

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

THESIS

**SUBMITTED TO THE
BABASAHEB BHIMRAO AMBEDKAR UNIVERSITY
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2020



*Dedicated to
My Beloved Parents*





बाबासाहेब भीमराव अम्बेडकर विश्वविद्यालय

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DECLARATION

I, **MANINDRA KUMAR SINGH**, hereby declare that this research work embodied in this Ph.D. thesis titled “**A LEGAL STUDY OF MARINE ENVIRONMENT WITH SPECIAL REFERENCE TO CONSERVATION OF MARINE FISHERIES**” has been carried out by me under the supervision of **PROF. S.K. BHATNAGAR (Retd.)**, Department of Human Rights, School of Legal Studies, Babasaheb Bhimrao Ambedkar University (A Central University) Lucknow, 226025.

This Research work is an original work and it has not been previously submitted in part or full for any other degree or diploma in this or any other university.

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CERTIFICATE

This is to certify that the thesis titled "A LEGAL STUDY OF MARINE ENVIRONMENT WITH SPECIAL REFERENCE TO CONSERVATION OF MARINE FISHERIES" submitted by MR. MANINDRA KUMAR SINGH is an original research work and has not been previously submitted in part or full for the award of any other degree or diploma to this or any other university.

This thesis submitted to Babasaheb Bhimrao Ambedkar University, Lucknow satisfies all the requirements as stipulated in the *Doctor of Philosophy (Ph.D.) regulations, 1999 as amended in 2013* and it is fit for submission and evaluation for the award of the degree of Doctor of Philosophy of the University.

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PREFACE

The dark oceans were the womb of life: from the protecting oceans life emerged. As can be seen in the words of Arvid Pardo, the Ambassador for Malta, it would be no exaggeration to say that a sound marine environment provides the foundation for all life. This thesis will seek to provide readers with a systematic overview of the legal framework of protection marine environment including marine fisheries as an inseparable part of public international Environment law. More than 85 per cent of the world's fish stocks are either fully exploited or over-exploited. Ever increasing numbers of marine species are threatened or endangered as a result of human activities. Destructive fishing practices, ship source pollution, marine debris, noise pollution, construction of artificial islands and pipelines, offshore oil and gas exploration, seabed mining, and marine scientific research all present increasing threats to the health and well-being of the oceans.. However, it is probably not possible for humans to continue to exist on this earth without the food, ecosystem and other services the oceans provide. So it is not only important, but absolutely imperative that we respect, care for and provide for the oceans as they have cared and provided for us.

For the systematic, smooth and purposeful study the entire research work has been broadly divided into seven chapters. The first is an introduction to various concepts relating to the research work. It includes significance and scope of study, statement of problem, objectives of the study, hypothesis, and research methodology of the research work.

The second chapter deals with origin and development of the law relating to protection of marine environment. Law of the sea has developed steadily and gradually since the time of Grotius. Earlier the powerful States laid extensive claims of sovereignty over specific portions of the open sea. With the developments in trade and commerce in the 20th century and the realization of the inexhaustible use of the sea, the classic principle of 'mare liberium' or 'freedom of the seas' has been eclipsed. The law developed out of well-settled usages culminating in customary law. But the United States declared

proclamation jurisdiction over the continental shelf which gave a new direction to the law of sea. Many nations made sweeping claims to protect their economic and military interests.

The third chapter explores the overviews of the marine environment. In the international law of the sea, the oceans are divided into several jurisdictional zones, namely internal waters, territorial sea, archipelagic waters, the contiguous zone, the exclusive economic zone (EEZ), the continental shelf, the high seas and the Area. In principle, the law of the sea regulates human activities in the ocean according to these jurisdictional zones.

The fourth chapter laid down the legal framework for the protection of marine environment. This chapter examines the way in which marine environmental protection is addressed in the United Nations Convention on the Law of the Sea (UNCLOS). UNCLOS sets out the jurisdictional framework for the law of the sea and prescribes general principles and rules relating to pollution of the marine environment and the sustainable use of marine living resources.

The fifth chapter analysis various legal frameworks for the conservation of marine fisheries. This chapter reviews the legal framework for the regulation of fishing in the United Nations Convention on the Law of the Sea (UNCLOS) and explains how States have developed additional rules and standards for the conservation of marine living resources at global and regional levels.

The sixth chapter deals with role of organizations in the protection of marine environment including marine fisheries. It deals with the role of international institutions as a mechanism for securing international cooperation in conservation of marine living resources and regulation of marine pollution. In this regard, the role of regional fisheries organs and treaty commissions created by environmental treaties merits particular notice.

In seventh chapter, on the basis of study the conclusion and suggestions is to drawn for improve the legal regimes of conservation of marine fisheries.

TABLE OF CONTENTS

I. List of Cases	i
II. List of Abbreviations	ii-iii

DESCRIPTION	PAGE NO.
CHAPTER - I INTRODUCTION	1-20
1.1 Introduction	1
1.2 Scope and significance of study	12
1.3 Review of literature	12
1.4 Statement of the Problem	16
1.5 Objective of Research Study	17
1.6 Hypothesis	17
1.7 Research Methodology	18
1.8 Limitation of the Study	18
1.9 Framework of the Study	18
CHAPTER – II ORIGIN AND DEVELOPMENT OF LAW RELATING TO PROTECTION OF MARINE ENVIRONMENT	21-71
2.1 Introduction	21
2.2 Independent State Systems in Asia and related Maritime Practices	22
2.2.1 Naval Supremacy of the Arabs and the Freedom of the Sea	23
2.3. The revival of Natural Law	30
2.3.1 The Debate	31
2.3.2 Responses to Mare Liberum	32
2.4 The League of Nations: Early Attempts at Codification	37
2.5 Truman Proclamation	39
2.6 The United Nations: A New Era of Codification	41
2.7 The Impact of the 1958 Conventions	44
2.8 The Second United Nations Conference on the Law of the Sea	44
2.9 The Third United Nations Conference on the Law of the Sea	45
2.9.1 UNCLOS III Conference Dynamics	47
2.9.2 The United States Position on Common Heritage and the Deep Seabed	50

2.9.3 The United Nations Convention on the Law of the Sea	51
2.9.4 Entry into Force	51
2.9.5 Implementing Agreement, 1994	52
2.9.6 Fish Stocks Agreement 1995	53
2.10 The role of the ICJ and the International Tribunal in the Progressive Development of the Sea	55
2.10.1 The Contribution of the ICJ to the Codification of the Law of the Sea	56
2.10.2 The Contribution of the International Tribunal for the Law of the Sea	60
2.10.2.1 Prompt Release of Vessels and their Crews	60
2.10.2.2 Means of Enforcement of Laws and Regulations of the Coastal State	61
2.10.2.3 Preservation and Protection of the Marine Environment	62
2.11 Present Perspective	66
2.12 Conclusion	70

CHAPTER - III MARINE ENVIRONMENT: AN OVERVIEW **72-134**

3.1 Introduction	72
3.2 Meaning of the Marine Environment	72
3.2.1 Definition of the Marine Environment	74
3.2.2 The Importance of the Marine Environment	74
3.2.3 Biological Importance of the Marine Environment	74
3.2.4 Scientific Importance of the Marine Environment	75
3.2.5 Global Importance of the Marine Environment	75
3.3 Sources of the International law of the Sea	76
3.3.1 Formal sources	76
3.3.1.1 Customary law	77
3.3.1.2 Treaties	80
3.3.2 Material sources	81
3.3.2.1 Judicial decisions and the writings of publicists	81
3.3.2.2 Non-binding instruments	82
3.4 Principles of International Marine Environmental Law	83
3.4.1 The Principle of SIC UTERE TUO UT ALIENUM NON LAEDAS	85
3.4.1.1 Sic Utere Tuo Ut Alienum Non Laedas as a Fundamental Principle in Environmental Protection	85
3.4.1.2 The Limits of the Principle of Sic Utere Tuo Ut Alienum Non Laedas	86
3.4.2 The Precautionary Principle	88
3.4.2.1 The Limits of the Precautionary Principle	90
3.4.3 Sustainable Development	93

3.4.3.1 The Concept of Sustainable Development in Marine Environmental Protection	93
3.4.3.2 The Limits of the Concept of Sustainable Development	94
3.4.4 International co-operation and Protection of the Marine Environment	95
3.4.4.1 International co-operation in the field of information	96
3.4.4.2 International co-operation in the field of prevention	96
3.4.4.3 International cooperation in the adoption of rules for the prevention, reduction and control of marine pollution	97
3.4.4.4 Transfer of technology related to the protection of the marine environment to developing countries	98
3.4.5 Polluter Pays Principle	99
3.4.5.1 Concepts of Polluter Pays Principle	99
3.4.5.2 Legal Status under International Law	101
3.4.5.2.1 Agenda 21	101
3.4.5.2.2 Rio Declaration on Environment and Development	101
3.4.5.3 Liability and Compensation Mechanism on Marine Pollution under International Law	102
3.4.5.3.1 Principles in International Declarations	102
3.4.5.3.2 Concepts under Customary International Law	103
3.4.5.3.3 UN Convention on the Law of the Sea	104
3.4.6 Common but Differentiated Responsibility	107
3.5 Maritime Zones under the United Nations Conventions	108
3.5.1 Internal Waters	109
3.5.2 Baselines	111
3.5.2.1 Normal Baselines	112
3.5.2.2 Straight Baselines	112
3.5.2.3 Archipelagic baselines	113
3.5.3 Territorial Sea	114
3.5.4 Contiguous zone	118
3.5.4.1 The concept of the contiguous zone	118
3.5.4.2 Coastal State jurisdiction over the contiguous zone	119
3.5.5 Exclusive Economic Zones	121
3.5.5.1 Concept of the EEZ	121
3.5.5.2 Legal status of the EEZ	122
3.5.6 Continental Shelf	124
3.5.6.1 The concept of the continental shelf	124
3.5.6.2 The Commission on the Limits of the Continental Shelf	127
3.5.7 High Sea	130
3.5.7.1 Spatial Scope of the High Seas	131
3.5.7.2 Principle of the freedom of the high seas	131

