to protect other legitimate interests. An international conference to consider the proposed legal regime was held in Brussels in 1969 under the auspices of the responsible international organization (then IMCO) and resulted in the 1969 Intervention Convention.

---

137 1963 Treaty Banning Nuclear Weapon tests in the Atmosphere, in Outer Space and Under Water (Moscow) 5 August 1963 480 UNTS (3) (1964) Cmnd.2245. (In force 10 October 1963) (1963 Nuclear Test Ban Treaty).

138 The 1969 International Convention Relating to Intervention on the High Seas in Cases of Oil Pollution Casualties (Brussels) 29 November 1969, in force 6 May 1975; 9 ILM (1970), 25 (1969 Intervention Convention).

The Convention affirms the right of a coastal state to take such measures on the high seas as may be necessary to prevent, mitigate or eliminate danger to its coastline or related interests from pollution by oil or the threat thereof following upon a maritime casualty. However, the coastal state can only take necessary and proportionate action, and in any case after due consultations with appropriate or relevant interests including, in particular, the flag state or states of the ship or ships involved, the owners of the ship(s) or cargo in question, and, where circumstances permit, independent experts appointed for this purpose. A coastal state which takes measures beyond those which are permitted under the Convention is liable to pay compensation for any damage caused by such measures, and dispute settlement mechanisms are provided for. The Convention applies to all sea-going vessels except warships or other vessels owned or operated by a state and used on Government non-commercial service.[139] While these latter exceptions are not surprising at all, with similar provisions in the 1982 UN Convention on the Law of the Sea, it is submitted that this easily is one of the clearest weaknesses of this law. This is because war ships or other vessels owned or operated by states for non commercial purposes may in fact be the biggest culprits with regard to high seas environmental pollution and degradation.

In 1973, a Protocol was adopted additional to the 1969 Intervention Convention. It had become apparent that the 1969 Intervention Convention was limited to maritime casualties involving pollution by oil. In view of the increasing quantity and prevalence of other substances, mainly hazardous chemicals, carried by ships, the 1969 Brussels Conference had in fact recognized the need to extend the Convention to cover substances other than oil. The Legal Committee of the IMO[140] made progress in this regard and prepared and submitted draft articles for a protocol to the 1973 London Conference on Marine Pollution. The 1973 Conference yielded the 1973 Intervention Protocol.[141] It extends the regime of the 1969 Intervention Convention to substances which are either listed in the Annex to the Protocol or which have characteristics substantially similar to those substances.[142]

Ibid., Preamble, Article I, III,IV V,VI, under Article II Para. (1) " Maritime Casualty"includes ship collisions, stranding or navigation incident or other occurrence resulting in material damage to a ship.

The IMO has in its mandate connected with the adoption or implementation of conventions established several standing committees: Legal Committee, Maritime Safety Committee, Marine Environment Protection Committee (MEPC), and the Facilitation Committee.

The 1973 Protocol Relating to Intervention on the High Seas in cases of Marine Pollution by Substances Other than Oil, (London) 2 November 1973 in force 30 March 1983; UNTS 27(1983)(The 1973 Intervention Protocol).

Ibid., Articles 1 (1) (2) and (3).

In 1989, largely as a consequence of the massive accident involving the **AMOCO CADIZ** in 1978, the 1989 International Convention on Salvage[143] was adopted. The convention has the dual purpose of encouraging salvage and other measures to protect the marine environment from the consequences of accident emergencies.

The new instrument highlighted the inadequacies of the previous regime particularly the 1910 Assistance and Salvage Convention[144] and the need to provide for rules governing the remuneration of efforts by salvors to prevent or mitigate pollutions. The 1989 Salvage Convention provides an incentive for salvors to take measures to protect the environment, "even if those measures may have no useful effect". It also protects the legal position of coastal states with respect to pollution arising from accident emergencies. Under Article 12 of the Convention salvage operations entitle the salvor to a reward only if the operations have had a useful result, except as otherwise provided. Under Article 13, preventing environmental damage can be deemed to contribute a useful result; and the reward is to be fixed taking into account, *inter-alia,* the skill and effort of the salvors in preventing or minimizing damage to the environment.[145] In addition, Article 14 thereof contemplates a safety net whereby compensation may be obtained from the owner of the vessel involved in a maritime casualty, thus providing further safety nets for salvors who may have prevented or minimized damages to the environment. Interestingly, the salvor is also subject to a negative incentive, negligence and the failure to prevent or minimize environmental damage may result in deprivation of the whole or part of any special compensation due to the salvor.[146]

Thus under the 1989 Salvage Convention, salvors have a continued incentive and obligation to mitigate environmental damage even after the vessel is saved, or after it sinks. However, consistent with the traditional "no cure no pay" principle, the salvor will not be compensated for efforts, however great, which lead to no useful result, whether because the vessel is lost or because damage to the environment cannot be reduced or averted.[147] The main weaknesses of this law include the uncertainty of the "reward system," apparent lack of enforcement

---

143 The 1989 International Convention on Salvage (London)28 April 1989 in force 14 July 1996, IMO /LEG/CONF.7/27.(The 1989 Salvage Convention).

144 The 1910 Convention for the Unification of Certain Rules of Law Respecting Assistance and Salvage at Sea(Brussels), 23 September 1910;UKTS 4 (1913) (Cmnd 6677) as amended by Protocol. Brussels 27 May 1967,UNTS 22 (1978), Cmnd, 7095. In any case, the basis on which most maritime salvage services have traditionally operated is the "no cure no pay " principle, providing no reward to salvors for work carried out benefiting the coastal state and reducing the liability of the vessel owner for pollution damage if the vessel itself was lost.

145 International Convention on Salvage (London), IMO/LEG/CONF.7/27(1989), Article 13 (1) (b).

146 Ibid., Article 14 (5).

147 Birnie, P. Boyle, A and Redgwell, C: *International Law and the Environment*, 3rd ed. (2009), p. 426.

mechanisms, and the fact that it is rather narrowly focused on salvage, individual salvors, and their reward regime, as opposed to high seas environmental protection as such.

Prior to the 1989 Salvage Convention, the 1982 UN Convention on the Law of the Sea had codified the customary international law principle which obligated states to respond to marine pollution emergencies individually, in cases where the pollution incident fell within their jurisdiction or control. Failure to respond would ordinarily amount to a breach of the state's obligation under customary international law to control sources of pollution, even if the pollution emergency could not be attributed to the state's action or lack of action.[148]

Under the 1982 UN Convention on the Law of the Sea, states are required to ensure that pollution arising from incidents or activities under their jurisdiction or control does not spread beyond areas where they exercise sovereign rights, or is not transferred to other areas.[149] In addition, states are to take measures designed to "minimize to the fullest extent possible, pollution from vessels, sea bed oil exploration and exploitation and other installations, in particular measures for preventing accidents and dealing with emergencies."[150] Apart from their typically framework nature, these provisions do not have effective institutional enforcement mechanism, as will be clear in the next chapter. They are also rather specific on "emergency" vessel type pollution, and much less on routine, systematic or non emergency pollution.

Perhaps the most famous international instrument relating to marine pollution emergencies is the 1990 International Convention on Oil Pollution Preparedness, Response and Co-operation (OPRC).[151] Its background briefly was that following the **Exxon Valdez** disaster in Alaska in July, 1989, a conference of leading industrial nations held in Paris called upon the IMO to develop further measures to prevent pollution from ships. The call was endorsed by the IMO Assembly in November of the same year and work began to draft a Convention, which became the 1990 OPRC Convention. There was deemed to be general necessity of further preventing and minimizing environmental and economic consequences caused by major tanker accidents.

---

148 See, for example, the *Corfu Channel Cases*, ICJ Reports (1949), 3.

149 1982 UN Convention on the Law of the Sea, Article 194(2).

150 Ibid., Article 194(3)(b)(c) and (d).

151 The 1990 International Convention on Oil Pollution Preparedness, Response and Co-operation, London 30 November 1990 in force 13 May 1995; 30 ILM (1991), 735 (The 1990 OPRC Convention).

The main purpose of the 1990 OPRC Convention is to provide a global framework for international co-operation in combating major incidents or threats of marine pollution. Parties to the Convention are obliged to establish measures for dealing with pollution incidents either nationally or in co-operation with other countries. Such measures include development of national and regional contingency plans; and ships are required to carry a shipboard oil pollution emergency plan, the contents of which are to be developed by the IMO. Operators of offshore units under the jurisdiction of states parties are also required to have oil pollution emergency or contingency plans or similar arrangements which must be coordinated with regional and national systems to ensure prompt and effective response to oil pollution incidents.[152] They are also obliged to report or cause such reporting to the IMO.[153] Under the 1990 OPRC Convention contracting parties are obliged to respond to requests for assistance from states which are likely to be affected by oil pollution. Other than national action required upon reports of incidents, the IMO must also be informed of major oil incidents, using as far as practicable, the oil pollution reporting system developed by the organization.[154]

Other provisions of the 1990 OPRC Convention concern international co-operation in pollution response (Article 7); research and development (Article 8); technical co-operation (Article 9); and promotion of bilateral and multi-lateral co-operation in preparedness and response (Article 10). Arguably the most important requirements under the 1990 OPRC Convention are those requiring states to establish national systems capable of responding promptly and effectively, including the designation of competent national authorities and national contingency plans.

However, after the 1990 OPRC Convention was adopted, it was soon recognized that spills of chemicals and other hazardous substances would have similar environmental consequences like oil spills. Indeed many of the chemicals carried by sea are far more dangerous to the marine environment than oil spills. A diplomatic conference held from 9 to 15 March 2000 in London yielded the so-called 2000 OPRC-HNS Protocol.[155] The new Protocol is aimed at providing a global framework for international co-operation in combating major incidents or

---

[152] Ibid., Article 3,6, "oil pollution incident" is defined as an occurrence or series of occurrences having the same origin, which results or may result in a discharge of oil and which poses or may pose a threat to the marine environment, or to the coastline or related interests of one or more states, and which requires emergency action or other immediate response "(Article 2 Para. (2).)

[153] Ibid., Article 4.

[154] Ibid., Article 5.

[155] The 2000 Protocol on Preparedness, Response and Co-operation to Pollution Incidents by Hazardous and Noxious Substances, London 15 March 2000.(*See http www.imo.org, accessed on 14.10.2012).*

threats of marine pollution from ships carrying hazardous chemicals. It closely follows the principles set out in the 1990 OPRC Convention dealing with oil spills. For example, like in the 1990 OPRC Convention, parties to the Protocol are required to establish measures for dealing with the pollution incidents, either nationally or in co-operation with other countries. There is also provision for the promotion of bilateral or multi-lateral agreements for preparedness for and response to pollution incidents arising from hazardous and noxious substances which are defined by reference to lists of substances included in various IMO conventions and codes. The Protocol is expected to enter into force twelve months after ratification by not less than fifteen contracting parties to the 1990 OPRC Convention.

Concerning the 1990 OPRC Convention and the other emergency conventions and protocols cited above, their provisions are generally commendable on the subject of pollution emergencies at sea. However, at the same time they are necessarily limited in scope in that unless an incident is defined as a marine pollution emergency, they do not apply. This means that these instruments are not useful to contain routine or systematic pollution at sea. In a sense therefore, these legal instruments are on "stand by" for a marine pollution emergency to occur before they become active. Moreover, to the extent that most of these instruments (with the exception of the 1969 Intervention Convention) apply to the marine environment generally, they do not have specific or focused attention on the high seas as such. Finally, the absence of an effective institutional framework to enforce the protection of the high seas environment, which is covered in detail in the next chapter, makes this category of instruments rather weak as a legal framework for the protection of the high seas environment.

4.3.2 Regional Instruments Concerning Marine Pollution Emergencies

Most of the UNEP–RSPs framework conventions have specific articles and additional protocols on marine pollution emergencies.[156] Some also have specific hazardous wastes protocols.[157] Interestingly, there are no such explicit articles or additional protocols for the non-UNEP-RSPs, such as the 1992 Helsinki Convention for the Baltic Sea Region and the 1992 OSPAR Convention for the North-East Atlantic. However, in the North Sea Region, the

[156] See for example, the 1985 Nairobi Convention Article 11, and the 1985 Nairobi Emergency Protocol; the 1978 Kuwait Convention Article IX, and the 1978 Kuwait Emergency Protocol; the 1982 Jeddah Convention, Article IX and the 1982 Jeddah Emergency Protocol; the 1981, Abidjan Convention, Article 11, and the 1981 Abidjan Emergency Protocol; the 1983 Cartagena Convention Article 11, and the 1983 Cartagena Emergency Protocol, the 1976 Barcelona Convention Article 9, and the 1976 Barcelona Emergency Protocol ; the 1992 Bucharest Convention Article IX, and the 1992 Bucharest Emergency Protocol; the 2003 framework Convention for the Caspian Sea, Article 13; the 1981 Lima Convention Article 6, and the 1981 Lima Emergency Protocol; the 1986 Noumea Convention Article 15, and the 1986 Noumea Emergency Protocol; and the 2002 Antigua Convention (North-East Pacific Region) Article 8.

[157] See, for example the Izmir Hazardous Wastes Protocol for the Mediterranean Region; the 1998 Kuwait Hazardous Wastes Protocol for the Kuwait Region; and the 1989 Paipa Radio-active Pollution Protocol.

first regional agreement, the 1969 Bonn Agreement for Co-operation in dealing with Pollution of the North Sea by Oil,[158] has since been superseded by the 1983 Bonn Agreement.[159] The latter extends the co-operative framework to oil and other harmful substances and also covers threatened as well as actual pollution; goes beyond the 1969 Bonn Agreement by requiring parties to jointly develop and establish guidelines for joint action and provide information on pollution incidents. Others include the establishment of a standard form for reporting of pollution; the provision of rules concerning costs; and institutional arrangements.[160]

In comparison to other UNEP-RSP protocols, emergency protocols are the most prevalent and the earliest in time for most regional conventions, perhaps emphasizing the importance most regions have placed on this source of marine pollution. However, as for the global emergency conventions above, all these regional instruments are also "stand by" instruments which would only have relevance when a pollution emergency occurs in their respective area of jurisdiction. Secondly, these regional instruments suffer even more limited scope than their global counterparts, with regard to their geographical application. They primarily cover the areas of national jurisdiction of the contracting parties, and do not extend to the high seas as such Thirdly, they also lack a coordinating mechanism among them, at least to mitigate their geographical, jurisdictional and other limitations.

4.4 Conventions and Instruments dealing with Responsibility, Liability and Compensation Resulting from Marine Pollution

There are global and regional instruments dealing with issues of responsibility, liability and compensation originating from marine pollution. Some of the instruments, particularly most of the relevant IMO Conventions are quite specific and detailed on this subject. Others have at least an article or two regarding liability and compensation as part of their provisions on other marine environment subjects. This letter scenario is particularly apparent in the UNEP-RSPs' framework Conventions and their additional protocols.

[Bonn] 9 June 1969, in force 9 August 1969, 704 UNTS 3 (1969 Bonn Agreement).

1983 Agreement for Co-operation in dealing with Pollution of the North Sea by Oil and Other Harmful Substances, (Bonn) 13 September 1983, in force 1 September 1989 (The 1983 Bonn Agreement) IELM T 983:68.

Ibid., Article 1,3,4,5 9-15.

4.4.1 Global Instruments Concerning Responsibility, Liability and Compensation

The most important instruments include the 1982 UN Convention on the Law of the Sea and several IMO Conventions which are specific to responsibility, liability and compensation. Article 235 of the 1982 UN Convention on the Law of the Sea provides as follows in part:-

1. States are responsible for the fulfillment of their international obligations concerning the protection and preservation of the marine environment. They shall be liable in accordance with international law.
2. States shall ensure that resource is available in accordance with their legal systems for prompt and adequate compensation or other relief in respect of damage caused by pollution of the marine environment by natural or juridical persons under their jurisdiction.

Moreover, states are to co-operate in the implementation of existing international law as well as the further development of international law on responsibility and liability with the objective of assuring prompt and adequate compensation in respect of all damage caused by pollution of the marine environment. Some of the suggested approaches to compensation include compulsory insurance or compensation funds.[161] It is apparent that the 1982 UN Convention on the Law of the Sea provisions on responsibility, liability and compensation are generic to both land based and sea based sources of marine pollution. It is also apparent that state responsibility as contemplated under Article 235 includes both flag states in respect of activities which they permit within their jurisdiction or control. However, although it is theoretically settled that states are responsible for marine environmental injury, the states have conspicuously failed to resort to this foundation. Instead, they have seemed in practice to prefer alternative approaches based on the liability of the polluter.[162]

The various IMO Conventions on responsibility, liability and compensation seem to distinguish between oil pollution; nuclear wastes pollution; and hazardous and noxious substances pollution.[163] For oil pollution incidents, liability and compensation regimes are governed by the 1969 CLC[164] as amended in 1992;[165] and the 1971 Fund Convention[166] as

---

[161] The 1982 UN Convention on the Law of the Sea, Article 235 Para. (3)

[162] 557(a) ; See also, Birnie, P, Boyle, A and Redgwell, C: *International Law and the Environment*, 3rd ed (2009), p. 431.

[163] For comparative discussion on the difference between oil pollution and nuclear liability regimes, see Birnie, P, Boyle, A and Redgwell, C: *International Law and the Environment* 3rd ed (2009) p. 488.

[164] The 1969 International Convention on Civil Liability for Oil Pollution Damage (Brussels), 29 November 1969 in force 19 June 1975, 973 UNTS 3 (1969 CLC).

amended in 1992.[167] Incidentally, the **Torrey Canyon** disaster of 1967, which led to an intensification of IMO's technical work in preventing pollution, was also the catalyst for work on liability and compensation. The earliest result was the 1969 CLC.

The 1969 CLC was designed to ensure that adequate compensation was available to persons who suffer oil pollution damage resulting from maritime casualties involving oil carrying ships. The Convention places the liability for such damage on the owner of the ship from which the polluting oil escaped or was discharged.[168] Subject to a number of specific exceptions the liability of the owner is strict: it is the duty of the owner to prove that any of the exceptions specified operates in the particular case to his favour.[169] However, unless the owner has been guilty of actual fault there are maximum limits of liability for each incident. A ship owner in personal fault cannot limit his liability.[170]

The 1969 CLC also requires ships covered by it to maintain insurance or other financial security in sums equivalent to the owner's total liability for one incident. Although the Convention applies to all sea-going vessels actually carrying oil in bulk as cargo, only ships carrying more than 2,000 tons of oil are required to maintain insurance in respect of oil pollution damage.[171] These requirements do not apply to warships or other vessels owned or operated by a state and engaged for the time being in Government, non – commercial service.[172] But the Convention applies in respect of the liability and jurisdiction provisions to ships owned by a state and used for commercial service. The only exception with regard to the latter category of vessels is that they are not obliged to carry insurance. Instead they are required to carry a certificate issued by the appropriate authority of the state of their registry stating that the ships liability under the Convention is covered.[173]

---

167 The 1992 Protocol on Civil Liability for Oil Pollution Damage, 27 November 1992, in force 30 May 1996 (As further amended by 2000 Protocol, in force 1 November 2003 (The 1992 regime is to replace the 1969 CLC).(The 1992 CLC).

168 The 1971 International Convention on the Establishment of an International Fund for Compensation for Oil Pollution Damage (Brussels), 18 December 1977 in force 30 May 1992 (Amended by 2000 Protocol, in force 1 November 2003). (The 1971Oil Pollution Fund Convention).

169 The 1992 Convention/Protocol to the 1971 Convention) on the Establishment of an International Fund for Compensation for Oil Pollution Damage, 27 November 1992, in force 30 May 1992 (Amended by 2000 Protocol, in force 1 November 2003). (The 1992 Fund Convention).

170 The 1969 CLC, Article III Para. (1).

171 Ibid, Article III Para. (2).

172 Ibid., Article V.

173 Ibid., Article VII.

Ibid., Article XI Para. (1).

Ibid., Article XI Para. (2).

The 1969 CLC covers pollution damage resulting from spills of persistent oils suffered in the territory (including the territorial sea) of a state party to the Convention.[174] It is applicable to ships which actually carry oil in bulk as cargo, which are generally laden tankers. Spills from tankers in ballast or bunker spills from ships other than tankers are not covered. It is also not possible to recover costs when preventive measures are so successful that no actual spill occurs.

There were 1976[175] and 1984[176] Protocols to the 1969 CLC. The latter never entered into force and was superseded by the 1992 CLC Protocol/Convention. The latter is itself designed to supersede and replace the 1969 CLC. The 1992 Protocol changed the entry into force requirements by reducing from six to four the number of large tanker-owing countries that are needed. However the compensation limits are those agreed in the 1984 Protocol.[177]

The 1992 Protocol also widened the scope of the 1969 Convention to cover pollution damage caused in the EEZ or equivalent area of a state party.[178] The Protocol covers pollution damage as before but environmental damage compensation is limited to costs incurred for reasonable measures to reinstate or restore the contaminated environment .It also allows expenses incurred for preventive measures to be recovered when no oil spill occurs as long as there was grave and imminent threat of pollution damage.[179] The Protocol also extends convention cover to spills from sea-going vessels constructed or adapted to carry oil in bulk as cargo so that it applies to both laden and unladen tankers, including spills of bunker oil from such ships.[180]

---

174 Ibid., Article II.

175 The 1976 Protocol to the 1969 CLC was adopted on 9 November 1976 and entered into force on 8 April 1981.Its purpose was to amend the applicable unit of account. The 1969 CLC used the "poincare franc"based on the "official" value of gold as the applicable unit of account. However, experience had shown that the conversion of this gold-franc into national currencies was becoming increasingly difficult. The 1976 Protocol was adopted and provides for a new unit of accounts, based on the special drawing rights (SDR) as used by the International Monetary Fund (IMF). However, so as to cater for the countries which are not members of the IMF and whose laws do not permit the use of the SDR, the protocol provides for an alternative monetary unit based,as before, on gold.

176 The 1984 Protocol to the 1969 CLC was adopted 25 May 1984.It was to enter into force 12 months after being accepted by 10 states, including with tanker fleets of at least 1 million gross tons. It was motivated by the generally accepted realization that by the mid-1980's the limits of liability under the 1969 CLC and the 1971 Fund Conventions were too low to provide adequate compensation in the event of a major pollution incident .The 1984 Protocol set increased limits of liability but it soon became clear that it would never secure the acceptance required for entry into force. The major constraint was the reluctance of the US, a major oil importer to accept the Protocol. The US preferred a system of unlimited liability, which it had introduced in its Oil Pollution Act of 1990.As a result, the 1992 Protocol was drawn up in such a way that the ratification of the US was not needed for the Protocol to enter into force.

177 The 1984 Protocol had set the following compensation limits: (1) for a ship not exceeding 5000 gross tonnage, liability is limited to 3 million SDR (about US $4 1 million) ; (2)for a ship 5000 to 140,000 gross tonnage, liability is limited to 3 million SDR plus 420 SDR (about US$ 567) for each additional unit of tonnage, and (3) for a ship over 140,000 gross tonnage liability is limited to 59.7(about US$ 80 million).

178 The 1992 CLC Protocol/Convention Article 3 (a) (ii).

179 Ibid., Article 2 Para (6).

180 Ibid., Article 2 para (1).

Under the 1992 Protocol, a ship owner cannot limit liability if it is proved that the pollution damage resulted from ship owner's personal act or omission committed with the intent to cause such damage or recklessly and with knowledge that such damage would probably result.[181] The 1992 Protocol also allows for its states parties to issue certificates to ships registered in states which are not party to the 1992 Protocol. Consequently a ship owner can obtain certificates to both the 1969 and 1992 CLC even when the ship is registered in a country which has not yet ratified the 1992 Protocol. From 16 May 1998 parties to the 1992 Protocol ceased to be parties to the 1969 CLC due to a mechanism of compulsory denunciation of the "old" regime. However, in the meantime, the two regimes operate concurrently as some parties to the 1969 CLC have not ratified the 1992 regime.

The 1971 Fund Convention was arguably developed in response to a perceived inadequacy of the 1969 CLC. Although the latter had provided a useful mechanism for ensuring the payment of compensation for oil pollution damage, it did not deal satisfactorily with all the legal, financial and other questions raised during the 1969 Conference. One area of objection by some states was that it introduced the principle of strict liability of the ship owner to damage which he could not always foresee, and therefore represented a dramatic departure from traditional maritime law which based liability on fault. Other states also objected on the issue that the compensation limitation figures adopted were likely to be inadequate in cases of oil pollution damage involving large tankers. They therefore preferred either an unlimited level of compensation of a very high limitation figure. The 1969 Brussels Conference considered a compromise proposal to establish an international fund to be subscribed to by cargo interests.

Their fund would have two purposes: firstly, relieving the ship owner of the burden imposed by the 1969 CLC; and secondly, providing additional compensation to the victims of pollution damage in cases where compensation under the 1969 CLC was either inadequate or unobtainable.

A Conference held in Brussels in 1971 yielded the 1971 Fund Convention. It is primarily supplementary to the 1969 CLC and establishes a regime for compensation of victims of oil pollution when full compensation under the CLC cannot be obtained.[182] The latter happens when damage exceeds the owner's liability under the 1969 CLC, when the owner is

---

[181] Ibid., Article 6 Para. (2) see also Article 4 Para. (4).

[182] See Edward H.P. Brans: "The Braer and the Admissibility of Claims for Pollution damage under the 1992 Protocols to the Civil Liability Convention and the Fund Convention" in *"Environmental Liability*, vol. 3 (1995), London Sweet and Maxwell, pp 6-69 at p. 62.

financially incapable of meeting his obligators under the 1969 CLC, or when no liability arises under that Convention.

Accordingly, under the 1971 Fund Convention a subscriptions fund is established. The fund is obliged to pay compensation to states and persons who suffer pollution damage, if such persons are unable to obtain compensation from the owner of the ship from which the oil escaped or if the compensation due from such owners is insufficient to cover the damage suffered. Under the 1971 Fund Convention victims of oil pollution damage may also be compensated beyond the level of the ship owner's liability. However, the Fund's obligations are limited so that the total payable to victims by the ship owner and the Fund shall exceed 30 million SDR (about U.S. $ 40 million) for only one incident. In effect therefore the Fund's maximum liability is limited to 16 million SDR. Nevertheless, in cases where no ship owner is liable or the ship owner liable is not able to meet his liability, the Fund will be required to pay the whole amount of compensation due. Under certain circumstances, the Fund's maximum liability may increase to not more than 60 million SDR (about US $ 81million) for each incident. There is also provision for preventive assistance by the Fund to states who may be threatened or affected by oil pollution.

The 1971 Fund Convention, like the 1969 CLC, also had 1976[183] and 1984[184]protocols which were in similar terms as those under the 1969 CLC. In fact, the 1984 Fund Protocol met with the similar fate as the 1984 CLC Protocol. It never entered into force and was superseded by the 1992 Fund Protocol. The latter is designed and intended to supersede and replace the 1971 Fund Convention.

The 1992 Fund Protocol had the effect of extending the scope of coverage of the Convention in line with the 1992 CLC Protocol,[185] and led to the replacement of the 1971 Convention and the 1971 Fund itself.[186]

---

[183] The 1976 Protocol to the 1971 Fund Convention was adopted on 19 November 1976 and entered into force on 22nd November 1994. As the 1971 Fund Convention like the 1969 CLC, had used the "poincare franc" as the unit of account, the protocol become necessary to provide for a unit based or the SDR as used by the IMF.

[184] The 1984 Protocol to the 1971 Fund Convention was like, the 1984 CLC Protocol, adopted on 25 May 1984 and was similarly to enter into force 12 months after being accepted by at least eight states whose combined total of contributing oil amounted to at least 600 million tons during the previous calendar year. The 1984 Fund Protocol was primarily intended to raise the limits of liability contained in the convention and thereby enable greater compensation to be paid to victims of oil pollution incidents. Like the 1984 CLC Protocol, this Protocol never entered into force, and has since been superseded by the 1992 Fund Protocol.

[185] The 1992 Fund Protocol, Article 4.

The 1992 Fund Protocol established the 1992 Fund[187] which is managed in London by a secretariat as with the 1971 Fund, under the 1992 Fund Protocol. The maximum amount of compensation payable from the Fund for a single incident, including the limit established under the 1992 CLC Protocol is 135 million SDR (about US $ 182 million). However if three states contributing to the Fund receive more than 600 million tones of oil per annum, the maximum amount is raised to 200 million SDR (about US$ 267 million).[188]

Beyond the 1992 amendments to the CLC and Fund Conventions which greatly enhanced the limits of liability, some further amendments were made by the 82nd session of the Legal Committee of the IMO. The latter amendments entered into force on 1 November 2003.[189]

In May 2003, a Diplomatic Conference adopted the 2003 Protocol on the Establishment of a Supplementary Fund for Oil Pollution Damage. The Protocol establishes an International Oil Pollution Compensation Supplementary Fund, which is meant to provide an additional, third tier of compensation for oil pollution damage. Participation in the Supplementary Fund is optional and is open to all contracting parties to the 1992 Fund Convention. However, those countries which do not join this Fund will continue to enjoy their present cover under the current CLC/Fund regime. The Protocol entered into force on 5 March 2005, limiting the total amount of compensation payable for any one incident to a combined total of 750 SDR (just over US $ 100 Million), including the amount of compensation paid under the existing CLC/Fund Convention.[190]

With regard to nuclear wastes pollution of the marine environment, mention may be made of the 1971 Maritime Carriage of Nuclear Material Convention.[191] This was the outcome of a Conference in Brussels in 1971 convened by the IMO in association with the IAEA and the European Nuclear Energy Agency of the Organization for Economic Co-operation and Development (OECD). The purpose of this Convention is to resolve difficulties and conflicts which arise from the simultaneous application, to nuclear damage, of certain maritime

---

Due to the denunciations of the 1971 Fund Convention, this Convention ceased to be in force on 24 May 2002. From 16 May 1998, members of the 1992 Fund ceased to be members of the 1971 Fund Convention due to a mechanism in the Protocol which established the 1992 Fund allowing for compulsory denunciation of the of the "old regime". See also article 31 of the 1992 Fund Protocol., Article 3.

The 1992 Fund Protocol, Article 3.

Ibid, Article 6, Para. (4).

See http://www.imo.org/legal/mainforce.asp accessed on 24.09.2012

Ibid. for detailed discussion on the 1992 CLC/Fund regime, see Edward H.P. Brans, "The Braer and the Admissibility of Claims for Pollution damage under the 1992 Protocols to the Civil Liability Convention and the Fund Convention" in *"Environmental Liability*, vol. 3 (1995), London Sweet and Maxwell, pp 6-69. ..

The 1971 Convention Relating to Civil Liability in the Field of Maritime Carriage of Nuclear Material (Brussels) 17 December 1971, in force 15 July 1975, misc. 39 (1972), Cmnd. 5094 (The 1971 Maritime Carriage of Nuclear Material Convention).

conventions dealing with ship-owners liability, as well as other conventions which place liability arising from nuclear incidents on the operators of the nuclear installations from which or to which the material in question was being transported.

The 1971 Maritime Carriage of Nuclear Material Convention provides that a person otherwise liable for damage caused in a nuclear incident shall be exonerated from liability if the operator of the nuclear installations is also liable for such damage by virtue of the Paris Convention of 29 July 1960 on Third Party Liability in the Field of Nuclear Energy[192] or the Vienna Convention of 21 May 1963 on Civil Liability for Nuclear Damage[193] or national law which is similar in the scope of protection given to the persons who suffer damage.

However, the 1971 Maritime Carriage of Nuclear Material Convention is not widely ratified, which is characteristic of nuclear related instruments. In fact, the earlier 1962 Brussels Convention on the Liability of the Operators of Nuclear Ships[194]is not in force and none of the states which license nuclear ships is a party. Unfortunately also, discharges of nuclear or radio-active material into the sea has cumulative rather than immediately catastrophic effects, thus making it harder to deal with issues of responsibility and liability.

As for responsibility and liability for marine pollution caused by or involving hazardous and noxious substances (HNS), early attempts were made by the IMO when it convened a conference in 1984 to consider a new instrument in this regard. However, the issue proved to be so complex that the attempt had to be abandoned. Owing also to the heavy commitments of IMO's Legal Committee, it was not until 1996 when the HNS issue was revisited. The 1996 HNS Convention[195] will make it possible for up to 250 million SDR to be paid out to victims of disasters involving HNS by sea such as chemicals. Once it enters into force the key risks in international maritime transport will all have been covered. The 1996 HNS Convention regime is quite similar in approach to the 1992 CLC/Fund regime.[196] The strict liability of the ship owner is channelled and limited in the same way, and contributions to the HNS Fund come from the receivers of HNS cargoes or from governments on their behalf. The

---

192 The 1960 OECD Convention on Third Party Liability in the field of Nuclear Energy, (Paris) 29 July 1960, in force 1 April 1968; 956 UNTS 251 (1960 Paris Convention). See also 1963 OECD Agreement Supplementary to the Paris Convention of 1960 on Third party liability in the field of Nuclear Energy, Brussels, 31 January 1963, in force 4 December 1974; 1041 UNTS 358 (as amended by 1964 Protocol) (1963 Brussels Supplementary Convention).

193 The 1963 Convention on Civil Liability for Nuclear Damage (Vienna) 29 May 1963, in force 12 November 1977; 1963 UNTS 265 (1963 Vienna Convention).

194 The 1962 Convention on the Liability of Operators of Nuclear Ships, (Brussels) 25 May 1962, not in force; 57 AJIL 268 (1963); 654.

195 The 1996 Convention on Liability and Compensation for the Carriage of Hazardous and Noxious Substances by Sea, 35 ILM (1996). (Not in force) (The 1996 HNS Convention).

196 Birnie, P, Boyle, A and Redgwell, C: *International Law and the Environment*, 3rd ed (2009) p. 440.

Convention applies to a range of noxious, dangerous or hazardous liquids, gases, substances and bulk substances as defined in the 1992 CLC Convention although oils listed in Annex 1 of MARPOL 1973/78 are included. Neither the 1992 CLC/Fund Conventions nor the 1996 HNS Convention covers bunker fuel, which is now governed by a March 2001 International Convention on Bunker Oil Pollution[197].

On a more general note, the 1972 London Convention also provides an "undertaking" for contracting parties to "develop procedures for the assessment of liability and the settlement of disputes regarding dumping."[198]

While the regime of global instruments for liability and compensation for marine pollution damage is extensive, detailed and complex as above demonstrated, it must be conceded that liability and compensation schemes necessarily follow the event. That is, pollution incidents occur, and thereby activate the liability and compensation schemes. Otherwise they operate pre-emptively in the sense that potential polluters and victims are aware of their potential liability and compensation schemes. With regard to their efficacy as instruments for the protection of the marine environment generally, and the high seas in particular, it may be argued that both their pre-emptive effect, and the rather punitive compensation levels serve to restrain any would be voluntary or negligent polluter. However, in the absence of empirical evidence of such effect, this proposition may be far-fetched or remote.

On the other hand, the multiplicity and complexity of the instruments and their arrangements makes the efficacy of this legal regime problematic as part of the legal protection of the high seas environment. The efficacy of its institutional arrangements is dealt with in the next chapter.