3.5.8 The Area	132
3.6 Conclusion	134
CHAPTER – IV LEGAL FRAMEWORK FOR THE PROTECTION OF MARINE ENVIRONMENT	135-192
4.1 Introduction	135
4.2 Definition of the Pollution of Marine Environment	135
4.2.1 Definition provided by the International Convention for the Prevention of Pollution from Ships, London (MARPOL 1973)	135
4.2.2 Definition under United Nations Convention on the Law of the Sea (1982)	136
4.2.3 Definitions of Pollution of the Marine Environment Provided by Jurists	137
4.3 Kinds of Marine Pollution	138
4.3.1 Kinds of Marine Pollution Based on Its Characteristics	138
4.3.2 Kinds of Marine Pollution, Based on Its Source	139
4.3.3 Kinds of Marine Pollution, Based on Its Effects	140
4.3.4 Kinds of Pollution, Based on Geographical Scope	142
4.4 Causes of Pollution of Marine Environment	142
4.4.1 Pollution of the Marine Environment through Voluntary (intentional) Actions	142
4.4.2 Pollution of the Marine Environment through Non- Voluntary Actions	144
4.5 Types of Pollutants	144
4.5.1 Hydrocarbon Compounds	144
4.5.2 Persistent Toxic Substances	145
4.5.3 Heavy Metals	145
4.5.4 Radioactive Materials	146
4.5.5 Nutrients	146
4.6 Legal frameworks of protection of marine environmental	147
4.6.1 Land-based pollution and the marine environment	148
4.6.1.1 THE LOSC and Land-Based Pollution	150
4.6.1.2 The Requirement of Co-operation	153
4.6.1.2.1 The MOX Plant Case	153
4.6.1.2.2 Regional Cooperation	154
4.6.1.3 Legal Network of Indirect Influence	156
4.6.1.4 The Global Programme of Action	158
4.6.1.5 Taking it Home - Enforcement and Compliance	160
4.6.2 Vessel source pollution	161
4.6.2.1 The Jurisdictional Scheme	164
4.6.2.1.1 Flag State Jurisdiction	164
4.6.2.1.2 Coastal and Port State Jurisdiction	165
4.6.2.1.2.1 High seas	165
4.6.2.1.2.2 Exclusive Economic Zone	166

4.6.2.1.2.3 Territorial sea	167
4.6.2.2 Prescriptive Standards	168
4.6.3 Prevention of Oil Pollution of the Marine Environment	169
4.6.3.1 International Convention for the Prevention of Pollution from Ships (MARPOL)	169
4.6.3.2 International Convention on Civil Liability for Oil Pollution Damage (CLC), 1969	170
4.6.3.3 International Convention on Oil Pollution Preparedness, Response and Co-operation (OPRC)	171
4.6.3.4 International Convention on the Establishment of an International Fund for Compensation for Oil Pollution Damage (FUND)	172
4.6.3.5 HNS (Hazardous Noxious Substances) Fund	173
4.6.3.6 International Convention on Civil Liability for Bunker Oil Pollution Damage, 2001	174
4.6.3.6.1 The Civil Liability Regime as a Legal Norm for Marine Oil Pollution	175
4.6.3.6.2 Compensation and Liability of States for Marine Oil Pollution	176
4.6.3.7 Effects of Oil Pollution in the Marine Environment	177
4.6.3.7.1 Effects of Oil Pollution on Coastal Habitats	178
4.6.3.7.2 Effect of Oil Pollution on Organisms	179
4.6.3.7.3 Effect of Oil Pollution on Ecological Disruption	179
4.7 Climate Change and the International Law of the Sea	180
4.7.1 Sea-Level Rise	180
4.7.2 Loss of Statehood	181
4.7.3 Shifting Baselines	182
4.7.4 Environmental Protection in UNCLOS	183
4.7.5 Reduction of Emissions of Greenhouse Gases	183
4.7.6 Iron Dumping in the High Seas	187
4.7.7 Carbon Capture and Storage	188
4.7.8 Marine Biodiversity	189
4.7.9 Melting of Polar Ice and Arctic Navigation	190
4.8 Conclusion	191
CHAPTER - V LEGAL FRAMEWORK FOR THE CONSERVATION OF MARINE FISHERIES	193-277
5.1 Introduction	193
5.2 Global trends in exploitation	195
5.3 Jurisdiction over fisheries	196
5.3.1 Evolution of high-seas freedom of fishing	196
5.3.2 Geneva conventions and jurisdiction over marine fisheries resources	199
5.4 The development of international fisheries regimes	202

5.4.1	Conservatory conventions and commissions	202
5.4.2	The UN convention on the law of the sea	204
5.4.2.1	Competence over conservation of marine fisheries resources under UNCLOS	205
5.4.2.1.1	Territorial sea (TS)	206
5.4.2.1.2	Archipelagic waters	206
5.4.2.1.3	Exclusive economic zone (EEZ)	207
5.4.2.1.3.1	International Legal Regime Governing Fisheries in the EEZ	207
5.4.2.1.3.2	The Rights and Duties of the State in the EEZ	208
5.4.2.1.3.3	Conservation, Management and Utilization of the Fisheries Resources of the EEZ	209
5.4.2.1.3.4	Conditions of Access	211
5.4.2.1.3.5	Criteria for Granting Access	211
5.4.2.1.3.6	Collection of Scientific Data	212
5.4.2.1.3.7	Enforcement	214
5.4.2.1.3.8	Some Conclusions	214
5.4.2.1.3.9	Conservation and Management	215
5.4.2.1.3.10	Overall Assessment	219
5.4.2.1.4	Continental shelf	219
5.4.2.1.5	The high seas	220
5.4.2.1.6	Deep seabed	222
5.5	The species approach	223
5.5.1	Highly migratory species (HMS)	223
5.5.2	Marine mammals	224
5.5.3	Anadromous species	227
5.5.4	Catadromous species	228
5.5.5	National implementation of UNCLOS fishery provisions	229
5.6	Post UNCLOS Developments	230
5.6.1	UNCED and the conservation of high seas fisheries resources	230
5.6.2	Alternative approaches to management of high seas fisheries	231
5.6.3	Agreement on straddling and highly migratory fish stocks (UNFSA)	233
5.7	New Approaches to Conservation of Marine Fisheries Resources	234
5.7.1	The Ecosystem Approach	234
5.7.1.1	The Normativity of the Ecosystem Approach as a Rule of Conduct	236
5.7.1.2	The Normativity of the Ecosystem Approach as a Rule for Adjudication	237
5.7.1.3	Scientific and Technological Difficulties	237
5.7.1.4	Consistency of Conservation Measures	238
5.7.1.5	Marine Protected Areas as an Implementation of the	239

Ecosystem Approach	
5.7.1.5.1 Definition of Marine Protected Areas	240
5.7.1.5.2 Marine Protected Areas in ABNJ	241
5.7.1.5.3 A New International Legally Binding Instrument on Marine Biodiversity in ABNJ	242
5.7.1.5.4 MPAs under a New LOSC Implementing Agreement	243
5.7.2 The Precautionary Approach and Its Limits	245
5.7.2.1 The Normativity of the Precautionary Approach as a Rule of Conduct	247
5.7.2.2 The Normativity of the Precautionary Approach as a Rule for Adjudication	248
5.7.3 New Approaches to Ensure Compliance	249
5.7.3.1 Limits of the Flag State Jurisdiction	249
5.7.3.2 Non-Flag State Measures Concerning the Contracting Parties	251
5.7.3.2.1 At-Sea Inspection of Vessels of the Contracting Parties	251
5.7.3.2.2 Inspection of Contracting Party Vessels in Port	252
5.7.3.3 At-Sea Inspection of Non-Contracting Party Vessels	254
5.7.3.3.1 Port Inspection of Non-Contracting Party Vessels	258
5.8 Regional Seas Conventions	261
5.8.1 Current Reform Initiatives	262
5.8.1.1 UN General Assembly	262
5.8.1.2 IUU Fishing Initiatives	265
5.8.1.3 Ministerially-led Task Force on IUU Fishing on the High Sea	267
5.9 Marine Fisheries Management in India	269
5.9.1 Fishery resources	271
5.9.2 Legislatives provisions in India	271
5.10 Conclusions	275
CHAPTER - VI ROLE OF ORGANISATIONS IN THE PROTECTION OF MARINE ENVIRONMENT INCLUDING MARINE FISHERIES	278-337
6.1 Introduction	278
6.2 International Institutions involved in the Protection of Marine Environment	278
6.2.1 Role of the UN in the Protection of Marine Environment	279
6.2.1.1 The 1972 UN Conference on the Human Environment (UNCHE) and the United Nations Environment Programme (UNEP)	280
6.2.1.2 The United Nations Conference on Environment and	281