4.4.2 *Regional Instruments Concerning Responsibility, Liability and Compensation*

There are several important regional instruments which at least provide an article specifically on responsibility and liability and compensation for marine pollution damage. They include

---

The 2001 International Convention on Civil Liability for Bunker Oil Pollution Damage, 2001 *(http//www.imo.org/legal/mainframe.asp? topic_id358 assessed on 24.09.2012*

The Convention will establish a liability and compensation regime for spills of oil when carried as fuel in ships' bunkers as this is not provided for in current Conventions on oil spills. The Convention is modelled on the 1969 CLC.

The 1972 London Convention, Article X; 1996 Protocol to the 1992 London Convention, article 15.

most of the UNEP RSPs and others in all oceans and sea regions of the world.[199] Others include the 1960 Paris Convention (OECD); and the 1977 Seabed Mineral Resources Convention[200] which is not yet in force. Only states with coastlines on the North Sea, the Baltic Sea or Northern parts of the Atlantic may become parties.[201]

These regional instruments basically reaffirm the customary international and conventional rules on responsibility, liability and compensation for marine environment damage.

4.5 Conclusion

The chapter has sought to examine the efficacy of existing legal and policy instruments for the protection of the marine environment generally, and the high seas environment in particular. It has skimmed through numerous international (global and regional, soft and hard) instruments, which in various ways respond to the marine environmental problems under discussion. These include those dealing with the prevention, reduction and control of marine pollution and environmental degradation from various sources and activities; those dealing with marine pollution environmental emergencies; and those dealing with responsibility, liability and compensation for marine environmental damage. It is apparent from the preceding pages that there is indeed a huge number and variety of instruments ranging from the framework law for the seas and oceans, the 1982 UN Convention on the Law of the Sea, to regional instruments remarkable for their specificity and detail as to geographical coverage, subject (whether cause of pollution, type of intervention, and the like) and other pertinent details.

It is also noteworthy that notwithstanding the dichotomy of global and regional instruments, soft and hard law instruments, there is an inherent consistency and synergy created in the various rules contained in these instruments affecting the vast seas and oceans of the world. In fact, especially with regard to the legal instruments governing the UNEP-RSPs and the various IMO-related Conventions and most global soft law instruments, newer or more recent instruments seem to consistently build upon the foundation and principles of earlier ones.

---

199 See for example, the 1985 Nairobi Convention Article 15; the 1978 Kuwait Convention, Article XIII; 1982 Jeddah Convention, Article XIII; the 1981 Abidjan Convention, Article 15; the 1983 Cartagena Convention, Article 14; the 2002 Antigua Convention, Article 13; the 1976 Barcelona Convention, Article 12; the 1992 Helsinki Convention, Article 25; the 1992 Bucharest Convention, Article XVI; the 2003 Framework Convention for the Caspian Sea, Article 29; the 1981 Lima Convention, Article 11; and the 1986 Noumea Convention, Article 20.

200 The 1977 Convention on Civil Liability for Oil Pollution Damage Resulting from Exploration for and Exploitation of Seabed Mineral Resources (London) 1 May 1977, not in force, 16 ILM (1977), 1450.

201 Ibid., Article 18.

They remain remarkably true to the ideal of protecting the marine and coastal environment through the instrument of a well-ordered legal, policy and institutional framework.

However, there is a clearly discernible disparity between the scientific reality about the health of our seas and oceans and the plethora of largely well-written legal instruments, whose efficacy as frameworks for the protection of the high seas environment is doubtful. This disparity, as will become more apparent in the next chapter, is even more serious where global commons, including the high seas, are concerned. The high seas face critical and surmounting environmental problems, and yet there is a significant inadequacy of legal, policy and institutional responses to confront the problems. Whereas the legal and policy frameworks, taken as a whole, are generally commendable and adequate in their formulation, they are not as efficacious largely because the institutional machinery for enforcement and machinery is lacking or is otherwise inadequate. The next chapter examines the efficacy or otherwise of existing institutional arrangements for the protection of the high seas environment.

CHAPTER FIVE

The Efficacy of Existing Institutional Frameworks

5.1 Introduction

This chapter will examine the efficacy of existing environmental institutional frameworks for the high seas environment. It will cover relevant international environmental institutions, and particularly the institutions created under the 1982 UN Convention on the Law of the Sea, the UNEP, the IMO framework, and other frameworks, all with a bearing on the high seas environment.

Our thesis is that while there are clearly a large number of international environmental institutions, some with marine environmental mandates, none of them has a specific responsibility for the high seas environment. The 1982 UN Convention on the Law of the Sea appears to vest key enforcement competencies to states, notably flag and port states, leading to a large measure of "domestic jurisdiction" over the high seas. At the core of the problem with high seas governance is its legal status as defined under Part VII of the 1982 UN Convention on the Law of the Sea, with the "freedom of the high seas" being its most remarkable feature. The current institutional arrangements are in any event limited, weak, ineffective and inadequate, thus making a justification for the establishment of a focused regulatory and enforcement agency for this vital global commons.

It is argued that at the moment, the high seas environment, as a global commons, is the least protected under the current legal and institutional framework. By comparison, the common heritage resources in the International Sea Bed Area, which underlies the high seas, are subject to regulation by a strong international authority, which in this sense is unique among international instruments with environmental responsibilities. The founders of the 1982 UN Convention on the Law of the Sea, while "conscious that the problems of ocean space are closely related and need to be considered as a whole" nevertheless neither applied the common heritage regime to the waters above the deep sea bed, nor to the living resources found anywhere in the oceans.

There are two other arguments. Firstly, in spite of its imperfections, an international institutional framework with regulatory and enforcement powers is still the most viable practical vehicle towards the better protection of the high seas environment. The importance of adequate institutional machinery to oversee the implementation and enforcement of international environmental requirements cannot be over emphasized.

Secondly, in spite of its imperfections, the precautionary approach is still the most viable theoretical basis for the protection of the high seas environment. This latter argument will be elaborated in the next chapter.

Troubled Waters: A Ship without a Captain?

An examination of current high seas governance reveals three main problems, which are all inter- linked, and which largely explain the weak, ineffective and inadequate institutional arrangements for the high seas environment. These are: the legal status of the high seas, mainly characterized by the famous "freedoms of the sea"; the principle of state sovereignty; and the practical difficulties associated with regulating and managing an enormous, amorphous, and largely remote global commons. We shall examine each of these below.

Legal Status of the High Seas: Too Large Freedoms

Two conventions, the 1958 High Seas Convention and the 1982 Law of the Sea Convention, define the legal status of the high seas. As previously stated the 1958 High Seas Convention was an outcome of UNCLOS I, while the 1982 UN Convention on the Law of the Sea was the result of UNCLOS III. The provisions of the 1958 High Seas Convention were largely duplicated in Part VII of the 1982 UN Convention on the Law of the Sea. However, the latter introduced additional elements, such as a 200 nautical mile exclusive economic zone (EEZ), which is claimable by a coastal state, and which in the event of claim reduces the size or delimitation of the high seas. As Brownlie[1] correctly observes, "the EEZ is optional and by no means all states claim such a zone." He also notes, correctly in our view, that a significant proportion of the freedoms of the high seas are still applicable to the EEZ.[2] Moreover, the 1982 UN Convention on the Law of the Sea creates a special regime underlying the high seas, exclusively for the resources of the sea bed and subsoil beyond the limits of national jurisdiction,

---

[1] Brownlie, I. *Principles of Public International Law*, 5th ed (1998), p.229

[2] Ibid; citing Articles 58 and 86 of the 1982 UN Convention on the Law of the Sea.

which are placed under the control and management of the ISA.[3] Activities in the sea bed Area have significance to the high seas environment. Other elements under the 1982 UN Convention on the Law of the Sea include an expanded list of freedoms of the high seas;[4] enlarged justifications for boarding and searching ships on the high seas, as well as other matters concerning jurisdiction over ships on the high seas.[5]

Significantly, the 1982 UN Convention on the Law of the Sea also has provisions under its Part XII, concerning the duties of states in respect of the protection and conservation of the marine environment, including the high seas, from various sources including discharge of oil into the sea by ships.[6]

In view of the foregoing, in the present study, we shall primarily make reference to the 1982 UN Convention on the Law of the Sea as the authoritative source of legal rules affecting the status of the high seas. In that respect, Article 86 of the 1982 UN Convention on the Law of the Sea provides as follows:

> The provisions of this [Part VII] apply to all parts of the sea that are not included in the EEZ, in the territorial sea or in the internal waters of a State, or in the archipelagic waters of an archipelagic State. This Article does not entail any abridgement of the freedoms enjoyed by all states in the EEZ in accordance with Article 58.

5.2.2 *Freedoms of the High Seas*

The hallmark of the high seas regime is the concept of "freedom of the high seas." Traditionally and historically, as discussed in chapters 1 and 3, the open seas were regarded as open and free to all states and peoples, (*mare liberium* as opposed to *mare clausum*). The high seas are also not open to acquisition by occupation by states individually or collectively: it is *res extra commercium*. The high seas remained in theory and practice under the *mare clausum* regime for two centuries until the 1958 Geneva Conventions were adopted following UNCLOS I. The 1958 Geneva Conventions, and particularly the 1958 High Seas Convention, essentially upheld the customary law position on the freedom of the high seas. Thus, high seas freedoms in their customary largeness found expression in the earliest conventions on the governance of the seas. Conversely, in general, UNCLOS I did not give protection of the

---

3 Ibid.; see Part XI of the 1982 UN Convention on the Law of the Sea.
4 1982 UN Convention on the Law of the Sea, Article 87 (1).
5 Ibid., Articles 92, 94, 109, 110.
6 Ibid., Articles 192-237.

marine environment any special importance and naturally the 1958 Geneva Conventions say little on the subject. Of significance in this regard are articles 24 and 25 of the 1958 High Seas Convention, which require states to prevent oil pollution from ships, pipelines and seabed activities, as well as pollution from radioactive substances. However, as Birnie, Boyle and Redgwell correctly observe, "they fall short of acknowledging a more comprehensive duty to prevent marine pollution or protect the marine environment, and offer no definition of the term "pollution."[7] Moreover, according to the same authors, the content of even these limited obligations was uncertainly defined, leaving states with much discretion concerning the measures they could take to protect the marine environment.[8]

Articles 24 and 25 of the 1958 High Seas Convention did rather loosely refer to states "taking account (of) existing treaty provisions" (notably the 1954 International Convention for the Prevention of the Sea by Oil[9]), and also "any standards and regulations which may be formulated by the competent international organizations," perhaps referring at the time to the regulations on disposal of radioactive wastes adopted by the International Energy Atomic Agency (IAEA).[10] The loose formulation of environmental protection standards and obligations belied the bias of the states at the time in favour of the freedoms of the high seas. It is arguable that this state of affairs, which was seemingly acceptable at the time of UNCLOS I and II, gave prominence to high seas freedoms at the expense of the protection of the marine environment. It may also be observed that at the time, the importance of protection of the marine environment, including the high seas, had not gained prominence, and it seemed expedient to retain the traditional large freedoms of the high seas.

Moreover, according to Birnie, Boyle and Redgwell, "in practice, the 1958 Geneva Conventions seemed to suggest that states enjoyed substantial freedom to pollute the oceans, moderated only by the principle that high seas freedoms must be exercised with reasonable regard for the rights of others."[11] Indeed, the 1954 London Convention did not entirely

---

7. Birnie, P, Boyle, A and Redgwell, C: *International Law and the Environment*, 3rd ed (2009), p 390.
8. Ibid
9. The 1954 London Convention, 327 UNTS 3; UKTS 54(1958).
10. Ibid.
11. Ibid.; p 386-387.

prohibit discharges of oil from ships at sea but sought to minimize operational discharges of oil, and the IAEA's regulations permitted the disposal of low-level radioactive waste.[12]

An important feature of the 1958 Geneva Conventions, and particularly the High Seas Convention, was the absence of any institutions mandated for the governance of the high seas. Thus, just like for the 1982 UN Convention on the Law of the Sea, it was a case of "obligations without institutions," or of a "ship without a captain." This could only weaken further the already loosely worded standards and obligations for the protection of the marine environment.

The 1982 UN Convention on the Law of the Sea, the key outcome of UNCLOS III, introduced more strongly worded obligations to protect the marine environment, thereby potentially and significantly constraining the high seas freedoms. It replicated, and expanded most of the freedoms of the high seas expressed in the 1958 High Seas Convention.[13] It also introduced more detailed provisions on the protection of the marine environment generally, and particularly for the high seas. Article 87 of the 1982 UN Convention on the Law of the Sea, entitled "freedom of the high seas" provides as follows:-

1. The high seas are open to all States, whether coastal or land locked. Freedom of the high seas is exercised under the conditions laid down by this Convention and by other rules of international law. It comprises, *inter-alia,* both for coastal and land-locked States:
   (a) Freedom of navigation;
   (b) Freedom of over flight;
   (c) Freedom to lay sub-marine cables and pipelines, subject to Part VI;
   (d) Freedom to construct artificial islands and other installations permitted under international law, subject to Part VI;
   (e) Freedom of fishing, subject to the conditions laid down in section 2;
   (f) Freedom of scientific research, subject to Parts VI and XIII.

   These freedoms shall be exercised by all States with due regard for the interests of other States in their exercise of the freedom of the high seas, and also with due regard for the rights under this Convention with respect to activities in the Area.

---

[12] Ibid., p 387, 1954 London Convention article...; and IAEA Regulations, Annex 1 para 6; Annex II, para (d) . The 1954 London Convention, *inter-alia,* established "prohibited zones" extending at least 50 miles from the nearest land in which the discharge of oil or of mixtures containing more than 100 parts of oil per million was forbidden. It also required Contracting Parties to take all appropriate steps to promote the provision of facilities for the reception of oily water and residues. In 1962, IMO adopted amendments to the Convention which extended its application to ships of a lower tonnage and also extended the "prohibited zone".

[13] 1958 High Seas Convention, Art 2.

Elsewhere, under Articles 88 and 89 of the 1982 UN Convention on the Law of the Sea, two important qualifications to the freedoms of the high seas are provided respectively: the high seas are reserved for peaceful purposes, and claims of sovereignty over any part of the high seas are invalid.

The above provisions merit some comment. Firstly, as already stated, the Articles not only replicate but more importantly expand the list of freedoms of the high seas, while clearly indicating by the use of the term *"inter-alia"* that the list is not exhaustive. The 1958 High Seas Convention lists four freedoms, namely navigation, fishing, laying of sub-marine cables and pipelines and freedom of over flight. Secondly, the freedoms of navigation and over flight are framed as absolute in both Conventions: they are not qualified, as is the case with all other freedoms under the 1982 UN Convention on the Law of the Sea. The other two freedoms expressed under the 1958 High Seas Convention are expressed with conditions or limitations under the 1982 UN Convention on the Law of the Sea. This means that the framers of the latter Convention perceived the freedoms of the high seas as being generally elastic, and therefore expanded their definition.

Thirdly, they also understood that the freedoms of the high seas had to be constrained by other provisions and Parts of the Convention. Nevertheless, they did not categorically delimit the freedoms of the high seas on environmental grounds, such as subjecting them to the provisions of Part XII of the Convention. It is apparent, though, that under the 1982 UN Convention on the Law of the Sea, pollution or other environmental degradation can no longer be regarded as an implicit freedom of the seas, but rather as a matter of comprehensive legal obligation affecting the marine environment as a whole.[14] Moreover, the emphasis is no longer placed on responsibility or liability for environmental damage, but rather on international regulation and cooperation focused on protection of the marine environment.[15]

Fourthly, the 1982 UN Convention on the Law of the Sea does not subject the freedoms of the high seas to any institutional oversight or authority. Rather, it provides various obligations to the State Parties, including setting conditions for nationality of ships, their registration and right to fly the flags of the states concerned.[16] In this regard, "ships have the nationality of the

---

14 Birnie, P, Boyle, A and Redgwell,C: *International Law and the Environment*, 3rd ed (2009), p. 393.

15 Ibid.

16 1982 UN Convention on the Law of the Sea, Article 91(1).

State whose flag they are entitled to fly."[17] The Convention also provides extensive provisions on duties of the flag State.[18] We shall revert to the issues concerning nationality of ships when considering the question of sovereignty, in the next section below.

Finally, and without a doubt, the exercise of any of the freedoms of the high seas as expressed under Article 87 of the 1982 UN Convention on the Law of the Sea has actual or potential environmental consequences, many of which have already been discussed in preceding chapters. The absence of an organization or institution with clear or comprehensive mandates over the high seas environment arguably imperils this vital global commons.

5.2.3 State Sovereignty

The concept of state sovereignty and its application is well established in international law, and its importance cannot be gainsaid. Neither can we overemphasize the current challenges to this time honoured pillar of international law.[19] However, in the present context, we have identified it as one of the problematic issues in the high seas environment. How is state sovereignty a problem afflicting the protection of the high seas environment?

Firstly, it creates "competing national jurisdictions in the high seas". This is mainly through the flagship of ships and other vessels in the high seas. Since, as previously noted, ships have the nationality of the State whose flag they are flying, and there must always be "a genuine link between the State and ship"[20] it is arguable that in that limited sense a State which has a ship on the high seas claims sovereignty, albeit transiently, of the portion occupied by the vessel. In that respect, the major shipping nations end up with significant pockets of "national jurisdiction" in the high seas. In the absence of oversight or regulatory environmental institutions of an international nature to ensure accountability, any environmental malfeasance by ships flying national flags could easily go undetected or unattended.

Secondly, state sovereignty could lead to actual or potential resistance to any bilateral or multilateral intervention in the event of environmental damage on the high seas. In other words, a state can claim sovereignty with respect to its actions on the high seas and assert its right to exercise its freedoms on the high seas without undue interference by other states. In

---

17 Ibid.

18 Ibid.; Article 94.

19 See, generally: Brownlie, I :*Principles of Public International Law*, 5th ed (1998), especially Chapters VI, VII,VIII,XIV,XV; Oppenheim, L: *International Law*, vol. 8th ed (1955); Starke, J.G: *An Introduction to International Law*, 9th ed (1988).

20 1982 UN Convention on the Law of the Sea, Article 91(1).

the 1974 Nuclear Test Cases[21], where Australia and New Zealand complained against France concerning interference with the high seas freedoms of all states, the ICJ declined to uphold the notion of an *actio popularis* allowing high seas freedoms to be enforced by any state. This was in spite of the generally accepted position in international environmental law that obligations of global environmental responsibility may have an *erga omnes partes* character, in the sense that they are owed to all states acting through collective institutions of treaty supervision.[22]

Thirdly, largely due to their sovereignty, states are often the primary actors, though by no means the only ones, in international environmental law. This is generally consistent with the Westphalian myth of unimpaired freedom of action or inaction attributed to the state.[23] Though this rather old conception of the state has changed somewhat over time, states have remained as the primary authors, addressees and guardians of international environmental law.[24] Other players such as international organizations, non-governmental organizations and civil society, commercial actors and individuals play more secondary and sometimes contentious roles in international environmental law and governance. Consequently, it is often the case that, in the high seas, states act first and foremost in their national interest and not in the collective or "international" interest. In spite of the proliferation of international environmental institutions, some with high seas mandates, states have not made use of these institutions by transferring sovereign powers to them, but have rather relied on them as law-making forums. Thus there has only been only a very limited transfer of responsibility to international environmental institutions.[25]

3.2.4 *Expansiveness of the High Seas*

The high seas are the world's largest expanse of common space,[26] occupying about 60% of the oceans and boasting some of the richest biodiversity. Unfortunately, the high seas face serious threats from anthropogenic activities such as irresponsible fishing, shipping activities, pollution and climate change. And yet there is no comprehensive policy or management

---

21 ICJ Reports (1974) 253,457

22 Birnie, P, Boyle, A and Redgwell, C: *International Law and the Environment*, 3rd ed . (2009), p. 145. See also the dissenting opinion of Judge Weeramantry in the *Gabcikovo-Nagymaros Case*, ICJ Reports (1997) 7.

23 Thilo Marauhn: "Changing Role of the State", in Bodansky,D, Brunee,J and Hey,E (Eds):*The Oxford Handbook of International Environmental Law* (2007), p.728-729.

24 Ibid., pp 733-736.

25 Ibid., p 741.

26 Birnie, P, Boyle, A and Redgwell, C: *International Law and the Environment*, 3rd ed (2009), p. 379.

framework to govern the high seas, and its basic laws are based on 17th century notions of open access.[27] While technological advances have largely overcome past limitations in monitoring and enforcement of ocean governance regimes, including the high seas, political will to commit resources and undertake measures for the protection of the high seas environment has been lacking.[28]

The foregoing scenario leaves a large part of the vast high seas unattended and unregulated.

5.3 The 1982 UN Convention on the Law of the Sea Institutions and the High Seas Environment

The 1982 UN Convention on the Law of the Sea, as previously pointed out, is primarily concerned with establishing a framework global legal regime governing all aspects of the uses of the oceans. This includes environmental protection. However, it is apparent that, both its rules for environmental protection and the institutions established under it are too generalist[29] and fall short of adequate or effective protection of the high seas environment. The Convention has not established a clear enforcement, regulatory or supervisory mechanism or authority for the high seas environment or indeed for the entire marine and coastal environment. It has entrusted the primary responsibility of enforcement of its environmental provisions on states parties which may be coastal states, flag states or port states.[30]

States are expected to take individual or joint responsibility to enforce the obligations set out in the Convention. Even the exact magnitude of the obligations of the states, which is clearly very extensive, is not spelt out. Some of these obligations include "to protect and preserve the marine environment"[31]; to prevent, reduce and control pollution of the marine environment;[32] global and regional cooperation;[33] technical assistance;[34] monitoring and environmental assessment;[35] and to develop international rules and national legislation to prevent, reduce and control pollution of the marine environment;[36] Others deal with enforcement;[37] safeguards;[38]

---

27 See "10 Principles of High Seas Governance", in *www.iucn.org,accessed 18. 09. 2012.*

28 Ibid.

29 Birnie, P, Boyle, A and Redgwell, C: *International Law and the Environment*, 3rd ed (2009), p. 382

30 1982 UN Convention on the Law of the Sea, Articles 192,193,194-208,213,216.

31 Ibid , Article 192.

32 Ibid., Article 194.

33 Ibid., Articles 197-201.

34 Ibid ,Articles 202-203.

35 Ibid., Articles 204-206.

36 Ibid., Articles 207-212.

ice covered areas;[39] responsibility and liability;[40] sovereign immunity;[41] and obligations under other conventions on the protection and preservation of the marine environment.[42]This may be apparently due to the principle of state sovereignty, discussed above, and a desire by the dominant players in the making of the Convention, to preserve or perpetuate national self-interest in the articulation of the high seas regime. In any case, as the primary holders of the freedoms or rights of the high seas, as well as other maritime zones, states also have concomitant responsibilities, and breach of this entails the duty to make reparation.[43] In this regard, Article 235(1) of the 1982 UN Convention on the Law of the Sea provides that "States are responsible for the fulfilment of their international obligations concerning the protection and preservation of the marine environment", and "they shall be liable in accordance with international law."

On the other hand, Part XII of the 1982 UN Convention on the Law of the Sea repeatedly refers to "competent international organizations" or "diplomatic conference" in the context the states' obligations for global or regional co-operation,[44] technical assistance,[45] monitoring and environmental assessment,[46] international rules and national legislation to prevent, reduce and control pollution of the marine environment,[47] enforcement[48] and safeguards,[49] without any specificity as to what or which they are. Obviously, Part XII concerns the entire marine environment and not just the high seas. But this lack of specificity only makes it worse. Which are the "competent international organizations" or "competent diplomatic conferences"? Who determines competence in this regard? What is the measure of such competence? There do not seem to be ready answers to the foregoing questions. It is arguable that, with regard to the high seas environment in particular, "competent international organizations or diplomatic conference" means virtually any international organization or

---

39 Ibid., Article 213-222

40 Ibid.,Articles 223-233.

41 Ibid., Article 234.

42 Ibid., Article 235.

43 Ibid., Article 236.

44 Ibid., Article 237.

45 According to Judge Huber in the *Spanish Zone of Morocco Claims*(*RIAA ii*, 615at 641: "Responsibility is the necessary corollary of a right. All rights of an international character involve international responsibility. If the obligation in question is not met, responsibility entails the duty to make reparation". For more detailed discussion on state responsibility, see Brownlie, I: *Principles of Public International Law*, 5th ed (1998), p.443-478.

46 1982 UN Convention on the Law of the Sea, Articles 197,198,199,200 and 201.

47 Ibid., Articles 202 and 203.

48 Ibid., Articles 204,205 and 206

49 Ibid., Articles 207(4), 208(5), 210(4), 211(1),(2),(3), and (5), and 212(3).

Ibid., Articles 213, 214, 216(1), 217(1),(4) and (7), 218(1), 220(7), and 222.

Ibid., Article 223.

diplomatic conference which defines or claims for itself, or is identified or claimed by others, to have such competence. The "competent international organizations or diplomatic conferences" are clearly diffuse and implied in the Convention. It could have helped if the framers of the 1982 UN Convention on the Law of the Sea had been explicit on these or at least the most obvious of these organizations and their specific mandates, even if in an annex. As presently given, this is a rather awkward institutional uncertainty, which may lead to a "free-for-all –but- no- responsibility- for –any- or –all" with regard to the protection and preservation of the high seas environment.

Moreover, the general mandates of "competent international organizations or diplomatic conference", provided in typically general and imprecise terms under Part XII of the 1982 UN Convention on the Law of the Sea, include rule and standard setting, as well as providing forum for cooperation and coordination at the global or regional levels.[50] The primary obligations for implementation and enforcement remain with the states.[51]

Since the 1982 UN Convention on the Law of the Sea was framed as a package deal framework convention, it necessarily anticipated and deliberately provided for other institutions not created by it to carry out some of its mandates. These institutions would invariably be both global, regional and even sub regional. By necessary implication and practice, some of these "competent international organizations or diplomatic conferences" include the UNEP, dedicated exclusively to international environmental matters; the International Maritime Organization(IMO), which provides the principal forum for further law making with respect to pollution from ships; the Food and Agriculture Organization (FAO), which oversees the further development of fisheries law; the International Atomic Energy Agency (IAEA), which is responsible for atomic or nuclear energy regulation; and the United Nations Educational, Scientific and Cultural Organization-Inter-Governmental Oceanographic Commission(UNESCO-IOC), responsible for oceanographic research. We shall discuss relevant aspects of some of the foregoing organizations in some detail below.

Moreover, implied competent "diplomatic conferences" include the 1992 UN Conference on Environment and Development (1992 RIO Conference or Earth Summit); the Commission on

---

50 Ibid., Part XII generally.

51 However, in some cases, the "competent international organizations" seem to have implementation mandates, such as contingency plans against pollution."States in the affected area...and competent international organizations shall cooperate...in eliminating the effects of pollution and preventing and minimizing the damage." (Ibid., Article 199)

Sustainable Development(CSD); the Conference of Parties to the 1992 Convention on Biological Diversity (CBD); the UN General Assembly(UNGA), and the Informal Consultative Process on the Law of the Sea, among others.

On its part, the 1982 UN Convention on the Law of the Sea establishes three key institutions all with varying but rather peripheral levels of relevance to the high seas environment: the Commission on the Limits of the Continental Shelf;[52] the International Seabed Authority (ISA);[53] and the International Tribunal for the Law of the Sea (ITLOS).[54] The first two institutions cover the governance of specific maritime zones while the third one is for the resolution of maritime disputes generally.

The Commission on the Continental Shelf does not have any explicit environmental mandate neither for the continental shelf (including where it seems to overlap with the area) nor for the high seas, and particularly the superjacent waters above the extra 150 nautical mile continental shelf. The environmental mandate for the continental shelf belongs to the coastal state rather than the Commission on the Limits of the Continental Shelf.[55] It may well be argued and rightly so, that the makers of the 1982 UN Convention on the Law of the Sea never intended, in establishing the Commission, to ascribe to it environmental mandates. It could also be argued that the environmental mandate is implied in the Commission's function of providing "scientific and technical advice" and in its cooperation with UNESCO-IOC, the International Hydrographic Organization or other "competent international organizations" with a view to exchanging scientific and technical information" relevant to the Commission's mandate.[56] However, to the extent that there are almost invariably environmental consequences for entering into or laying claims upon the ocean space, it would have been necessary, at any rate to ascribe an environmental mandate to this body.[57] Alternatively the 1982 UN Convention on the Law of the Sea could have established an institution with a clear environmental mandate, especially to take care of the global commons.

---

52 Ibid., Part VI (Articles 76-85); Annex II.

53 Ibid., Part XI (Articles 156-185).

54 Ibid., Annex VI.

55 Ibid., Article 79(2).

56 The 1982 UNCLOS, Annex II, Article 3(1)(b) and (2).

57 For interesting jurisprudence on the continental shelf, though not relevant to environmental issues, see *Land and Maritime Boundary between Cameroon and Nigeria*, I.C.J.Reports (2002);*Delimitation of the Maritime Boundary in the Gulf of Maine Area(Canada vs. U.S.A)* I.C.J Reports(1984),*Continental Shelf(Libyan Jamahiriya vs Malta)* I.C.J Reports 1985,p.47.

As for the ISA, to a certain extent it has an environmental mandate, at least with respect to the Area, but none over the high seas.[58] Indeed, since high seas waters are to a large extent superjacent to the Area, an express mandate of the Authority and particularly its Assembly or Council on environmental matters could have given voice and visibility to the high seas environment. The ISA, and particularly the Council and its Legal and Technical Commission, has powers to control, prohibit or reduce pollution of the marine environment caused by activities in the Area.[59]

However, considering the Council's scientific and technical nature, its interests' based and relatively small composition, its seeming reliance on the Assembly for political action, all accounting for a significantly diminished profile and visibility, it may not have the clout to significantly champion the cause of the marine environment generally, or even the Area or the high seas for that matter. The result might be that the otherwise well-intentioned provisions on marine environmental protection vested in the ISA may not find effective enforcement or implementation. In any case, since the Authority has not yet become operational in relation to activities within the Area, those provisions may also be as yet unimplemented. However, as Sands and Kleine observe, the Authority's implications for future activities and for an enhanced role for international organizations more generally, are beginning to be felt.[60] As evidence of this, in the award of the Court of Arbitration in the St Pierre and Miquelon case[61], between Canada and France, concerning the delimitation of the maritime area between the two states, the Court ruled that it could not delimit the area over the continental shelf beyond 200 nautical miles because to pronounce a delimitation would involve a delimitation "not 'between the Parties' but between each one of them and the international community, represented by organs entrusted with the administration and protection of the international seabed area (the sea- bed beyond national jurisdiction) that has been declared to be the

---

According to Wood, M.C, "The Authority does not have a general mandate as regards the protection of the marine environment in the Area..It is of course true that, in addition to mining, threats to seabed ecosystems may derive 'from a number of activities, such as marine scientific research, bio-prospecting, oil and gas exploitation, geothermal exploitation and tourism' but (to the extent that such activities take place in the Area at all) it does not follow that the Authority is competent in relation to the environmental consequences of these activities."(Wood, M.C: The International Seabed Authority's Fifth to Twelfth Sessions (1999-2006)," in Bogdandy, A and Wolfrum, R (eds), *Max Planck Yearbook of United Nations Law*, (UNYB) Vol 2, 2007, p 47-98.(*http://www.mpil.de/shared/data/pdf/pdfmpunyb/02_wood_11.pdf, accessed 24.09.2012.*

59 1982 UN Convention on the Law of the Sea, Article 162(2)(w),(x);Article 165.

60 Sands, P. and Kleine P. *Bowett's Law of International Institutions* (2001) p. 139.

61 Award of 10 June, 1992, 95 ILR 545 at 647.

common heritage of mankind. This court is not competent to carry out a delimitation which affects the rights of a party which is not before it."[62]

Thus, as a whole the ISA comes close, at least theoretically, to elaborating a marine environment protection regime with a sound international institutional structure for effective protection of the marine global commons. However, it is largely untested in this regard and was not even designed for the high seas. Nevertheless it provides a credible institutional model.

Finally, the ITLOS, which is a tribunal for the settlement of disputes under the Convention, seemingly has broad jurisdictions, including over the marine environment.[63]

It provides an important model for the elaboration of judicial or dispute resolution provisions for the proposed high seas institutional arrangements in chapter 7.

5.4 The UNEP and the High Seas Environment

The UNEP was established in 1972 by G.A res.2997 (XXVII) (1972) following the 1972 Stockholm Conference, and it has since continued to exercise the global environmental mandate. Its constituent instrument commits it to promote international environmental cooperation, to provide policy guidance for the direction and coordination of environmental programmes within the UN system, and to receive and review reports from the Executive Director of the UNEP. Other mandates include reviewing the world environment situation, to promote scientific knowledge and information and to contribute to technical aspects of environmental programmes, and keep under review the impact of national and international environmental policies on developing countries. Its key programme themes are: environmental assessment, management, and supporting measures. Its most significant contribution is in the realm of international environmental law making both through formal global and regional instruments and soft law instruments.[64]

---

62 Ibid.

63 1982 UN Convention on the Law of the Sea, Annex VI, article 21.

64 See http://www.unep.org; Petsonk, "The Role of the UNEP in the Development of International Environmental Law", 5 Am.U.J. of International Law and Policy 351 (1990); Sands P, and Klein,P: *Bowett's Law of International Institutions* 5th Ed (2001), pp72-73;Bodansky D,Brunnee,J and Hey E. (Eds): *The Oxford Handbook of International Environmental Law* (2007), pp2-3, 34.

According to Sand,[65] the UNEP "continues to serve as the centrepiece of environmental activities within the UN family of organizations", and although it did not originally have a formal international legislative mandate, it has nevertheless succeeded in initiating and negotiating no less than 48 multilateral environmental conventions and protocols since 1976 initially through diplomatic conferences convened under its auspices and subsequently in the context of the Montevideo Programme.

The UNEP's main role is generally that of a catalyst for action by other institutions or by states. It normally undertakes studies or enquiries into environmental problems and elaborates programs, but implementation is usually undertaken by the UN as a whole, often with the aid of regional governmental or non-governmental organizations and individual states.

The UNEP's mandate on management of the environment includes the legal and policy regulation of human activities that have any measurable impact on the environment. In this regard UNEP has over the decades played a pivotal role in the development of various instruments of environmental law. On the marine environment, as early as 1974, UNEP adopted a regional approach to the management protection of the oceans and seas of the world. This led to the development of the RSPs, discussed in Chapter 4. Under this regional approach, various regional treaties and protocols and action plans for different maritime regions have been established and operationalized.[66]

It appears that for all its benefits, the UNEP's regional approach to the management and protection of the marine environment is inadequate to protect the high seas. Thus the high seas are a neglected area for intervention. In other words, UNEP's traditional regional approach to marine environmental issues has led to a situation where the marine global commons-the high seas, seabed Area and the Antarctic- do not seem to be within the UNEP's direct ambit. In particular, the UNEP does not seem to have a high seas environmental programme. The regional approach, whatever its merits, which we shall discuss in detail in chapter 6 is simply not designed to deal with high seas environmental problems. Their regional orientation confines them to the relatively narrow interests and frontiers of contracting parties to the various regional treaties. As was detailed in chapter 4, the areas of application for the RSPs conventions, protocols and action plans are their coastal and marine

---

[65] Sand, P.H: "The Evolution of International Environmental Law", in Bodansky D,Brunnee,J and Hey E. (Eds): *The Oxford Handbook of International Environmental Law* (2007), p30-43, at p 34.

[66] See chapter 4 above

environments within the scope of each country's national jurisdiction; coastal and sometimes river basins, territorial waters and contiguous zones, continental shelf and the EEZ.

A practical approach would be for States, through UNEP, along or in concert with other institutions with corresponding mandates in the marine environment, such as the IMO, FAO, ISA, IAEA and UNESCO–IOC to construct a specialized regime for the high seas environment. The high seas, after all, are collectively much larger than the areas within national jurisdiction, even after taking into account the "encroaching jurisdiction" engendered by the 1982 UN Convention on the Law of the Sea provisions as to EEZ and the continental shelf. The challenge and opportunity is for the UNEP to take a leadership and cataclysmic role in this regard. However, it is clear that UNEP's institutional form is rather weak as it remains a Programme of the UN, without its own dedicated decision making institutions comparable, for example, to the ISA or the UN itself.

5.5 The IMO and High Seas Environment

The IMO (formerly IMCO) was established in 1948 and transformed its name to the present one in 1982.[67] Its constitutional mandate broadly is to promote the general adoption of the highest practicable standards in matters concerning maritime safety, efficiency of navigation and prevention and control of marine pollution from ships."[68]

IMO's framework of conventions and soft law instruments are primarily concerned with safety in international shipping and the control of marine pollution from ships and other vessels, but they do not establish any international enforcement or regulatory authority for the high seas. Much of the responsibilities and obligations defined in these instruments devolve to coastal states, flag states and port states. On the other hand, and more importantly for this discussion, the IMO is implied as a "competent organization" for the international regulation of shipping under the 1982 UN Convention on the Law of the Sea.[69]

---

[67] The Convention on the International Maritime Organization (Geneva), 289 UNTS 48; UKTS 54 (1950), Cmnd.589; 53 AJIL (1948)516. (In force 17 March 1958). A provisional Maritime Consultative Council was established in 1946 and a UN Maritime Conference in February-March 1948 drew up the Convention of the Inter-governmental Maritime Consultative Organization (IMCO).There was considerable delay in securing the 21 requisite ratifications, seven of which have to be nations with one million gross tons of shipping. The Convention did not enter into force until 1957.In 1982 the name of the Organization was changed to IMO upon entry into force of the 1975 amendment to the 1948 Convention (Sands P. and Klein P.: *Bowett's Law of International Institutions*, 5th Ed. (2001),p. 102).The IMO Convention itself has also been amended in 1964,1965,1974,1977 and 1979.

[68] Ibid., Article 1.

[69] See for example, Articles 211,217,218 also The IMO: Implications of the entry into force of the UNCLOS for the IMO, LEG/MISC/2 (1997).

However, it is observed that the flag state, coastal state and port state jurisdictions defined in the various IMO Conventions and even the 1982 UN Convention on the Law of the Sea have their own limitations, including imperfect or imprecise definitions and limited application. According to Birnie, Boyle and Redgwell, when flag jurisdiction seemed too imperfectly defined and the coastal states powers seemed too limited, the MARPOL 73/78, one of the IMO conventions, and the 1982 UN Convention on the Law of the Sea seemed to address the problem by extending the enforcement powers of coastal and port states at the expense of the flag state's exclusive authority, and by re- defining and strengthening the latter's obligations towards the protection of the marine environment.[70] The result is a relatively complex structure of authority over maritime activities which try to reconcile the potentially conflicting interests of effective enforcement of environmental regulations on one hand, with the primary concern of maritime states' freedom of navigation on the other.[71]

As was pointed out in chapter 4, the IMO has to its credit numerous maritime conventions concerned with safety at sea,[72] compensation and liability,[73] and marine environmental protection. Indeed the adoption of maritime conventions is still IMO's most visible responsibility and achievement.[74] The organization has also introduced a series of measures including technological innovations designed to prevent accidents or minimize marine pollution due to oil or other contaminants such as hazardous chemicals and other toxic wastes. All these have direct implications on the high seas environment.

Over the years, the IMO has benefited from technological advances that allowed major improvements to the maritime distress system. In the 1970s it introduced a global search and rescue system and began to use the International Mobile Satellite Organization (INMARSAT),[75] which greatly improved radio and other ship communications. In 1992 the Global Maritime Distress and Safety System was made operational. With this innovative technology, a ship in distress anywhere in the world can be guaranteed assistance even if its crew does not have time or opportunity to radio for help as the distress signal is transmitted

---

70 Birnie, P, Boyle, A and Redgwell, C: *International Law and the Environment*, 3rd ed (2009) p.77

71 Ibid.

72 For example, the 1974International Convention for the Safety of Life at Sea (SOLAS.), 1184 *UNTS* 2

73 For example the 1969 Liability Convention (973 UNTS 3); the 1971 Nuclear Liability Convention (Misc. 39(1972) Cmnd 5094); and the 1971 Fund Convention, 11 ILM (1972) 284.

74 For example the 1969 Intervention Convention; the 1972 London Dumping Convention and its 1996 Protocol convention, the 1973/78 MARPOL and the 1990 OPRC.

75 It was through IMCO that in 1976 IN MARSAT was established as a separate entity.

automatically.[76] These technological capacities are key institutional strengths of the IMO in its oversight of the marine environment including on the high seas.

In its institutional set up, the IMO has a Marine Environment Protection Committee which has certain environmental mandates. Among others, it is to consider matters within the scope of the IMO concerned with marine pollution and particularly to perform functions conferred upon the IMO by or under international conventions for the prevention and control of marine pollution from ships. It is also to consider measures to facilitate the enforcement of such conventions and to "provide for the acquisition of scientific, technical and any other practical information on the prevention and control of marine pollution from ships for dissemination to states...and where appropriate, make recommendations and develop guidelines."[77]

Some interesting issues arise from the IMO's institutional and jurisdictional features which bear on its efficacy as a custodian of the high seas environment. Firstly, the IMO comes out as the premier global institution concerned specifically with key marine mandates, including the marine environment, international commercial shipping and maritime safety. In fact IMO seems to have an institutional monopoly over international maritime safety and shipping, even elaborating legal, technical and other standards, including a detailed liability and compensation scheme. In this respect, it may well be held that the IMO has the most "hands on" grasp of the maritime environment, politically, technically, and legally. Unlike the UNEP and other institutions, which somewhat deal with the marine environment "from the shores", the IMO seems to be present and "sailing" in the waters, mainly through the many legal and technical rules, monitoring and assessment programmes, and the use of modern technologies to track international shipping. This "presence" is also partly reinforced by the fact that the most important or influential shipping or trading nations are involved at the core of political, administrative and operational decision making in the IMO, thus creating an element of ownership and commitment.

Secondly, the IMO's constitutional features demonstrate the point that this is an established international organization with the hard ligaments necessary for effective presence and action.[78] Its history is relatively long, coming so soon after World War II and perhaps borne out of the realization that effective regulation of international shipping was necessary to make

---

Kiss A and Shelton D. *International Environmental Law* (2004), p.70.

Ibid., Article 38.

The Convention on the International Maritime Organization (Geneva), 289 UNTS 48; UKTS 54 (1950), Cmnd.589.

the world more secure and safe and to enhance the prospects of economic and commercial prosperity for the world in the wake of the devastations inflicted by World War II. At any rate, the major world powers of the time were also vitally interested in international shipping both commercial and naval. Coincidentally, as was discussed in chapter 3, there was increasing global interest in the seas and oceans of the world generally.

The IMO's institutional framework seems to have worked well over the six decades of existence, providing much needed institutional backbone for its vast mandates over the seas and oceans. In terms of institutional features the IMO, as a UN specialized agency, is clearly superior compared to the UNEP, which as pointed out earlier, is still a UN Programme directly reporting to the UNGA and subject to the administrative control of the UN Secretary General. Equally important is that its 1948 Convention, as amended over the years, provides it with constitutional stability and enables it to identify its core mandates and jurisdictions as well as its operational parameters. As a specialized agency of the UN, the IMO has a separate legal personality and therefore enjoys a measure of both budgetary and legislative autonomy.[79] Moreover, the IMO's organs exhibit to a certain extent, the mix of political, administrative, scientific and technical competencies and jurisdictions.

Thus, as a model for a proposed high seas environmental body, the IMO provides a credible inspiration. On the other hand, there are a number of reasons why the IMO falls short as an institutional custodian of the high seas environment.

Firstly, it is apparent that the IMO's intra-relations, especially between the Assembly and the Council as well as between the Council and the Committees, exhibit a lack of "internal democracy," leading to the inevitable conclusion that the IMO is one of the global institutions today suffering from "agency capture." At the root of this scenario is the fact that, right from inception, the IMO was born, nurtured and matured under the control of key shipping or maritime nations. These powerful nations politically, militarily and economically have always kept a controlling stake in the IMO through the Council. Sands and Kleine point out that, with regard to the powers of the Assembly, which ideally is the supreme organ of the organization "it is apparent that it does not enjoy, *vis-à-vis* the Council, the same dominant role as the plenary organs" of some of the existing organizations.[80] For example, while the Assembly

---

79 See Sands, P and Kleine, P: *Bowett's Law of International Institutions*, 5th ed. (2007) pp77-83, 102-105.
80 Ibid., p.102.

may establish temporary subsidiary bodies, it cannot establish permanent subsidiary bodies except "upon recommendation of the Council,"[81] The Assembly is rather deliberative and recommendatory in its functions, while effective action appears to rest with the Council, much similar to the power structure between the UNGA and the UN Security Council. In the formal sense it is the Assembly which recommends to the Governments of the contracting states, but in practice these recommendations will be those of the Council as the Assembly has no powers to change the Council's recommendations: it can only refer them back to Council with comments.[82]

It is submitted that although this power relationship between the Assembly and the Council appears to work well in practice,[83] they lead to a perception of the IMO as a closed, cartel like shop which could undermine its credibility in the discharge of its maritime mandates, including the protection of the maritime environmental commons. It is apparent, from the composition of the Council at least, that the major maritime powers which have "reserved seats" in the Council have drafted the Constitution of the IMO so as to ensure their continued hegemony through the Council which is an organ of limited composition, as opposed to "the unpredictable forum of the Assembly" in which each member of the organization has presence and one vote.[84] A more desirable scenario, certainly where a global commons is concerned would be a situation where real institutional power rests with the body most representative of all members and the collective aspiration of humankind. The IMO seemingly falls short of this standard. It is hard to "democratize" its institutions and "free" the IMO in the face of deeply vested commercial/industry, political/military and strategic interests.

Secondly, and still on institutional arrangements, the IMO has a large body of international legal instruments, both conventional and soft laws, but without always providing the necessary institutional frameworks for effective implementation and enforcement. Some of the instruments do not have any institutional provisions to enable them to be implemented, and this is especially true of earlier conventions. For example, the 1954 OILPOL;[85] the 1969 Intervention Convention;[86] the 1972 London Dumping Convention;[87] and the 1990 OPRC[88]

- The 1948 IMO Convention, 289 UNTS 48; UKTS 54 (1950), Cmnd.589), Article 15(c)
- Sands, P. and Kleine P. *Bowett's Law of International Institutions*, 5th ed. (2007),pp 102-103, citing Article15(h)
- Ibid.
- Ibid.
- 327 UNTS 3; UKTS(1958) Cmnd 595.
- UKTS 77(1971) Cmnd.6056; 9 ILM (1970) 25.
- UKTS 43 (1976) Cmnd.6486; 11 ILM(1972),1294.

provide for no institutional mechanisms to oversee implementation, making it rather difficult to find effective enforcement.[89]

Some of the instruments, such as the 1972 London Dumping Convention[90] only provide for the "Conference of Parties" (COP) or "consultative meetings" approach, which for all its benefits lacks proper institutional grounding. This leads to the IMO offering secretariat hosting to a very large number of international maritime instruments. Fortunately, the 1971 Fund Convention[91] at least established an implementing institution- the IOPC Fund – with legal personality and key organs.

Thirdly, it seems that IMO's mandate is more largely concerned with international commercial shipping and maritime safety than with the marine environment as such. In fact, its environmental conventions are all linked to an aspect of shipping or other. Of course, the core environmental mandate of the IMO regime is with sea-based or more accurately ship-based pollution and not just any marine environmental pollution or degradation. This scenario, partly also influenced by the fact of the self-interests of the international commercial shipping countries, leads to the conclusion that the IMO does not give due attention or action in favour of the marine environment, especially where it is in conflict with commercial shipping interests.

In fact, to the extent that the Council of the IMO is effectively controlled by major shipping interests, it is doubtful that there would be sufficient enthusiasm to act in any punitive manner with a member who is guilty of significant or substantial marine pollution or other environmental degradation. This scenario would portend very negative consequences especially for the high seas, which also happen to be major maritime high ways. Unfortunately, the non-shipping international community may not have the knowledge or the power to act meaningfully.

Fourthly, still on environmental jurisdiction, it appears that, for all its broad mandates over the maritime spaces the IMO has not accepted to take on its mandate land-based sources and activities causing marine pollution and degradation. When the UNEP-GPA called upon the IMO to develop a clearing-house mechanism for oils and litter in the marine environment that

---

- 30 ILM (1991) 735.
- Sands, P and Kleine P. *Bowett's Law of International Institutions*, 5th ed. (2007), pps 125-126.
- UKTS 43 (1976) Cmnd.6486; 11 ILM(1972),1294.
- UKTS 95 (1978) Cmnd.7383;11 ILM (1972) 284.

rovide for no stitutional mechanisms to oversee implementation, making it rather difficult o find effecti nforcement.[89]

Some of the i uments, such as the 1972 London Dumping Convention[90] only provide for he "Confere of Parties" (COP) or "consultative meetings" approach, which for all its enefits lacks per institutional grounding. This leads to the IMO offering secretariat osting to a v large number of international maritime instruments. Fortunately, the 1971 Fund Conven[91] at least established an implementing institution- the IOPC Fund – with egal personal nd key organs.

Thirdly, it se that IMO's mandate is more largely concerned with international commercial sh ng and maritime safety than with the marine environment as such. In fact, ts environmen conventions are all linked to an aspect of shipping or other. Of course, the core environm mandate of the IMO regime is with sea-based or more accurately ship-based pollutio nd not just any marine environmental pollution or degradation. This scenario, partly o influenced by the fact of the self-interests of the international commercial shipping count leads to the conclusion that the IMO does not give due attention or action in favour of t marine environment, especially where it is in conflict with commercial shipping interes

In fact, to the ext that the Council of the IMO is effectively controlled by major shipping interests, it is d ful that there would be sufficient enthusiasm to act in any punitive manner with a memb ho is guilty of significant or substantial marine pollution or other environmental adation. This scenario would portend very negative consequences especially for high seas, which also happen to be major maritime high ways. Unfortunately, non-shipping international community may not have the knowledge or the power to act me gfully.

Fourthly, still o vironmental jurisdiction, it appears that, for all its broad mandates over the maritime sp the IMO has not accepted to take on its mandate land-based sources and activities causin rine pollution and degradation. When the UNEP-GPA called upon the IMO to develop aring-house mechanism for oils and litter in the marine environment that

89 30 ILM (1991) 735.
90 Sands, P and Kleine P *s Law of International Institutions*, 5th ed. (2007), pps 125-126.
91 UKTS 43 (1976) Cmnd ILM(1972),1294.
UKTS 95 (1978) Cmnd ILM (1972) 284.

originate from land-based sources and activities, the IMO Assembly responded that the organization had a mandate to prevent marine pollution from sea-based sources only and that the subject matter of the request lay outside its constitutional responsibilities. When no voluntary resources were provided by member states, the Assembly concluded that the IMO should not undertake the work.[92] This, it is submitted, was quite a narrow and restrictive interpretation of mandate. A more total approach to marine environmental problems would be more desirable.

Finally and importantly, the system of fluid and potentially overlapping jurisdictions of the coastal states, port states and flag states, described below, make the IMO's interventions in the marine environment rather problematic. Most IMO conventions define certain jurisdictions for these various categories of states.[93] This opens the way for overlaps, inconsistencies and gaps in implementation of standards, rules and requirements.

It should be emphasized that the IMO's conventions on the various state jurisdictions regarding the high seas above mentioned are generally consistent with the 1927 Lotus Case[94] holding, the 1958 High Seas Convention[95] and the 1982 UN Convention on the Law of the Sea.[96] The general principle enunciated in the Lotus Case was as follows:-

> Vessels on the high seas are subject to no authority except that of the state whose flag they fly...in virtue of the principle of the freedom of the seas that is to say the absence of any territorial sovereignty upon the high seas, no state may exercise any kind of jurisdiction over foreign vessels upon them.[97]

Article 6(1) of the 1958 High Seas Convention and Article 92(1) of the 1982 UN Convention on the Law of the Sea affirm the Lotus Case and have similar wording:

> Ships shall sail under the flag of one state only and save in exceptional cases expressly provided for in international treaties or in this Convention, shall be subject to its exclusive jurisdiction on the high seas. A ship may not change its flag during a voyage or while in a port of call, save in the case of a real transfer of ownership or change of registry.

---

92 Kiss, A and Shelter D; *International Environmental Law* (3rd Ed) UNEP, (2004), pps 70-71.

93 See for example the 1954 OIL POL Convention Articles IX(5) and X; the 1969 Intervention Convention Articles III and V; the 1973/78 MARPOL, Articles 3,4,5 and 6; the 1990 OPRC Articles 4 and 5.

94 The Lotus Case (1927) PCIJ, ser.A no. 10, p.25.

95 450 UNTS 82; UKTS 5 (1963) Cmnd.1929.

96 21 ILM (1982) 1261.

97 Ibid.

The exceptions provided in the Conventions to the foregoing provision are with regard to piracy, slave trade, hot pursuit and the right of approach by warships.[98]

Thus with regard to flag state[99] jurisdiction, several IMO conventions create flag state responsibility for regulating safety at sea and prevention of collisions, the manning of ships and the competence of their crews for setting standards of construction design, equipment, sea worthiness as well as pollution prevention .The Conventions include the 1954 OILPOL Convention,[100] the 1973/78 MARPOL,[101] and the 1974 SOLAS.[102] These instruments attempt to consolidate customary international law that gives the flag state ample power to regulate marine pollution especially from vessels and create the institutional mandate of the IMO, which is implied as the "competent international organization" under the 1982 UN Convention on the Law of the Sea.[103] Nevertheless, as pointed out earlier, the flag state jurisdiction remains quite imperfectly defined, which led to an apparent expansion of coastal state jurisdiction particularly under the 1973/78 MARPOL[104] and the 1982 UN Convention on the Law of the Sea.[105] In the former case, a scheme which involves the co-operation of coastal states, port states and flag states in a system of certification, inspection, and reporting is introduced with a view of making the operation of defective vessels difficult or impossible and ensuring compliance with environmental protection treaties is established.[106] This, it is argued, hardly makes the IMO's mandate any clearer or more effective.

Coastal state and port state jurisdictions are in most cases restricted to the territorial seas and other areas within national jurisdiction and thus operate to constrain rather than expand IMO's jurisdiction over the high seas environment. Indeed coastal states usually have responsibility for regulating pollution from seabed activities, dumping and activities within their EEZ but

---

However common Articles 11(1) and 97(1) of the 1958 Convention and the 1982 UN Convention on the Law of the Sea appear to negative certain aspects of the Lotus Case. They provide as follows " (1) In the event of a collision or any other incident of navigation concerning a ship on the high seas involving the penal or disciplinary responsibility of the master or of any other person in the service of the ship, no penal or disciplinary proceedings may be instituted against such person except before the judicial or administrative authorities either of the flag state or of the state of which such person is a national; (3) No arrest or detention of the ship, even as a measure of investigation shall be ordered by any authorities other than those of the flag state." On the other hand, the Lotus Case forms the possible basis for port state jurisdiction over high seas pollution offences defined under Article 218 of the 1982 UN Convention on the Law of the Sea (Birnie, P, Boyle, A and Redgwell, C: *International Law and the Environment*, 3rd ed (2009) p 421-422.

"Flag state" is the state in which the vessel is registered or whose flag it is entitled to fly. Interestingly, the 1982 UN Convention on the Law of the Sea defines also "flags of convenience" under Article 92(2)as arising (when) "a ship which sails under the flags of two or more states, using them according to convenience".

327 UNTS 3; UKTS (1958) Cmnd 595.

12 ILM (1973) 1319; 17 ILM (1978) 546

1184 UNTS 2; UKTS 46 (1980)

21 ILM (1982) 1261.

12 ILM (1973) 1319; 17 ILM (1978) 546

21 ILM (1982) 1261

Birnie, P, Boyle, A and Redgwell, C: *International Law and the Environment*, 3rd ed. (2009),p. 420.

their regulatory jurisdiction is limited to the application of international rules for enforcement purposes only.[107]

However, a significant effect of the 1982 UN Convention on the Law of the Sea[108] is that in contrast to the more limited coastal state jurisdiction, Article 218 thereof gives port states express power to investigate and prosecute discharge violations wherever they have taken place. This power covers both high seas offences and violations within the coastal zones of other states. The result is that flag states no longer enjoy exclusive jurisdiction over all high seas offences, even if this doesn't necessarily create concurrent jurisdictions.[109]

The upshot of the foregoing is that the IMO does not have effective and straight forward jurisdictional mandates over the high seas environment. Although it is implied under the 1982 UN Convention on the Law of the Sea[110] as a "competent international organization," both the said Convention and various IMO conventions do not establish it as the high seas environmental authority. Thus, overall, the IMO, while enjoying important institutional capabilities, does not adequately cater for or deal with the high seas environment, necessitating the establishment of more appropriate institutional arrangements.

5.6 Other Institutional Arrangements

Other important institutional arrangements affecting the high seas environment albeit less prominently include the FAO, the IAEA, and the UNESCO-IOC. These bodies, like the UN itself, are not necessarily endowed with explicit environmental mandates, but have developed their environmental responsibilities mainly through interpretation and practice.[111] We will briefly comment on their environmental mandates especially as it concerns the high seas environment.

5.6.1 The Food and Agriculture Organization and High Seas Environment

The FAO is a UN specialized agency charged primarily with improving efficiency in the production of food and agricultural produce. Little may be said of its high seas environmental competence. It was established by the 1943 UN Conference on Food and Agriculture, and

---

Ibid., pps 420-423.

21 ILM (1982) 1261

Birnie, P, Boyle, A and Redgwell, C: *International Law and the Environment*, 3rd ed. (2009) p. 420

21 ILM (1982) 1261

Birnie, P, Boyle, A and Redgwell, C: *International Law and the Environment*, 3rd ed. (2009) p. 71

succeeded in functions and assets the former International Institute of Agriculture at Rome.[112] Some of its key functions include: to collect, analyze, interpret and disseminate information relating to nutrition, food and agriculture; to promote international action with respect to research; to promote the improvement of education and administration relating to nutrition, food and agriculture. Others are the conservation of natural resources, and ensuring humanity's freedom from hunger, among others.[113] None of its functions is explicitly environmental.

However, the FAO has gradually progressed from its earlier development focus to accommodate environmental concerns and presently it covers sustainable approaches to fishing, water resource management, and agriculture, taking into account in all these fields the environmental impacts, conservation needs, habitat protection and the effects of pollution, as well as the deleterious effects of chemicals, pesticides and fertilizers used in agriculture. The FAO has also promoted international environmental law making in various ways.[114] It was involved in the development of the 1958 Convention on Fishing and Conservation of the Living Resources of the High Seas;[115] the 1993 Agreement to Promote Compliance with Conservation Measures on the High Seas;[116] the 1995 Agreement on Straddling and Highly Migratory Fish Stocks;[117] and in collaboration with UNEP, of the 1998 Rotterdam PIC Convention.[118] Thus, the FAO's mandate invariably covers high seas fisheries. However, its environmental competencies are imputed rather than explicitly provided for.

While the FAO is important for this discussion especially with regard to its involvement with high seas fisheries as global resources, it is argued that to the extent that it does not have any direct high seas environmental mandate or indeed environmental provisions, it is not adequately suited to oversee the high seas environment.

---

112 The International Institute of Agriculture had been created by a Convention of 7 June 1905 (for full text of original Convention, See Knipping (ed), *The United Nations System and its Predecessors* Vol.II(1997), p.135.

113 See, *http://www.fao.org;* Sands, P. and Kleine P: *Bowett's Law of International Institutions*, 5th ed. (2007), p. 84; Birnie, P, Boyle, A and Redgwell,C: *International Law and the Environment*, 3rd ed. (2009) p. 45.

114 Ibid.(Birnie, P, Boyle, A and Redgwell,C: *International Law and the Environment*, 3rd ed. (2009) p. 74.

115 559 UNTS 285; UKTS 39(1966) Cmnd. 3028.

116 33 ILM (1994) 969.

117 34 ILM 1542, (1995) 6YbIEL 841.

118 38 ILM (1999) 1 See also, Birnie, P,Boyle, A and Redgwell, C: *International Law and the Environment*, 3rd ed (2009), p 75; Sands, P: *Principles of International Environmental Law*, 2nd ed (2003), p.95-96; Sands P and Klein,P:*Bowett's Law of International Institutions* 5th ed.(2001),pps 84-85.

5.6.2 *International Atomic Energy Agency and High Seas Environment*

The IAEA was established in 1956,[119] and is not a specialized agency of the UN as such since its relationship agreement with the UN has been concluded with the UNGA and not with ECOSOC, as provided for in Articles 57 and 63 of the UN Charter. The relationship agreement with the UNGA was done on 14 November 1957[120] and is modelled on the UN agency agreements except that the IAEA is more autonomous. Moreover, because of the peace and security implications of nuclear energy, the UNGA and UN Security Council are the organs with which IAEA is linked, and not ECOSOC.[121]

The main objective of IAEA is to accelerate and enlarge the contribution of atomic energy to peace, health and prosperity throughout the world, while ensuring that assistance provided by it "is not used in such way as to further any military purpose."[122] The agency both promotes and regulates the peaceful uses of nuclear energy, including the prevention of proliferation of nuclear weapons.[123] It also deals with the development of a programme on radio-active waste management. The IAEA's environmental mandate, and thus its relevance to the marine environment as a whole, and the high seas in particular, stems from its involvement with nuclear testing in the marine environment, as well as nuclear or radio active waste management. The IAEA's nuclear safety mandate acquired a new environmental perspective after the Chernobyl nuclear disaster in the former Soviet Union, rather like the IMO after the *Torrey Canyon* disaster.[124] Conventions on nuclear safety, radio active waste liability for nuclear accidents and notification and cooperation in emergencies have subsequently been negotiated through the IAEA. Many of these were discussed in chapter 4.[125] The point to note is that marine environmental protection, including the high seas, while implied in the various mandates of the IAEA, is not the primary or core business of this organization. It collaborates with other agencies such as UNEP, IMO, UNESCO-IOC and others in their explicit or

---

119 See the IAEA Statute, 26 October 1956,276 UNTS, 3.The statute has been amended a number of times in 1961, 1970 and 1984.

120 281 UNTS 369.

121 Sands, P. and Klein P: *Bowett's Law of International Institutions* (5th ed) (2001), p.112.

122 The 1956 IAEA Statute, Article II.

123 According to Sands P. this dual role of promotion and regulation "appears anomalous" (Sands, P. *Principles of International Environmental Law* 2nd ed (2003) p.100.

124 Birnie, P, Boyle, A and Redgwell,C: *International Law and the Environment*, 3rd ed (2009), p 494.

125 For example, the Convention on Nuclear Safety, 33 ILM (1994) 1518; Protocol on Civil Liability for Nuclear Damage (Vienna) 36 ILM (1997) 1462; the Convention on Supplementary Compensation for Nuclear Damage (Vienna) 36 ILM (1997) 1473; and the Joint Convention on the Safety of Spent Fuel and Radioactive Waste Management, 36 ILM (1997) 1436.

implied respective environmental mandates.[126] However, the IAEA is not directly responsible for enforcement or regulation of the high seas environment as such.

The institutional formulation of IAEA suggests that, apart from the fact of its jurisdictional limitations with regard to the high seas environment, it is otherwise a competent agency with an apparent balance between the interests of all members and those of the countries which control the greater mass of global nuclear energy technology. Nevertheless, as pointed out earlier, the IAEA because of this latter set of interests, is probably one of the institutions suffering from "agency capture" similar to the IMO, which is heavily controlled by international shipping and maritime nations.

5.6.3 Inter-Governmental Oceanographic Commission of the United Nation Educational, Scientific and Cultural Organization and the High Seas Environment

The UNESCO-IOC was established in 1960, as a scientific body to provide scientific advice and research on matters of environmental importance among others. It provides, alongside other scientific bodies "a diversity of knowledge and expertise,"[127] and provides an independent source of publicly accessible information. Scientists cannot be expected to take policy decisions that are ultimately the responsibility of politicians and governments but they help "to refine problem definition and to identify and expand the range of response options", by setting out probable consequences of action or inaction.[128] This is how UNESCO-IOC's role should be understood with regard to the marine environment. The UNESCO-IOC is active in the marine scientific research projects and has increasingly involved developing countries in joint research programmes. Usually UNESCO-IOC conducts research at the regional level through inter-governmental commissions such as those dealing with land based pollution, pollution from dumping, and fisheries.

The UNESCO-IOC works closely with GESAMP whose reports have provided important information on the state of the marine environment.[129] The UNESCO itself was responsible

---

For example the IAEA collaborates with these agencies and others in the Joint Group of Experts on Scientific Aspects of Marine Pollution(GESAMP) .The latter has a mandate to conduct research and carry out assessments on the state of the marine environment and to make appropriate recommendations. It has produced several reports. The collaborating agencies include the UN, UNEP, FAO, UNESCO, WHO, WMO and the IAEA.

Kimball L: "Treaty Implementation: Scientific and Technical Advice enters a New Stage" (Washington D.C 1996) p. 7, cited by Birnie, P, Boyle, A and Redgwell, C: *International Law and the Environment*, 3rd ed (2009) p. 99-100.

Ibid.(Birnie, P, Boyle, A and Redgwell, C: *International Law and the Environment*, 3rd ed (2009)), p.99

Ibid., p.100.

the adoption of and performs secretariat functions for the 1971 Ramsar Convention[130] and 1972 World Heritage Convention.[131]

us, both jurisdictionally and institutionally, the UNESCO-IOC is not adequately framed to dertake regulatory or enforcement mandates over the high seas environment.

7 Conclusion

e foregoing discussion has covered the legal status of the high seas as a maritime zone and vealed that there are several institutions with both direct and indirect, even peripheral, andates in the regulation of the high seas environment. To the extent that there is not a ngle institution given the direct jurisdiction over the high seas environment, the system of gulation and enforcement has continued to operate somehow. One view could be that if the stem is working so far, then it is good and perhaps nothing should change. However, many nitations could be, and have been identified against these institutions individually or llectively, which demonstrate that there is need for a dedicated international regulatory thority to provide better environmental protection for the high seas environment.

might have been expected, quite legitimately, that the UNEP could coordinate the vironmental programmes of the UN agencies as was originally designed at its inception, but is has apparently not happened. Equally to be expected would be at least a systematic ogramme for the regulation and enforcement of high seas environmental standards, quite art from the decades old RSPs approach which, as discussed above, is not suited or even esigned for the high seas global commons.

he absence of dedicated institutional arrangements for regulation and enforcement of the igh seas environmental standards could have serious implications on the future of this nmense global resource. Even if at the present the actual threats to the high seas environment o not seem substantial, compared, for example, to the coastal and near shores maritime areas eavily polluted and degraded by land based sources and activities, still there are adequate easons for global concern. The now established precautionary principle, the increasing thirst or better global environmental governance, the sheer enormity of this resource and other actors necessitate serious consideration of legal and institutional frameworks for the high

[130] 996 UNTS 245; UKTS 34(1976) Cmnd 6465; 11 ILM (1972) 963.
[131] 11 ILM(1972) 1358; UKTS 2 (1985), Cmnd. 9424

seas environment, which will assure the present and future generations of a healthy, peaceful and sustainable global resource.

Having reviewed the efficacy of existing institutional arrangements in the present chapter, the next chapter will make a case for the establishment of a new, dedicated institutional framework for the regulation and enforcement of the high seas environment and explore the possible challenges and odds against this proposition.

CHAPTER SIX

The Case for an International Institutional Framework for the High Seas Environment

Arguably the biggest environmental crises facing human kind today, such as climate change, depletion of ozone layer, and marine and coastal pollution, are global in nature. Any effective response to these problems must be an international one[1]

6.1 Introduction

This chapter makes a case for the establishment of a global regulatory and enforcement agency for the high seas environment. It will seek to show that international regulation- the setting of common standards supervised by international institutions-offers the best means of ensuring a generally accepted minimum level of environmental protection.[2] It will also be shown that high seas environmental problems do not have significant regional variations or distinctions to justify a regional approach; that indeed the regional approaches are not adequate; and that there is a strong basis for serious consideration of the nature and scope of a global agency to perform those comprehensive functions. This study views unilateralism and regionalism outside the framework of a global system as inadequate to protect the high seas environment, and as grossly marginalizing the bulk of land locked and developing states from participating in decision-making or deriving benefits from the high seas.

The place for unilateral or regional participation in global efforts is not to be diminished completely. However, the high seas environment should be served by a global enforcement and regulatory mechanism, which could or may have regional or national centres and focal points for better implementation of its mandate. A global regulatory regime is necessary because the high seas are open to use by all states and thus they should have an equal forum to determine the issues that affect them. In spite of apparent "regional peculiarities" which may militate against the global approach while favouring the regional approach, it is nevertheless argued that for the high seas the former approach is more preferable.

---

1 Thornton, J and Beckwith S: *Environmental Law*, Sweet and Maxwell, London (1997), p.4.

2 Birnie, P, Boyle, A and Redgwell, C: *International Law and the Environment*, 3rd ed (2009), p 391.

In fact, a global approach as the favoured model in this study necessarily has regional and even national dimensions and the *vice versa* could also be true. Thus, a complementary system is envisaged but with the central role played by a global agency. There is an underlying argument that if indeed international law is an expression of the collective voice of the peoples of the world, and this law governs the global commons, including the high seas, then even the institutions responsible for the global commons governance should be essentially global.[3] The 1982 UN Convention on the Law of the Sea reflects the global consensus on the law governing the ocean spaces including the high seas. Its major flaw in this regard is the failure to establish such global agency.

However, as will become apparent, several challenges and problems will have to be overcome: entrenched unilateralism and regionalism; the open-ended nature of freedoms of the high seas and common heritage of human kind (for the international seabed Area); political, military and economic interests; and lack of global consensus on the establishment of an international environmental organization. First though, we discuss the "victims" and "culprits" of the high seas environmental problems.

6.2 The "Victims" and "Culprits" of the High Seas Environmental Problems

In previous chapters, we discussed the causes and consequences of marine environmental pollution and degradation including for the high seas. It is necessary to understand who are the actual and/or potential "victims" and "culprits," that is, who are the adverse but innocent recipients of the negative consequences of high seas environmental pollution and degradation; and who are adversely responsible or causative of these problems. The proposed new institutional framework for the high seas environment, described in the next chapter, would be addressing both the "victims" and "culprits" identified herein in its key provisions.