Development 1992	
6.2.1.3 Rio Declaration 1992	282
6.2.1.4 Environmental Treaty Bodies	283
6.2.1.5 International Economic Organizations	283
6.3 The International Maritime Organization	284
6.3.1 History of the Convention on the International Maritime Organization	284
6.3.2 Structure of the IMO and its Committees	285
6.3.3 The Main Conventions Administered by the IMO	290
6.3.4 International Convention on Safety of Life at Sea 1974 and its Protocols of 1978 and 1988 (SOLAS)	291
6.3.5 International Convention on the Prevention of Pollution from Ships 1973 and its Protocol of 1978 (MARPOL 73/78)	292
6.3.6 The International Maritime Organization as a forum for change?	295
6.4 The role of FAO in fisheries management and law	301
6.4.1 The FAO CCRF, 1995	303
6.4.2 The 1993 FAO IPOAs addressing specific key issues of the 1995 CCRF	304
6.5 Regional Fisheries Bodies in the Atlantic Ocean and Adjacent Seas	307
6.5.1 Fishery Committee for the Eastern Central Atlantic (CECAF)	307
6.5.2 Ministerial Conference on Fisheries Cooperation among African States bordering the Atlantic Ocean (COMHAFAT)	309
6.5.3 General Fisheries Commission for the Mediterranean (GFCM)	311
6.5.4 International Commission for the Conservation of Atlantic Tunas (ICCAT)	313
6.5.5 Northwest Atlantic Fisheries Organization (NAFO)	314
6.5.6 North East Atlantic Fisheries Commission (NEAFC)	318
6.5.7 South East Atlantic Fisheries Organization (SEAFO)	319
6.5.8 Regional Fisheries Bodies in the Indian- Pacific Ocean	320
6.5.8.1 Asia-Pacific Fishery Commission (APFIC)	320
6.5.8.2 Indian Ocean Tuna Commission (IOTC)	322
6.5.8.3 Regional Commission for Fisheries (RECOFI)	325
6.5.8.4 South West Indian Ocean Fisheries Commission (SWIOFC)	326
6.5.9 Regional Fisheries Bodies in the Pacific Ocean	327
6.5.9.1 Pacific Islands Forum Fisheries Agency (FFA)	327
6.5.9.2 North Pacific Anadromous Fish Commission (NPAFC)	329
6.5.9.3 South Pacific Regional Fisheries Management Organisation (SPRFMO)	330

6.5.10 Commission for the Conservation of Antarctic Marine Living Resources (CCAMLR)	332
6.6 Conclusion	336
CHAPTER - VII CONCLUSION AND SUGGESTIONS	338-354
7.1 Conclusion	338
7.2 Suggestions	352
BIBLIOGRAPHY	355-369

TABLE OF CASES

S.No.	Cases	Page No.
1.	Anglo-Norwegian Fisheries Case (1951)	56
2.	Corfu Channel Case, ICJ Reports 1949	56
3.	Fisheries Jurisdiction Case (United Kingdom v. Iceland), ICJ Reports 1974	53
4.	Gabcikovo-Nagymaros case (1997)	90
5.	Land Reclamation case	61
6.	Mayen case (1993)	65
7.	MOX Plant Case (Ireland v. United Kingdom)	64,65,153,278
8.	North Sea Continental Shelf cases (1969)	57
9.	Qatar/Bahrain case (2001)	57
10.	Right of Passage over Indian Territory case	77
11.	S.S. Lotus Case, PCIJ, 1928 Series A/10.	55
12.	Saiga 2 (Merits) case	61
13.	Southern Bluefin Tuna Case (Australia and New Zealand v. Japan)	64, 83
14.	Wimbledon case (1923) PCIJ, Series A, 1923, No 1	152

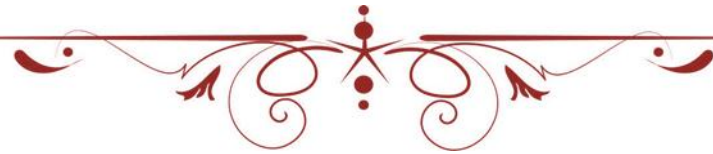
ABBREVIATIONS

AJIL	American Journal of International Law
ASDI	Annuaire suisse de droit international
BYIL	British Yearbook of International Law
CCAMLR	Convention for the Conservation of Antarctic Marine Living Resources
CYIL	Canadian Yearbook of International Law
EEZ	exclusive economic zone
EFZ	exclusive fishery zone
EJIL	European Journal of International Law
EU	European Union
FAO	Food and Agriculture Organization of the United Nations
GYIL	German Yearbook of International Law
ICAO	International Civil Aviation Organization
ICCAT	International Commission for the Conservation of Atlantic Tunas
ICJ	International Court of Justice
ICLQ	International and Comparative Law Quarterly
IHO	International Hydrographic Organization
IJMCL	International Journal of Marine and Coastal Law
ILC	International Law Commission
ILM	International Legal Materials
ILR	International Law Reports
IMO	International Maritime Organization
IOC	Intergovernmental Oceanographic Commission
IOTC	Indian Ocean Tuna Commission
ITLOS	International Tribunal for the Law of the Sea
IUCN	International Union for the Conservation of Nature
IUU	illegal, unreported and unregulated fishing
IWC	International Whaling Commission
LOSC	United Nations Convention on Law of the Sea
MARPOL	International Convention for the Prevention of Pollution from Ships
MPAs	marine protected areas
MSY	maximum sustainable yield
NAFO	Northwest Atlantic Fisheries Organization
NATO	North Atlantic Treaty Organization
NEAFC	North East Atlantic Fisheries Commission
NILR	Netherlands International Law Review
ODIL	Ocean Development and International Law
OPRC	International Convention on Oil Pollution Preparedness

	Response and Cooperation
OSPAR	Convention for the Protection of the Marine Environment of the North-East Atlantic
PSI	Proliferation Security Initiative
PSSA	particularly sensitive sea area
RCADI	Recueil des cours de l'Académie de droit international
RECIEL	Review of European Community and International Environmental Law
RGDIP	Revue générale de droit international public
RIAA	Reports of International Arbitral Awards
SOLAS	International Convention for the Safety of Life at Sea
SPLOS	Meeting of States Parties to the United Nations Convention on the Law of the Sea
SUA Convention	Convention for the Suppression of Unlawful Acts against the Safety of Maritime Navigation
TAC	total allowable catch
TSC	Geneva Convention on the Territorial Sea and the Contiguous Zone
UN	United Nations
UNCLOS	United Nations Conference on the Law of the Sea
UNDOALOS	United Nations Division for Ocean Affairs and the Law of the Sea
UNEP	United Nations Environment Programme
UNESCO	United Nations Educational, Scientific and Cultural Organization
UNTS	United Nations Treaty Series
Virginia Commentaries	United Nations Convention on the Law of the Sea 1982: A Commentary
WMD	weapons of mass destruction
WTO	World Trade Organization
YILC	Yearbook of International Law Commission
ZaöRV	Zeitschrift für ausländisches öffentliches Recht und



CHAPTER I
INTRODUCTION



INTRODUCTION**1.1 Introduction**

The oceans cover more than 70 percent of our planet and over 40 percent of the world's population (almost 3 billion people) lives within 100 kilometers of the coast. More than four billion people rely on fish for a substantial share of their protein intake. Marine environment with its vital diversity of marine and estuarine animals and plants is an integral part of the natural and cultural heritage of the world. Marine and coastal ecosystems play an important role in *photosynthesis* and *productivity*. Covering more than two-thirds of the Earth's surface, the oceans initially take up the greater part of incoming solar heat and thus determine our climate. The oceans support essential biogeochemical processes, supplying, for example, half of the oxygen we breathe, and contain some 250,000 known species, with many more waiting to be discovered. They also have the potential to provide medicines and biochemical resources. Thus, oceans are essential for supporting life on Earth and for the well-being of man and other living organisms.

Oceans play a substantial role in our lives through their life-sustenance and other functions. A series of complex oceanic processes contributes to oxygen generation, ensures climate regulation, maintains the carbon cycle and facilitates nutrient cycling. Ocean spaces offer manifold opportunities for realizing sustainable development objectives - food security, trade promotion, employment and avenues for tourism and cultural progress. The oceans serve as a medium for transport, support communication facilities, provide genetic and renewable energy sources, and also the world's marine production is overwhelmingly coastal-based. A series of diverse ecosystems like, wetlands, mangroves, coral reefs and sea-grass beds, provides necessary breeding, nursery and feeding grounds for marine life and supports a wide range of other functions.

Until recently, the focus was on coastal ecosystems and their governance, as these areas essentially fall under national jurisdiction. Very little was known about the secrets of the deep sea. With the recent advancements in deep-sea technology, one can now probe and exploit the potentialities seized by areas that lie beyond national jurisdiction exploiting fisheries, genetic resources, hydrocarbons and other minerals, shipping, waste disposal, laying pipelines and cables, carbon sequestration and ocean fertilization. Due to the wide range of ecosystem, goods and services that the coastal and oceanic environments provide, and the vital roles that they play in supporting food security, alleviating poverty, promoting cultural values, securing public health, ensuring coastal protection and in providing employment, states, all over, are increasingly looking to the “blue economy”, to sustain and fuel their economic growth and secure sustainable development.

The ever-increasing volume of shipping enhances the risk of accidental vessel source pollution. In addition, vessels may illegally discharge into the oceanic environment, untreated sewage and garbage. The loss of cargo containing dangerous substances, spills, washing cargo tanks, ballast water discharges, the breaking of cast-off ships, and wrecks also contaminate the marine environment.

Tourism, particularly visits to pristine marine environments, poses significant threats. Tourist cruise ships can, on an average, generate 4,500 kilograms of waste a day and many of this ends up in the marine environment. In addition, the anti-fouling hull paints used by these ships is responsible for the introduction of harmful chemicals like tributyltin, to pristine environments such as the Antarctic. Off late, there is growing tourism to hydrothermal vents, which negatively impact vent animals and their habitats.

There has been a proliferation of offshore exploration and exploitation activities including extraction of aggregates in a manner that affects the health of the marine environment. In addition, the numerous pipelines on the ocean floor that carry oil and gas remain potential ticking time bombs. Increased offshore oil and gas exploitation activity is a risky business. As of now,

hydrocarbons are regularly being extracted from water depth of 1,500 meters to 2,000 meters. New technological innovations are pushing the limits, increasing the ability to extract resources from the deepest sea floor. However, such developments also raise serious concerns regarding the security of these platforms and underwater facilities. As the deep water horizon incident, which led to nearly five million barrels of crude oil being split into the sea demonstrated, such spills can lead to catastrophic consequences and are difficult to contain. Again, the de-commissioning of offshore oil and gas structures pose many environmental concerns.

Anthropogenic activities like commercial and non-commercial shipping, the use of air guns for seismic surveys, military sonar, underwater detonations and construction, resource extraction and fishing activities and offshore wind farms, and other technology used to capture marine renewable energy, can lead to increasing levels of underwater noise, which can pose serious threats to marine living resources, including death, injury, and stranding of marine animals. For instance, it has been found that noise generated by seismic air guns reduce catch rates by 40 to 80 percent, severely impacting the distribution and abundance of fish stocks. Catch rates do not return to normalcy even days after the noise has abated.

Given the centrality of the internet and electronic communications in modern life, there has been an exponential growth in the laying of fibreoptic submarine cables. While these cables may not pose significant threats to the marine environment per se, the electromagnetic waves that they can generate may impact the marine environment. As well, tidal- and wave-powered generators and power cables create electromagnetic fields, which can affect species that depend on natural fields for guidance.

Power plants including nuclear power plants situated in coastal areas pose significant threats to the coastal and marine environment as was made clear when radioactive wastes leaked from the Fukushima Daiichi nuclear power plant in Japan, taking a severe toll on the marine environment. With proposals for floating nuclear power plants to be placed on large barges and

towed to their destination and anchored offshore, concerns have been expressed about the possibility of using the sea to dump radioactive wastes.

With climate change and rise in sea level, all the problems that confront the marine environment as identified above, stand to be magnified like never before. Climate change impacts will exacerbate existing stresses on marine resources and ecosystems. Greenhouse gas concentrations in the atmosphere have increased manifold times, and an already over-polluted ocean has absorbed nearly 30 percent of this anthropogenic carbon dioxide, causing ocean acidification. In addition, the oceans have warmed; ice is melting, leading to sea level rise. Climate change is expected to result in changes in salinity, wave conditions and ocean circulation. Coastal populations, all over, will disproportionately suffer from the adverse impacts of climate change on the oceans. In particular, small island developing states that are excessively reliant on marine ecosystems and resources are acutely vulnerable to climate change and, in particular, to sea level rise.

Cumulatively, these changes and perturbations in the marine environment will severely restrict the ability of mankind to depend on the oceans and its resources for sustainable development. Already, the pollution of the oceanic environment has reached such high levels that the impacts of these degradations are there for all to see. The increasing number of dead zones, frequent outbreaks of harmful algal blooms leading to mass mortality of fish and marine mammals, increases in the number of invasive species, decreased catch and collapse of fisheries, and increasing coral bleaching events are symptomatic of a degraded marine environment.

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

The seas are not homogeneous; their vulnerability varies depending on their geography, their depth, temperature, salinity, currents and age, as well as on the economic and political development of the coastal areas that surround them. The management of pollution must transcend the national boundaries. Pollution can be dealt with effectively only on the international level.

The term environment is derived from the French word **Environner**, which means to encircle. The word environment is a vague term that is incapable of having precise legal definition. Even the Law of the Sea Convention which comprehensively defines pollution of the marine environment does not define the marine environment as such. An exception is the 1993 Council of Europe Convention on Civil Liability for Damage Resulting from Activities Dangerous for the Environment. According to Article 2(10) of the Convention “environment” includes:

- Natural resources both abiotic and biotic, such as air, water, soil, fauna and flora and the interaction between the same factors.
- property which forms part of the cultural heritage; and
- the characteristic aspects of the landscape.

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

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

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

of sewage and industrial effluents, oil pollution and the discharge of radioactive waste.”

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

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

After the Second World War, the United States has dramatically challenged the traditional freedom of the seas doctrine. The Truman proclamation has extended the American coastal jurisdiction and control over its natural resources, sea bed of its contiguous continental shelf, fisheries in its coastal waters and the claims of sovereign authority over high seas resources directly off the coast. These extended rights over the seas eliminated the traditional cannon shot approach (three mile limit) of the territorial seas. This precedent was quickly adopted by other nations laying similar claims, led by

Latin American Countries and by 1958 almost 20 countries had declared legal control over their continental shelves. It weakened the freedom of seas doctrine and causing international conflict between coastal states and fishing nations.

United Nations held its first conference on the law of the sea in 1958 in Geneva and in this conference four conventions on the law of the seas were adopted. They are as follows:

1. Convention on the Territorial Seas and Contiguous Zone;
2. Convention on the High Seas;
3. Convention on Fishing and Conservation of Living Resources of high seas;
4. Convention on the Continental Shelf.

The Geneva Convention on High Seas addressed specific sources of pollution, such as oil pollution, pollution from vessels and pollution from radioactive substances etc. But the protection granted by these conventions were too weak because these conventions neither established a comprehensive duty towards the protection of marine environment nor assigned respective duties and responsibilities of states to address the marine pollution. While indicative of emerging customary international law, none of the conventions came into force. The Second United Nations Conference on the Law of the Sea held in 1960, but failed to reach agreement on the extent of the territorial sea.

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

Currently marine pollution is an increasing threat to a healthy marine environment. Indeed, marine pollution may severely damage the environment, including ecosystems, and human health. It would be no exaggeration to say that the welfare of coastal population relies essentially on a sound marine environment. Thus, there appears to be a general sense that the protection of the marine environment is considered as a common interest of the international community as a whole.

Despite its vital importance, the regulation of marine pollution has attracted little attention until recently because of low awareness of environmental protection. It is only since World War II that international regulation of marine pollution has begun to develop. In the 1950s, the development of treaties regulating marine pollution was still slow moving. While the first multilateral treaty regulating oil pollution, i.e. the International Convention for the Prevention of Pollution of the Sea by Oil, was adopted in 1954, the effect of this Convention was only limited. The 1958 Convention on the Territorial Seas and the Contiguous Zone (the TSC) and the 1958 Convention on the Continental Shelf contained no provision dealing directly with the protection of the marine environment. The Convention on the High Seas covered only a few sources of marine pollution, namely the discharge of oil from ships or pipelines or resulting from the exploitation and exploration of the seabed and its subsoil (Article 24), and the dumping of radioactive waste (Article 25). The result was that, subject only to the few limitations imposed by customary international law, States had a wide discretion to pollute the oceans.

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

year, the International Convention on Civil Liability for Oil Pollution Damage was also adopted.

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

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

Second, the ecological and physical conditions of the oceans may change with the passage of time. The degradation of the healthy marine environment may also be accelerated by human activities in the oceans. Hence there is a need to flexibly adapt the rules and standards regulating marine pollution to new environmental situations.

Third, traditionally, compliance with rules of international law has been ensured by self-regulation on the basis of reciprocity, and the same applies to the law of the sea. In essence, the principle of reciprocity seeks to secure the national interests of each State on the basis of the symmetry of rights and obligations. Nonetheless, like human rights treaties, treaties concerning marine environmental protection do not seek to ensure reciprocal engagements and

advantages for the mutual benefit of the Contracting Parties. The effectiveness of marine environmental protection cannot be supported by relying exclusively on self-regulation based on the principle of reciprocity. Hence there is a need to explore more institutionalized compliance mechanisms. Noting these issues, this chapter will explore the rules applicable to the protection of the marine environment in the law.

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

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

UNCLOS III was held in 1982. One of the most fundamental results of the UNCLOS III negotiations and the State practice generated by it, has been the emergence of a new international law of marine fisheries. The treaty sources of this customary law regime are to be found in Part V of the Law of the Sea Convention (LOS Convention) setting out the exclusive economic zone (EEZ) concept and Part VII, section 2 entitled "Conservation and Management of the Living Resources of the High Seas."

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

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

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

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

The Declaration of Cancun called upon FAO to draft, in consultation with relevant international organizations, an international Code of Conduct for Responsible Fishing. The Code of Conduct, which was adopted in October 1995, and it was the first of a generation of voluntary international fisheries instruments, has been described as representing '*the most complete and up-to date expression of the principles of sustainable fisheries management and development and is likely to have substantial impact on fisheries management at both national and international levels.*'

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

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

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

1.2 Scope and Significance of Study:

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

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

1.3 Review of Literature:

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

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

This book is divided into 15 chapters. Chapter 7 of the book deals with the Law of Sea and the protection of marine environment. This chapter has demonstrated the extent to an international legal regime for protection of marine environment from pollution. Chapter 13 of this book discusses about conservation of marine living resources and biodiversity. This book is useful

for us to understand role of international environmental law to marine environment.

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

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

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

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

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

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

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

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

Those collected essays examine different aspects of the modern law of the sea. They address many key provisions in the United Convention on the Law of the Sea, including its historical development, the substantive rules governing navigation, resources, the regime of the high seas, maritime jurisdiction, the protection of the marine environment and the delimitation of

maritime boundaries, as well as the settlement of disputes. The essays also review the Implementation Agreement of 1994 concerning deep seabed mining and the Implementation Agreement of 1995 concerning Straddling and Highly Migratory Fish Stocks. The author presents purely personal views on many negotiations and cases in which he participated. The essays, written between 1988 and 2006, will be of interest to everyone involved in the law of the sea.

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

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

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

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

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

1.4 Statement of the Problem

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

Fishing practices both within and beyond national jurisdictional are adversely affecting marine biodiversity and the environment. Many fish stocks have plummeted to the brink of collapse due to over-exploitation, illegal, unreported and unregulated fishing and use of destructive fishing practices. The actual mandates contained in the United Nations Convention on the Law of the Sea divide ocean space into different types of zones, and provide different rules to manage resource use in different zones. In the absence of a mandate for an ecosystem-based integrated ocean management, this division has so far been achieved without any consideration for where marine living resources gather to spawn, feed, and hunt. This lack of ecological considerations in the mandates of the United Nations Convention on the Law of the Sea results in the same resources migrating between or existing in different marine zones and the management of their exploitation differently in different zones. As a result, disputes have occurred over the inconsistent management of the same resources in different zones.