While it is feasible to simply identify humankind generally as both the "victims" and "culprits" of the high seas environmental problems, since these problems are essentially anthropogenic, it is also possible and even better to distinguish the more specific elements, despite some overlaps among them.

---

[3] According to Chimni, however "...a coalition of powerful social classes and states decides when an (international institution) is the appropriate form in which to pursue their interests, as well as its central preoccupations. This understanding goes beyond both the neo-realist view that (international institutions) are simply reflections or embodiments of state power and interests and the neo-liberal view that international organizations have an independent role in resolving collective action problems" (Chimni, B.S. "International Institutions Today: An imperial Global State in the Making". EJIL (2004), Vol. No. 1, pp1-37.)

6.2.1 The "Victims"

The first obvious "victim" is the high seas environment as a whole, including its biodiversity. Specific elements of this environment include the deep sea fisheries, seabirds, cetaceans, hydrothermal vents and their communities, cold water coral communities, the ecosystems of sea mounts, and unique scientific reference sites. These elements suffer at various levels as recipients of high seas environmental pollution and degradation from various sources and activities, both sea-based and land- based.

Deep sea fisheries are affected and threatened by over fishing; sea birds by long liners and litter; and pollution discharges especially oil and other contaminants. Cetaceans, which include the taxonomic family of whales, dolphins and porpoises, are at risk from, *inter-alia,* habitat destruction, pollution from discharges and noise, over- harvesting and over-fishing of prey, and ozone depletion. Hydrothermal vents and their communities are affected by scientific research, mining, tourism and bio-prospecting; cold water coral communities and sea mount ecosystems both suffer the adverse effects of trawling and exploration, while the scientific reference areas are afflicted by trawling.[4]

It is arguable that the high seas environment and its various components are the most vulnerable victims of marine pollution and degradation for various reasons. Firstly, they are direct recipients of pollution and degradation especially from vessel based sources. Secondly, they are the most expansive and remote parts of the maritime zones. Thirdly, they do not have effective voice, that is, appropriate institutional mechanisms to champion their protection and conservation. Indeed, on the latter question, it has been observed that the 1982 UN Convention on the Law of the Sea which is the basic relevant law, gives far more priority to the utilization of the marine resources than to their protection, preservation and conservation.[5] As a result of these vulnerabilities, and in the absence of more effective legal and institutional frameworks, the high seas environment, including its living marine resources can only be

---

4 Thiel, H. and Koslow J.A (eds): *Managing Risks to Biodiversity and the Environment of the High Seas including Tools such as Marine Protected Areas: Scientific Requirements and Legal Aspects; Proceedings of the Expert Workshop held at the International Academy for Nature Conservation.* Isle of Vilm, Germany 27 February – 4 March 2001,p.24. For more detailed discussions on the various aspects of the high seas biodiversity and environment, see in the same volume; Gordon J.D.M. "Deep Water Fish and Fisheries".p 31-37; Johnston C. "Conservation Status and Needs of High Seas Birds: Consideration from the U.K. Perspective" p 75-82; Thiel, H and Gilman,E.L; " Protection for Birds on the High Seas" p 83-87;Jumper S.K, "Background Paper on Deep Sea Hydrothermol Vents" p 89-95; and Thiel,H. "Unique Science and Reference Areas on the High Seas" pps.97

5 Platzoder, R "The United Nations Convention on the Law of the Sea and Marine Protected Areas on the High Seas", in Thiel,H and Koslow,J.A (eds) (ibid), p137-142.

expected to become worse.[6] This is in spite of the fact that in comparative terms, the open seas and oceans are considered to be relatively cleaner than the coastal and near-shore maritime waters.[7]

As previously indicated, the major sources and causes of pollution and degradation of the high seas include land-based sources such as persistent organic pollutants (POPs) which can undergo long-range atmospheric transportation and deposition; sewage and nutrients, radio-active substances and radio nuclides; polycyclic aromatic hydrocarbons (PAHs); and litter.[8] Sea-based sources and activities include ship-based oil and other pollution; dumping of wastes; and military, nuclear and commercial activities.[9]

Apart from the high seas environment itself, another prominent victim of high seas environment is humankind. This can be understood at two levels: firstly, humankind as a whole, being the principal stakeholder of the high seas environment; and secondly, the more proximate humankind relative to the high seas, including the peoples of coastal, island and archipelagic states; and owners and operators of ships and other sea vessels.

With respect to humankind as a whole, it is noted that the high seas environment is a human environment owned collectively as a global commons. Pollution and degradation of this resource is thus a matter of concern for all human kind. The adverse effects of high seas pollution and degradation affect humankind generally, often indiscriminately. Admittedly, estimating the nature, extent and costs of environmental damage is extremely difficult even under well-defined local conditions. This is even more so in such expansive global commons as the high seas where, because of the sheer enormity of the resources and amenities as well as their relative remoteness, it is very difficult to estimate the scales of impact. Moreover, the process of valuing the environment generally and the high seas in particular, is extremely complex and involves not only economic factors but also ecological, social, legal, and cultural

---

6 With regard to marine fisheries generally, Birnie, and Redgwell make the following assessment of the advances made under the 1982 UN Convention on the Law of the Sea: "It was and remains undoubtedly an advance on the previous regime and its provisions concerning fisheries have led to creation of more fisheries organizations at international, regional and sub-regional levels under the auspices of the FAO and outside it, with the result that fewer marine areas within which fisheries are now conducted remain outside the scope of a regulatory regime. Despite this success, fisheries within the new jurisdictional zones, whether on the high seas or under national jurisdiction have continued to decline and are almost everywhere in trouble" (Birnie, P,Boyle, A and Redgwell,C: *International Law and the Environment*, 3rd ed (2009).p. 684.

7 GESAMP Reports and Studies No. 39(1990), jointly sponsored by IMO, FAO, UNESCO, WMO, WITO, IAEA, UNEP and the UN, p ?; GESAMP Reports and Studies No. 70, p.1.

8 See Chapter 2 above.

9 Ibid.

considerations. There is also limited understanding of the direct and indirect linkages between human activities and their impacts on the environment and *vice versa.*[10]

However, in spite of the above limitations, it can be safely argued that humankind remains the principal recipient actually and potentially of the adverse effects of high seas environmental pollution and degradation. These, as discussed in chapter 2, include public and human health problems; loss of economic and social benefits and uses especially from marine living resources (mainly fisheries); loss of aesthetic values; and climate change.

Human populations that are more proximate to the high seas environment include those who occupy coastal and near-shore areas, islands, and archipelagos and those involved in shipping and other vessel-based activities and operations. These categories may be held to suffer as "victims" over and above the rest of humankind. This is because they are usually the more direct recipients of high seas pollution and degradation. Because the seas and oceans are interconnected water masses joining continents, peoples and cultures, it is natural that those communities that live along the coastal zones and depend directly on maritime goods and services as well as those who own, control and operate sea vessels for various reasons, are "particularly imperilled victims".

As currently structured, the legal and institutional arrangements for high seas environmental protection do not offer adequate protection for the identified "victims". On the question of liability and compensation for high seas environmental damage, Situma notes, correctly in our view, that the global commons generally are the least protected areas under international environmental law, and even if each State were under obligation to take action to prevent damage to the environment of the commons, the consequence of breach of such obligation is not clear under international law.[11] Moreover, while obligations to protect the global commons such as high seas environment may be *erga omnes,* the absence of an *action popularis* in international law-the right of any member of the international community to take legal action to vindicate a public interest- "effectively bars an invocation by any one state of the responsibility of another for breach of the obligation to prevent damage to the

---

[10] GESAMP Reports and Studies No. 71 (2001) p.9

[11] Situma, F.P: "The Efficacy of International of International Environmental Law: A Personal Reflection," 2/1 ILSA Journal of International and Comparative Law (1995), p 87.

environment of areas beyond the limits of its national jurisdiction and, when damage has occurred, to demand compensation."[12]

Therefore, there is need to establish an international institution to champion the high seas environment and affirm and better protect the so-called "victims" while identifying, regulating and even penalizing the "culprits".

6.2.2 The "Culprits"

Humankind generally is the primary "culprit" to the extent that high seas environmental problems are largely anthropogenic. As previously noted, the human activities may be consumptive, extractive or operational, and they invariably all have adverse environmental impacts. Even the failure by the negotiators of the 1982 UN Convention on the Law of the Sea to provide for effective legal and institutional mechanisms to protect the high seas commons, especially when the opportunity to negotiate and establish the Convention was presented is itself culpable. Although, as will become apparent in the next chapter, it is still feasible to formulate such legal and institutional mechanisms, an opportunity was lost during UNCLOS III to establish a specific institution under the Convention to better protect the high seas environment.

However, the more specific "culprits" include existing institutions or organizations having corresponding mandates over the high seas environment; shipping and other vessel owning or operating states; naval and nuclear states; and those with fishing, mining or research interests in the high seas or seabed below.

The existing international institutions, which were discussed in chapter 4, have mandates which could be regarded as direct or indirect, peripheral or complimentary, relative to the high seas environment. These institutions include the UN and its "family" of institutions, such as the UNEP, IMO, FAO, IAEA, UNESCO-IOC, as well as the 1982 UN Convention on the Law of the Sea institutions. All these institutions, to the extent of their respective limitations fall short and are therefore party to some of the high seas environmental problems. This is more so for those with direct marine environmental mandates, particularly the UNEP and the

[12] Ibid. See also, Birnie,P, Boyle, A and Redgwell,C: *International Law and the Environment*, 3rd ed.(2009), p. 233

M O.[13] Their cumulative institutional failures have arguably contributed significantly to the current weak protection of the high seas environment.

It is easy to understand why states involved directly in the high seas environment would be "culprits": they fundamentally act in national self-interest, whether politically, strategically or commercially. Shipping and other vessel nations delight in the notion of the freedom of the high seas, and would feel free to act as they please, with minimal or no external supervision or restraint. Since they also have treaty mandates as flag states, port states or coastal states, they would perhaps only feel obliged to act first and foremost in their national interest and only incidentally in the global or regional interest. Moreover, since government, non-commercial vessels and warships are immune from external interference,[14] it becomes easy to subvert environmental standards especially in the high seas. Fortunately, under Articles 235 and 236 of the 1982 UN Convention on the Law of the Sea, states shall be liable in accordance with international law, and are therefore expected to act consistently with the requirements of the Convention.

6.0 Current Institutional Problems and the High Seas Environment

There are three possible approaches to the institutional framework for the high seas environment. These are "unilateralism," "regionalism" and "globalism."[15] While it is possible to distinguish them clearly, they nevertheless have overlaps and complementarities both actually and potentially. However, each of the approaches also presents current and potential institutional problems, which do or may undermine the integrity of the high seas. Our argument here is that compared to the others, the globalist approach provides the most appropriate framework for the protection of the high seas environment.

6.1 *"Globalism" and the High Seas Environment*

It has been noted that the development of international organizations is mainly in response to the need for international intercourse rather than to the philosophical or ideological appeal of the notion of world or global government.[16] Thus, fundamentally, the globalist approach to institutional development is a functional one, envisaging the performance of certain roles and

---

[13] Chapter 4 above; Birnie, P, Boyle, A and Redgwell, C: *International Law and the Environment*, 3rd ed (2009), p. 145.

[14] 1982 UN Convention on the Law of the Sea, Articles 95 and 96.

[15] Kwiatkowska B.: Towards Regional Arrangements for Regulation of Marine Pollution: An Appraisal of Options, 4/1 *Ocean Development and International Law Journal* (1977).

[16] Archer, P. and Klein P. *Bowett's Law of International Institutions*, 5th ed. (2001), p.1.

functions by the organizations thus established rather than the establishment of a world or global system of government to overtake or replace states. Global institutions today have specific mandates ascribed to them by their own constitutive instruments and decision-makers. Their basic difference with regional institutions is that they have global or universal mandate (geographical), albeit restricted to particular aspects, for example trade, health, shipping and the like. However, even then, some of the key global institutions, notably the UN and the League of Nations before it, have or had very wide or generic mandates which allowed them to impact a vast array of international issues. In this regard, Potter, reflecting on the demise of the League of Nations, which itself was perhaps the first truly public international organization, notes that the League "made a far greater contribution to the progress of international organization than any other institution in history",[17] with significant achievements in the fields of economics, finance, public health, mandates, transport and communications, social and labour problems, in spite of its failure to prevent the outbreak of World War II.

There are a number of arguments in favour of a globalist approach to the high seas environment. Firstly, the high seas environment is a global resource, a commons for all humankind. This means that both its endowments and uses belong collectively to humankind. It is not capable of nationality claims and is free for all to use and extract its resources only within the bounds of existing international legal instruments.

Secondly, the high seas environment is huge and expansive and is diffused in all major regions of the world. The interconnected water masses constituting the high seas are a physically enormous resource which requires the collective and concerted efforts of humankind to give it protection.

Thirdly, the current international law of the sea, while defining the maritime zones and ascribing jurisdictions to port states, coastal states and flag states, clearly does not confer overall jurisdiction over the high seas to any states or institution as such. As noted previously, this is perhaps one of the most glaring failures of the 1982 UN Convention on the Law of the Sea regime. In other words, the current legal and institutional mandates over the high seas leave gaps with respect to the protection of the environment of this maritime zone, which makes it necessary to make a proposal for global institutional arrangements..

---

[17] Potter: *Introduction to the Study of International Organization*, p.257, cited by Sands andKlein, ibid; p.13.

Fourthly, in a globalised world with vast inter-state and inter-regional connections, the imperatives of international governance dictate that those global resources be governed in a democratic, participatory and accountable manner on behalf of humankind. Since the resources and the costs and benefits of accessing them are to be shared, it is necessary to define a governance system that responds to the collective aspirations of the peoples of the world. A global legal and institutional framework is thus the preferred model. As noted in chapter 5, inter-governmental organizations with global competence have a larger scope for articulating and fulfilling the needs and aspirations of the greater international public. In this league are the UN itself, UNEP, IMO, IAEA, among others.

Fifthly, as Sands and Klein put it, "the advent of globalization" so called has created the conditions for an increased role for international institutions, whether legislative, administrative or judicial."[18] This means that with regard to the high seas environmental commons, the importance and relevance of international institutional frameworks cannot be overemphasized. Its particular features-legislative, administrative, judicial or other-will be elaborated in the next chapter.

Finally, a globalist approach still envisages regional and national dimensions. Within the framework of a global institution, there would be defined roles for regional and national organizations and authorities. In fact, the proper model of a global agency is one which establishes policy guidance, standards and rules, monitoring and reporting requirements and generally plays an oversight role, while leaving specific enforcement actions to regional or sub-regional entities and states. The global entity would seek systems which can ensure the integration of environmental and development objectives in the high seas in a more balanced and efficient manner.[19]

However, there are plausible arguments against the globalist approach. Firstly, there is no full-fledged international environmental organization in the first place. UNEP remains a programme of the UN without autonomous self-existence.[20] In spite of its achievements, especially in catalyzing environmental action among the UN specialized agencies, and leading in development of international environmental law, the UNEP has not succeeded in

---

Sands and Klein K: *Bowett's Law of International, Institutions*, 5th ed (2001),p 14.

Birnie P, Boyle, A and Redgwell,C:*International Law and the Environment*, 3rd ed (2009), p.70.

See chapter 5 .

effectively co-ordinating the environmental work of the UN and other bodies.[21] In fact, the creation of other environmental bodies after the 1992 Rio Summit, notably the CSD, GEF and an Inter-Agency Committee on Sustainable Development had the effect of adding more competing institutions with overlapping responsibilities and potentially diluting further the UNEP's global environmental role.[22] It is arguable therefore that the establishment of an international organization for the high seas environment would only confuse and duplicate the existing global environmental governance regime further. It would be difficult, for example, to define jurisdictional mandates and relationships between UNEP or a global environmental organization as such, and the proposed high seas environmental organization.

Secondly, such an approach could create an expensive, centralized, bureaucratic and entrenched institution with doubtful effectiveness and value. In rejecting proposals to transform UNEP into a specialized agency or to create a new environmental agency, during UNCED preparatory meetings, arguments were made that this would entail extra costs and other political implications. There was no enthusiasm for more bureaucratization of the UN, although there was support for strengthening UNEP in its existing role and location.[23] The UNCED, in Agenda 21 thus called on the UNEP to promote co-operation on policy making, monitoring and assessments, and to give priority in this regard to the development of international environmental law; environmental impact assessment and audit; dissemination of information; promotion of regional and sub-regional co-operation; as well as the co-ordination of the growing number of environmental treaties and their secretariats.[24]

According to Okidi, there seems to be a clear agreement that while marine pollution is a global problem requiring a comprehensive regulatory system, the regime does not necessarily have to be a single global agency. Prominent supporters of the comprehensive mechanism have at times dismissed the idea of a monolithic system as illusory.[25]

Thus, by implication, a high seas environmental agency would be an unnecessary and costly venture, which could be avoided by recasting and strengthening existing institutional mandates.

Birnie,P,Boyle, A and Redgwell,C:*International Law and the Environment*, 3rd ed.(2009), p.65.

Ibid.

Ibid.

See the Report of the UNCED, vol. 1(New York), UN Doc. A/CONF.151/26/Rev.1,Chapters 29 and 38.

Okidi, C.O: *Regional Control of Ocean Pollution: Legal and Institutional Problems and Prospects*, Sijthoff and Noordhoff (1978), citing Schachter and Serwer, "Marine Pollution Problems and Remedies", 65 American Journal of International Law 110, (1971). Prof. William Barnes calls it the "global Gobbledygook", (Private Conversation).

Thirdly, such institutional mandates formation would not be able to monopolize and exclusively deal with the high seas environment. After all, the high seas constitute merely a maritime zone among other zones, and it is subject to multiple uses such as commercial shipping, marine scientific research, military and nuclear activity and the exploitation of marine living resources. All these high seas goods and services are currently governed by a plethora of international and regional institutions, often with corresponding and not always harmonized legal instruments. In support of this objection, the sceptisms against the transformation of the UNEP into a full-fledged specialized agency of the UN come to mind. According to Birnie, Boyle and Redgwell, a UN environment agency could not monopolize the field, nor could it take over the environmental responsibilities of other specialized agencies such as the FAO or IMO since the work of these bodies has an important environmental dimension which cannot be separated from their core responsibilities. Moreover, even with regard to co-ordination of environmental treaty regimes, it is not demonstrable that this would be any easier if UNEP became a specialized agency instead of its present status as a programme.[26]

In addition, by comparison with WTO which has a huge load of trade related disputes, there are far fewer disputes arising from environmental treaties and which have so far been satisfactorily resolved through non-compliance procedures or negotiation. Thus, it is not necessary in the circumstances to establish new institutional arrangements.[27]

If a new international environmental agency with a wider scope of mandate to replace UNEP as a programme is not required, then it is likely less desirable or needful to establish one for the high seas environment. A more feasible option would perhaps be to recast and strengthen the mandates of existing institutions dealing with the various aspects of the high seas in order to effectively govern its environmental resources.

Fourthly, it has also been argued that marine environmental pollution problems in areas beyond national jurisdictions (including high seas), in as much as they have 'global character" do have "regional peculiarities" which would justify a regional rather than global approach.[28] Okidi identifies two principal interest groups which may suffer the direct consequences of

---

Birnie,P, Boyle, A and Redgwell, C: *International Law and the Environment*, 3rd ed (2009), p. 70.

Ibid. However, these authors also concede that the IMO and IAEA have been reluctant to monitor compliance with environmental treaty commitments, although they argue that this does not necessarily contribute anything to the effectiveness of environmental treaties"(Ibid), p.70).

Okidi C.O: Towards Regional Arrangements for Regulation of Marine Pollution: An Appraisal of Options,*4/1 Ocean Development and International Law Journal;* (1977).

pollution of the marine environment, namely, the international community as a whole, and the coastal states which may suffer the direct consequences of pollution of the marine environment.[29] However, on a balance of those interests, he favours the regional approach, which in fact is concurrent with UNEP's approach in designing the RSPs. Thus, there is a strong argument that due to "regional peculiarities" the best approach for the protection of the marine environment beyond areas of national jurisdiction, including the high seas, a regional approach as opposed to a global one is more preferable. What is not clear, though, is how to "regionalize" the high seas for purposes of environmental protection.

6.3.2 Regionalism

The regional approach to marine environmental protection generally was, as previously noted, established early by the UNEP. The regional approach envisaged that UNEP's interventions in the marine and coastal environment would follow a regional configuration under the now fairly well established regional seas programmes (RSPs). Currently there are at least 18 RSPs, most of which are directly administered by the UNEP.[30] The RSPs have action plans with, typically, five integrated components: environmental assessment, environmental management, institutional arrangements, financial arrangements and regional legal instruments. The Mediterranean Action Plan was the earliest of them (1975) and became a model for the rest of the regions. The RSPs are assumed to be established taking into account different needs and capabilities of the various regions.

Several persuasive arguments could be advanced in favour of regionalism in the protection of the high seas environment. Firstly, that efforts to establish a single global regime have been considered either futile or illusory, at the same time unilateral procedures, as a means of developing a new custom, have been found objectionable. Therefore a regional regime is considered ideal for providing an impetus for global initiatives. Most of the legal controls can be carried out at regional level, with the global institutions performing "an interstitial function, filling the gaps where no controls exist or where ineffective ones may exist at the regional level."[31]

---

29 Ibid.

30 www.unep.org/regionalseas, accessed on 24.09.2012; UNEP (2006). *Financing the Implementation of Regional Seas Conventions and Action Plans: A Guide for National Action.* UNEP Seas Reports and Studies No. 180, UNEP.The Hague, Foreword, p.i.

31 Okidi, C.O: Regional Control of Ocean Pollution: Legal and Institutional Problems and Prospects, (1978) p.159

Secondly, that regionalism is justified on the basis of "regional peculiarities" in the coastal and marine environment, and the truism that coastal states in the various regions in any case suffer, or are likely to suffer, more than non-coastal states, the effects of pollution and degradation.

Thirdly, that the regional approach is now well tested since inception in 1974. In other words, this model has served the marine and coastal environment well, and if anything, its coverage has been increasing both within and outside the UNEP framework. Today, most of the coastal and marine environment is covered by RSPs,[32] demonstrating the resilience and acceptability of the approach.

Fourthly, that the RSPs are now largely legally and institutionally grounded. Most of the RSPs have policy instruments (Action Plans), and legal instruments applicable to the respective region, even though they are largely replicated among the regions.[33] The UNEP serves as the Secretariat/Organization function for several of the RSPs. The policy, legal and institutional grounding means that they have form, structure, legitimacy and mandate. However, as will be seen below in counter-argument, it is apparent that their mandate does not extend to the high seas.

Fifthly, that RSPs provide a pragmatic, manageable and feasible approach to the management of coastal and marine environment generally. Such units arguably increase the sense of ownership among regional countries and other stakeholders. Especially for land-based sources and activities which cause the bulk of marine and coastal pollution, states would arguably be more willing to act in a regional context to seek prevention and mitigation responses to marine and coastal pollution and degradation than they would under a global framework. They would identify better with coastal and near-shore marine issues, as in any event there are some of the most productive marine zones of vital importance to the countries. In any case, coastal states also have legal entitlement to such maritime zones as the territorial and contiguous zones, the EEZ, and the continental shelf.

According to Okidi, regionalization encourages the participation of the maximum number of states, including developing states which may otherwise remain at the periphery in a globally centralized system using high level technology. At present, it is only the developed states that

---

[32] http://www.unep.org/regionalseas, accessed on 24.09.2012

[33] For a detailed account of these instruments see Chapter 4.

have the high technical expertise and financial resources needed for effective pollution control. Besides, the industrialized countries will have more incentive to explain themselves to the representatives of the lesser developed countries than is the case in the large global conferences where issues generally lack focus. In this case, the countries within a region determine the focus of their regulatory interests for the protection of their marine environment.[34]

Sixthly, that the regional approach does not interfere with the freedoms of the high seas or with other global commons. It leaves the freedoms of the high seas and the common heritage of humankind intact. In any event, it could be further argued that there are currently no serious threats to the high seas environment and therefore their system of governance should remain undisturbed.

Birnie, Boyle and Redgwell also identify several other arguments in favour of regionalism, and we agree with them. They include that regional approaches are simply a means of implementing policies which are necessary in the interests of a specific community of states and which are best tackled on a regional basis including co-operation in cases of pollution emergencies or the exploitation of fisheries. This is contemplated under the 1982 UN Convention on the Law of the Sea. In this way regional arrangements do help accommodate the special needs and varying circumstances of a range of seas with diverse ecological and oceanographic characteristics.[35]

Moreover, regional approaches may facilitate cooperation in monitoring, supervision and enforcement; and regional treaties can be seen as a means of giving effect to the framework provisions of the 1982 UN Convention on the Law of the Sea and the implementation of the latter's provisions at the regional level. In this regard, their apparent conformity in most respects with the 1982 UN Convention on the Law of the Sea is some indication of their legislative functions in international law, and of the present legal status of the Convention's provisions on protection of the marine environment. Also, regional regimes offer a more appropriate basis for the integrated ecosystem and coastal zone management called for by Agenda 21 of the 1992 UNCED.[36]

---

34 Okidi, C.O: *Regional Control of Ocean Pollution: Legal and Institutional Problems and Prospects*, Sijthoff and Noordhoff (1978),p. 158, 159.

35 Birnie, P. Boyle, A and Redgwell,C: International Law and the Environment,3rd ed 2009 p. 390.

36 Ibid.

Other arguments are that regional mechanisms lead to distribution of the remedial technology and facilities close to where incidents may occur, making them accessible in cases of sudden ecological catastrophe. To that extent, the mechanism may also provide for transfer of the relevant technology to areas that do not already have it. An economical and efficient method of utilization of resources would be through the pooling of national and international resources on a regional basis, and making those available for dispatch to any scenes of actual or suspected catastrophe.[37]

On the other hand, even if there were an ocean region which was not immediately threatened by serious pollution of any kind, the states would still need to consider a regional system of their own for two reasons: first, baseline studies of the ocean water seem already to be needed in all regions to facilitate determination of the subsequent changes in the water quality. Regional organizations seem the obvious ones to undertake such studies. Secondly, pollution may not have so far required an institution within certain regions; however, pollution has proved to be a concomitant of economic growth which can only be controlled by deliberate efforts.[38]

Admittedly, the foregoing arguments and rationalizations are persuasive in favour of regionalism. However, there are convincing arguments against this approach for the high seas environment. Firstly, most RSPs do not in their policy, legal and institutional frameworks accommodate high seas environment, even in the regions adjourning their respective areas of jurisdiction. This is because, as previously noted, they are generally designed to deal with coastal and marine areas within the national jurisdiction of the concerned contracting parties. The geographical scope of UNEP-RSPs typically includes the territorial seas and EEZs of the respective contracting parties.[39]

However, some of the RSPs, notably the North-East Atlantic/North Sea, the South East Pacific and the South Pacific, have provisions in their respective conventions which cover at

---

37 Ibid, p 157, 158

38 Ibid. p 156

39 See, for example, the 1995 Barcelona Convention, Article 1; the 1992 Baltic Sea Convention, Article 1; the 1992 Black Sea Convention, 32 ILM (1993) 1110, Article 1; the 1983 Cartagena Convention, 22 ILM (1983) 221, Articles 1 and 2; the 1985 Nairobi Convention, Articles 1 and 2(a) (www.unep/NairobiConvention, accessed 14.04.2011(2012) (an Amended Nairobi Convention was adopted 01.04.2010); the 1981 Abidjan Convention, 20 ILM (1981) 746, Article 1: the 1978 Kuwait Convention, 1140 UNTS 133, Articles 3; the 1981 Lima Convention, ND (Looseleaf) Doc.J.18, Article 1; and the 1986 Noumea Convention, 26 ILM (1987) 38, Articles 1 and 2.

least to an extent, adjourning high seas.[40] The 1992 OSPAR Convention defines its "maritime area" or geographical jurisdiction as follows:

> (a) "Maritime area" means the internal waters and the territorial seas of the contracting parties, the sea beyond and adjacent to the territorial sea under the jurisdiction of the coastal state to the extent recognized by international law and the high seas including the bed of all those waters and its subsoil situated within the following limits:-
>
> (i). Those parts of the Atlantic and Arctic oceans and their dependent seas which lie north of 36° latitude sand between 42° west longitude and 51° east longitude, but excluding:
>
> - the Baltic Sea and the Belts lying to the south and east of the lines drawn form Hagenore Head to Gniben Point from Korshage to Spodsbjerg and from Gilbjerg Head to Kullen;
> - the Mediterranean Sea and its dependent seas as far as the point of intersection of the parallel of 36° north Latitude and the Meridian of 5° 36° west longitude.
>
> (ii). that part of the Atlantic Ocean north of 59° north latitude and between 44° west - longitude and 42° west longitude.[41]

Elsewhere, the 1981 Lima Convention provides as follows, under its Article 1 on geographical coverage:

> The sphere of application of this Convention shall be the sea area and the coastal zone of the South East Pacific within the 200 mile maritime area of sovereignty and jurisdiction of the High Contracting parties and beyond that area, the high seas, up to a distance within which pollution of the high seas may affect that area..

Under the 1986 Noumea Convention, the "Convention Area" is defined to include "those areas of high seas which are enclosed from all sides by the 200 nautical mile zones..."[42]

Thus, while in some cases the RSPs cover adjourning high seas and even then in a clearly restricted sense, most of them have explicit and implicit provisions, which exclude high seas from their scope. Moreover, at least for the 1981 Lima Convention provision cited above, the definition of the high seas covered is clearly imperfect.

Secondly, while there may be no serious objection to the fact that RSPs are time-tested and are largely established legally and institutionally, it remains incontestable that they were not

---

[40] The 1992 OSPAR Convention, 32 ILM (1993) 1072, Article 1; the 1981 Lima Convention, ND (Looseleaf) Doc.J.18, Article 1; and the 1986 Noumea Convention, 26 ILM (1987) 38, Articles 1 and 2.

[41] The 1992 OSPAR Convention, 32 ILM (1993) 1072, Article 1(a)

[42] The 1986 Noumea Convention, 26 ILM (1987) 38, Article 2 (a) (ii)

designed or framed for the protection of the high seas environment. This may have been borne of their orientation as instruments of marine and coastal environmental protection mainly from land-based sources and activities, which are easily traceable to specific countries and regions. Sea based sources of pollution and degradation, on the other hand, such as pollution from ships and other sea vessels are best dealt with at the global level, unless they arise near shore and are in the nature of emergencies such as oil spills or hazardous wastes.

Thus, while the regional approach has grown to include a vast number of mainly coastal states around the world, representing a substantial body of practice of more general significance for the marine environmental law as a whole, this has not covered the high seas environment. Equally neglected, arguably, are the interests of non-coastal states and those states or regions, which are not currently covered by RSPs.

Thirdly, as the regionalist approach lacks the structure, form and legal mandate to tackle global environmental problems and particularly in the high seas, this undermines it as appropriate enforcement machinery for the global commons. Thus, even assuming that the RSPs were a possible vehicle to implement the requirements of the 1982 UN Convention on the Law of the Sea and other global environmental treaties, they do not seem to have enforcement machinery as currently constituted, to tackle high seas environmental problems.

Fourthly, according to Okidi, there may be conflicts between a regional regulation and a global one to the extent that users of the sea may in fact be subjected to harassment as they operate in different areas. This means that a regional regime for the promulgation of regional standards ought to provide mechanisms for the coordination of legislative processes of the global and regional organizations to facilitate harmony of the various standards adopted by the regional organizations, where such standards present genuine problems to users of the sea.[43]

Fifthly, the regional regulations may differ from region to region, thus permitting possible trans-regional pollution injuries. Furthermore, the regional initiatives may in some areas be frustrated by pre-existing political differences.[44]

Okidi, C.O: *Regional Control of Ocean Pollution: Legal and Institutional Problems and Prospects*, p 162

Ibid.

Finally, as Birnie, Boyle and Redgwell point out, the RSPs are based on apparently "unscientific zoning."[45] Although the 1982 UN Convention on the Law of the Sea itself is primarily concerned with a global system of international law governing all aspects of the use of the oceans, including environmental protection, it expresses reference to regional approaches and variations including regional rules, programmes and co-operation. Even as it anticipates regionalism within its global framework, the 1982 UN Convention on the Law of the Sea does not specify or define what is meant by "regional." The best interpretation of a "region" or "regional" is that it is defined by the context in which it arises, with a close correspondence between a "political" region and a "geographical" region.[46]

Under Article 122 of the 1982 UN Convention on the Law of the Sea, reference is made to enclosed or semi-enclosed seas, defined as "a gulf, basin or sea surrounded by two or more states and connected to another sea or the ocean by a narrow inlet or consisting entirely or primarily of the territorial seas and exclusive economic zones of two or more coastal states." This definition apparently includes the RSPs covering the Mediterranean, the Baltic, the Red Sea and the Persion Gulf. What makes these areas special or distinguishable as regions is their relative ecological sensitivity and separation from the marine environment of adjacent oceans.[47] These considerations of a "region" are apparently important especially as concerns land-based sources and activities.

On the other hand, a "region" does not have to be composed of ecological considerations as above. Some of the RSPs are founded upon "unscientific criteria" such as political considerations, common interests, or geographical proximity.[48] Some of the UNEP RSPs are founded on proximate oceanic coastal areas where the main factor connecting the parties is their location on a common coastline, and to a lesser extent identity of interest or shared ecological problems. Examples include RSPs in the south-east Pacific coasts of Latin America, and the Atlantic and Indian Ocean coasts of Africa.[49] Other RSPs such as those in the South Pacific and in the Caribbean are largely defined by the proximity and shared interests of a number of island states.[50] Therefore, the designation of regions as RSPs, for UNEP at least, is a matter of policy depending on what is the most sensible geographical and

[45] Birnie, P, Boyle, A and Redgwell, C: *International Law and the Environment*, 3rd ed (2009), p. 392.
[46] Ibid.
[47] Ibid., p.391.
[48] Ibid.
[49] Ibid, p.391-392.
[50] Ibid., p. 392.

Finally, as Birnie, Boyle and Redgwell point out, the RSPs are based on apparently "unscientific zoning."[45] Although the 1982 UN Convention on the Law of the Sea itself is primarily concerned with a global system of international law governing all aspects of the use of the oceans, including environmental protection, it expresses reference to regional approaches and variations including regional rules, programmes and co-operation. Even as it anticipates regionalism within its global framework, the 1982 UN Convention on the Law of the Sea does not specify or define what is meant by "regional." The best interpretation of a "region" or "regional" is that it is defined by the context in which it arises, with a close correspondence between a "political" region and a "geographical" region.[46]

Under Article 122 of the 1982 UN Convention on the Law of the Sea, reference is made to enclosed or semi-enclosed seas, defined as "a gulf, basin or sea surrounded by two or more states and connected to another sea or the ocean by a narrow inlet or consisting entirely or primarily of the territorial seas and exclusive economic zones of two or more coastal states." This definition apparently includes the RSPs covering the Mediterranean, the Baltic, the Red Sea and the Persion Gulf. What makes these areas special or distinguishable as regions is their relative ecological sensitivity and separation from the marine environment of adjacent oceans.[47] These considerations of a "region" are apparently important especially as concerns land-based sources and activities.