Since no one has the exclusive jurisdiction to protect the environment of the high seas, no one can enforce the law for the conservation of the high seas. It follows that the proper conservation of the high seas should rely on global cooperation and the voluntary participation of all relevant States. Therefore, it

is now required to review the adequacy of existing international legal framework for the protection of High seas biodiversity vis-à-vis different human activities. It is also required to establish and observe the new Marine Protected Areas on the high seas under existing international law .

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

1.5 Objective of Research Work

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

1.6 Hypothesis

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

1.7 Research Methodology

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

1.8 Limitation of the Study

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

1.9 Framework of the Study

For the systematic, smooth and purposeful study the entire research work has been broadly divided into seven chapters.

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

Chapter II– This chapter deals with the origin and development of the law relating to protection of marine environment. Law of the sea has developed steadily and gradually since the time of Grotius. Earlier the powerful States laid extensive claims of sovereignty over specific portions of the open sea. With the developments in trade and commerce in the 20th century and the realization of the inexhaustible use of the sea, the classic principle of ‘mare liberum’ or ‘freedom of the seas’ has been eclipsed. The law developed out of well-settled

usages culminating in customary law. The hallmark of this law, which was followed up to the half of the twentieth century, was essentially that of non-regulation and laissez-faire and except that of territorial waters, the law essentially endorsed the doctrine of 'open sea'. But the United States declared proclamation jurisdiction over the continental shelf which gave a new direction to the law of sea. Many nations made sweeping claims to protect their economic and military interests. These developments stressed the urgency for the codification of law in order to strive uniformity and resolve maritime conflicts among nations.

Chapter III - This chapter explores the overview of the marine environment. In the international law of the sea, the oceans are divided into several jurisdictional zones, namely internal waters, territorial sea, archipelagic waters, the contiguous zone, the exclusive economic zone (EEZ), the continental shelf, the high seas and the Area. In principle, the law of the sea regulates human activities in the ocean according to these jurisdictional zones.

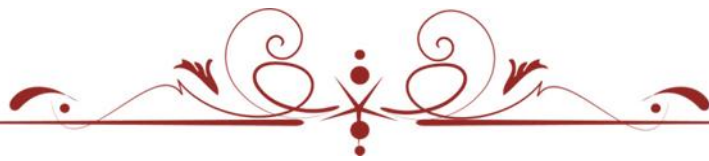
Chapter IV - This chapter laid down the legal framework for the protection of marine environment. This chapter examines the way in which marine environmental protection is addressed in the United Nations Convention on the Law of the Sea (UNCLOS). UNCLOS sets out the jurisdictional framework for the law of the sea and prescribes general principles and rules relating to pollution of the marine environment and the sustainable use of marine living resources. It explores the range of substantive and procedural rules on the protection of the marine environment, as well as how those provisions have been interpreted in recent judicial or arbitral proceedings. The chapter argues that UNCLOS provides a basic layer of protection for the marine environment but it also foresees the subsequent development of environmental rules and standards that are more detailed. Thus, UNCLOS should be understood as an umbrella convention that must read in light of other treaties and related instruments.

Chapter V - This chapter analysis various legal frameworks for the conservation of marine fisheries. This chapter reviews the legal framework for

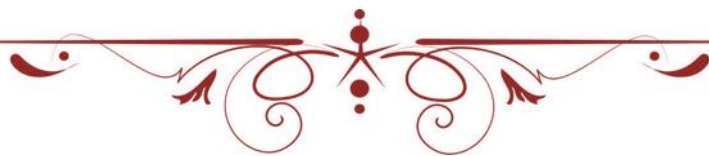
the regulation of fishing in the United Nations Convention on the Law of the Sea (UNCLOS) and explains how States have developed additional rules and standards for the conservation of marine living resources at global and regional levels. In particular, the analysis considers the extent to which States have implemented a precautionary and ecosystems approach to fisheries, as well as how they have sought to adopt law-making techniques that overcome the challenges of regulating the open-access resources of the high seas. The chapter covers major developments in the international law of fisheries, including the Code of Conduct on Responsible Fisheries, the Fish Stocks Agreement, the Port State Measures Agreement, and the International Guidelines on Deep-Sea Fisheries. The role of Regional Fisheries Management Organizations (RFMOs) in implementing these instruments is considered a key feature of the law-making process. The chapter also addresses the specific regimes that apply to anadromous species, catadromous species, and marine mammals.

Chapter VI - This chapter deals with role of organizations in the protection of marine environment including marine fisheries. It deals with the role of international institutions as a mechanism for securing international cooperation in the conservation of marine living resources and regulation of marine pollution. In this regard, the role of regional fisheries organs and treaty commissions created by environmental treaties merits particular notice. Whilst the mandates and functions of regional fisheries bodies vary, it is clear that regional fisheries organs facilitate institutionalization of international cooperation in conservation of marine living resources. Thus, to be a member of regional fisheries organs can be considered as a fulfillment of the obligation to cooperate in conservation of marine living resources.

Chapter VII - In this chapter, on the basis of study, the conclusion and suggestions are drawn for the improvement in the legal regime of conservation of marine fisheries.



CHAPTER II
ORIGIN AND DEVELOPMENT
OF LAW RELATING TO
PROTECTION OF MARINE
ENVIRONMENT



ORIGIN AND DEVELOPMENT OF LAW RELATING TO PROTECTION OF MARINE ENVIRONMENT

2.1 Introduction

The law of the sea is branch of international law as old as international law itself. It emerges from the fact that States exercise sovereignty over territory and the conduct of activities taking place on or in the sea. Its historical development has been driven by political, economic, security, and, in more recent times, scientific and environmental interests. It is generally believed and commonly asserted that the modern law of the sea, like other rules of inter-State conduct inherited by the world-wide community of States, is essentially the product of the European mind and European belief¹ which got consolidated and developed by European practices during the last three centuries.² The bulk and essence of maritime law during the last more than one hundred and fifty years can be summed up in the doctrine, 'freedom of the seas'. Although accepted as a binding principle under Roman law, it was lost and forgotten in Europe after the disintegration of the Roman Empire and was said to have been enunciated for the first time during the modern period by the seventeenth century Dutch scholar and jurist, Grotius, in his *Mare Liberum*, published in 1609. Few works of such small size have gained such great reputation as the *Mare Liberum*. It is said to be the first, and the classic, exposition of the doctrine of the freedom of the seas.³ In this remarkable small book, published anonymously in the first instance in 1609, perhaps even more than in his later and more authoritative work *De Jure Belli ac Pads* (1625), Grotius is especially associated with the birth of international law as to become entitled to the

¹ J. W. Verzijl, *Western European Influence on the Foundations of International Law*, in his *International Law in Historical Perspective* 435-436 (1968).

² R. P. Anand, *New States and International Law* 6-7. (1972).

³ W. S. M. Knight, "Seraphin de Freitas: Critic of *Mare Liberum*" 11 (1926).

general tribute he has received in modern times as 'Father of International Law'⁴.

2.2 Independent State Systems in Asia and related Maritime Practices

Most Western jurists and historians of international law fail to mention that when the Portuguese arrived in Asia in the late fifteenth century, there was an independent State system with well-developed rules of inter-State conduct "based on traditions which were more ancient than their own and in no way inferior to notions of European civilisation. Throughout *Mare Liberum*, it may be noted; however, Grotius shows a keen awareness of an independent State system and society in Asia.

There is little doubt that centuries before Europe came out of the "Dark Ages", Asians were already engaged in free navigation and peaceful maritime trade in the Indian Ocean. In about 300 B.C., in one of the most important works on Hindu polity, the *Arthashastra* of Kautilya, the author devotes an entire chapter to shipping and other matters connected with it. From the first century A.D., regular maritime commercial relations were established between Rome and several States in the Indian Ocean area. "Fleets of hundreds of vessels," according to the Roman historian Strabo, sailed carrying Chinese silk, Indian muslin and the most precious spices pepper, cinnamon, cardomon to Rome. By the seventh century, Chinese maritime enterprise began to appear and there was increased maritime trade from Egypt, Persia and India to China. By the late seventh century, maritime trade via the Straits of Malacca became increasingly important, and this contributed much to the rise of the Sri Vijaya Empire from its early status as a port of call on the Palembang River in southern Sumatra. Commerce converged here from all parts of southern Asia and China.⁵

All through these centuries, there is no doubt about the freedom of navigation and commercial shipping which was experienced by various countries and peoples in the eastern seas, and which led to the development of

⁴ W. S. M. Knight, *The Life and Works of Hugo Grotius* 112 (1925).

⁵ O. W. Wolters, *Early Indonesian Commerce* 15 (1965).

a number of entre pots and trade centres. In south-east Asia, although Sri Vijaya kings remained the strongest power in the area and more or less lords of the ocean, freedom of the seas and navigation was never interfered with, controlled or monopolized by anybody. Persians and Arabs, Indians and Ceylonese, Chinese and the peoples of the south-east Asian States, all used the seas for trade and enjoyed its bounties in perfect peace, disturbed only casually by pirates who were considered as enemies of all and suppressed by the powerful kings near their coasts. In the entre pots and trade centres, foreign traders engaged in peaceful business according to well recognised customs protected by local laws.

After the disintegration of the Sri Vijaya empire, conditions deteriorated in the Malacca Straits which became infested by pirates. Kublai Khan sent several naval expeditions in 1292 and later to suppress piracy and restore order. In the fifteenth century, Ming China also sent seven large naval expeditions (between 1405 and 1431) under the command of Cheng-Ho, a high eunuch official of the imperial palace, to suppress piracy and to increase China's maritime trade.