On the other hand, a "region" does not have to be composed of ecological considerations as above. Some of the RSPs are founded upon "unscientific criteria" such as political considerations, common interests, or geographical proximity.[48] Some of the UNEP RSPs are founded on proximate oceanic coastal areas where the main factor connecting the parties is their location on a common coastline, and to a lesser extent identity of interest or shared ecological problems. Examples include RSPs in the south-east Pacific coasts of Latin America, and the Atlantic and Indian Ocean coasts of Africa.[49] Other RSPs such as those in the South Pacific and in the Caribbean are largely defined by the proximity and shared interests of a number of island states.[50] Therefore, the designation of regions as RSPs, for UNEP at least, is a matter of policy depending on what is the most sensible geographical and

---

45 Birnie, P, Boyle, A and Redgwell, C: *International Law and the Environment*, 3rd ed (2009), p. 392.
46 Ibid.
47 Ibid., p.391.
48 Ibid.
49 Ibid, p.391-392.
50 Ibid., p. 392.

political area within which to address the inter-related problems of marine and terrestrial environmental protection. According to Birnie, Boyle and Redgwell, citing another author in this subject, "development of the basic regional concept has not been stimulated by scientific thought but by the decision making context and practice of the UN system."[51]

The "ecological region" described above perhaps represents in varying degrees "problem sheds or areas within which the levels of pollution or degradation are relatively or completely independent of discharges elsewhere, and therefore require regional coordination if control measures are to be effective.[52] However, the definition of the "region" in the context of RSPs is an imperfect conglomeration of both "political" and "geographical" region.[53] The "imperfect" or "unscientific" region, it is submitted, makes it harder to maintain the regionalist approach for the protection of the marine environment generally and the high seas in particular.

6.3.3 Unilateralism

A third possible option for responding to high seas environmental problems is "unilateralism". This essentially is available to coastal states, port and flag states and other maritime powers, and entails an open-ended national or unilateral approach as opposed to global or regional approaches. Unilateralism would theoretically assume the non-existence of global or regional legal, institutional or policy frameworks, or seek to bypass or overrule them if they exist.

As indicated in chapter 3, unilateralism was more current, and feasible, in the years before the current body of the international law of the sea, with its antecedents (including RSP frameworks) had come into existence. In those years, maritime powers would stake unilateral claims over maritime areas, some of which covered the high seas. In fact, the ancient maritime powers virtually apportioned and appropriated the seas and oceans of the world and claimed sovereign control. This was one of the underlying motivations for the development of the current international law of the sea, to forestall colonial-type grab of the maritime areas

---

51 Ibid., citing Vallega, 24 O&C Man (1994) 26.

52 Ibid, p.391, citing Okidi C.O, 4 ODIL (1971) 1; Schachter and Serwer, 65 AJIL (1971), 84.

53 Ibid, (Birnie, P, Boyle, A and Redgwell, C: *International Law and the Environment*, 3rd ed (2009)) p.392. For the definitional difficulties associated to "region", see also, Sands, P and Klein, P: *Bowett's Law of International Institutions*, 5th ed.(2001) p.18.

and their resources and to establish a collegial and shared framework for the control of these vast resources.[54]

Therefore, to a large extent, unilateralism remains a rather historical option and which is largely discredited as a viable approach to the protection of the maritime global commons including the high seas. However, its relevance is not to be completely diminished. As states remain the primary subjects and actors of international law and its key framers, as well as national frameworks, it is important to define the proper place of unilateralism.

Firstly, it should be emphasized that the primary legal obligations defined by international law, including the 1982 UN Convention on the Law of the Sea and other relevant marine international environmental laws, devolve to states to implement and enforce. While states need global or regional forums to articulate and determine issues that affect them, it is the state which ultimately carries the onerous responsibility of implementing or enforcing the standards and requirements agreed upon. In fact the 1982 UN Convention on the Law of the Sea defines various obligations for coastal states, port and flag states, and other maritime states,[55] many of which directly affect the maritime environment.

Secondly, because of the principle of state sovereignty and the right of a state to refuse to sign or ratify, or even to get out of a treaty or convention, it is expected that in certain cases a state could still operate legitimately outside the framework of a global or regional treaty or convention. Thus, except where legal obligations are *erga omnes,* or part of international customary law generally accepted by nations, a state could be legitimately outside the framework of a global or regional treaty or convention. In such circumstances a unilateralist approach is perhaps justified. In this regard, the USA's and other non-states parties' position *vis-ă-vis* the 1982 UN Convention on the Law of the Sea is rather problematic.

What is immediately apparent from the model of unilateralism is that there is no general understanding of the limits to which the unilateralist states' powers can extend with regard both to the breath of the zone to be claimed and to the substantive rules which the state may impose. Moreover, the oceans are a shared environment used extensively for navigation and commerce, and therefore any assumption of unilateral regulatory powers under national laws seriously jeopardizes the interests of other states and peoples. Further more, unilateral

---

[54] See Chapter 3.
[55] See Chapter 5.

extension of jurisdiction to control pollution has been characterized as a politically expedient way of extending the sovereignty of the coastal state to the high seas. This is the so-called 'creeping-jurisdiction', where states may end up controlling activities totally unrelated to pollution, the original evil. The reasons for imputing bad faith to a state's unilateral decision to control pollution may not always be persuasive, but that imputation certainly is widespread, and the plausibility of the argument depends on the special circumstances.[56]

Another argument against the unilateral approach to pollution control is that it can never be ultimately protective without similar efforts being taken by other states surrounding an ocean. Efficient pollution control must consider the ecological boundaries of the sea, and this is not secured by the disparate systems of unilateral regulatory jurisdiction. Moreover, most uses of the sea, including fishing, mining, navigation, and scientific research, are inter-related, and each has certain polluting aspects. It is now generally accepted that present and future peaceful and efficient activities in these areas can only be realized within the framework of an international agreement or agreements.[57]

Lastly, current international opinions reject unilateralism as an approach to the tackling of environmental problems which have international implications. A particularly important provision to that effect was expressed in Principle 25 of the Stockholm Declaration on the Human Environment which says:

> states shall ensure that international organizations play a co-ordinate, efficient and dynamic role for the protection and improvement of the environment.[58]

It is clear that the unilateral approach is objectionable and it ought to be used only as a last resort, where circumstances cannot await multilateral initiatives; and then it should only be interim, in order to allow a compromise position which commands the consensus of the states interested in the issues involved.[59]

Nevertheless, it is submitted that in the proposed global framework for the high seas environment described in the next chapter, the proper place for both regionalism and unilateralism will be elaborated.

---

[56] Ibid.
[57] Ibid, p 144, 145 and 146
[58] Ibid, p 148, citing UN Doc. A/CONF.48/14 (1972), p 7.
[59] Ibid, p. 148

6.4 Freedom of the High Seas, Common Heritage of Humankind and the High Seas Environment

Two underlying and mutually reinforcing justifications for the establishment of a global framework for the protection of the high seas environment are the freedom of the high seas and the common heritage of humankind. This discussion will also seek to show why the regionalist or unilateralist approaches are not appropriate models for the enhancement of high seas freedoms or for the common heritage of human kind. Another key justification is the precautionary principle.

6.4.1 Freedom of the High Seas

As noted in chapter 5, the freedom of the high seas is the hallmark of the current legal regime governing this maritime zone. It is the key distinguishing and defining characteristic of the high seas, apart from the sheer vastness of this commons. The modern law governing the high seas has its foundation in the rule that the high seas are not open to acquisition by occupation on the part of states individually or collectively: it is *res extra commercium.*[60] As the historical discussion in chapter 3 demonstrated, the emergence of the rule of freedom of the seas is associated with the rise to dominance of maritime powers and the decline of the influence of those states which had favoured closed seas or *mare clausum.* However, as Brownlie notes, whatever special interests the principle may have served historically, it has obviously commended itself to states generally, as representing a sensible and wholesome concept of shared use.[61]

As a result, freedom of the high seas is now a "general principle of international law."[62] Moreover, the freedoms articulated under article 2 of the 1958 High Seas Convention[63] were incorporated and augmented under the 1982 UN Convention on the Law of the Sea, and the latter has more freedoms than its 1958 predecessor. The specific freedoms include: freedom of over flight; freedom of navigation; freedom to lay submarine cables and pipelines; freedom to construct artificial islands and other installations permitted under international law; freedom of fishing; and freedom of scientific research.[64] The main qualification to these freedoms is that they should be exercised by all states "with due regard for the interests of

---

- Brownlie, I :*Principles of Public International Law*, 5th ed. (1998),p. 231
- Ibid.p. 231.
- Ibid.
- 450 UNTS 82; UKTS 5 (1963) Cmnd.1929.
- 1982 UN Convention on the Law of the Sea, Article 87(1)

other states in their exercise of the freedom of the high seas, and also with due regard for the rights under this Convention with respect to activities in the Area."[65]

On reflection, it is not difficult to see why the principle of freedom of the high seas is generally acceptable among states as a sensible and wholesome concept of shared use. Mainly because of the principle of non-appropriation and the non-acceptance of sovereign claims, states could only agree on a framework of shared and responsible access and use. Secondly, owing to the vastness of the resource and its goods and services, demand for access by states or their nationals is ever present. Inherent in this demand is the potential for conflict over access to or use of the high seas' bountiful goods and services. Moreover, other pertinent issues arising from the exercise of high seas freedoms would be the environmental consequences of access and use as well as liability and responsibility for environmental damage.

The task of balancing state interests in the course of exercising freedom of the high seas remains a practical and legal challenge. This is because of the reality of power differences among states and the numerous uses to which the high seas could be put by states simultaneously: shipping, fishing and exploitation of other marine living resources, laying of submarine cables, marine scientific research, military and naval activity, and Area activities, among others. As nations ultimately act in self-interest, it is imperative, for orderly access to and use of the entire multiple and legitimate purposes, to establish a collective and global institution to protect the environmental well-being of this commons. Virtually each of the multiple uses of the high seas has environmental consequences and the question of its protection must remain an important and central consideration in high seas governance.

On the other hand, the reference under Article 87(2) of the 1982 UN Convention on the Law of the Sea to "activities in the Area" merits some comment. As previously noted, the high seas water mass largely sits upon the Area. It is ironic that the framers of the Convention provided an institutional framework for seabed activities and failed to provide similarly for the high seas activities, which in any case are a greater variety than those anticipated in the Area. Nevertheless, it is gratifying that at least some consideration was given, in exercise of the high seas freedoms, to the interests of those states which were undertaking seabed activities.

---

[65] Ibid. Article 87(2).

Although the determination of what is reasonable and mutually acceptable among competing uses and access to the high seas will perhaps remain always imprecise, it is necessary to establish an appropriate global regulatory framework to mitigate and prevent environmental damage and help to determine issues of liability and responsibility. On the question of liability and responsibility for environmental damage, Situma points out that this causes particular problems in international law which need to be addressed. The problems are complex particularly in cases of damage to areas of the environment which are beyond the limits of national jurisdiction such as the high seas, where damage to the environment may be due to the cumulative effect of diverse sources; where sovereignty claims are not valid; and where the consequences for breach of environmental obligations are not clear.[66]

As sovereignty claims on any part of the high seas are prohibited,[67] the need for such a global framework is further reinforced. The greatest danger to the environment of the high seas is easily abuse or misuse of the freedoms of the high seas. Fortunately, these freedoms are not absolute and there are exceptions to their operation.[68]

6.4.2 Common Heritage of Humankind

As previously noted the common heritage of humankind underlies the regime of the Area and defines its key characteristic as a global commons. Like the high seas above it, the Area is not susceptible to appropriation by states and the regime of the freedom of the high seas applies *mutatis mutandis*.[69]

The institutional custodian of the common heritage of humankind principle, as applied to the Area, is the ISA which consists of all contracting parties to the 1982 UN Convention on the Law of the Sea.[70] The main argument here is quite simply this: that just like the principle of common heritage of humankind anchors and protects the Area, and is provided for institutionally through the ISA, so also the principle of the freedom of the high seas which anchors and protects the high seas, ought to have similar institutional arrangements. The mandate of the latter institution could be elaborated with close reference to the ISA as a model, but it must fundamentally be a global institution which has scope and competence

---

- Situma, F.D.P. "The Efficacy of International Environmental Law: A Personal Reflection," *ILSA Journal of International & Comparative Law*, Vol. 2, No. 1(1995) pp 85-87.
- 1982 UN Convention on the Law of the Sea, Article 87.
- Ibid, Articles 98,99,100-105,108,109,110,111; Brownlie,I :*Principles of Public International Law*,5th ed. (1998),p. 235-246.
- The 1958 High Seas Convention, Article 2; 1982 UN Convention on the Law of the Sea, Article 89.
- The 1982 UN Convention on the Law of the Sea, Article 156.

Although the determination of what is reasonable and mutually acceptable among competing uses and access to the high seas will perhaps remain always imprecise, it is necessary to establish an appropriate global regulatory framework to mitigate and prevent environmental damage and help to determine issues of liability and responsibility. On the question of liability and responsibility for environmental damage, Situma points out that this causes particular problems in international law which need to be addressed. The problems are complex particularly in cases of damage to areas of the environment which are beyond the limits of national jurisdiction such as the high seas, where damage to the environment may be due to the cumulative effect of diverse sources; where sovereignty claims are not valid; and where the consequences for breach of environmental obligations are not clear.[66]

As sovereignty claims on any part of the high seas are prohibited,[67] the need for such a global framework is further reinforced. The greatest danger to the environment of the high seas is easily abuse or misuse of the freedoms of the high seas. Fortunately, these freedoms are not absolute and there are exceptions to their operation.[68]

6.4.2 Common Heritage of Humankind

As previously noted the common heritage of humankind underlies the regime of the Area and defines its key characteristic as a global commons. Like the high seas above it, the Area is not susceptible to appropriation by states and the regime of the freedom of the high seas applies *mutatis mutandis*.[69]

The institutional custodian of the common heritage of humankind principle, as applied to the Area, is the ISA which consists of all contracting parties to the 1982 UN Convention on the Law of the Sea.[70] The main argument here is quite simply this: that just like the principle of common heritage of humankind anchors and protects the Area, and is provided for institutionally through the ISA, so also the principle of the freedom of the high seas which anchors and protects the high seas, ought to have similar institutional arrangements. The mandate of the latter institution could be elaborated with close reference to the ISA as a model, but it must fundamentally be a global institution which has scope and competence

---

66 Situma, F.D.P: "The Efficacy of International Environmental Law: A Personal Reflection," *ILSA Journal of International & Comparative Law*, Vol. 2, No. 1(1995) pp 85-87.

67 1982 UN Convention on the Law of the Sea, Article 87.

68 Ibid. Articles 98,99,100-105,108,109,110,111; Brownlie,I :*Principles of Public International Law*,5th ed. (1998),p. 235-246.

69 The 1958 High Seas Convention, Article 2; 1982 UN Convention on the Law of the Sea, Article 89.

70 The 1982 UN Convention on the Law of the Sea, Article 156.

throughout the vast high seas for the benefit of humankind who are the ultimate owners and beneficiaries of this global resource.

6.4.3 The Precautionary Principle and the High Seas Environment

It has been argued that "in high seas governance, more than any other place, the precautionary principle should become standard practice"[71] Whether it is "precautionary principle" or "precautionary approach,"[72] and notwithstanding uncertainties in the meaning, application and implications of the precautionary principle or approach, there is no doubt that it is an imperative for better protection of the high seas environment.[73] As to whether it is "precautionary principle" or "precautionary approach", it may be held that this may be a matter of semantics, and a demonstration that consensus is hard to achieve on the subject. According to Birnie, Boyle, and Redgwell, much of the confusion surrounding the precautionary principle or approach "stems from a failure to distinguish the identification of risk from the entirely separate question of how to respond to that risk".[74] Whether viewed as a principle or approach, the essence of precaution has been aptly explained as follows:

> The precautionary approach then is innovative in that it changes the role of scientific data. It requires that once environmental damage is threatened action should be taken to control or abate possible environmental interference even though there may still be scientific uncertainty as to the effects of the activities.[75]

The scientific basis of the precautionary principle as it applies to the high seas and the environment generally is fairly well established. It is difficult to conclusively identify, anticipate and prevent potential harm to the high seas environment. It is often difficult to establish a causal link between hazardous substances or other causes of pollution or degradation and specific environmental harm, and this is attributable to limitations in the current scientific knowledge. In this regard, scientific knowledge is especially limited in understanding the variability and effects of pollution on ecosystems.[76] Moreover, the ability of science to identify a threshold of effects or an assimilative capacity for an ecosystem is

---

71 IUCN: "10 Principles for High Seas Governance", *www.iucn.org, accessed 24.09.2012.*

72 Principle 15 of the Rio Declaration (1992) refers to "precautionary approach", at the insistence of the US, apparently in the belief that "approach" offers greater flexibility and would be less potentially restrictive than "principle". (Birnie, P, Boyle, A and Redgwell,C: *International Law and the Environment*, 3rd ed (2009), p. 155).

73 Birnie, P,Boyle, A and Redgwell, C: *International Law and the Environment*, 3rd ed (2009), p. 160.

74 Ibid., p.155.

75 Ibid., p 155-156, citing Freestone, 6 JEL (1994) 212.

76 Joel Tickner, J, "The Precautionary Principle", *The Networker*, The Newsletter of the Science and Environmental Health Net, May, 1997 - Volume 2, p 4

throughout the vast high seas for the benefit of humankind who are the ultimate owners and beneficiaries of this global resource.

6.4.3 The Precautionary Principle and the High Seas Environment

It has been argued that "in high seas governance, more than any other place, the precautionary principle should become standard practice"[71] Whether it is "precautionary principle" or "precautionary approach,"[72] and notwithstanding uncertainties in the meaning, application and implications of the precautionary principle or approach, there is no doubt that it is an imperative for better protection of the high seas environment.[73] As to whether it is "precautionary principle" or "precautionary approach", it may be held that this may be a matter of semantics, and a demonstration that consensus is hard to achieve on the subject. According to Birnie, Boyle, and Redgwell, much of the confusion surrounding the precautionary principle or approach "stems from a failure to distinguish the identification of risk from the entirely separate question of how to respond to that risk".[74] Whether viewed as a principle or approach, the essence of precaution has been aptly explained as follows:

> The precautionary approach then is innovative in that it changes the role of scientific data. It requires that once environmental damage is threatened action should be taken to control or abate possible environmental interference even though there may still be scientific uncertainty as to the effects of the activities.[75]

The scientific basis of the precautionary principle as it applies to the high seas and the environment generally is fairly well established. It is difficult to conclusively identify, anticipate and prevent potential harm to the high seas environment. It is often difficult to establish a causal link between hazardous substances or other causes of pollution or degradation and specific environmental harm, and this is attributable to limitations in the current scientific knowledge. In this regard, scientific knowledge is especially limited in understanding the variability and effects of pollution on ecosystems.[76] Moreover, the ability of science to identify a threshold of effects or an assimilative capacity for an ecosystem is

---

IUCN "10 Principles for High Seas Governance", *www.iucn.org, accessed 24.09.2012.*

Principle 15 of the Rio Declaration (1992) refers to "precautionary approach", at the insistence of the US, apparently in the belief that "approach" offers greater flexibility and would be less potentially restrictive than "principle". (Birnie, P, Boyle, A and Redgwell,C: *International Law and the Environment,* 3rd ed (2009), p. 155).

Birnie, P,Boyle, A and Redgwell, C: *International Law and the Environment,* 3rd ed (2009), p. 160.

Ibid., p.155.

Ibid., p 155-156, citing Freestone, 6 JEL (1994) 212.

Jane Tickner, J, "The Precautionary Principle", *The Networker,* The Newsletter of the Science and Environmental Health Net, May, 1997 - Volume 2, p 4

limited by deficiencies in data; lack of knowledge about processes in humans and nature; the effects of chemical mixtures and other stressors; variation in exposure; and the time lag between exposure and effects.[77] Waiting for convincing scientific evidence or certainty could pose high human health and ecological consequences, and for the high seas this could be globally disastrous.[78]

Other difficulties to establishing scientific certainty and thus justifying the precautionary principle or approach to the high seas environment include problems of statistical power, which describes in mathematical terms the probability of an experiment or monitoring program actually detecting an effect where one exists; low level adverse effects; challenges of addressing cumulative effects of multiple physical, chemical and other environmental stressors; financial and other resource limitations, among others.[79] The foregoing limitations of science help make the case for a precautionary approach or principle in the governance of the high seas environment, and in this sense reflecting, in its application, a better understanding of science, and not less science.[80]

According to Birnie, Boyle and Redgwell, the main international law effect of Principle 15 of the Rio Declaration, which encapsulates the precautionary principle or approach, is to "lower the standard of proof of risk".[81] In that respect, where there is some evidence of a risk of serious or irreversible harm, even if uncertainty exists, appropriate action may be called for and lack of full scientific certainty may not be invoked to justify inaction.[82] The scientific uncertainties contemplated by Rio Principle 15 include: the capacity of the environment to assimilate pollution or of the living resources to sustain exploitation, or the impact of proposed activities or any other factors.

As an imperative for high seas environmental protection, the precautionary principle obliges states to submit proposed activities affecting the high seas, such as industrial waste dumping, military or scientific research activities, disposal of nuclear wastes or oil spills, or exploitation

---

77 Ibid, citing Gee, D. (1995). Approaches to Scientific Uncertainty. Conference on Transport Policy and Urban Health, London School of Hygiene and Tropical Medicine, 4-7 April 1995.

78 Ibid.

79 Ibid

80 Birnie,P Boyle, A and Redgwell,C: *International Law and the Environment*, 3rd ed (2009), p. 156.

81 Ibid., p 157.

82 Ibid.

of marine living resources, to international scrutiny and demonstrate that they will not cause harm.[83]

However, the legal status and implications of the precautionary principle is rather uncertain. In fact, there are said to be at least three "versions of the precautionary principle", namely: 'uncertainty does not justify inaction'; 'uncertainty justifies action'; and 'shifting the burden of proof'.[84] It has been held to lack a specific, widely recognized definition, to be a mere concept, and that it fails to constitute a rigorous analytical framework, which has limited its use and applicability.[85] There are also divergent views as to whether it constitutes a normative rule of international environmental law, a rule of customary international law, a general principle of law, an emerging principle of international law, or whether it merely redefines existing rules of international law on control of environmental risk and conservation of natural resources.[86]

Nevertheless, as succinctly set out by Agenda 21, "(a) precautionary and anticipatory rather than a reactive approach is necessary to prevent the degradation of the marine environment."[87] We submit that this is more so for the high seas environment. Waiting for scientific evidence or certainty may be disastrous and possibly span generations. The precautionary principle or approach, whatever its future developments,[88] provides a good framework for weighing scientific evidence and making decisions in the face of uncertainty with respect to any environmental problems of the high seas. Such decisions include the possible establishment of an international institutional framework for the regulation and protection of the high seas environment.

6.5 Pitfalls on Establishment of International Institutional Framework for High Seas Environment

We now turn to a discussion of the possible pitfalls towards the establishment of an international institutional framework for the high seas environment. These include vested geo-political and military interests, and economic and commercial interests, including over the sea

---

- Ibid., p 159.
- Wiener, J.B: "Precaution", in Bodansky, D, Brunee, J and Hey, E (eds):*The Oxford Hand book of International Environmental Law*,(2007), p 598-612.
- Joel Tickner, J, "The Precautionary Principle", *The Networker*, The Newsletter of the Science and Environmental Health Net, May, 1997 - Volume 2, p 4
- Birnie, P, Boyle, A and Redgwell, C: *International Law and the Environment*, 3rd ed (2009), p. 159-164; Marr, S: "Precautionary Principle in the Law of the Sea", PhD Dissertation (2003)
- UNCED, *Agenda 21*, Chapter 17, Para. 21.
- Wiener, J.B: "Precaution", in Bodansky, D, Brunee, J and Hey, E (eds):*The Oxford Hand book of International Environmental Law*,(2007), p 610-612.

bed Area. However, as a preface thereto, there is a brief comment below on the new institutional possibilities.

6.5.1 *New Institutional Possibilities*

According to Worm and Vanderzwag, "navigating beyond the present troubled and tangled waters of high seas governance is likely to involve a long and arduous voyage."[89] While reflecting on the possible options for high seas (fisheries) institutional arrangements, the scholars propose either a High Seas Bio-Prospecting Agency; a High Seas Integrated Planning Commission; a High Seas Marine Protected Areas (MPA) Authority; a High Seas Compliance Committee; or even a World Ocean Organization.[90]

These are clearly bold and innovative proposals, and could address some if not all of the environmental issues of the high seas, including the absence of an effective institutional framework. They also reflect the ongoing debate about the options for future governance of the high seas, and demonstrate that certainly the global community has not reached an end point in high seas governance.[91]

However, Worm and Vanderzwaag also identify several key setbacks to such institutional possibilities, and we generally agree with them: desire to maintain status quo; lack of leadership and political will; institutional fiefdoms; and preferences for decentralization and regionalization.[92] These setbacks are reflective of various vested interests in the international arena, which may ultimately militate against the establishment of the proposed high seas environmental authority. We now turn to a discussion of those pitfalls.

6.5.2 *Political and Military Interests and the High Seas Environment*

A possible challenge and constraint to the quest for a global regulatory framework for the protection of the high seas environment is vested geo-political and military interests. Such interests have always existed and manifested themselves during the many years that preceded the eventual development of the current law of the sea. Geo-political and military interests are not always negative; in fact they are often legitimate national and regional claims to the maritime goods and services. The negative underside is usually in cases where they

---

89 Worm, B and Vanderzwaag, D: High Seas Fisheries: Troubled Waters, Tangled Governance, and Recovery Prospects, in *Behind the Headlines* (2007).
90 Ibid.
91 Ibid.
92 Ibid.

undermine the common interest of the global community, as for example where states refuse to co-operate in efforts to prevent or mitigate the adverse environmental impacts of their activities or where they proceed with impunity on a course destructive to the common environment.

There ought to be a proper balance established between global interests as they concern the high seas environment on one side, and national or regional interests, which may not be necessarily compatible. "Global stakeholders" ought to find mutual accommodation in the proposed new institutional framework for the high seas environment. But who are these "global stakeholders" and which are the main political and military interests in the high seas? What is the nature and effect of these interests? What should be the right balance of actual or conflicting interests? These are the questions that guide our discussion below.

In the previous chapters, we have discussed the marine pollution problems associated with military activities and nuclear wastes generally and in particular the high seas, as well as the efficacy of current legal and institutional frameworks seeking to respond to them. Military and nuclear issues have a fundamentally political character. Thus the main "stakeholders" are political decision makers, and particularly among the major maritime powers and those which have nuclear capability. For this category of stakeholders, their major interest would be national and regional security, self interest and the protection of strategic spheres of influence. Security through capability and the control of strategic spaces would be an important pre-occupation of such states. In this league are current permanent members of the UN Security Council-USA, France, Britain, China, and Russia, and their regional or sub-regional groupings. Other nuclear countries such as India, Pakistan and North Korea would similarly have national self-interest to protect and promote.

Invariably, it is the countries with major navies and nuclear capability that are mainly responsible for the military and nuclear wastes and materials remnant of war in the marine environment. This category of "stakeholders" is likely to resist a regulatory system which places greater burden on them to either avoid generating such wastes or take additional measures to mitigate their adverse environmental impacts or otherwise assume liability and responsibility for damage.

Another "political stakeholders" category would be coastal states including port states who are the greatest beneficiaries of the so called "creeping jurisdiction."[93] Coastal states including islands and archipelagic states are the main riparian states to the seas and oceans. Their main concerns may be nationalist, regional or sub-regional security matters or marine resources especially where their maritime zones interact with international waters. They may also be concerned about the impact of high seas environmental pollution and degradation on their own zones of national sovereignty or control. As Okidi correctly puts it, coastal states are a primary interest group where pollution in areas beyond national jurisdiction is concerned, because they often suffer the direct consequences of pollution of the marine environment.[94]

Collectively, coastal states constitute a large segment of the states of the world, and they include major global powers such as USA, France, Germany, Britain, Canada, China, Japan and Australia. Coastal states are largely organized as RSPs, and legally and politically control nearly one-third of the seas and oceans of the world, mainly due to their numbers, composition and the "creeping jurisdiction" or "ocean enclosure movement." Their geo-political and military interests must therefore be addressed in any credible efforts to establish a high seas environmental regulatory regime. These interests may include the need for greater freedoms to control regions and spheres; to tackle security concerns more freely, nationally or regionally; and greater access to maritime resources without necessarily incurring greater liability and responsibility for environmental damage.

Within this category of "coastal state stakeholders" are Small Island Developing States (SIDS), which face greater vulnerabilities arising from environmental damage, natural disasters and major climatic events, and their close dependence on maritime resources. The SIDS would perhaps need greater re-assurance that such a regime would improve their coping mechanisms and increase their environmental security.

Flag states are yet another "political stakeholder" category. They invariably include some in the naval and nuclear, as well as the coastal state categories already described above. But they also include non-coastal states that own or control sea going vessels. This category perhaps constitutes the proper high seas "operators." As the high seas are not occupied in the

---

93 Andrew Mark "Security Regimes for the Oceans. The Tragedy of the Commons, the Security Dilemma, and Common Security" in Van Dyke at al: *Freedom for the Seas in the 21st Century* (1993), p. 412.

94 Okidi, C.O: "Towards Regional Arrangements for Regulation of Marine Pollution: An Appraisal of options," 4/1 *Ocean Development and International Law Journal* (1977).

conventional sense, human presence is on vessels which by law must fly particular flags of nationality.[95] Thus, vessels and flags constitute "national presence" in the high seas. Flagship is doubtless an all-important symbol of political and national authority and presence, and confers, among others, exclusive jurisdiction in certain cases. This is more so in cases where warships or government non-commercial vessels are concerned.[96]

Where pollution and degradation of the high seas environment is vessel-based, as is often the case, the primary responsibility presently still devolves to the flag states to enforce environmental compliance.[97] This may well present practical political problems where a flag state is required to enforce environmental standards, the details of which are enacted by itself or in a regional context, and against vessels flying its own flag. This is essentially a system of environmental self-regulation in international waters, which in a sense imports elements of state sovereignty in the management of common resources. This system may have to be reviewed to accommodate a more collective approach to the protection, regulation and enforcement of the high seas environment. Such change is likely to be resisted by flag states, who probably perceive the current system as more favourable and acceptable to them.

A rather disparate and amorphous "geo-political category" includes non-coastal states, with the developing countries as the largest component. Others include civil society organizations and other special interest groups which traverse the other "political" categories. During the negotiations leading up to the enactment of the 1982 UN Convention on the Law of the Sea, the voice of this "silent majority" was represented by the so-called G77. This group also constitutes part of the largest, though perhaps not the most powerful voice, in the UNGA and other global forums. As many of the states are land-locked and developing, the pressing political issues for them include the quest for greater and more equitable access to maritime resources and spaces; equitable distribution of maritime resources, especially those constituting the common heritage of humankind and those in respect of which access is free (such as the high seas); and greater or more meaningful participation in ocean governance generally. An orderly governance system for the seas and oceans, after all, remains the common quest of human kind notwithstanding their land-locked, geographically disadvantaged or other status. This "political category" is likely to be more favourable to an

---

95 1982 UN Convention on the Law of the Sea, Articles 90, 91, 92, 94.

96 Ibid., Articles 95, 96.

97 Ibid, Articles 94,217.

international regime for the protection and regulation of the high seas environment. However, their interests should be appropriately and carefully balanced against the other competing interests.

Finally, other "geo-political" interest groups are not to be diminished. Regional security arrangements such as the North Atlantic Treaty Organization (NATO),[98] and Organization for Security and Cooperation in Europe (OSCE)[99] come to mind as examples. They would have, directly or indirectly, issues concerning the proposed high seas regulatory framework, because of the strategic importance of the high seas for military and security operations, as well as the environmental consequences of military and nuclear activities.

An important pre-occupation in the development of a high seas environmental regulatory body would have to be the resolution of and balancing of various geo-political and military interests. By their nature political and military or security issues are more intractable and therefore more difficult to resolve than commercial or trade, research or scientific issues.

6.5.3 Economic Interests, Sea bed Activities and the High Seas Environment

Another category of potentially problematic issues have to do with economic or commercial interests, particularly those concerning seabed activities, shipping and fisheries. The reality is that the high seas environment is affected directly by these economic and commercial activities, and the environmental consequences thereof are bound to be significant. The interests of shipping nations and the industry and those which have invested in seabed activities or fishing must therefore be addressed.

As shipping is a major global industry, it is controlled by influential countries with large economic and political influence. Therefore, even with largely private sector control the shipping industry is an influential voice among the governments of shipping nations. Shipping has both enormous economic, commercial and strategic advantages, and is therefore an important maritime stakeholder. The economic and commercial interests of both the governments and industry have a bearing on the well being of the high seas environment.

As previously indicated, flag state jurisdiction virtually amounts to a form of environmental self-regulation, with the flag state expected to regulate and enforce compliance of

---

98 For a brief historical, legislative and institutional description, see Sands, P and Klein, P. *Bowett's Law of International Institutions*, 5th ed.(2001),p. 191.

99 Ibid, p.199

environmental requirements against vessels flying its flag. Such vessels could be government commercial or non commercial, or private sector owned and run. Greater or more stringent enforcement of environmental standards as prescribed by the 1982 UN Convention on the Law of the Sea, the various IMO Conventions or other relevant instruments may simply be more expensive and less attractive commercially. In a sense, therefore, it could be argued that shipping nations including ship makers would have less enthusiasm for greater environmental compliance because it costs them more and also potentially adversely affects their mutually beneficial relationship with the shipping industry. Higher environmental costs may translate to higher prices of the goods and services carried, which in turn could affect their international trade.

On the other hand, environmental compliance could have positive benefits, including better international standing and greater competitiveness. Either way, shipping interests directly affect the high seas environment and would have to be addressed in the development of a global environmental framework for the high seas.

Moreover, seabed activities including commercial interest in the resources of the Area, and research are other key commercial interests to be addressed. As shown in chapter 3, the matter of the international seabed regime and particularly access and sharing of its assumed immense resources, easily became the most contentious issue in UNCLOS III, which eventually yielded the 1982 UN Convention on the Law of the Sea. Industrialized countries with technology to directly access the international seabed led by the USA, objected to a collective regime which was meant to operationalize the concept of the common heritage of humankind. They preferred instead to have commercial access on a competitive basis, with their private sectors, which controlled the required technology, taking the lead. They also argued that if the collective vehicle, the ISA's Enterprise or other players, needed the technology, they should acquire the same on competitive terms.[100]

The resultant regime under Part XI of the 1982 UN Convention on the Law of the Sea tilted the balance in favour of the majority of states most of whom were developing states who staked their hopes in the seabed on a collective vehicle and were opposed to unilateral approaches. As a result the USA and several other leading industrial countries refused to

[100] See also, generally, Brown, E.D: *Seabed Energy and Mineral Resources and the Law of the Sea, Volume 2:The Area Beyond the Limits of National Jurisdiction*, Graham and Trotman(1986).

become parties to the 1982 UN Convention on the Law of the Sea. Certain adjustments had to be done under the 1994 Agreement Relating to the Implementation of Part XI of the 1982 UN Convention on the Law of the Sea,[101] which paved the way for the entry into force of the Convention.[102] The 1994 Agreement had far reaching implications for the common heritage regime. The main implication is that it watered down Part XI of the 1982 UN Convention on the Law of the Sea "to such an extent that one may ask what remains of the idea that the seabed and its resources are the common heritage of humankind, notwithstanding its reaffirmation in the agreement."[103] Moreover, the common heritage concept has not found application beyond the 1982 UN Convention on the Law of the Sea and the 1979 Moon Treaty.[104] The concept of common heritage also remains of "doubtful legal status" and "controversial."[105] Even with the 1994 Agreement, the USA and a few other countries have still refused to become states parties to the 1982 UN Convention on the Law of the Sea. Apparently the USA seems determined to pursue a unilateralist approach, essentially to protect its commercial and strategic interests.[106]

Although commercial exploitation of seabed activities has not commenced in earnest, there is concerted attention and interest in the seabed because of its perceived potential. Apart from commercial exploitation, deep seabed research is another important interest, especially so because research and development of technologies hold the key to commercial exploitation. The interest of those countries currently engaged in research, development of technologies, prospecting and other operations, as well as the entire humankind who stake claim to the rich resources of the seabed collectively, have to be balanced against the imperatives of high seas environmental regulation and protection.

Supplement No. 49A(48/49/Add.1).

For detailed discussions, see generally, Brown E.D. : *Sea bed Energy and Mineral Resources and the Law of the Sea,Vol. 2: The Area Beyond the Limits of National Jurisdiction,* Graham and Trotman (1986); Brown E.D: *Seabed Energy and Mineral Resources and the Law of the Sea* Vol. 3.Selected Documents,Tables and Bibliography, Graham and Trotman (1986); Buzan. B: *Seabed Politics*, Praeger Publishers, Washington/London (1976), Ogley R: *Internationalizing the Seabed,* Gower Publishing Company Ltd (1984); Schmidt,G.M. *Common Heritage or Common Burden? United States Position on the Development of a Regime for Deep Sea Bed Mining in the Law of the Sea Convention,* Clarendon Press, Oxford(1989); Brewer W(Jr); "Deep Seabed Mining; Can an Acceptable Regime Ever be Found?" 11 Ocean Development and International Law 519 (1989).

Brunee, J: "Common Areas, Common Heritage, and Common Concern, in in Bodansky, D, Brunee, J and Hey, E (eds):*The Oxford Hand book of International Environmental Law* (2007), p 551-573, at 563.

Ibid., Agreement Governing the Activities of States on the Moon and Other Celestial Bodies (New York), 18 ILM (1979),1434.

Birnie, P, Boyle, A and Redgwell,C: *International Law and the Environment*, 3rd ed (2009), p. 198, 338.

On 31 October 2007 the Foreign Relations Committee of the United States Senate, by a vote of 17 to 4, recommended ratification, and President George W. Bush publicly supported U.S. accession to the Convention; no date has yet been set for action by the full Senate. *(www.isa.org, accessed 24.09.2012.*

6.6 Towards Global Consensus

States are the primary creators, movers and actors of the international institutional system. Thus, any proposition to create and empower a high seas environmental authority must necessarily address the consent and support of the global community of states. In the absence of state consent and support, such proposition would in all likelihood be still- born. The question therefore is whether such global state consensus exists, or whether there is scope and expectation of such consensus. This is admittedly a difficult issue, especially considering that most of these states participated in the development and adoption of the 1982 UN Convention on the Law of the Sea, as well as other existing international conventional arrangements together with their institutional arrangements. Considering the intricate and arduous processes and negotiations that gave rise to the 1982 UN Convention on the Law of the Sea in particular, a great deal of effort may be required to create and sustain global consensus in this matter.

Moreover, as demonstrated in the preceding section, there are various, essentially national, interests to which the current law of the sea is beholden, some of which would naturally militate against the possibility of a high seas environmental authority. Political and economic interests often dominate over sound science in ocean governance; and high seas governance continues to be fragmented rather than integrated. Also, as noted above, some states still refuse to ratify global environmental agreements, which make it more doubtful if they would support any new initiative to protect the high seas environment.

There have also been sentiments expressed to the effect that it is no longer necessary or priority to establish new international environmental institutions; the priority is to reform and better integrate the existing ones. For example, Elizabeth Dowdeswell,[107] former Executive Director of the UNEP, reflecting on the "Promise of Stockholm" and the role of the UNEP as a global catalyst and coordinator of environmental action, commented as follows:

> ... there (is) an indispensable role for environmental institutions in the world...Building institutions is clearly no longer a priority. Making sure that the ones we have are working in concert with each other is.... (a priority).... While circumstances have changed since 1973, there remains a strong sense that the world community needs an organization like

[107] Dowsdeswell, Elizabeth: "The Promise of Stockholm", in UNEP (1997): *Our Planet*, Vol.. 8, No. 5

UNEP to champion issues and act as an independent, objective and authoritative advocate for the global environment...[108]

As discussed in chapter 5, critics of UNEP and the proposal to establish a global environmental organization argue that a new environmental organization is politically unrealistic and would not fare any better at securing the necessary decisions; and reform of the system should focus on a simple clustering of MEAs within UNEP and greater efforts to coordinate international action.[109]

Elsewhere, Chimni argues that the growing network of international institutions (not just environmental) today constitute a nascent global state "whose current task is to realize the interests of an emerging transnational capitalist class in the international system to the disadvantage of subaltern classes in the third and first worlds." He argues further that there is an emerging "imperial global state" in this network of international economic, social and political institutions.[110] Chimni's perspective, though rather radical, is important both for a balanced understanding of the current international environmental institutions affecting the high seas environment, and their limitations, and as a caution against expecting too much out of a new global environmental agency for the high seas environment.

Yet the establishment of multilateral legal and institutional arrangements or "international regimes" characterized among others by multilateral environmental agreements (MEAs) with their related protocols, soft laws and corresponding institutional frameworks is now widespread, well-established and capable of dynamic evolution.[111] It has been observed that 'the strength of the (regulatory) regime model of governance is the opportunity it offers for multilateral solutions to environmental problems and the negotiated application and development of international legal standards." [112] The regime model of environmental governance also enables states to exercise a fiduciary or trusteeship role in the protection of the environment, other species and future generations. Moreover, "no other model of governance offers adequate solutions to the problem of controlling phenomena of global

---

108 Ibid, p.3.

109 Birnie, P, Boyle, A and Redgwell, C: *International Law and the Environment*, 3rd ed (2009), p.69-70.

110 Chimni, B.S: "International Institutions. Today: An Imperial Global State in the Making" E.J.I.L (2004) Vol. 15, No. 1, 1-37.

111 Birnie, P, Boyle, A and Redgwell, C: *International Law and the Environment*, 3rd ed (2009), p 84. On a more general note, Klabbers notes that "international organizations have developed into a pervasive phenomenon and according to most estimates, even outnumber states"(Klabbers,J: *Introduction to International Institutional Law*, Cambridge University Press (2002), p. 1)

112 Birnie, P, Boyle, A and Redgwell,C: *International Law and the Environment*, 3rd ed (2009), p.84.

character...where no single state's acts are responsible and where the interests of all are at stake."[113]

Thus the current scenario engenders both senses of pessimism and optimism concerning consensus on the establishment of the proposed high seas environmental authority, much similar to the proposed establishment of a high seas fisheries institution, also mentioned above. On the more optimistic side, there is growing convergence about the idea that the high seas are in need of internationally coordinated management within a global framework of effective environmental governance. The proposed reform of the current international environmental governance, discussed under chapter 5, should yield improved governance and protection of the high seas environment, and avoid for the high seas the famous "tragedy of the commons." As international environmental governance is being reviewed under the auspices of the UN system, which is primarily inter-state, it is conceivable and probable that indeed state consensus will gradually develop and coalesce around the proposed high seas environmental authority.

6.7 Conclusions

In conclusion, Elizabeth Dowsdeswell was probably right with regard to the critical need for environmental institutions at all levels and their need to work together; and about UNEP's role as the global environmental authority. However, with regard to building new institutions, she stands challenged. This chapter has attempted to make a case for a new environmental institution to protect, regulate and enforce the high seas environment. The main justification for it is that neither in the 1982 UN Convention on the Law of the Sea nor in the other legal and institutional frameworks is there an effective institutional champion of this vast global commons. States, and indeed humankind as a whole, ought to overcome the challenges and interests which constitute the pitfalls towards establishment of such an institution, and nurture consensus towards this goal.

As the discussion in chapter 5 showed, all existing institutions with proximity to high seas environmental mandate fail to provide the needed institutional framework. The present chapter has taken the discussion of the need for such an institution further and identified the "victims" and "culprits" of the high seas environmental pollution and degradation; the existing institutional approaches, including globalism, regionalism and unilateralism. The

---

[113] Ibid.

preferred model compared to the others is the globalist approach, which caters for the global nature of the resource and therefore its governance.

In this chapter we have also reflected on the freedoms of the high seas, the common heritage of humankind and the precautionary principle. Both reinforce our argument for a global approach to high seas environmental governance. Finally, the various interests in the high seas, including geo-political and military, economic and commercial and seabed issues, may pose challenges and constraints in the development of the proposed global regulatory framework for the high seas. The outstanding challenge is to recognize those interests which are legitimate and seek to adequately provide for them and thus create an acceptable balance between competing interests in the elaboration of the proposed regime.

As part of the efforts towards the realization of international consensus, and to engender further debate on the matter, the next chapter, which is the last substantive, attempts to portrait the institutional details and features, and the legal form that could and should be taken towards establishment of the proposed high seas environmental authority.

CHAPTER SEVEN

Portrait of a Global Regulatory and Enforcement Agency for the High Seas Environment

In general, effective treaty institutions are those which combine political direction and inclusive, transparent, informed decision-making processes with the availability of technical, financial and capacity-building support for developing state parties from UN specialized agencies, the Global Environment Facility, or developed states. In all these respects environmental treaties have been notably innovative."[1]

7.1 Introduction

There is no doubt that the various international institutions with some measure of competence over the high seas environment, and which have been covered in chapter 5, have become important institutions of global and regional environmental governance.[2] These institutions are augmented by the extensive network of supervisory bodies, conferences of parties (COP) and commissions established by environmental treaties.[3] Indeed the question of environmental governance has gained currency in recent times, whether in global, regional or national and local context. It can be firmly asserted that in this matter, legal, policy and institutional frameworks for the protection of the environment are at the core. Where global resources and spaces are concerned, such as the high seas, the question of governance becomes larger and more complex. This is attributable partly to the largeness and complexity of the high seas environment itself, and partly to the inherent difficulties and complexities of legislating and regulating a resource with so much divergence and convergence of geo-political, military, commercial and other interests among states, regions and other groups.

Admittedly, existing international environmental laws and institutions have gone some way in promoting and protecting the global environment, including the high seas. The previous chapters have amplified this issue. However, it is also true that existing frameworks have

---

1 Birnie, P, Boyle, A, and Redgwell,C: *International Law and the Environment*, 3rd ed (2009), p.86.

2 Ibid., p 86-87.

3 Chimni.B.S; "International Institutions Today: An Imperial Global State in the Making," EJIL (2004), Vol. 15.No. 1,p 1-37 at 12.

significant limitations particularly with regard to the high seas environment. As Chimni[4] eloquently argues, in the absence of an effective implementation of the principle of common but differentiated responsibility based on the premise of the historical responsibility of the developed North in causing larger-scale environmental damage, the operation of international environmental institutions and laws involves the redistribution of property rights in favour of the advanced capitalist countries.

In chapter 6, we made the case for the establishment of an international institutional framework for the regulation and enforcement of the high seas environment. This is premised on the reality that such a specific framework does not currently exist, leaving the high seas in a sort of lacuna and dilemma. Of various approaches to regulation of the high seas environment, we prefer globalism. Our argument is that, in spite of the various interests militating against a global high seas environmental agency, it is not only feasible but prudent that the world moves to establish such framework.

This chapter climaxes our thesis by attempting to develop the conceptual and operational bases and features of a global regulatory and enforcement agency for the high seas environment. The core discussions will include formulating a conceptual framework for the proposed institution, including fundamental principles and key characteristics, jurisdictional issues, and legal and operational features. This should form a basis for the recommendation, in the last chapter, for the establishment of a legal and institutional framework for the regulation and enforcement of the high seas environment.

7.2 Conceptual Framework for High Seas Environmental Agency

The conceptual formulation of the proposed high seas environmental agency is based on experience from existing international institutions and their relative successes and failures. It is also based on novelty. The latter is informed by the experience of existing or older institutions as well as the gaps which exist, and the pragmatic need to intervene to protect the high seas environment from pollution and degradation. As discussed in chapters 5 and 6, the various existing institutions have experienced certain successes and failures, and also, importantly, suffer from certain limitations which make them unsuitable to play the primary role of high seas environmental agencies. They also represent the various approaches so far

---

[4] Ibid.

tested in international environmental governance generally-globalism, regionalism and unilateralism.

It is possible, based on experience and pragmatism, to formulate an alternative framework which seeks to build on gains already achieved in the governance of important global commons and other environmental or related resources, and also create a new dynamism in international institutional and legal formulation. A number of fundamental principles and key characteristics, briefly outlined below, could be elaborated to form the basis of the proposed high seas environmental agency.

7.2.1 Universality

Universality in this context means "global inclusiveness," or the inclusion, involvement and representation of all geographical regions, political, social-cultural, technical and other characterizations or segments of the global community. In other words, there should be inclusiveness of the entire humankind and all the high seas territories of the world's seas and oceans. Inclusion of the entire humankind should primarily be through the opening of membership to all states or territories approximating thereto,[5] and competent international organizations.[6] Competent civil society groups could be given observer status. Civil society can be seen as enhancing both the effectiveness of the 1982 UN Convention on the Law of the Sea and the legitimacy of the proposed high seas regulatory institution in the exercise of its responsibility for the high seas environment. Although they shall not join or vote as full members, their observer status would allow them in many cases to make proposals, influence other parties, and to join actively in the negotiating processes.[7] Therefore, the nature, character and scope of the proposed high seas environmental authority should be universal: in terms of geographical competence and also in its essential representativeness.

The advent of "globalization" so called has also arguably created a greater need and relevance for international institutions. It is argued that where those institutions are concerned with global commons, their universal character should be readily recognizable in their mandate as

---

Sands, P and Klein, P assert that while international organizations have for long been open to states only-which presupposes political independence- this has sometimes been interpreted liberally or flexibly to include territories or "micro-states" which conventionally are not states. Examples include admission of Palestinian Authority (formerly PLO); and the federated republics of former USSR, namely Byelorussia and Ukraine to the UN. The PLO was also admitted to the Arab League. Other examples of constitutive instruments with flexible language include that for WMO (Art 3(d) and (e) and WTO (Art XII (i).(Sands, P and Klein,P. *Bowett's Law of International Institutions*,(5th ed) (2002), p.534-535.

Ibid., p 535. The most illustrious example is the European Communities(E.U), to which member states have transferred some of their competencies, such as environment, education, health, agriculture, and the like.

Birnie, P,Boyle, A and Redgwell, C: *International Law and the Environment*, 3rd ed (2009), 89-91.

defined in their constitutive instruments, scale of operations, decision-making structures and other operational details.

However, it should be emphasized that while geographical universality is common to most global institutions, the same is usually restricted to particular aspects or themes, for example, health (WHO), shipping (IMO), trade (UNCTAD/WTO), nuclear energy (IAEA), or food and agriculture (FAO).

Thus, the proposed high seas environmental agency should have geographical universality but be thematically confined to the regulation and protection of the high seas environment. This would create what may be described as a "specialist universal mandate", as opposed to a "generalist universal mandate" such as the one exercised by the UN and the defunct League of Nations before it. Its constitutive instrument should define its specific functions and thus create it as a universal but functionally thematic entity.

7.2.2 Accountability and Internal Democracy

One of the common charges against international institutions generally and more so global entities, is their lack of accountability and internal democracy. Some of the institutions, such as the UN itself and international financial institutions are often held to be opaque, unaccountable and suffering from agency capture.[8] The UN Security Council is remarkable for this characteristic, with the veto power apparently permanently belonging to its five members since inception in 1945. The weighted voting procedure in the Bretton Woods institutions is another prime example. Chimni cites the case of the International Telecommunications Union (ITU), quoting Braithwaite and Drahos as follows:

> Some of the most direct forms of capture of international regulatory processes are to be found at the (ITU), where its companies in particular use the support of their government to gain the chairmanship of technical committees which they use to write their own patents into global technical standards. Three hundred companies have succeeded in placing their employees on ITU Committees.[9]

The effect of such unaccountable and undemocratic systems is that they lead to a serious deficit of international justice, often to the greatest disadvantage of the vast number of people

---

8 See Chimni; B.S:"International Institutions Today: An Imperial Global State in the Making," EJIL(2004),Vol.15.No.1.p 1-37

9 Braithwaite and Drahos; *Global Business Regulation* (2000),p. 490,cited by Chimni; B.S :"International Institutions Today: An Imperial Global State in the Making," EJIL(2004),Vol.15.No.1.pps 1-37, at 15.

in the developing world. This includes populations in poor and vulnerable small island states, archipelagos, coastal states, land-locked and other geographically disadvantaged states.

The proposed high seas environmental agency, to the extent that it will have jurisdiction over one of the largest global commons resources, will have to be fundamentally accountable and democratic in its constitution, decision-making and operational structures. Its constitutive instrument would have to address these issues in its provisions. The vast multitude of humankind would expect the agency to be transparent, inclusive, participatory and sensitive to the interests of local communities, nations, regions and the global community as a whole. Those interests are overall for cleaner oceans and seas with bountiful harvestable, cultural, aesthetic and other resources. The benefits of a clean marine environment would be freely shared by humankind. Conversely, the consequences of environmental damage are often visited upon the "victims" and the "culprits" alike, thus denying justice to the vast majority of humankind.

The decision making structures of the agency, including the executive or administrative, deliberative or legislative, and judicial or arbitrative, need to be representative of the interests of the countries, regions and communities, including any special interest groups. No section of these interests, however important or pre-eminent, should be allowed to capture the agency and keep it hostage to its own interests.

Accountability is exercised mainly by techniques of general supervision or control of states in the performance of their international obligations, or other agreed standards of conduct. Good examples in this regard include regular COPs by the Antarctic Treaty System,[10] the 1972/1996 London Dumping Convention,[11] the 1973 CITES,[12] the various UNEP Regional Seas Conventions,[13] the 1985 Vienna Ozone Convention[14] and the 1992 Climate Change Convention,[15] among others. The other model of accountability is through the establishment of commissions in which contracting parties of particular environmental conventions are members, and examples include the 1974/1992 OSPAR Convention,[16] the 1976 and 1999

---

402 UNTS 71.

11 ILM (1972) 1294; 36 ILM (1997) 7

993 UNTS 243; 12 ILM (1973) 1085

See Chapter 3.

26 ILM (1987) 1529

31 ILM (1992) 851

32 ILM (1993) 1072; 3 *YbIEL* (1992) 759

Rhine Conventions,[17] the 1992 Baltic Sea Convention,[18] and the 1946 Whaling Convention,[19] among others.[20]

7.2.3 Efficiency and Cost Effectiveness

The principle of efficiency and cost effectiveness could mitigate any objections about the creation of yet another potentially expensive, centralized, bureaucratic entity with doubtful value for the high seas environment. There is already a vast and expensive network of international institutions, many of which are environmental. Therefore, in proposing yet another new global agency, as opposed to recasting and strengthening existing institutions such as the UNEP and the IMO, issues of efficiency and cost effectiveness are critical. The institution not only needs to be operationally efficient and cost effective but it also needs to be sustainable in the medium and long-term. One important approach to sustainability is to minimize costs and utilize existing resources judiciously and especially so for the core mandates of the institution rather than maintaining the institutional bureaucracy.

As a regulatory and enforcement agency, most of the resources of the agency ought to be directed at the core mandates of standards and policy setting, surveillance, monitoring and evaluation, research and training, general oversight, as well as coordination with complementary or counterpart institutions and other entities. Its staff compliment should be remarkable for leanness, professionalism and service delivery.

With regard to complementary or counterpart institutions such as global institutions having certain high seas environmental mandates (for example IMO, IAEA, ISA, UNEP), the agency should seek co-operative arrangements. For regional arrangements such as the UNEP-RSPs and regional or economic integration blocks, the said agency should play an oversight, policy guidance and standard setting role, while leaving specific enforcement actions to those entities. It should be emphasized that even if such an agency were established it would not be able to monopolize or exclusively deal with the high seas environment. Thus, complementation and co-operation with pre-existing global and regional entities is crucial. So is the possibility of establishing regional nodes for the agency.

1124 UNTS 375; 16 ILM (1977) 242

BNA 35:0401

161 UNTS 72,as amended 19 November 1956, 338 UNTS 336

Birnie,P, Boyle, A and Redgwell,C: *International Law and the Environment*, 3rd ed. (2009), p 86-87

7.2.4 Common but Differentiated Responsibility

The proposed agency should also be premised on the principle of common but differentiated responsibility. This is especially important considering the inequalities which exist among the countries and regions of the world today. It is often the case that the largest maritime polluters and degraders are the major developed countries and their transnational corporations, while the vast majority of poorer nations are net victims of environmental damage.

While humankind must necessarily have common responsibilities and obligations to the high seas environment, such responsibilities and obligations should be differentiated to the extent that the major developed states take greater burden than the poorer ones. This means that they should have larger responsibility to control pollution and degradation by themselves or their commercial interests or citizens as well as to pay for the mitigation of damage or towards compensation for damage and injury. Indeed, it is often the major developed countries which directly impact the high seas environment through their commercial and other shipping fleets, military and nuclear enterprises, fishing and marine scientific research, among others.

7.3 Legal Framework for the High Seas Environmental Agency

As discussed in chapter 4, there exists a large body of laws for the protection of the marine environment including the high seas. Some of these laws deal with land-based pollution and degradation, others with sea-based pollution, and others with environmental emergencies. Some of the legal instruments such as the 1982 UN Convention on the Law of the Sea and the UNEP-RSP conventions generally deal with all aspects of marine pollution and degradation.

However, as previously noted, none of these legal instruments establishes specific provisions for the establishment of a high seas environmental agency. Moreover, as discussed in chapter 5, the existing international institutions, while they may be having certain, often secondary mandates over the high seas environment, do not give specific focus to this large global commons. Thus a gap exists both in legal and institutional formulation, and which needs to be filled.

In this part, we shall attempt to locate the possible legal grounding for the proposed high seas environmental agency, as well as elaborate some of its key provisions. This effectively constitutes possible new legal developments, which may entail among others the review or amendment of existing instruments and the development of new legal instruments altogether.

7.3.1 Options for Legal Framework

It is proposed to establish the high seas environmental agency as a multilateral environmental institution with legal personality, and through an inter-state adoption process. Various options exist for the legal hosting of the proposed high seas environmental agency. They include the 1982 UN Convention on the Law of the Sea; the IMO Conventional framework; and the UNEP framework.

The 1982 UN Convention on the Law of the Sea regime was conceived as a framework global "constitution of the seas" with a multifaceted outlook. The Convention creates several institutions, including the Commission on the Limits of the Continental Shelf, the ISA and the ITLOS, but not a high seas environmental authority. Seemingly the Convention leaves institutional mandates over the high seas environment to "competent international organizations," which presumably include the UNEP, IMO and others.

But a primary question to be answered is whether the 1982 UN Convention on the Law of the Sea makes substantive provisions for the protection and preservation of the high seas environment. The answer is affirmative. As previously indicated, Part VII (High Seas)[21] and Part XII (protection and preservation of the marine environment)[22] constitute some of the direct substantive provisions concerning high seas environmental protection. Their largest failure, we submit, is that they do not provide an effective regulatory and enforcement framework to ensure that there is meaningful compliance and enforcement.

What would be the logical entry point for the proposed high seas environmental agency under the current 1982 UN Convention on the Law of the Sea framework? Two possibilities come to mind. Firstly, an amendment of Part VII of the 1982 UN Convention on the Law of the Sea to provide for the institution within the substantive Part. By way of example, such scenario exists under Part XI where the ISA is created. Also, this would require consequential amendments to Part XII and other parts of the Convention, largely to reflect the existence of such an agency and its specific mandates or roles in marine environmental protection.

Secondly, and perhaps more pragmatically and conveniently, a new **Annex or Constitutive Agreement** on the high seas environmental agency could be established as part of the Convention. Of the nine annexes constituting integral parts of the 1982 UN Convention on the

---

[21] 1982 UN Convention on the Law of the Sea, Articles 86-120.

[22] Ibid., Articles 192-237

aw of the Sea, at least three of them concern institutions established under the convention: nnex II (Commission on the Limits of the Continental Shelf; Annex IV (Statute of the nterprise); and Annex VI (Statute of the ITLOS). Moreover, the 1982 UN Convention on the aw of the Sea is capable of further evolution through amendment, and or the adoption of dditional global and regional implementing agreements and soft law.[23] A good example of ne latter is the 1995 UN Agreement Relating to the Conservation and Management of traddling Fish Stocks and Highly Migratory Fish Stocks[24]

nterestingly, the 1982 UN Convention on the Law of the Sea does not create protocols, or ven the possibility of adopting them. Part XVI (General Provisions)[25] and Part XVII (Final rovisions)[26] are silent on the question of protocols. This is rather unusual, considering that his is largely a framework though quite comprehensive convention, which should ordinarily nticipate additional protocols to better elaborate its provisions. By comparison, the 1985 Vienna Ozone Convention, the 1992 CBD, the 1992 Climate Change Convention and the 989 Basel Convention, as well as the vast majority of the UNEP-RSPs, among others have lirect provisions for the establishment and even amendment of both protocols and annexes.[27]

However, some of the annexes under the 1982 UN Convention on the Law of the Sea are emarkably unique in their formulation and details, and virtually amount to protocols save for he name only. They constitute articles and rules, which establish institutions and clear legal obligations on the contracting parties to the Convention. Under Article 318, they are also expressed to be an integral part of the Convention. Therefore it is feasible and appropriate to legally elaborate the proposed high seas environmental agency through an annex or constitutive agreement to the 1982 UN Convention on the Law of the Sea, with necessary consequential amendments to Part VII, Part XII and other relevant sections.

A second option would be under the IMO conventional framework. As previously discussed, the IMO has a large number of conventions under its jurisdiction dealing with safety at sea, compensation and liability, and marine environmental protection. The latter category of

---

Birnie, P, Boyle, A and Redgwell, C: *International Law and the Environment*, 3rd ed (2009), p. 382.

34 ILM (1995) 1542, (1995) 6 *YbIEL* 841.

1982 UN Convention on the Law of the Sea, Articles 300-304.

Ibid., Articles 305-320

See 1985 Vienna Convention, 26 ILM (1987) 1529, Articles 8,9,10; the 1992 Convention on Biological Diversirty,31 ILM (1992) 818, Articles 28,29,30; the 1992 Climate Change Convention, 31 ILM (1992) 851, Articles 16,17; the 1989 Basel Convention, 28 ILM (1989) 657, Articles 15,18, the 1976 Barcelona Convention (Revised 1995), 6 *YbIEL* 887 (1995), Articles 15,16,17; 1985 Nairobi Convention(amended 2010), Articles 18,19,20; the1983 Cartagena Convention, 22 ILM (1983) 221, Articles 17,18.

instruments is most relevant to the question of legal hosting of the proposed high seas environmental agency. Of the many marine environmental instruments under the IMO, perhaps the best home for the proposed high seas environmental agency would be the 1969 Intervention Convention[28] as amended by the 1973 Protocol.[29] This instrument concerns intervention in the high seas by coastal states in case of marine environmental emergencies. Whereas its provisions concerning intervention are clearly warranted, and have been so since the catastrophic 1967 **Torrey Canyon** accident, what it seems to lack are clear international institutional mechanisms regulating and enforcing intervention, apart from the coastal state.

Apart from the IMO's rather disengaged role, there is no international framework established for intervention. Suppose there is a high seas environmental emergency and no coastal or other state, or even group of states comes forward to intervene? What would be the coordinating or supervisory mechanism where more than one coastal state is affected? Does the IMO have the capacity, technical and otherwise, to ensure that the rather onerous obligations of coastal states seeking to intervene in the high seas are adhered to?

We submit that a high seas environmental agency is needed to fill the gaps implied by the above questions. Such an agency should take up most of the oversight, regulatory and enforcement roles currently taken by IMO and coastal states. A logical entry point would be a protocol additional to the 1969 Intervention Convention, concerning the establishment of such an agency and elaborating powers and functions as well as its operational structures. However, such an institution would not only deal with high seas environmental emergencies, but also with other operational and accidental pollution, dumping and even land based and atmospheric pollution of the high seas. Therefore, its mandate will invariably be larger than those contemplated under the 1969 Intervention Convention and its 1973 Protocol. It is anticipated that such an agency will be primarily responsible for the protection of the high seas environment in a comprehensive manner entailing oversight, regulation and enforcement. Alternatively, still under the IMO conventional framework, a new convention altogether could be developed to establish the high seas environmental agency.

The third option would be under the UNEP framework. As noted previously, the UNEP itself is a UN programme rather than a substantive institution; and its constitutive instrument is not

---

9 ILM (1970) 25

UNTS 27 (1983)

a convention capable of being amended to include a new institution; or to produce an additional protocol or annex. Thus its own legal and institutional basis is rather weak. Moreover, even the conventions which the UNEP has sponsored or for which it serves as secretariat, do not seem to have direct relevance to the high seas environment, as for example the 1982 UN Convention on the Law of the Sea or the 1969 Intervention Convention or other IMO instruments. In fact, regarding the marine environment generally, the UNEP seems to have deferred to the UNCLOS III process, which was already underway when the UNEP itself was established; and also to an extent, the IMO which was an older institution. The UNEP therefore seems to have concentrated more on the terrestrial environment and other natural resource domains such as the atmosphere and outer space.

However, to its credit, the UNEP has at least established a big and growing network of RSPs. Unfortunately, as discussed in chapter 5, the RSPs regime generally does not cover the vast high seas environment, and this remains a major weakness of the UNEP-RSP regime. Consequently, from the outset and, notwithstanding that the UNEP should have come across as the natural legal and institutional home of the proposed high seas environmental agency, it is in fact the least feasible of the options discussed herein.

On a balance, it appears that of all the options presented, the 1982 UN Convention on the Law of the Sea framework is the most feasible and convenient: its advantages include: firstly, the Convention is the framework law of the seas and has assumed this pre-eminence; secondly, the Convention is the one which establishes the maritime zone called the high seas in the first place, even if inherited from the 1958 High Seas Convention;[30] thirdly, as noted already, the Convention establishes several institutions, some within its substantive provisions and others through annexes, in respect of specific aspects or mandates created under the Convention. Fourthly, the institution proposed would, alongside the other 1982 UN Convention on the Law of the Sea institutions, fall directly under the UN Secretary General, thus increasing its profile and visibility. By comparison, under the IMO conventional framework, the agency would naturally be deemed to be one of the IMO's "subsidiary" institutions and would have considerably reduced visibility and profile, as it would report under or through the IMO Assembly and other structures. Under the UNEP, the proposed agency may have an indeterminate and perhaps untenable status as a Division or Department, which may undermine its capacity to independently function and carry out its mandates.

---

[30] 450 UNTS 82

Thus, for legal hosting of the proposed high seas environmental agency, we suggest that a new annex or constitutive agreement to the 1982 UN Convention on the Law of the Sea with consequential amendments to the main text of the Convention as appropriate, would be the most convenient and pragmatic. This of course is subject to the rather onerous and static amendment procedure defined in the Convention, but it will be worth the effort.[31]

7.3.2 Proposed Key Provisions for Legal Framework

The key provisions of the legal framework for the proposed high seas environmental agency should follow the conventional patterns of other international institutions for consistency. They will typically include establishment, membership and status of the agency itself, its organs, its key powers and functions, legal status, privileges and immunities, and relationship with pre-existing or subsequent international environmental institutions. Other key provisions will include the clear definition of its geographical and functional jurisdiction, financial mechanisms as well as dispute resolution mechanisms.

Thus, in a large measure, the legal provisions will be descriptive of the proposed agency and its key organs, which are discussed further in the next section. The provisions should be closely modelled on the institutional description of the organs established under Part VI of the 1982 UN Convention on the Law of the Sea. In fact, since the proposed agency is designed as a part of the 1982 UN Convention on the Law of the Sea regime, the procedural details of the ISA should apply to it, as much as possible, *mutatis mutandis*. This is because among others, the agency, just like the ISA, is proposed for a specific maritime zone, which in fact overlies the Area that is covered by the ISA. Moreover, the membership of the agency will be the same as for the ISA: all the contracting parties of the 1982 UN Convention on the Law of the Sea. Finally, the proposed agency and ISA would be sister institutions under the Convention, and which are only functionally and thematically different. On the other hand, as will be discussed below, even the dispute resolution and financial mechanisms would be closely aligned to the existing 1982 UN Convention on the Law of the Sea regime to avoid unnecessary replication or re-invention.

As expected, the geographical jurisdiction of the agency would be global, but specific to the high seas maritime zone as defined in the 1982 UN Convention on the Law of the Sea and particularly Part VII thereof. Thematically, the jurisdiction would be confined to the

[31] 1982 UN Convention on the Law of the Sea, Articles 312,313,314,315,316.

environmental aspects of the high seas, to avoid any conflict with other legitimate uses and resources of the high seas such as shipping, fisheries, military activities and scientific research. As the geographical mandate of the agency would be very large, the legal provisions may detail regional nodes or zones as well as collaboration and co-operation with other international institutions in order to make the agency's interventions more manageable and feasible.

As the proposal herein is to establish an international organization,[32] its detailed legal provisions are to be contained in an annex or constitutive agreement.[33]

7.4 Portrait of Institutional Details of the Proposed Agency

The high seas environmental agency proposed herein is expected to be established by the Contracting Parties to the 1982 UN Convention on the Law of the Sea and to have international legal personality and executive, legislative and judicial powers and functions. Its various organs, which will be complementary but functionally different, will exercise these various powers and functions. These organs and their proposed competencies are outlined in some detail below.

7.4.1 The Agency: Establishment, Nature and Fundamental Principles

The Agency itself will be established under the proposed "Constitutive Agreement" to be annexed to the 1982 UN Convention on the Law of the Sea, similar to the establishment of the other institutions under that Convention. The Agency may be called *"UN High Seas Environmental Authority/Agency," "International Agency/Authority for High Seas Environment"* or their derivatives. It is expected that all contracting parties to the 1982 UN Convention on the Law of the Sea shall be members of the proposed agency. This is modelled on the ISA, where contracting parties to the Convention "are *ipso facto* members of the (ISA)."[34] The current membership of the ISA is 161, including all major maritime and

---

According to Sands and Klein, "International organizations are legal persons, whose activities are governed by law, including obligations under general rules of international law, under their constitutions and under international agreements. Their powers are derived directly from their constituent instruments as reflecting the intentions of their founders, and are subjects to the limits of law" (Sands, P and Klein, K: *Bowett's Law of International Institutions,* 5th ed (2002), p 441, citing I.C.J Advisory Opinion, Interpretation of the Agreement of 25 March 1951 between the WHO and Egypt (1980) I.C.J Reps 73,89-90.