These expeditions not only suppressed Sumatran pirates and made maritime trade safe with the Malay Archipelago, Ceylon, the Malabar coast of India and the Persian Gulf, but reached up to Aden in Arabia and to several ports on the east coast of Africa.⁶ These military expeditions, almost unique in the history of the Indian Ocean, were short lived. It is significant that although the Chinese had excellent ships, compasses and gunpowder, they did not take advantage of the distant routes opened to them by the warships of the Ming emperors.

2.2.1 Naval Supremacy of the Arabs and the Freedom of the Sea

With the downfall of Sri Vijaya, and the disappearance of the Chola Tamil State of South India which had waged war for almost a hundred years against Sri Vijaya, weakening both Powers in the process, oceanic trade in the

⁶ W. W. Rockhill, Notes on the Relations and Trade of China with the Eastern Archipelago and the coast of the Indian Ocean during the 15th century Part II," XVI T'oung Pao, 61-159 (1915).

Indian Ocean passed almost exclusively into Arab hands. They were the great carriers of Indian and south-east Asian trade in the fourteenth and the fifteenth centuries, and their activities extended from the Red Sea ports to Canton and the marts of China. But while dominating ocean trade, it is important to note that they never tried to exercise a naval control on the ocean, because Arab navigation had been developed by merchant adventurers and was not the result of any State policy.

The founding and development of Malacca in the fifteenth century, as an important entre pot and commercial town for ships and traders sailing from Indian ports and Ceylon to China and other south-east Asian ports, led to a tremendous increase in maritime trade in the Indian Ocean. By the end of the fifteenth century, Malaccan trade had reached its peak and Malacca had become a commercial emporium and the centre of inter-Asian trade. Hundreds of merchants from Arabia, Persia, India, Java, Sumatra, Siam and China flocked every year to Malacca.⁷

From the legal point of view, it is important to note the existence of a written maritime code in Malacca, compiled during the reign of Sultan Mahmud Shah at the end of the fifteenth century, codifying commercial and maritime usages. The Malacca Code contains interesting rules about the rights of the captain of the ship, who was considered "the sovereign at sea", and those of sailors, as well as about the maintenance of law and order on the high seas, and the organization of trade on a ship. While it was the task of the ship's captain to settle disputes on the ship and to punish offenders, the pilot officer was charged with the direction of the vessel and with all the technical details of its navigation. Other rules related to fishing, ships in distress, and shipwreck. The legal status of the ship changed as soon as it entered harbour. There the captain's exclusive jurisdiction was replaced by the jurisdiction exercised by the Shahbandar or harbour master. The maritime code of Macassar, edited by a local jurist, Amana Gapa, and promulgated at approximately the same time,

⁷Tome Pires, *Suma Oriental: An Account of the East, from the Red Sea to Japan*, written in Malacca and India 1512-1515 (tr. Armando Cortesao) vol. ii, 228. (1944).

was similar to the Malacca Code, but contained additional provisions relating to charter parties. Codified or not, similar rules were applied by other maritime States in south, south-east and east Asia.

The specific character of these rules relating to ships, when they were outside harbour or inland waters, clearly shows that the high seas were accepted as free. This is further "corroborated by the law relating to piracy which authorised common action of all maritime powers in the vast expanse of the oceanic waters for the purpose of maintaining maritime safety". Early European travellers, for instance, Ludovico de Varthema, testified to this state of affairs. Thus, resisting the attempts on the part of the Dutch East India Company to prohibit all trade with the Spice Islands, the ruler of Macassar said in 1615: 'God has made the earth and the sea, has divided the earth among mankind and given the sea in common. It is a thing unheard of that anyone should be forbidden to sail the seas.'⁸

It is difficult to find a clearer statement of the principle of the freedom of the seas. Malacca was not the only important commercial port in the regime of free navigation and trade in the Indian Ocean. There were numerous other trading centres from Aden on the Arabian coast up to China, Japan and Korea in the East, where merchants met and traded peacefully without restrictions, under the general protection of well-recognised rules of inter-State conduct. In fact most of these ports came to depend on each other's trade in their interdependent world.

Mare liberum has become something of an icon in international law not only for providing the first effective argument for the freedom of the seas in modern times, but in combination with Grotius's more mature work, *De jure belli ac pacis* (1625). For reinvigorating the natural law of ancient times as a transcendent legal regime in the service of the common good.

In principle, the Roman Civil Law had already established that navigation on the high seas was open to all.⁹ But in practice the principle was

⁸G. J. Resink, *Indonesia's History Between the Myths* 45(1968).

⁹R.P. Anand, *Origin and Development of the Law of the Sea* (1983).

frequently disregarded even by Rome itself, when its naval power was at its height and by others after its decline. With the growth of maritime commerce, especially in the later Middle Ages, maritime powers asserted dominion¹⁰ over wide areas of ocean space.

Early efforts to codify maritime law, such as the twelfth century Laws of Oleron and the Consolato del Mare reflected accepted customary practice on a range of relevant subjects, including ship ownership, discipline and punishment of crews, and salvage." But they did little to resolve claims growing out of what were becoming increasingly acrimonious political disputes among European sovereigns over sea routes and rights to trade with the Americas and the East Indies.

The most extensive of these claims were ones made beginning in the mid-fifteenth century by Spain and Portugal, respectively, following Europe's discovery of the New World and maritime trade routes to Asia. The claims were said to have acquired legitimacy by virtue of an award made by Pope Alexander VI in 1493, as perfected by subsequent agreements between Spain and Portugal. Together they purported to justify the exclusion of other states not only from sharing in dominion over the newly discovered lands, but from navigating the trade routes and carrying on profitable trade with their inhabitants as well.

Papal authority to grant such rights did not go uncontested, even within Catholic Spain. As early as 1563, a prominent Spanish jurist named Fernando Vazquez de Manchaca had attacked Venice and Genoa's claims to dominion over parts of the Mediterranean, defending freedom of the seas itself.¹¹ Other European states rejected Spain and Portugal's claims even more energetically, not only because, as had quickly become apparent, the logic underlying the division of their respective dominions had proved illusory, but the practical reason that the two countries were manifestly unable to enforce them.

¹⁰Terms like dominion, sovereignty and even control are frequently employed in the literature of the law of the sea to describe the legal nature of rights being claimed. Their invocation lends to be outcome-oriented, however, and should be approached skeptically.

¹¹Anthony Pagden, *Lords of All World: Ideologies of Empire in Spain, Britain and France, 1500-1800* 56-61 (Vasquez Menchaca, 1995).

Even Queen Elizabeth of England, while herself demanding that foreign vessels entering waters claimed by England strike their topsails and take in their flags in recognition of Britain's sovereign jurisdiction, declared that the exclusion of foreign merchants from Indian commerce was contrary to the law of nations. "The use of the Sea and air is common to all," she told the Spanish ambassador.

The tensions generated by both Spain and Portugal's claims intensified at the start of the seventeenth century. An exponential growth in world trade and aggressive efforts by the newly formed Dutch East India Company to protect its right to engage in it brought the issue to a head. The Company had been organized by the Dutch government itself, in 1602, with a view to expanding the capital base, and thereby enhancing the collective security, of individual Dutch ship owners and captains who up to that point had had to fend off Spanish and Portuguese naval vessels on their own. Though the Company was an independent entity, with private shareholders, the Dutch government's involvement blurred the distinction between private and sovereign enterprise, and the rights accruing to each, thereby setting the stage for a dramatic confrontation.

It was not long in coming. In February 1603, a small fleet belonging to the Company attacked and overwhelmed a richly laden Portuguese vessel, the *Santa Catarina*, in the waters separating Sumatra from Malacca, known as the Straits of Singapore. The captured vessel and cargo were brought back to the Netherlands, where a Dutch admiralty court ordered the proceeds of its sale distributed to the Company, the admiral of the fleet and his crew. A furious row erupted over the legality of the seizure, which struck many as scarcely distinguishable from piracy.

The case presented complex legal issues. The need to defend its right to participate in the East India trade had arisen in the course of the young Dutch republic's war of independence against Spain, which by then held dominion over Portugal and, anyway, regarded the Dutch as no more than rebellious subjects. Moreover, some of the Company's own shareholders themselves

protested that it had been organized as a private commercial enterprise, not as a vehicle for engaging in an aggressive war, much less for enriching itself and its shareholders in the process.¹²

Some of the dissident shareholders threatened to withdraw their capital, to form a new enterprise in competition with the Company, even to make common cause with a French company projected by Henry IV. The controversy within and about the Company placed its very existence at risk and with it the future of the young Dutch republic's burgeoning overseas commerce.¹³

To win over popular support, the Company turned to Hugo Grotius, then only twenty-one years old and too new to the practice of law to handle the Santa Catarina litigation itself," but already renown throughout Europe for his prodigious erudition in the wisdom and practices of biblical and classical times. Grotius's defense of the Company's position seems to have been tantamount to a celebrity endorsement, as valuable to the Company in this respect as by the persuasiveness of whatever legal arguments he could muster in support of its actions.

He immediately set about drafting a monograph that would justify the Company's action not only in terms of existing codes of civil law. But as both honorable and appropriate. His preparation of it was quickly overtaken by events, however. The dissident shareholders had made good on their threat, to the extent of withdrawing their capital, but had failed to organize another company or to persuade the French to do so. Just as important, the Company's commercial success had precipitated a change in public sentiment, effectively silencing critics of its aggressiveness.¹⁴ Then, too, an end was in sight to Holland's decades- old war of independence from Spain. The moment, perforce, was inauspicious for a verbal assault on Spain and Portugal's claims to a global monopoly. Grotius's monograph, substantially completed by 1605, went unpublished for the time being.