The same authors note further as follows: - "the constituent instrument of an international organization is almost always a treaty, although in some exceptional cases an international organization may be created by act of one or more existing international organizations. The constituent instrument will provide for the functions and objects of the organization, and indicate how they are to be achieved. It will also provide for the framework against which secondary acts of the organization may be adopted and its other practice developed even if such practice sometimes departs from the original object of a particular provision of the constituent instrument. On occasion the constituent instrument might also indicate the relationship between the organization and other rules of international law, as well as any applicable or relevant rules of national law"(Ibid; p.442).

See the 1982 UN Convention on the Law of the Sea, Article 156(2).

industrial countries (except the US), the vast majority of developing countries from all regions and civilizations of the world, and the European Communities. This reflects a gradual universal acceptance of the 1982 UN Convention on the Law of the Sea itself, and the seabed regime as elaborated in the Convention and the 1994 Agreement. Indications that the US may accede to the Convention and therefore join the ISA, perhaps alongside other states that are still non contracting parties, are encouraging.[35] In its area of competence, it is arguable that the ISA has begun to record gains, albeit in modest terms, with the most remarkable success being in the stabilization of the seabed regime.[36]

The ISA model may make the proposed high seas environmental Agency all-inclusive and participatory of all or most states and regions of the world. The seat of the Agency and any regional centres or offices is also to be provided for. The secretariat and all other organs of the Agency are to operate primarily from the seat of the Agency, which may for pragmatic reasons be aligned to existing locations of the UN or its relevant specialized organizations or the sister institutions under the 1982 UN Convention on the Law of the Sea The Agency will be established as an international environmental organization, with competence over the high seas environment as a whole, and with the mandate to oversee and protect the high seas environment, in the name and on behalf of all its members, who shall relate on the basis of the principle of sovereign equality.

Similarly, the contracting parties should be expected to fulfil "in good faith" the obligations assumed by them as members of the Agency "in order to ensure to all of them the rights and benefits resulting from membership."[37] The principles of sovereign equality and good faith have remained fundamental pillars of modern inter-state relations and commitments, and are necessary to be included or retained in the high seas environmental realm.

7.4.2 The Assembly: Plenary Organ

As for other international or "universal" organizations, a plenary organ, which is typically deliberative and "legislative," is proposed. This would naturally be the supreme organ of the

---

[35] *www.isa.org, accessed 26.09.2012*

[36] Some of the other gains include having functional and representative organs such as Assembly, Council, Secretariat (with a lean staff complement of 35); adoption in 2000 of regulations governing exploration for polymetallic nodules, and ongoing development of other regulations; contracting of public and private entities to undertake exploration for seabed resources; and environmental protection of the seabed. However, no commercial exploitation of seabed resources is yet in sight, and no concrete steps have been taken to operationalize the Enterprise.*(www.isa.org, accessed 26.09.2012*

[37] 1982 UN Convention on the Law of the Sea., Article 157(1),(3) and (4).

Agency, to which the other principal organs shall be accountable.[38] It would be composed of all states parties to the 1982 UN Convention on the Law of the Sea, demonstrating its core representativeness, participation and universality. As noted above, the 1982 UN Convention on the Law of the Sea is well on its way to universal acceptance. Moreover, it has been observed, correctly in our view, that the potential effectiveness of regulatory or management institutions, such as the proposed Agency, "is significantly affected by their composition."[39] Rather than an institution with limited membership based on those who benefit from an activity or resource such as under the Antarctic Treaty System, membership of the proposed Agency should be all-inclusive of those who benefit and those who would be adversely affected, such as in the London Dumping Convention Consultative Meetings and the International Whaling Commission.[40] The latter two institutions are good examples of broadly drawn membership which partly accounts for their success in their fiduciary role on behalf of the environment.[41]

In addition, the Assembly, based on the principle of sovereign equality of the countries, should have representation and equal voting power. Sessions should be regular annual and/or special as necessary, which enhances accountability of the member states. The Assembly should retain the power to make its own rules of internal procedure. Moreover, simple and special majority requirements in decision-making and resolutions should be provided for especially to distinguish between procedural matters (requiring simple majority) and substantive matters (requiring special or superior majority such as two-thirds or even consensus).[42] All these demonstrate internal democracy and accountability, which are critical features for the governance of global resources such as the high seas.

However, it should be conceded that the proposed "one-state-one vote", simple or qualified majority decision making process, though preferred for the Agency herein, is not without

---

Ibid., Article 160(1).

Birnie,P, Boyle, A and Redgwell, C: *International Law and the Environment*, 3rd ed (2009), p.88

Ibid.

Ibid.

Ibid., Article 159. Elsewhere, Sands and Klein note that "one of the most significant trends in respect of procedure is the evolution from the requirement for unanimity in decision-making towards majority voting.....the UN Charter emerged as a fairly radical break with tradition for there the majority vote becomes the rule. Unanimity has also virtually disappeared from the specialized agencies. It remains in a few organizations of limited membership....obviously the smaller the membership, the greater the justification in principle for the retention of the unanimity rule".(Sands, P and Klein,P: *Bowett's Law of International Institutions*,5th ed(2001),pps 263-265.On its part, "consensus" is a technique of adoption of institutional acts by which the president of the organ concerned, after consultations, reports that there is a general agreement between the members on the proposal before them and declares the act to be adopted. It does not mean, however, that the act concerned benefits from unanimous approval...decisions adopted by consensus may be somewhat equivocal although there is no clear opposition to the norms adopted (otherwise, a vote would have been required), the actual extent of support among the members is not always apparent."(Ibid., p.266).

limitations. Sands and Klein describe it as "somewhat unrealistic," leading to the eventual development of variations in the rule of equality of voting power.[43] These included allowing plural voting by colonies or separate territorial units of a state; weighted voting dependent on interests; allocation of specific numbers of votes to particular countries or the allocation of more effect (such as veto) to the votes of certain countries.

In practice, the equality of voting and majority rule may lead to a tendency towards ignoring practical realities in respect of some of the resolutions adopted. For example, the first United Nations Conference on Trade and Development (UNCTAD) in Geneva produced an imposing set of "Principles"[44] which were adopted by an overwhelming vote of the developing countries, but which required the active assistance of developed countries to be executed. Unfortunately, the "Principles" were largely unacceptable to the developed countries, thus undermining their chances of implementation. In efforts to surmount such practical difficulties, the UNGA under Resolution 1995(XIX), in providing a constitution for UNCTAD, maintained equality of voting and a two-thirds majority rule on substantive matters but at the same time established an elaborate system of conciliation which may be established by request of groups of members before any vote on a substantive matter occurs.

The UNCTAD conciliation committee's essential task is to produce proposals which have a realistic chance of true acceptance by the conference or its board (of UNCTAD)... "true" in the sense of support from members having the capacity to give effect to the proposals, and to avoid proposals which, whilst capable of securing two-thirds majority, could never find such true acceptance.[45] This demonstrates a trend towards a search for "consensus" as opposed to reliance on the results of formal voting.[46] In this regard, the example of the General Agreement on Tariffs and Trade (GATT) comes to mind. Decision-making by consensus was the general practice followed by the GATT from its inception and was continued by its successor, the World Trade Organization (WTO).[47] The Council of the ISA also takes some of its decisions by consensus.[48]

Ibid., p. 266.

Yearbook of the UN (1964) 198-201.

Sands P. and Klein P: *Bowett's Law of International Institutions*, 5th ed. (2001) p. 265.

Jenks: "Unanimity, the veto, weighted voting, special and simple majorities, consensus as modes of decision in international organizations", in Cambridge Legal Essays (1965), p.48, cited by Sands, P and Klein, P: *Bowett's Law of International Institutions*, 5th ed.(2001),p.266. .

Sands, P and Klein, P; *Bowett's Law of International Institutions*, 5th ed. (2001), p.266.

1982 UN Convention on the Law of the Sea, Articles 161(8)(d); 1994 Agreement relating to the Implementation of Part XI of the Convention, Annex, Section (3) Para.2.

Therefore, while elaborating the decision making procedures for the Agency, the foregoing limitations and considerations should be borne in mind, to avoid unrealistic outcomes such as unworkable or un-implementable simple or special majority decisions which fail to take into account international power dynamics as such as regional and other interests,[49] while at the same time avoiding "agency capture." With regard to its powers and functions, the Assembly, as the plenary organ, will be the ultimate policy decision making entity of the Agency, with oversight powers over the other organs. This model is already provided by the Assembly of the ISA within the framework of the 1982 UN Convention on the Law of the Sea.[50] In this regard, the Assembly of the Agency should have the power to establish general policies in accordance with the Constitutive Agreement, on any question or matter within the competence of the Agency. This should be its core power and function. Other specific powers and functions should include: to elect members of the Council of the Agency, the Secretary General of the Agency; the members of the Board of the Enforcement Commission, and to establish any subsidiary organs that may be necessary for the due performance of its functions under the Constitutive Agreement.

Others may include assessment of the contributions of members of the administrative budget of the Agency; budget consideration of and action on reports from the other organs of the Agency; the initiation of studies and enquiries relevant to the high seas environment; consideration of any general or special problems related to the mandate of the Agency; and the suspension of the exercise of rights and privileges of membership in the Agency.[51]

Thus the Assembly will be the primary instrument for the international institutional supervision and regulation of the high seas environment. It would represent the collective voice of humankind in the governance of this vast global commons, and thereby overcome any problems posed by individual states lacking the standing to bring international claims relating to the high seas environment as a global commons. It would also create a forum whereby an equitable balancing of interests and *ad hoc* political compromise among states may help surmount environmental problems through peer review and accountability, discussion and negotiation rather than by resort to judicial adjudication. The Assembly framework and, by extension, the entire Agency would certainly be a more significant basis

---

49 Wolfrum: "The Protection of Regional or other Interests as structural element of the Decision Making process of International Organizations." *1 Max Planck Yearbook UN Law*, (1997),p. 259.

50 1982 UN Convention on the Law of the Sea, Articles 160(1).

51 Ibid, Article 160(2).

for dispute settlement in an environmental context than state responsibility and inter- state claims.[52]

The Assembly's reporting powers and functions would allow it to conduct monitoring and reporting on the member states' obligations, undertake or commission fact-finding and research as well as inspection as necessary. But this mandate also entails receiving and considering reports from the other organs of the Agency.

7.4.3 The Council: Executive Organ

The proposed Council, unlike the Assembly, is proposed as a smaller executive body, with a limited membership chosen on specified criteria mainly taking care of various interests. For consistency with the 1982 UN Convention on the Law of the Sea regime, and other considerations, it should also be modelled on the Council of the ISA.[53] Its composition, procedure and voting will need to reflect the various interests of the states as well as maintain operational leanness and efficiency. It is proposed to have up to 36 members, similar to the Council of the ISA, and to include in this number at least half or at any rate a substantial number of states reflecting the principle of equitable geographical distribution so as to accommodate all regions of the world. Of the remaining slots, fair representation should include developed and developing countries including least developed countries, economies in transition, major shipping nations, major importers and/or exporters of maritime transported cargoes, especially oil and chemicals, coastal states and landlocked or other geographically disadvantaged states including small island developing states (SIDS).

Other special interest considerations could include those states which have significant investments or interests in marine science and technological development and those with major navies. The criteria for composition and its implementation should result in an organ that is truly universal, accountable, efficient and cost effective, and collectively responsible for the high seas environment.[54] Considering its limited numbers and the fairly stringent criteria for membership, this can be expected to be a difficult issue to resolve among the member countries of the 1982 UN Convention on the Law of the Sea.

---

52 Birnie, P Boyle, A and Redgwell,C:*International Law and the Environment*, 3rd ed,(2009), p, 237-241

53 1982 UN Convention on the Law of the Sea, Articles 161-165.

54 According to Birnie, Boyle, and Redgwell, "Institutions whose membership is too narrowly drawn are more likely to legitimize pollution or the over-exploitation of resources than to tackle them. Second, transparency is an essential ingredient if these institutions are to be made responsive to a wider public."(Birnie, P Boyle, A and Redgwell, C: *International Law and the Environment*, 3rd ed (2009), p 87.

The composition of the Council, apart from its internal procedure and decision making structures, may also determine whether or not the Council will become another example of "agency capture." In terms of procedure and voting, it is proposed that in tandem with the model provided by the Council of the ISA, elections to the Council should be held at regular sessions of the Assembly and each Council member be elected for a period of years (may be four as in the Council of the ISA), subject to re-election but with due regard for the principle of rotation of membership. The Council should function at the seat of the Agency, facilitated by the Secretariat and should meet as often as necessary, subject to a certain minimum number of times per year.[55] This should ensure that the Council is in constant and regular operation, taking necessary decisions and measures governing the high seas environment.

With regard to voting and decision-making, it is proposed that there should be a combination of methods including simple majority for procedural matters and special and superior majorities (such as two-thirds, three-fourths and the like), and consensus,[56] for substantive matters. As pointed out earlier, it would be necessary to take into account, in Council decisions, the various interests represented in order to arrive at workable and implementable resolutions.

The main powers and functions of the Council should include establishing the specific policies to be pursued by the Agency on any question or matter within the competence of the Agency. Thus it would take the cue from the Assembly, which has a general policy making mandate, and elaborate specific policies and actions. More specifically, the Council should supervise and co-ordinate the implementation of provisions of the 1982 UN Convention on the Law of the Sea concerning the protection of the high seas environment, its own Constitutive Agreement and other relevant international law instruments within the mandate of the Agency, and invite the attention of the Assembly to any cases of non-compliance. In this regard, it should be pointed out that non-compliance by one or more states concerning global commons such as the high seas, affects all parties to the Convention[57] and is therefore a matter of concerted interest. Attention to the Assembly is a mechanism of securing compliance and a negotiated resolution to any dispute rather than resort to judicial

---

The Council of the ISA is expected to meet "not less than three times a year" (1982 UN Convention on the Law of the Sea, Articles 161(5).

"Consensus" is defined under Article 161(8) (e) of the 1982 UN Convention on the Law of the Sea as "the absence of any formal objection."

Birnie, P Boyle, A and Redgwell,C: *International Law and the Environment*, 3rd (3rd)ed. (2009), p.245-246.

proceedings, which may not be well situated to such problems of non-compliance under international environmental treaties.[58]

Other functions should include proposing to the Assembly a list of candidates for election of the Secretary General and the Board of the Enforcement Commission; establishment of any necessary subsidiary organs to better carry out its mandate; adoption of its own rules of procedure; agreements with other international organizations including the UN; and reporting mandates. The latter should include considering reports from the Enforcement Commission and other subsidiary organs and submitting the same to the Assembly as well as making its own annual and other periodic reports to the Assembly.

Others include issuing directives to the Enforcement Commission and other subsidiary organs; approval of plans of work of the Enforcement Commission and other subsidiary organs; exercising overall control over activities in the high seas; adoption and application of rules, regulations and procedures concerning the protection of the high seas environment including enforcement measures, subject to approval by the Assembly; submission of the annual budgets of the Agency to the Assembly for approval by the Assembly; and issuance of emergency orders concerning the high seas environment. The detailed functions of the Council should reflect its core role as the mover of high seas environmental protection and enforcement.

Because of the diversity of its powers and functions it is proposed that the Council should have at least two subsidiary organs, namely an Enforcement Commission and a Scientific and Technical Commission. The Enforcement Commission should deal with the more operational issues of regulation, enforcement, compliance and surveillance while the Scientific and Technical Commission should deal with scientific and technical basis to support the Council's actions. This would include scientific research, technological development, capacity building, monitoring and evaluation, and the development of technical and legal rules, regulations and other tools.

The subsidiary organs of the Council should be composed of a smaller number than the Council itself, elected by the Council on nomination by the contracting parties for a fixed term, subject to re-election. A cardinal consideration for these commissions should be

[58] Ibid., pps 208-209.

professional or technical and academic qualifications in relevant fields of competence as well as high levels of integrity and the need for equitable geographical distribution and representation of special interests.[59] This should hopefully shield the two subsidiary commissions from domination and "capture" by countries or interests with the greatest technological and economic power.

It is noteworthy that one of the subsidiary organs of the Council of the Authority, the Legal and Technical Commission,[60] has certain environmental functions which would be concurrent with the proposed subsidiary institutions under the Council of the Agency. They include preparation of assessments of the environmental implications of the activities in the Area; the making of recommendations to the Council on the protection of the marine environment; the formulation and submission to the Council of the Authority of rules, regulations and procedures with due regard for environmental considerations; and the making of recommendations to the Council of the Authority regarding the establishment of a monitoring programme to observe, measure, evaluate and analyze by recognized scientific methods and on a regular basis, the risks or effects of pollution of the marine environment from activities in the Area. Others are making recommendations to the Council concerning environmental emergency orders and recommendations regarding disapproval of areas for exploitation in the Area which have substantial evidence of risk of serious harm to the marine environment.

While this provides a case for complementarities and synergy, just like the whole framework of the proposed high seas environment Agency and the Authority, it would be desirable for the Constitutive Agreement of the Agency to clearly demarcate the mandate of the subsidiary organs of the Council of the Agency and indeed all other organs. If necessary, a review of the substantive provisions of the 1982 UN Convention on the Law of the Sea concerning the mandates and functions of the organs of the ISA may be done. In any case, the distinction between the high seas maritime zone and its environment, which are the concern of the proposed Agency and the Area, which is the concern of the ISA, should be made clear in the formulation of the legal framework envisaged herein. Moreover, as will be elaborated below, the mandate and functions of the proposed Agency should be distinguished clearly from other international organizations which affect the high seas, such as the IMO, IAEA, UNEP, UNESCO-IOC and the FAO.

---

[59] See the 1982 UN Convention on the Law of the Sea, Articles 163, for comparable provisions.

[60] Ibid., Article 165.

7.4.4 The Secretariat: Operating Service

The third principal organ of the proposed Agency is a Secretariat headed by a Secretary-General. This would give the Agency physical existence and identity and supply its operational form. The Secretariat will service the other organs of the Agency, including the Assembly and Council and serve as the seat of the activities and operations of the Agency.

Again, the model provided by the Secretariat of the ISA is appropriate.[61] Apart from the Secretary General there should be such other staff as the Agency may require. The Secretary General should be elected for a term of years, subject to re-election, by the Assembly, on the recommendation of the Council. This creates a level of mutual responsibility, accountability and acceptability between the Assembly and the Council. As the Chief Administrative Officer of the Agency, the Secretary-General should act in that capacity in all meetings of the Assembly, the Council and the subsidiary organs, and should in addition have reporting requirements to the Assembly on the work of the Authority. The Secretariat of the Agency, like for all other international organizations, should be an international civil service with appropriate scientific and technical qualifications, and maintain the character of an international public service.

An important dimension to the work of the Secretary –General is liaison, consultation and co-operation with other international and non-governmental organizations, especially those with mandates corresponding in any respect with the mandate of the Agency. In this regard, the Agency may need to consult and co-operate with international institutions, hitherto having certain mandates over high seas environment, such as the IMO, IAEA, UNEP, UNESCO-IOC, the FAO, the ISA, and relevant international civil society organizations (ICSOs). Sharing of reports of findings, interventions and other collaborative endeavours would be important for the Agency and other organizations working on the high seas environment. In order to devolve its activities and operations and increase its visibility, the Secretariat may have regional offices or centres reporting to the headquarters, but should maintain a lean and cost-effective structure.

[61] Ibid, Articles 166-169.

7.4.5: Dispute Resolution Mechanisms

While bearing in mind that, as observed earlier, environmental conflicts arising from multi-lateral environmental agreements, especially concerning non compliance, are not well suited to an adversarial procedure, it is nevertheless prudent to propose a judicial mechanism to resolve those conflicts or disputes which may not find accommodation otherwise. In any event, a sound international multi-lateral system should always anticipate such eventualities and make provision for resolution mechanisms.

The first level of resolution should be the rather fluid mechanism of seeking, as much as possible, compliance in a consultative and negotiated manner. That is, the parties should at all times seek to adequately accommodate all the various interests and encourage consensus. This is the spirit implied in the "consensus procedure" under Article 162 of the 1982 UN Convention on the Law of the Sea, and which we have discussed above. Such approach, if it is followed, would avoid differences and conflicts and enhance a mutual spirit in the fulfilment of the countries' mandate over the high seas environment.

However, beyond such possibility, judicial options should be available. Unlike a specific dispute resolution mechanism such as the Sea-Bed Disputes Chamber for the Area disputes,[62] it is proposed to utilize the general dispute resolution mechanisms and procedures in the 1982 UN Convention on the Law of the Sea exemplified by the ITLOS. It is noted that the framers of the Convention had to pay particular regard to the Area issues as they turned out to be the most intractable. The inclusion of specific provisions for Area dispute resolution underlines the weight the framers of the Convention gave to the Area. Such treatment is really not necessary for the high seas environment, where the anticipated conflicts may primarily revolve around non-compliance with environmental obligations.

Part XV of the 1982 UN Convention on the Law of the Sea governs the settlement of disputes. Among others, the Convention[63] invokes the peaceful means of resolving disputes under the 1945 UN Charter, Article 2(3). Where no peaceful settlement is reached by the parties, or where the parties have agreed on any peaceful settlement procedure but have not been able to reach settlement, the parties are then obliged to follow the procedure set out

---

62 1982 UN Convention on the Law of the Sea, Articles 186,187,Annex VI

63 Ibid., Articles 279,280

under Part XV.[64] The procedures include an obligation to exchange views regarding settlement by negotiation or other peaceful means; conciliation;[65] and compulsory procedures entailing binding decisions by court or tribunal having jurisdiction.[66] The choice of compulsory procedure includes resort to the ITLOS under Annex VI; the ICJ under its structure; arbitral tribunal under Annex VII; and a special arbitral tribunal under Annex VIII.[67]

It is noted that the voluntary and compulsory dispute settlement mechanisms elaborated in the 1982 UN Convention on the Law of the Sea are comprehensive and exhaustive and should apply to any disputes concerning the high seas environment. No necessity exists to warrant new or different dispute resolution mechanisms. Fortunately also, the ITLOS has established as one of its chambers, a chamber for marine environment disputes which would be the natural home for high seas environmental disputes.[68]

7.4.6 Financial Arrangements of the Agency

A final institutional issue would be the financing of the Agency. There is no doubt that the viability and sustainability of international organizations and other multilateral arrangements generally, depends in a large measure on the sustainability of their financing. One of the common international institutional problems is financing and this is easily one of the convincing arguments against the establishment of yet another international organization. With that reality, the proposed financing arrangements for the Agency should take into account the principle of leanness and cost effectiveness, as well as the principle of common but differentiated responsibility as concerns the commitments of the contracting parties.

In general, a major challenge for international environmental organizations and other multilateral commitments is to secure and maintain a long-term and sustainable financing mechanism.[69] This challenge faces the proposed Agency, even more so because as a new entity it would require start-up funding, and thereafter sustainable operational and administrative funding. How would the Agency be financed? Like the ISA, and most

---

bid., Articles 281,282

Ibid., Article 284,Annex V

Ibid.,Articles 286-299

Ibid., Article 287

See ITLOS Statute, Article 15(1); ITLOS Rules, Article 28.

UNEP (2006): Financing the Implementation of Regional Seas Conventions and Action Plans; Sands, P and Klein,P: *Bowett's Law of International Institutions* (5th ed) (2001) p.565.

international organizations, its first call would be on contracting parties on the basis of both assessed and voluntary contributions.[70] After all, contracting parties to a convention or treaty always take upon themselves the obligation, *inter alia,* to finance the implementation of the legal instrument, including its institutions.

Assessed contributions bring into play the principle of common but differentiated responsibility, implying that richer or more prosperous countries pay more than poorer ones. Therefore the contracting parties of the 1982 UN Convention on the Law of the Sea would have to make both assessed and voluntary contributions to the Agency. Moreover, as an international legal person, the Agency should have the power to borrow funds, subject to limits and other terms prescribed by its decision-making organs. As a precedent, under the 1982 UN Convention on the Law of the Sea, the ISA has power to borrow funds without the individual liability of the states parties and the Council of the ISA is to exercise the borrowing power on behalf of the Authority.[71] Moreover, the Headquarters Agreement between the ISA and the Government of Jamaica entitles the former to "raise funds through the exercise of its borrowing power..." (Article 16), and the Enterprise "shall have power to borrow funds and to furnish such collateral or other security as it may determine." (Article 24). [72] However, it appears that the ISA, which became fully operational as an autonomous international organization in June 1996, has not exercised the borrowing power, except some internal borrowing from the pioneer investment fund to bridge its operational/administrative budget. Instead it has relied during its formative years, initially on the regular budget of the UN (up to 31.12.1997), and subsequently on members' assessed contributions as adopted by its Assembly, in the process enduring budgetary crises, especially in 1998-1999.[73]

While the ISA is expected to raise funds from commercial activities and operations in the Area, including license fees and profits,[74] such is not anticipated for the proposed Agency, as there are no comparable activities on the high seas. As the Agency is proposed as a regulatory and enforcement body for the high seas environment, its greatest "benefit" would be the

---

70 1982 UN Convention on the Law of the Sea, Article 171(a) and (e).

71 Ibid, Article 174.

72 Agreement between the International Seabed Authority and the Government of Jamaica Regarding the Headquarters of the International Seabed Authority", in *www.isa.org.jm/files/documents, accessed 12.09.2012).*

73 Wood, M.C: "International Seabed Authority: The First Four Years (1994-1998)," in Frowein, J.A and Wolfrum, R (eds), *Max Planck UNYB 3* (1999), *(www.mpil.de/shared/data/pdf/pdfmpunyb/wood_3.pdf, accessed on 12.09.2012);* Wood, M.C: "The International Seabed Authority: Fifth to Twelfth Sessions (1999-2006)," in Bogdandy, A and Wolfrum, R (eds), *Max Planck UNYB* Vol 2, 2007, p 47-98. *(http://www.mpil.de/shared/data/pdf/pdfmpunyb/02_wood_11.pdf, accessed 12.09.2012).*

74 Ibid, Article 171(b)(c) and (f)

protection of the environment from degradation and pollution from whatever source. It would not be expected to "produce" and "sell" any tangible goods or services as such. To this extent and from the point of view of sustainability, the Agency would compare unfavourably with the ISA, notwithstanding that the latter has not yet become operational in relation to activities in the Area.[75]

It is proposed that high seas Environment Trust Fund should be established as part of the institutional arrangements of the Agency. This Trust Fund should receive funds from the states parties as assessed and voluntary contributions, donations and grants, loans and borrowings, as well as special levies and charges upon maritime cargoes and other activities under appropriate mechanisms to be elaborated by the responsible organs of the Agency. The latter may appear like "international environmental taxation", and may meet with strong objections from shipping interests and other operators on the high seas, *inter-alia,* on the basis that it would clog the celebrated freedom of the high seas or may increase the cost of international goods and services. However, if the same is appropriately framed and presented, it can be justified under the polluter pays and precautionary principles. It would pass a responsible stewardship measure that is necessary to temper the high seas freedoms and at the same time to enhance the sustainability of the financial arrangements to protect the high seas environment.

The idea of an environmental Trust Fund is not exactly novel: it already exists under the UNEP and other environmental instruments including under national laws. What is envisaged for the high seas environment is that apart from the proposed Agency, other relevant institutions such as the UNEP, IMO, IAEA, UNESCO-IOC, the FAO and others who have as part of their mandates the protection of the high seas environment, would be co-contributors and co-administrators of the Trust Fund. This means, for example, that the UNEP or the IMO may have to contribute part of their own funds to the high seas environment Trust Fund in proportion to their (diminished) role as custodians of the high seas environment. As co-contributors, they will become co-administrators or trustees of the Trust Fund under appropriate and mutually negotiated frameworks, considering that the foregoing institutions are themselves inter-governmental bodies which depend on their own members' assessed contributions for their primary funding. The idea of a Trust Fund is beneficial to the extent that it "ring-fences" and sets aside financial resources for a particular purpose, which should

[75] Sands, P, and Klein, P: *Bowett's Law of International Institutions*,5th Ed(2001) p. 139.

give confidence to all contributors and other stakeholders concerning the utilization of resources for the intended purposes.

Finally, the Agency should have and operate on an approved budget framework. The example of the ISA where the same is drafted by the Secretary General and submitted to the Council which then submits it to the Assembly[76] should be emulated as it creates a fairly rigid internal accountability framework. In addition there should be provisions governing expenses of the Agency and annual or regular audit[77] to enhance the financial accountability of the Agency.

7.5 The Proposed Agency: Grappling with Jurisdictional Issues

The last discussion in this chapter concerns jurisdictional issues concerning the proposed Agency. Issues of jurisdiction including geographical and thematic application and how to demarcate the Agency's roles *vis-à-vis* other international organizations hitherto having primary or secondary competence over the high seas environment, may turn out to be one of the most contentious issues in the conception and operationalisation of the Agency. As discussed in preceding chapters, while it is true that the high seas suffer environmental pollution and degradation, it is equally true that there have been and still exist legal, policy and institutional arrangements seeking to protect the high seas environment. The major gap is that there is no dedicated institutional framework to focus attention and energy on this vast global commons. In the event existing legal, policy and institutional frameworks may be described as imperfect and inadequate.

However, in view of the proposal for the establishment of the Agency herein, complete with its legal framework, the question arises as to how best to re-align the various international jurisdictional mandates currently vested in a number of institutions so as to accommodate the Agency as the lead institution in the protection of the high seas environment, without losing the value and contribution of other international institutional players. It seems necessary to propose a mechanism which seeks to create a fine balance between the new and the old, and to make the Agency work in collaboration and co-operation, rather than in exclusion and competition, with existing frameworks. In any case, the Agency would be a new outfit pitted against older and established institutions with deep seated interests and bases.

---

[76] 1982 UN Convention on the Law of the Sea, Article 172

[77] Ibid, Articles 173,175,concerning the ISA

As the proposed Agency would be in a sense "eating" into their turf, reactions of resentment and inter-institutional jealousies are bound to arise and these must be dealt with realistically. The primary jurisdiction of the proposed Agency should therefore as much as possible be, collaboratively, to lead, coordinate and oversee various institutional efforts to protect the high seas environment, rather than usurping or taking over those roles from existing institutions.

7.5.1: Geographical Application

Up to 64% of the oceans, which is more than half of the planet, lie beyond the national jurisdiction of any state.[78] The 1982 UN Convention on the Law of the Sea defines these open sea areas as "high seas:" all parts of the sea that are not included in the EEZ in the territorial seas or in the internal waters of a state, or in the archipelagic waters of an archipelagic state.[79] Considering that only a narrow coastal strip of ocean falls within the territories and EEZ of coastal states, the largest portion of the oceans and seas actually constitute the high seas. Thus the geographical application of the Agency will cover the entire spectrum of this vast maritime zone. Included in this geographical zone would be the activities and operations legitimately taking place under existing international law.

By necessary implication all non-high seas areas are excluded from the geographical application of the Agency and its legal framework. Thus, RSPs will largely be out of this scope and can therefore work concurrently with the Agency. As previously discussed, the UNEP RSPs and others primarily cover the territorial waters and the EEZ of coastal member states.

In defining any activities, interventions and operations, the Agency will be geographically confined to the high seas as a maritime zone. However, the inter-face between the high seas maritime zone, on one hand, and the territorial seas and EEZ on the other, will constitute part of the collaborative and co-operative arrangements between the Agency and other institutions, mainly the UNEP.

7.5.2 Thematic Application

The proposed Agency is basically an environmental body: its thematic application would be the environmental aspects of the high seas. This may bear relationship with other high seas

---

[78] See *www.panda.org, accessed on 12.09.2012*

[79] 1982 UN Convention on the Law of the Sea, Article 86

themes such as maritime living resources/biodiversity, shipping or marine science research, but the Agency will not be primarily concerned with those other themes except only to the extent that they may have environmental impact or implication. Thus high seas fisheries, shipping or marine science research can continue to be the primary focus of FAO, IMO and UNESCO-IOC respectively. However, the Agency will take leadership and coordination of the environmental aspects of the high seas including those arising from or concerning fisheries, shipping, marine science research or seabed activities. In respect of the latter themes, the Agency will correspondingly defer to the primary leadership of the other relevant organizations. Of significance is that the Agency will have jurisdiction and mandate over all causes, activities and sources leading to high seas environmental pollution and degradation whether sea-based, land-based or atmospheric. It will also take, in particular, jurisdiction over environmental emergencies taking place in the high seas, howsoever caused.

Thematic leadership of the high seas environment will provide much needed focus direction and guidance, which is currently missing under existing legal and institutional frameworks.

7.5.3 Demarcating Other Institutions' Jurisdictions

As the high seas environment has hitherto been a stated responsibility of various multilateral institutions, it would be necessary to demarcate those institutions' primary jurisdictions so as to distinguish them from the proposed Agency. In particular, for the UNEP, which is the programme with a global environmental mandate, it would be necessary to clarify that while that remains the case, institutional leadership and coordination for the high seas environment belongs to the Agency. The UNEP will continue to take primary jurisdiction over the non-high seas maritime environment comprising the territorial waters and EEZ of coastal states currently under the RSPs framework. Moreover, the ISA will continue to have primary environmental jurisdiction over the Area. But all these institutions will have a collaborative and cooperative mechanism to ensure that all maritime zones are adequately protected and that there is synergy and complementarities between the various frameworks.

On its part, the IMO will continue to exercise primary jurisdiction over shipping and maritime safety, but will defer to the Agency in environmental matters. Similarly, the FAO will primarily focus on high seas fisheries; the UNESCO-IOC on marine science/oceanographic research; the IAEA on nuclear energy; the CBD on biological diversity and conservation,

alongside conservation organizations such as the IUCN/World Conservation Union and the WWF.

All the latter institutions and organizations and others will similarly defer to the Agency in respect of the high seas environment. The foregoing collaborative and co-operative arrangements should help clarify the proper jurisdictional boundaries both for the Agency and the other organizations and hopefully enhance the quality of the high seas environment itself as well as its governance systems.

7.6 Conclusion

This chapter has sought to model and describe the proposed high seas environmental Agency, together with its constitutive legal framework. The core characteristics of the proposed Agency, including universality, accountability and internal democracy, efficiency and cost effectiveness, as well as common but differentiated responsibility have all been elaborated.

With respect to the appropriate legal framework, a case has been made, upon consideration of various options, for inclusion through a new annex (in lieu of a protocol) to the 1982 UN Convention on the Law of the Sea, together with consequential amendments to some of its articles. A summary of the key legal provisions proposed have also been presented, including the proposed organs of the Agency and their functions. The organizational model is quite familiar in international organizations today, but is much more so aligned to the ISA under the 1982 UN Convention on the Law of the Sea for very practical reasons. Other important issues such as dispute resolution, financial arrangements and jurisdiction have been discussed in some detail.

In conclusion, firstly, the establishment of the proposed Agency and its legal framework is both necessary and feasible. The chapter has provided a basic framework to begin engaging debate on this subject. Secondly, we believe that the proposals herein need to be tackled expeditiously by the contracting parties to the 1982 UN Convention on the Law of the Sea and other stakeholders so as to place the high seas environment in a governance framework that would assure it of long-term quality and sustainability.

The next chapter provides the summary, conclusions and recommendations of the study.

CHAPTER EIGHT

Summary, Conclusions and Recommendations

8.1 Introduction

This chapter provides the summary, conclusions and recommendations of the study.