¹²W.S.M. Knight, *The Life and Works of Hugo Grotius*(1925).

¹³Knight, *supra* note 11, at 6.

¹⁴Christian Gellinek, *Hugo Grotius* 97(1983)

By the middle of 1608, The Company was becoming increasingly alarmed over reports that, in pursuing a truce with Spain and thereby of obtaining Spain's recognition of Dutch independence, the Dutch government was prepared to concede Spain's right to exclude the Dutch from the eastern seas. At the Company's urging, Grotius returned to his manuscript, rewriting the introduction and expanding the conclusion of one of its chapters. Chapter XII the one in which he dealt specifically with freedom of the seas.

This one chapter was published the following spring, by itself, as a pamphlet entitled *Mare liberum*. No mention was made in it of the identity of its author although the fact that it was none other than the celebrated Grotius quickly became known.¹⁵ The rest of the monograph of which it was but a part was consigned to Grotius's personal papers. While he alludes to it in some of his private correspondence, its existence remained largely unknown until a manuscript copy of it was discovered nearly three centuries later, in 1864, and published, in 1868, under the title *De jure praedae* (On the Law of Prize). So, as interesting as it is to us to contemplate the larger context in which the Grotius sought to defend the Company's aggressiveness, the only part of *De Jure praedae* with which his contemporaries were familiar was the one chapter of it first published in 1609 as *Mare liberum*.

Ironically, the publication of *Mare liberum* came too late to influence negotiations with Spain. It was immediately injected, instead, into a dispute over Dutch herring fisheries along the English and Scottish coasts, a subject for which it had not been intended and with which it did not specifically deal. As to this, more is said below. Its abiding significance, in any event, is that, as developed with greater sophistication in *De jure belli ac pacis*, it ignited a fierce debate over sovereign control of ocean spaces, and more generally, over the existence of a universal law governing humanity's common interests.¹⁶

¹⁵Its author's identity was revealed for the first time in 1614, in the second Dutch translation.

¹⁶ Herbert F. Wight, "Some Lesser Known Works of Higo Grotius" 135-36 (1928).

2.3. The Revival of Natural Law

The idea of such a universal law was not new. Ancient Greece had developed a concept of nature in which the physical world was regarded as the consequence of some primordial element or law, infused with a transcendent morality.¹⁷ Roman law was presumed by the Romans to embody the natural law. Jus, the Latin word for law, itself carries the implication of natural right or justice.

Medieval thought, too, was influenced by the idea of a higher law, existing independently of the authority of any ruler, to which all positive law had to conform and to which all rulers owed allegiance.¹⁸ By then, however, this higher law was perceived to be embodied in the scriptures, with the result that during and after the eleventh and twelfth centuries it came under the guardianship of the Church. Its religious association, in fact, contributed to a decline in the influence of the higher law in part because it encouraged passivity to even the most unjust actions of rulers, since, if rulers were disobeying divine law, God could be counted on to punish them. If He did not, it must be because He had some hidden purpose, perhaps to punish an unfaithful people by permitting them to be oppressed by the illegal acts of an unjust king. "Under such circumstances," one scholar has observed, "men would be impiously presumptuous if they undertook to throw off the tyranny to which God wished them to be subjected for their sins.

Its identification with that of the Church itself attenuated the higher law's effectiveness even more critically when the Reformation dispersed the monopoly the Church had previously enjoyed over the enunciation of moral prerogatives. This development had been foreshadowed by the invention or rediscovery, if this was the case of movable type in the mid-fifteenth century. Moveable meant reusable, an improvement in production efficiency that might strike our high-tech age as unremarkable, but that at the time had altogether

¹⁷ Vreeland, *supra* note 15, at 173-74. Religion was the most important influence in unifying the physically separate communities of ancient Greece.

¹⁸ John Dickinson, *The Statements Book of John of Salisbury* (1927).

revolutionary social and political effects. So dramatically did it reduce the cost of printing, that the second half of the fifteenth century witnessed an unprecedented outpouring of inexpensive, readily accessible books and other printed materials. Many of the newly published works were republications of ancient texts, with learned commentaries, those of ancient Greek and Roman philosophers, historians and poets conspicuous among them. Inevitably, or at least so it seems to us now, the newly available knowledge led to a rapid proliferation in literacy and to an expansion in the ranks and influence of the most erudite men of the age.

The relocation of moral authority played directly to Grotius's strengths. As a child, he had read voraciously, mastered Latin and Greek, and translated and edited ancient texts encompassing a dazzling range of the humanities, meanwhile composing thousands of lines of Latin verse himself. By his late teens, he had written two full-length dramas on biblical themes,¹⁹ written about and translated works on astronomy and translated from Dutch into Latin a recent scientific paper on navigation. By the time *De jure belli ac pacis* appeared, he had published two works on Christianity, another on the history of the Dutch republic, yet another of his own Latin verses.

Beyond its versatility, the most influential aspect of Grotius's erudition lay in his familiarity with the history and tenets of the Christian religion and his elevation of the ethical aspects of Christianity above dogma. "The need to distinguish between the essential and the indifferent put a premium on the history of Christianity," an historian has noted, with reference to the advantage that this familiarity accorded to Grotius. To many of his contemporaries, Grotius's minimalist approach to Christian doctrine could serve to remove barriers that inessential dogma placed in the way of Christian unity and to establish common ground between Christians and the non-Christian world.

2.3.1 The Debate

At first glance, the principal arguments the Grotius makes in *Mare liberum* seem conventional. The Portuguese had no title to sovereignty over the

¹⁹Adamu, *IExu* 1(1601).

territories or peoples of the East Indies, he argues, nor, other than in exceptional cases, did any nation acquire such sovereignty. Portugal never possessed control over East Indian, or any other waters, and so could not claim that they had acquired property rights by dint of possession. More than that, no nation has the right to monopolize overseas trade or to interfere with any other nation's trade.

By themselves, neither the premise nor the logic of this reasoning is apt to strike readers today as altogether compelling. But Grotius knew his audience and the attractiveness to them of appeals to the dictates of reason. In terms of the trend *Mare liberum* initiated, rejuvenated or accelerated, therefore, what is of abiding importance to the case it builds lies in its insistence that criteria relevant to evaluating the legality of navigation, trade and capturing enemy goods were to be found not just in written codes of existing law, but in natural reason, and to morality as determined by reason.

His appeal to morality also allowed Grotius to argue that the Company's ships had been justified in using force, and in claiming the Santa Catarina and its cargo as prize, by virtue of the circumstances faced by Dutch traders in the Indies, Portugal's interference with their rights to trade there, the outrages the Dutch had had to endure at the hands of the Portuguese, and the grievances endured by East Indians themselves.

2.3.2 Responses to *Mare Liberum*

The defense of Portugal's imperial claims in the East Indies was taken up initially by Seraphim de Freitas, a Portuguese theologian-jurist and professor at the University of Valladolid, in a treatise published in 1625 under the title *De Justo Imperio Lusitanorum asiatico*. Vastly larger and longer than Grotius's mere pamphlet, *De Justo Imperio* was highly critical not only of the youthful Grotius's arguments, but of what Freitas contended were its factual inaccuracies and misleading references and inferences, as well.²⁰

²⁰ Monica Brito Viera, "Mare liberum vs. Mare clausum: Grotius, Freitas, and Seldcn's Debate on Dominion over the Seas." 64 *J. History of Ideas* 361 (2003).

In Freitas's view, the right to free trade and navigation, whatever its roots in natural law, had never become a part of the law of nations. A sovereign could refuse admission of foreigners to his territories or commerce and could forbid his subjects to trade with them, he wrote. Conceding the absence of papal authority to accord dominion over newly discovered territories and peoples. Freitas insisted that his authority as the spiritual dominus mundi nonetheless entitled him to grant an exclusive right to spread the Christian faith and civilization. Since, to be effective, this right necessarily involves both trade and limited conquest, the pope had had authority to grant Portugal-Spain the right to exclude other powers from the east.

De Justo Imperio was expanded upon four years later by a Spanish jurist named Juan de Solorzano Pereira, in a treatise entitled De Indiarum jure. Solorzano Pereira said that, regardless of the legitimacy of the fifteenth century papal grants on which they were based, Portugal's actual control and occupation of the new territories were sufficient in themselves to satisfy the requirements for retrospective ownership (prescription) recognized in both Roman and customary law.

Neither Freitas's nor Solorzano Pereira's treatise had as much influence in the seventeenth century as its legal merit warranted, partly because the center of intellectual interest and political power was shifting from Catholic Spain to Protestant countries, and partly because the supremacy of England's naval power rendered Spain and Portugal's legal claims unenforceable in practice. England's own claims to maritime sovereignty ran counter to Spain's and Portugal's, as well as to Holland's. Even during the reign of Queen Elizabeth and notwithstanding her rebuke to the Spanish ambassador England claimed sovereign rights seaward. During her realm these extended to the waters immediately adjacent to its coast, but her successors insisted that they extended as well into the Atlantic, off the coast of Spain, and in the North Sea to the coast of Norway.²¹

²¹Thomas Wemyss Fulton, *The Sovereignty of the Sea* 9(1911).

The first British treatise on the law of the sea had appeared in 1590. Written by William Welwood, a professor of mathematics and then law at St. Andrews University (Scotland), and entitled *The Sea Law of Scotland*, it defended royal dominion over the seas out to a distance of eighty miles off the Scottish coast. It pleased the king of Scotland, James V, who had objected, albeit ineffectively, to what he regarded as the intrusion of the Dutch herring fleet into Scots waters, and who rewarded Welwood monetarily for lending legal support to his cause.