8.2 Summary and Conclusions

This study sought to evaluate the existing legal, policy and institutional framework for protection, regulation and enforcement of the high seas environment. The specific objectives of the study included, firstly, to discuss the problem of marine pollution and degradation and efforts towards protection and preservation of the high seas environment; secondly, to identify and discuss the perceived shortcomings and weaknesses of the existing legal, policy and institutional frameworks for the protection, regulation and enforcement of the high seas environment; and thirdly, to suggest and discuss possible legal and institutional options and directions in the protection, regulation and enforcement of the high seas environment. There were two key hypotheses which we sought to prove or disprove, namely: that the existing legal, policy and institutional framework for the high seas environment has weak and ineffective regulatory and enforcement machinery; and that there is need and justification for the establishment of an effective global regulatory and enforcement agency and machinery for the protection of the high seas environment.

The theoretical framework of the study relied on the concept or theory of globalism. "Globalism" describes the reality or aspiration of being inter-connected, or a world which is characterized by networks of connections that span multi-continental distances. It attempts to understand all the inter-connections of the modern world, and to highlight the patterns that underlie and explain them. The study proceeded on the premise that international law is an expression of the collective voice, strength and aspirations of the peoples of the world. Therefore, the protection, regulation and enforcement of the marine environment, including the high seas, as well as the exploitation and sharing of marine resources and other sea ventures are and should remain the collective business of humankind as a whole. In particular,

the high seas as an expansive and important global commons should be preserved, protected and shared by all humankind through a global framework.

The study was primarily a library and desk top research and relied largely on secondary information, and not field work and primary data collection. But the researcher also attended many conferences and workshops dealing with various aspects of the marine and coastal environment. The study was descriptive and analytical of existing legal phenomena, focusing especially on perceived weaknesses and problems, and prescriptive of alternative paths to confront those problems.

The various chapters sought to satisfy the stated research objectives. The first objective was to discuss the problem of marine pollution and degradation and efforts towards protection and preservation of the high seas environment, and this was largely covered under chapter 2. Chapter 3 has dealt substantively with the historical and ideological foundations of the modern marine environmental law. It appears from the long history of this branch of public international law that high seas environmental issues were included, though not always directly. In fact, not until 1958 did an international convention dealing with the high seas as such come into being. The 1958 High Seas Convention provisions were largely replicated in the 1982 UN Convention on the Law of the Sea. However, no specific institutional arrangements were provided for in the legal instruments for the high seas as a maritime zone and which exemplified the principle of freedom of the high seas.

Moreover, throughout the historical evolution of the present law marine environmental law, case law played a significant role in the development of the rules and principles that constitute the present regime. The brief survey of cases concerning various aspects of the law of the sea illustrates this assertion. However, it is apparent that marine environmental issues did not feature in most of the disputes reviewed in chapter 3. There was greater interest with territorial and proprietary issues than with matters of environment generally, or the high seas in particular.

In chapter 2, where we discuss marine environmental degradation and pollution, we conclude that it is apparent that based on scientific findings, the marine pollution and other degradation problems are serious, even critical, and are growing in virtually all seas and oceans with no easy answers in sight. Land-based sources and activities are the most problematic, with sewage, POPs and litter/solid waste and agricultural inputs being quite prominent. However,

no less serious are sea-based sources and activities including vessel-based oil spills and discharges, dumping of wastes, hazardous and noxious substances and military and nuclear wastes carried or dumped on the seas and oceans. Even atmospheric depositions are not insignificant.

It has been shown that the most prominent high seas environmental problems arise from ship based oil and other pollution; oceanic dumping of wastes; and military activities, nuclear wastes and materials remnant of war. Others are exploitation of marine living resources and sea bed activities. It is clear that there is sufficient, or at least significant scientific knowledge concerning marine pollution generally, and the high seas in particular. As noted in chapter 2, the environmental problems of the maritime zones including the high seas are growing rather than diminishing. This is so in spite of the vast array of laws and corresponding institutional and policy instruments which have been established over several decades. Thus the greater question is not the lack of scientific knowledge or basis for action, but the efficacy of existing laws, policies and institutional frameworks.

The second research objective, concerning perceived weaknesses and shortcomings of existing legal, policy and institutional frameworks for the protection, regulation and enforcement of the high seas environment, is largely covered under chapters 4 and 5. Chapter 4 discusses the efficacy of the various legal and policy instruments which have been established to tackle high seas environmental problems, while chapter 5 deals with the efficacy of existing institutional frameworks.

The main legal instruments that seek to respond to the various marine environmental problems, including over the high seas, include those which are for the prevention, reduction and control of marine pollution from various sources, including both land based and sea based sources and activities; and those dealing with responsibility and liability resulting from marine pollution. In chapter 4 we have undertaken a description and analysis of those instruments and their relative efficacy in confronting the high seas environmental problems. These legal and policy instruments are both global and regional, and together constitute a large mass of law and policy for the protection of the international marine environment. However, our thesis is that these various instruments, though laudable in many respects, and not least as the prevailing legal framework for marine environmental protection, nevertheless fall short of what is needed to effectively protect the environment of the high seas.

We conclude that there is indeed a huge number and variety of instruments ranging from the framework law for the seas and oceans, the 1982 UN Convention on the Law of the Sea, to regional instruments remarkable for their specificity and detail as to geographical coverage, subject (whether cause of pollution, type of intervention, and the like) and other pertinent details.

It is also noteworthy that notwithstanding the dichotomy of global and regional instruments, soft and hard law instruments, there is an inherent consistency and synergy created in the various rules contained in these instruments affecting the vast seas and oceans of the world. In fact, especially with regard to the legal instruments governing the UNEP-RSPs and the various IMO-related conventions and most global soft law instruments, newer or more recent instruments seem to consistently build upon the foundation and principles of earlier ones. They remain remarkably true to the ideal of protecting the marine and coastal environment through the instrument of a well-ordered legal, policy and institutional framework.

However, there is a clearly discernible disparity between the scientific reality about the health of our seas and oceans and the plethora of largely well-written legal instruments, whose efficacy as frameworks for the protection of the high seas environment is doubtful. The disparity is even more serious for the high seas as global commons. The high seas face critical and surmounting environmental problems, and yet there is a significant inadequacy of legal, policy and institutional responses to confront the problems.

In chapter 5 we cover relevant international environmental institutions; and discuss particularly the institutions created under the 1982 UN Convention on the Law of the Sea, the UNEP, the IMO framework, and other frameworks, all with a bearing on the high seas environment.

Our thesis is that while there are clearly a large number of international environmental institutions, some with marine environmental mandates, none of them has a specific responsibility for the high seas environment. The 1982 UN Convention on the Law of the Sea appears to vest key enforcement competencies to states, notably flag and port states, leading to a large measure of "domestic jurisdiction" over the high seas. At the core of the problem with high seas governance is its legal status as defined under Part VII of the 1982 UN Convention on the Law of the Sea, with the "freedom of the high seas" being its most remarkable feature. The current institutional arrangements are in any event limited, weak,

ineffective and inadequate, thus making a justification for the establishment of a focused regulatory and enforcement agency for this vital global commons.

It is argued that at the moment, the high seas environment, as a global commons, is the least protected under the current legal and institutional framework. By comparison, the common heritage resources in the Area, which underlies the high seas, are subject to regulation by an established international authority, the ISA, which in this sense is unique among international instruments with environmental responsibilities.[1] The founders of the 1982 UN Convention on the Law of the Sea, while "conscious that the problems of ocean space are closely related and need to be considered as a whole" nevertheless neither applied the common heritage regime to the waters above the deep sea bed, nor to the living resources found anywhere in the oceans.[2]

There are two other arguments in chapter 5. Firstly, in spite of its imperfections, an international institutional framework with regulatory and enforcement powers is still the most viable practical vehicle towards the better protection of the high seas environment. The importance of adequate institutional machinery to oversee the implementation and enforcement of international environmental requirements cannot be over emphasized. Secondly, in spite of its imperfections, the precautionary approach is still the most viable theoretical basis for the protection of the high seas environment. This latter argument is further elaborated in chapter 6.

The study reveals that there are many institutions with both direct and indirect, even peripheral, mandates in the regulation of the high seas environment. To the extent that there is not a single institution given the direct jurisdiction over the high seas environment, the system of regulation and enforcement has continued to operate somehow. One view could be that if the system is working so far, then it is good and perhaps nothing should change. However, many limitations could be, and have been identified against these institutions individually or collectively, which demonstrate that there is need for a dedicated international regulatory authority to provide better environmental protection for the high seas environment.

It might have been expected, quite legitimately, that the UNEP could coordinate the environmental programmes of the UN agencies as was originally designed at its inception, but

---

1 Birnie, P, Boyle, A, and Redgwell, C: *International Law and the Environment*, 3rd ed. (2009), p.95-97.

2 Ibid, citing UNGA Res. 2750 XXV (1970).

this has apparently not happened. Equally to be expected would be at least a systematic programme for the regulation and enforcement of high seas environmental standards, quite apart from the decades old RSPs approach which, as discussed above, is not suited or even designed for the high seas global commons.

The absence of dedicated institutional arrangements for regulation and enforcement of the high seas environmental standards could have serious implications on the future of this immense global resource. Even if at the present the actual threats to the high seas environment do not seem substantial, compared, for example, to the coastal and near shores maritime areas heavily polluted and degraded by land based sources and activities, still there are adequate reasons for global concern. The now established precautionary principle, the increasing thirst for better global environmental governance, the sheer enormity of this resource and other factors necessitate serious consideration of legal and institutional frameworks for the high seas environment, which will assure the present and future generations of a healthy, peaceful and sustainable global resource.

The third research objective, namely to suggest and discuss possible legal and institutional options and directions for better protection, regulation and enforcement of the high seas environment, is covered under chapters 6 and 7. In chapter 6 we make a case for the establishment of a global regulatory and enforcement agency for the high seas environment. It seeks to show that international regulation- the setting of common standards supervised by international institutions-offers the best means of ensuring a generally accepted minimum level of environmental protection.[3] It has been shown that high seas environmental problems do not have significant regional variations or distinctions to justify a regional approach; that indeed the regional approaches are not adequate; and that there is a strong basis for serious consideration of the nature and scope of a global agency to perform those comprehensive functions. This study views unilateralism and regionalism outside the framework of a global system as inadequate to protect the high seas environment, and as grossly marginalizing the bulk of land locked and developing states from participating in decision-making or deriving benefits from the high seas.

The place for unilateral or regional participation in global efforts is not to be diminished completely. However, the high seas environment should be served by a global enforcement

---

[3] Birnie, P, Boyle, A, and Redgwell,C: *International Law and the Environment*, 3rd ed (2009), p 492-493.

this has apparently not happened. Equally to be expected would be at least a systematic programme for the regulation and enforcement of high seas environmental standards, quite apart from the decades old RSPs approach which, as discussed above, is not suited or even designed for the high seas global commons.

The absence of dedicated institutional arrangements for regulation and enforcement of the high seas environmental standards could have serious implications on the future of this immense global resource. Even if at the present the actual threats to the high seas environment do not seem substantial, compared, for example, to the coastal and near shores maritime areas heavily polluted and degraded by land based sources and activities, still there are adequate reasons for global concern. The now established precautionary principle, the increasing thirst for better global environmental governance, the sheer enormity of this resource and other factors necessitate serious consideration of legal and institutional frameworks for the high seas environment, which will assure the present and future generations of a healthy, peaceful and sustainable global resource.

The third research objective, namely to suggest and discuss possible legal and institutional options and directions for better protection, regulation and enforcement of the high seas environment, is covered under chapters 6 and 7. In chapter 6 we make a case for the establishment of a global regulatory and enforcement agency for the high seas environment. It seeks to show that international regulation- the setting of common standards supervised by international institutions-offers the best means of ensuring a generally accepted minimum level of environmental protection.[3] It has been shown that high seas environmental problems do not have significant regional variations or distinctions to justify a regional approach; that indeed the regional approaches are not adequate; and that there is a strong basis for serious consideration of the nature and scope of a global agency to perform those comprehensive functions. This study views unilateralism and regionalism outside the framework of a global system as inadequate to protect the high seas environment, and as grossly marginalizing the bulk of land locked and developing states from participating in decision-making or deriving benefits from the high seas.

The place for unilateral or regional participation in global efforts is not to be diminished completely. However, the high seas environment should be served by a global enforcement

---

[3] Birnie, P, Boyle, A, and Redgwell,C: *International Law and the Environment*, 3rd ed (2009), p 492-493.

and regulatory mechanism, which could or may have regional or national centres and focal points for better implementation of its mandate. A global regulatory regime is necessary because the high seas are open to use by all states and thus they should have an equal forum to determine the issues that affect them. In spite of apparent "regional peculiarities" which may militate against the global approach while favouring the regional approach, it is nevertheless argued that for the high seas the former approach is more preferable.

In fact, a global approach as the favoured model in this study necessarily has regional and even national dimensions and the *vice versa* could also be true. Thus, a complementary system is envisaged but with the central role played by a global agency. There is an underlying argument that if indeed international law is an expression of the collective voice of the peoples of the world, and this law governs the global commons, including the high seas, then even the institutions responsible for the global commons governance should be essentially global. The 1982 UN Convention on the Law of the Sea reflects the global consensus on the law governing the ocean spaces including the high seas. Its major flaw in this regard is the failure to establish such global agency.

However, as has become apparent, several challenges and problems will have to be overcome: entrenched unilateralism and regionalism; the open-ended nature of freedoms of the high seas and common heritage of human kind (for the international seabed area); political, military and economic interests; and lack of global consensus on the establishment of an international environmental organization.

In chapter 6 we have taken the discussion of the need for high seas environmental Agency further and identified the "victims" and "culprits" of the high seas environmental pollution and degradation. We have also reflected on the freedoms of the high seas, the common heritage of humankind and the precautionary principle. Both reinforce our argument for a global approach to high seas environmental governance. Finally, the various interests in the high seas, including political and military, economic and commercial and seabed issues, may pose challenges and constraints in the development of the proposed global regulatory framework for the high seas. The outstanding challenge is to recognize those interests which are legitimate and seek to adequately provide for them and thus create an acceptable balance between competing interests in the elaboration of the proposed regime.

Chapter 7 climaxes our thesis by providing a portrait of the proposed high seas environmental Agency, as part of the efforts towards the realization of international consensus, and to engender further debate on the matter. An attempt is made to describe and discuss the institutional details and features, and the legal form that could and should be taken towards establishment of the proposed high seas environmental Agency. We attempt to develop the conceptual and operational bases and features of a global regulatory and enforcement agency for the high seas environment. The core discussions include formulating a conceptual framework for the proposed institution, including fundamental principles and key characteristics, jurisdictional issues, and legal and operational features. This should form a basis for the recommendation made below for the establishment of a legal and institutional framework for the regulation and enforcement of the high seas environment.

The core characteristics of the proposed Agency, including universality, accountability and internal democracy, efficiency and cost effectiveness, as well as common but differentiated responsibility have all been elaborated.

With respect to the appropriate legal framework, a case has been made, upon consideration of various options, for inclusion through a new annex or constitutive agreement (in lieu of a protocol) to the 1982 UN Convention on the Law of the Sea, together with consequential amendments to some of its articles. A summary of the key legal provisions proposed have also been presented, including the proposed organs of the Agency and their functions. The organizational model is quite familiar in international organizations today, but is much more so aligned to the ISA under the 1982 UN Convention on the Law of the Sea for very practical reasons. Other important issues such as dispute resolution, financial arrangements and jurisdiction have been discussed in some detail.

In conclusion, firstly, the establishment of the proposed Agency and its legal framework is both necessary and feasible. In chapter 7 we have provided a basic framework to begin engaging debate on this subject. Secondly, we believe that the proposals herein need to be tackled expeditiously by the contracting parties to the 1982 UN Convention on the Law of the Sea and other stakeholders so as to place the high seas environment in a governance framework that would assure it of long-term quality and sustainability.

Therefore we have proved both our research hypotheses as follows: firstly, that indeed the existing legal, policy and institutional frameworks for the high seas environment are rather

weak, ineffective and inadequate to protect, regulate and enforce the high seas environment; and secondly, that there is need and justification for the establishment of a more effective global regulatory and enforcement Agency for the protection, regulation and enforcement of the high seas environment.

8.3 Recommendations

Based on the study and its findings, the following are recommended actions:

8.3.1 Reform of International Environmental Governance

There should be concerted efforts to sustain and pursue the on going reform of international environmental governance as one of the key pillars of sustainable development. At the moment, international environmental governance- comprising the rules, practices, policies and institutions that shape how humans interact with the environment at the international level-is fragmented and overly complex and therefore weak compared to the economic and social pillars of sustainable development.[4] The UN and UNEP should, collaboratively with other organizations with environmental mandates, continue to take the lead in this regard. The UNEP has the primary global mandate to deal with the protection of the environment generally; has prioritized environmental governance among six key priorities; and has "unparalleled convening power on the global stage." [5] Such reform would directly impact the governance of the high seas environment as a vast global commons.

8.3.2 Coordination of International Environmental Organizations

As part of reform of international environmental governance, or in spite of it, there should be better coordination and coherence between the organizations which have existing high seas environmental mandates, including in particular the UNEP, ISA, FAO, IMO, IAEA, and UNESCO-IOC. The UN itself should provide the primary framework for such inter-organizational coordination, at least until the proposed high seas environmental Agency is established.

---

4 See *www.unep.org, accessed on 12.09.2012.*

5 Ibid. The other current priority areas for UNEP are: climate change; ecosystem management; resource efficiency; hazardous substances; and disasters and conflicts.

8.3.3 Establishment of High Seas Environmental Agency

In the context of reform of international environmental governance and towards better coordination of existing institutional mandates in the marine and coastal environment, as well as the filling of existing gaps, there should be established the proposed high seas environmental Agency, on the basis of an annex or Constitutive Agreement to be anchored and to form part of the 1982 UN Convention on the Law of the Sea. The contracting parties to the Convention, through the framework of the UN, should move towards consensus on the need, structure and legal arrangements of such Agency, including any consequential review or amendments to the Convention.

8.3.4 Universal Acceptance of 1982 UN Convention on the Law of the Sea

There should be concerted efforts by all states and peoples to realize universal acceptance and application of the current international law of the sea, exemplified by the 1982 UN Convention on the Law of the Sea. In particular, the rather few countries which have not acceded to or ratified the Convention, including the US, should overcome their objections to the Convention, many of which initially concerned Part XI of the Convention, and become contracting parties without further delay. The contracting parties to the Convention, acting bilaterally or multilaterally through relevant organizations, should continue with or make efforts to realize the universal acceptance and application of the Convention. This would positively impact the governance of the high seas environment.

8.3.5 New or Further Studies on Related Subjects

In view of the limitations of the present study, it is recommended that further or new studies should be carried out on related subjects. Some of the possible areas of further research include the following: the need for comprehensive review of the 1982 UN Convention on the Law of the Sea; issues concerning jurisdictions over areas beyond national jurisdictions; high seas biodiversity conservation including marine living resources; maritime security and military uses of the high seas; marine scientific research in the high seas; shipping and maritime transport in the high seas; the role of regional organizations, particularly in the African Region, in the protection of the high seas environment, among others.

Select Bibliography

A: Books

Adede, A.O.: *International Environmental Law Digest: Instruments for International Responses to Problems of Environment and Development*, 1972 –1992, Elsevier, Amsterdam/ London/ New York/Tokyo, (1993).

Anand, R.P.: *Legal Regime of the Sea and the Developing Countries*. A.W. Sijthoff- Leyden, (1976).

Arroyo, 1: *International Maritime Conventions, Kluwer Law and Taxation* Publishers, Deventer/ Boston (1991).

Baker, M.J.: *Marine Ecology and Oil Pollution*, Applied Science Publishers Ltd (1976).

Beynon, L.R. et al (Eds): *Ecology Aspects of Toxicity Testing of Oils and Dispersants: International Dimensions of the Environmental Crisis*, Boulder Col. Westview Press (1982).

Birnie, P.W. et al: *International Law and the Environment*, Clarendon Press, Oxford 3rd ed (2009).

_____. *International Protection of the Environment*, Oxford University Press (1983).

Bishop, W.W.: *International Law: Cases and Materials*, 3rd ed. Little, Brown and Company, Boston and Toronto, (1971).

Blaustein, E.H.: *Your Environment and You: Understanding the Pollution Problem*, Oceana Publications, Inc., Dobbs Ferry, New York (1974).

Bowett, D.W.: *The Law of the Sea*, Manchester University Press, Oceania Publications Inc. (1967).

Brown, E.D.: *Seabed Energy and Mineral Resources and the Law of the Sea* Volume 2: *The Area Beyond the Limits of National Jurisdiction*, Graham and Trotman. (1986)

Brown, E.D: *Seabed Energy and Mineral Resources and the Law of the sea,* Volume 3: *Selected Documents, Tables and Bibliography,* Graham and Trotman, (1986).

_____. *The International Law of the Sea, Volume 1, Introductory Manual,* Dartmouth Publishing Co. Ltd, Aldershot, (1994).

Brownlie, I: *Principles of Public International Law,* 4th ed., Oxford, Clarendon Press (1990).

Buzan B: *Seabed Politics*, Praeger Publishers, Washington/London, (1976).

Byers, R.B. (Ed): *The Denuclearization of the Oceans,* Croom Helm, London /Sydney (1986).

Gamble J.K. (Ed): *Law of the Sea: Neglected Issues*: The Hague, Netherlands (1978).

Grad, F.P.: *Treatise on Environmental Law,Vol. 1,* Mathew Bender and Company, Inc. (1980) Binder 1.0.1 pp. 1-3 to 1-8.

Harris D.J.: *Cases and Materials on International Law,* 4th ed. Sweet & Maxwell, London (1991).

Hickling, C.F.: *Water as a Productive Environment*: Croom Helm, London (1975).

Hohmann, H. (Ed): *Basic Documents of International Environmental Law,* Vol. 2, Graham and Trotman (1992).

Johnston, P.O.: *International Environmental Law,* Stockholm, Liberforlag (1976).

Keith, C.: *Into the Hidden Environment: The Oceans,* New York, Viking (1972).

Kelsen, H.: *Introduction to the Problems of Legal Theory* (A translation of the 1st ed. of the Reine Rechtslehre or "Pure Theory of Law"), Clarendon Press, Oxford (1992).

Kemal, B: *The Concept of the Common Heritage of Mankind in International Law;* Martinus Nijhoff Publishers, The Hague /Boston/London (1998).

Kittichisaire, K.: *The Law of the Sea and Maritime Boundary Delimitations In South East Asia,* Oxford University Press (1987).

Knight, G., et al: *The International Law of the Sea: Cases, Documents and Readings,* Elsevier Applied Science, London and New York (1991).

Kwiatkowska: *The 200-mile EEZ in the New Law of the Sea*, Dordrecht (1989).

Lloyd, D.: *Introduction to Jurisprudence (with selected texts)* 2nd ed, London, Stevens & Sons (1965).

McConnell, F.: *The Biodiversity Convention: A Negotiating History*, Kluwer Law International, London/The Hague/Boston).

Mitchell, R.R.: *International Oil Pollution at Sea: Environmental Policy and Treaty Compliance.* The MIT Press, Cambridge, Massachusetts, London, England.

O'Connell D.P.:*The Influence of Law on the Sea Power*, Manchester University Press (1975).

_____. *The International Law of the Sea,* Oxford University Press, University Press (1984).

Ogley, R: *Internationalising the Seabed*, Gower Publishing Company Ltd (1984).

Okidi, C.O.: *International Measures to Control Pollution of the Ocean by Oil*, Cambridge University Press (1970).

_____. *Regional Control and Ocean Pollution: Legal and Institutional Problems and Prospects*, The Netherlands, Sijthoff & Noordhoff (1978).

Post, A.M.: *Deep Sea Mining and the Law of the Sea*, The Hague, Martinus Nijhoff Publishers, (1983).

Rembe, N.S.: *Africa and the International Law of the Sea: A study of the Contribution of the African States to the Third United Nations Conference on the Law of the Sea*, Sijthoff and Noordhoff Alphen ann den Rign, The Netherlands (1980).

Rokumoto, K. (Ed): *Sociological Theories of Law*, Dartmouth Publishing Co.Ltd, Aldershot, Hong Kong/ Singapore/Sidney (1994).

Said, M.A.: *Study of the Progressive Development of International Law Concerning the Management of the Polymetallic Nodules of the Deep Seabed*, Almquist and Wilksell International, Stockholm, Sweden (1987).

Salm, R.V. et al: *Marine and Coastal Protected Areas: A Guide for Planners and Managers*, IUCN, Washington D.C. (2000).

Sand, P. et al: *Bowett's Law of International Institutions*, 5ih ed, London, Stevens and Sons (2001).

_____. (Ed): *The Effectiveness of International Environmental Agreements: A Survey of Existing Legal Instruments* (1992).

_____. (Ed): UNCED and the Development of International Environmental Law, *3 Yearbook of International Environmental Law* (1992).

_____. *Principles of International Environmental Law* (Vol. 1), *Frameworks, Standards and Implementation*, Manchester University Press, Manchester/New York (1994).

_____. *Marine Environmental Law in the UNEP*, Tycooly Publishing, London/Dublin (1988).

Schmidt, G. M.: *Common Heritage or Common Burden? United States Position on the Development of a Regime for Deep Sea Bed Mining in the Law of the Sea Convention*, Clarendon Press, Oxford (1989).

Sinjela, A.M.: *Landlocked States and the UNCLOS Regime*, Oceania Publications, London (1983).

Shigeru, O.: *International Control of Sea Resources,* Martinus Nijhoff Publishers (1989).

Shuchman, P.: *Cohen & Cohen's Readings in Jurisprudence and Legal Philosophy*, Little, Brown and Company, Boston and Toronto (1979).

Springer, A.L.: *The International Law of Pollution: Protecting the Global Environment in a World of Sovereign States* (1983).

Starke, J.G.: *An Introduction to International Law,* 9th ed, Butterworths: London (1988).

Tigar, E.M.: *Law and the Rise of Capitalism*, Monthly Review Press New York and London (1977).

B: Articles

Adede A,O: International Environmental Law from Stockholm to Rio: an Overview of Past Lessons and Future Challenges"22 *Environment Policy and Law*, 88(1992).

_____. "Avoidance, Prevention and Settlement of International Environmental Disputes" in Sun Lin *et al* (Eds): *UNEP's New Way Forward: Environmental Law and Sustainable Development,* Nairobi (1995).

Biggs, C.: "Deep Sea Mining and Unilateral Legislation," *8 Ocean Development and International Law 223 (1980).*

Borgesse, E.M.:"The Seabed Treaty and the Law of the Sea: Prospects for Harmonization", in Byers, R.P. (Ed), *The Denuclearization of the Oceans*, Croom Helm, London and Sydney (1986).

Bowman, M.: "Environmental Litigation and the International Legal System" *3 Environmental Liability 70,* (1995).

Brans, E.H.P.: "The Braer and the Admissibility of Claims for Pollution Damage under the 1992 Protocols to the Civil Liability Convention and the Fund Convention", *3 Environmental Liability 61* (1995).

Brewer, W. (Jr.): "Deep Seabed Mining: Can an Acceptable Regime Ever be Found?" *11 Ocean Development and International Law 25* (1982).

Brown E.D.: "The Conventional Law of the Environment", *13 Natural Resources Journal,* 203 (1973).

Caron, D.D.: "Municipal Legislation for Exploitation of the Deep Seabed," *8 Ocean Development and International Law* 529 (1980).

Foders, F.: "International Organisations and Ocean Use: The Case of Deep Seabed Mining". *20 Ocean Development and International Law* 519 (1989).

Hahn, R. and Richards: "The Internationalization of Environmental Regulation," *30 Harvard International Law Journal* (1989), pps 421,433-40.

Hayashi, M.: "Registration of the First Group of Pioneer Investors by the Preparatory Commission for the International Seabed Authority and for the Law of the Sea," *20 Ocean Development and International Law,* 1 (1989).

Jenks: "Unanimity, the veto, weighted voting, special and simple majorities, consensus as modes of decision in international organizations", in Cambridge Legal Essays (1965), p.48

Joyner, C.C.: "The Legal Implications of the Concept of the Common Heritage of Mankind," *International and Comparative Law Quarterly,* 190 (1986).

Kaczynski, V.M: "In Search of Self-reliance: Problems of Marine Technology Transfer to the Developing Countries: The Case of West Africa," *20 Ocean Development and International Law* 1623 (1989).

Kimball and L.A. Boyd, W.C.: "International Institutional Arrangements for Environment and Development: A Post-Rio Assessment" (1992)1/3 RECUEL, 295-305.

Kimball, L.A. "International Law and Institutions: The Ocean and Beyond," 20 *Ocean Development International Law* 147 (1990).

Kindt, J.W: "Ice Covered Areas and Law of the Sea: Issues involving Resources Exploitation and Antarctic Environment" 14/1 *Brooklyn Journal of International Law* (1988) pps 27-72.

Larson D.: "When will the UN Convention on the Law of the Sea Come into Effect? *20 Ocean Development International Law* 147 (1977).

Lenihan, J. and Fletcher, W. (eds): "Environment and Man" in *5 The Marine Environment,* Blackie, Glasgow and London, (1977).

Llewellyn, K.N: "On Reading and Using the Newer Jurisprudence" (1940), *40 Columbia Law Review*, P. 581.

Llewellyn, K.N.: "Some Realism About Realism –Responding to Dean Pound," (1931) *44 Harvard Law Review*, pps 1222-1256.

Lukashuk, I.: "Morality and International Law (1975) *15 Indian Journal of International Law* 47-62.

Malone, L.A.: "Green Helmets: A Conceptual Framework for Security Council Authority in Environmental Emergencies" *17 Michigan Journal of International Law* (1996) 515-536.

Marvasti, A.: "Conceptual Model for the Management of International Resources: The Case of Seabed Minerals, "*20 Ocean Development and International Law 273* (1987).

Meyers, G.D.: "Surveying the law of the Land, Air, and Water: Features of Current International Environmental Law and Natural Resources Law, and Future Prospects for the Protection of Species, and Habitats to Preserve Global Biological Diversity 3 *Colorado Journal of International Environmental Law and Policy* 481-604,(1992).

Michael: "An Alternative to Common Heritage Principle", *9(4) Environmental Ethics*, 351-371 (1987).

Miller, A.S.: "Comments on "An International Regime for Environmental Protection by Rt. Hon. Prof. Sir G. Palmer" 42/5 *Journal of Urban and Contemporary Law, 29-33* (1992).

Mische, P.: "National Sovereignty and Environmental Law", in Bilderbeek, S.; *Biodiversity in International Law,* Oxford University Press 105-115.(1992).

Muench, I.G.: "International Environmental Law: Some Remarks", 23 *Indian Journal of International Law* 210-224 (1983).

Nanda,V.P. and Ris, W. K.: "Public Trust Doctrine: A Viable Approach to International Environmental Protection" 5 *Ecology Law Quarterly*, 291-319 (1976).

Okidi, C.O.: "Towards Regional Arrangements for Regulation of Marine Pollution: An Appraisal of Options", *4/1 Ocean Development and International Law Journal* (1997).

Pallemaerts, M.: "International Environmental Law From Stockholm to Rio: Back to the Future", in Sand, P. (Ed), *Greening International Law*, Earthscan, London (1993).

Palmer, G.: "New Ways to make International Environmental Law," 86/2 *American Journal of International Law 259-283* (1992).

Pontercovo, G.: "Musing About Seabed Mining, or why what we don't know can hurt us," 21 *Ocean Development and International Law,* 117 (1990).

Situma, F.P.:"The Efficacy of International Environmental Law: A Personal Reflection," *2/1 ILSA Journal of International and Comparative Law* (1995).

Sohn, L.B.: "The Stockholm Declaration on the Human Environment," 14 *Harvard International Law Journal,* 423 (1973).

Springer A.L.: "Towards a Meaningful Concept of Pollution in International Law", 26 *International Comparative Law Quarterly* 531(1997).

Van Dyke J.M. and Yuen C., "Common Heritage vs Freedom of High Seas: which governs the Seabed? *19 San Diego Law Review* 494-551 (1982).

_____. "International Governance and Stewardship of the High Seas and its Resources", in Van Dyke *et al*: *Freedom for the Seas in the 21st Century: Ocean Governance and Environmental Harmony*, Island Press, Washington, pps 13-22 (1993).

Vicuna, F.O.: "The Deep Seabed Mining Regime: Terms and Conditions for its Renegotiation", 20 *Ocean Development and International Law,* 531 (1989).

_____. "The Presential Sea: Defining Coastal States Special interest in High Seas Fisheries and other Activities" *35 GYIL* 264-292 (1992).

Weber, P.: "Abandoned Seas: Reversing the Decline of the Oceans," *116 World Watch Paper* (1993).

_____. "Net Loss: Fish, Jobs and the Marine Environment", *120 World Watch Paper (1994).*

Weiss, E.B.: "International Environmental Law: Contemporary Issues and the Emergence of a New World Order, 81 *George Town Law Journal* 675-710.(1993).

Wilder, R. J.: "Law of the Sea Convention as a Stimulus For Robust Environmental Policy. The Case for Precautionary Action," 12 *Ocean Yearbook*, University of Chicago Press (1996).

Wolfrum: "The Protection of Regional or other Interests as structural element of the Decision Making process of International Organizations." 1 *Max Planck Yearbook UN Law*, (1997), p. 259.

C: Reports and Like Publications

Abraham, M.: (1991). *One World, One People, One Destiny,* ELCI Occasional paper No. 1, ELCI, Nairobi, Kenya.

De Fontaubert, A.C., *et al:* (1996) *Biodiversity in the Seas: Implementing the Convention on Biological Diversity in Marine Coastal Habitats*, IUCN, Gland and Cambridge.

El Hinnawi, E.: (1986). *Disarmament, Environment and Sustainable Development: A Time for Action* (UNEP, Nairobi, Kenya).

GAOCMAO/MARPOL 73/78: *Gulf Area Application: Proceedings of GAOCMAO* Seminar, Manama, Bahrain 24-25 September 1984.

Horrill, J.C. *et al:* (2001). *Collaborative Reef and Reef Fisheries Management in Tanga, Tanzania*, (SEACAM/IUCN), March 2001.

IUCN/UNEP/WWF (1991). *Caring For the Earth: A Strategy for Sustainable Living,* Gland, Switzerland (1991).

Kelleher, G: (1999). *Guidelines for the Marine Protected Areas,* IUCN, Gland, Switzerland and Cambridge UK.

Okemwa, E. *et al* (Eds): *Status and Future of Large Marine Ecosystems of the Indian Ocean,* Report of the International Symposium and Workshop, IUCN Publication, Gland, Switzerland.

SEACAM: (2001). *Summary of the Proceedings 4th Reference Group Meeting,* Maputo, Mozambique, April 18-20, 2001.

UNEP and IOC-UNESCO 2009, An Assessment of Assessments,Findings of the Group of Experts: Start-up Phase of a Regular Process for Global Reporting and Assessment of the State of the Marine Environment including Socio-economic Aspects. ISBN 978-92-807-2976-4, p 27.)

Westmacott, S. *et al:* (2001). *Management of Bleached and Severely Damaged Coral Reefs,* IUCN, Gland, Switzerland and Cambridge.

WWF/IUCN/WCPA (2001). *The Status of Natural Resources on the High Seas*, WWF/IUCN, Gland, Switzerland.