After James succeeded to the crown of England, following Queen Elizabeth's death, he issued a proclamation claiming all fisheries along the British and Irish coasts, and prohibited foreign vessels from fishing in these waters without a royal license. To support his position, he asked Welwood to refute *Mare liberum* directly. This Welwood did in two treatises: *An Abridgement of AH the Sea-Lowes* (1613) and, in an amplified Latin version inspired in part by James's wife, Queen Anne of Denmark, *De dominio maris* (1615).²² Quoting extensively from biblical sources and Roman lawyers, Welwood rejected Grotius's claim that the waters of the world had always been regarded as indivisible and defended the right of a coastal state to fish and to navigate -and to impose taxes with respect to either in the waters adjacent to its coasts.

Grotius had written *Mare liberum* in the context of the Dutch-Portuguese trade dispute, not directly with respect to the right of foreign fishermen to exploit the living resources of a state's coastal waters. In 1612, when he was sent to London by the Dutch government as part of a delegation charged with negotiating a solution to the Anglo-Dutch fisheries dispute, he found the very arguments he had made in *Mare liberum* thrown back at him, to his acute embarrassment.²³ The Company's power in the East Indies had emboldened the Dutch to claim the right to keep all other competitors out of the

²²J.D. Alsop, William Welwood, et al., *Anne of Denmark and the Sovereignty of the Sea*. 49 (Scottish Historical Review, 1980).

²³C.R. Boxer, *The Dutch Seaborne Empire 1600-1800* 102 (1965).

region. If Grotius's arguments in *Mare liberum* were valid, the English asked, did they not apply to the Dutch?

Grotius's response, which he continued to develop even after returning from the mission, furthered the appeal to natural justice he had begun to make in *Mare liberum*. Although the Dutch originally had gone to the Mollucas as peaceful traders, he now contended, they had been compelled in self-defense to drive out the Portuguese and the Spanish and to maintain their position by means of costly garrisons and fleets. Since they were carrying on the struggle single-handedly, they were entitled to all the profits derived from the spice trade.

The reputation of Welwood's texts has been eclipsed over time by the acclaim, especially within England, that greeted John Selden's subsequently published treatise. Selden, an English jurist, scholar and polymath whose erudition rivaled that of Grotius himself, had begun researching and writing a refutation of *Mare liberum* soon after its publication, before either of Welwood's two treatises had appeared in print. But by the time he completed it, around 1617 or 1618, Grotius was caught in the center of both the political and the religious aspects of the underlying dispute, as a result of which he had been arrested, convicted by a jury comprised principally of his enemies, and sentenced to life imprisonment. James was reluctant in any event to provoke a dispute with Denmark, whose claims to waters in the North Atlantic were incompatible with Selden's enthusiastic arguments in defense of England's maritime claims. He refused to allow *Mare clausum* to be published.

Selden apparently abandoned the project for nearly seventeen years. By then, Grotius having escaped from prison in 1621 and living in exile in France, had published *De jure belli ac pacis*, an instant success, in which he had constructed a far more comprehensive theoretical framework for the rule of natural law, substantiated with an utterly overwhelming display of references to classical sources. Among its other effects, the acclaim *De jure belli ac pacis* received changed the rules of scholarly engagement. Consequently, whereas in his earlier draft of *Mare clausum*, Selden had had only to expose weaknesses in

Mare liberum's limited recitation of historical antecedents and assertions of justice, as Freitas, Solorzano Pereira and Welwood had done, he now faced the far more daunting task of placing his refutation within an expanded analytical construct like, or rivaling, the one Grotius had constructed and of matching, or at least neutralizing, Grotius's exhaustis'e show of classical scholarship.

Like *De jure belli ac pacis*, *Mare clausum* is a remarkable display of scholarship, too much so for modern readers, who tend to see in both works an excess of learning, indeed pedantry for its own sake, but decisively impressive to the two men's contemporaries.²⁴ Selden concedes the innocence of harmless navigation and commerce, but maintains that restrictions on them do not necessarily violate the law of nature and the law of nations. The open sea is not everywhere common, he says, is capable of dominion, and in fact had often been occupied and appropriated throughout history. As to Grotius's contention that the inexhaustibility of the seas deprives ownership of it of any utility, Selden argues that, in theory, the entire world can be regarded as inexhaustible, but that it is still logically possible to claim dominion over parts of it, and history had repeatedly demonstrated this fact. As to the Spanish and Portuguese claims, whose legitimacy England continued to deny, Selden says that, while on general principles they could be valid, in actual practice neither of the two countries ever acquired valid title or command to the areas they claimed.

Grotius did not respond to *Mare clausum*. By the time it was published, his attempt to return to his native country had been thwarted, he was once again relegated to exile and, perhaps most critically, he had meanwhile been appointed to represent Queen Christina of Sweden in Paris, had renounced his Dutch citizenship in favor of that of Sweden, and was hardly disposed to return to the defense of the Dutch maritime claims that were inconsistent with Sweden's own claims in the Baltic. Both Grotius and Selden were able to draw upon the work of others.

For the seventeenth century, the centerpieces of the debate over the law of the sea were Grotius's *Mare liberum* and *De jure belli ac pads* and Selden's

²⁴O.J.Toomir, John Selden: A Life in Scholarship (2009).

Mare clausum. Subsequent developments have rendered ironic the characterization of Grotius and Selden as rivals, however. They were rivals, to be sure, in terms of the immediate issue whether or which parts of ocean space can legitimately be claimed by one or another sovereign. But in building his argument for closed seas, Selden had in fact accepted much of Grotius's theoretical framework. Rivals in a narrow sense, in a larger sense their treatises reinforced one another.

2.4 The League of Nations: Early Attempts at Codification

From the beginning of the twentieth century, there was an increasing interest in the idea of codifying international law. It was widely believed at the time that the codification of international law on major topics would contribute to the maintenance of international peace and security. It was thought that the reduction of rules to writing would promote clarity and certainty in the applicable law. The Second Hague Peace Conference had adopted a resolution which called for the codification of topics which were "ripe for embodiment in international regulation" but the outbreak of the First World War had prevented this initiative from being further pursued. Nevertheless, Rosenne suggests "that recommendation is the seed which was ultimately to burgeon forth, first as the Committee of Experts for the Progressive Codification of International Law, and later as the International Law Commission of The United Nations.

The 1920s saw several codes on the law of the sea produced by private institutions and individuals, including the International Law Association, the Institute de Droit International, the American Institute of International Law, the German Society for International Law, the Japanese Society for International Law, and Harvard Law School.²⁵ These private initiatives were swiftly followed by governmental attempts at codification. In 1924 the Council of the League of Nations initiated a process for the codification of international law. To reflect the international character of the project, it was to be carried out by "a body representing the main forms of civilization and the principal legal

²⁵O'Connell, *The International Law of the Sea* at pp. 20-21;(1985).

systems of the world. The Council duly established a Committee of Experts for the Progressive Codification of International Law. Participation in the Committee was not restricted to individuals from member states of the League of Nations.²⁶ This Committee was charged with investigating which topics or fields of law were suitable for codification.²⁷ The initial list of topics for potential codification considered by the Committee included the status of territorial waters, the status of government ships engaged in commerce, the suppression of piracy, and the exploitation of the products of the sea.²⁸ Following a series of debates, the Committee of Experts narrowed down the list to those topics of international law which it considered were “sufficiently ripe” for codification by a general international conference. Of the above topics, only the subject of territorial waters was considered to meet this criterion.²⁹

In response to this recommendation, the League convened the 1930 Hague Codification Conference, which was attended by delegates from forty-seven governments, including states which were not members of the League. The issue of territorial waters was considered by the Second Committee of the Conference. Despite prolonged discussions, delegates failed to agree a treaty on territorial waters, although they did produce a set of draft articles that were subsequently circulated to governments. This text itself did not create legal obligations. Nevertheless, one commentary explains that it “later exerted influence to the extent that Governments accepted them as a statement of existing international law.”³⁰ The draft articles once again demonstrate the influence that a written text can have on the formation of customary international law.

²⁶The seventeen members of the Committee were selected by the League Council following consultations with governments. Membership of the Committee included the United States although the Soviet Union chose not to participate.

²⁷Rosenne, *Committee of Experts for the Progressive Codification of International Law* at p. vii.

²⁸*Ibid.*, at p.11.

²⁹*Ibid.*, at p. 21.

³⁰United Nations, *The Work of the International Law Commission* 3-4 (United Nations, 1988).

The 1930 Codification Conference was to be the only major multilateral attempt to codify international law during the lifetime of the League whose attention was consumed with more fundamental political crises during the 1930s. Although the Conference had failed to produce substantial results, many lessons were learned which would subsequently influence future attempts at codification.³¹

2.5 Truman Proclamation

Classic as well as modern International Law publicists tell us that the modes used by a state for acquiring additional sovereign territory are occupation and cession, conquest, prescription, and accretion.³² Yet a method, that of proclamation, was used by President Harry S. Truman on September 28, 1945, when he proclaimed the American policy respecting the natural resources of the subsoil and sea-bed of the continental shelf.

The concept of the continental shelf has a philosophical as well as a scientific basis. The philosophical justification for the sovereign extension over the shelf is often found within the proclamations themselves, for example, the Truman Proclamation contends that " the continental shelf may be regarded as an extension of the land-mass of the coastal nation and thus naturally appurtenant to it." The scientific basis is founded in ocean geology and geography. It is generally agreed that out from the shores of the littoral state the sea-bed gradually falls off to and levels at about two hundred metres,³³ until it reaches a point (the limit of the shelf) where the drop becomes suddenly steep and continues down to the oceanic basin. The International Law Commission, at its fifth session, tentatively approved articles for submission to the General Assembly of the United Nations wherein the continental shelf is defined as" the sea-bed and subsoil of the submarine areas contiguous to the coast, but outside the area of the territorial sea, to' a depth of two hundred metres." The practical purposes of adopting the two hundred metre line are evident in light of the

³¹ Rosenne, ed., *League of Nations Conference for the Codification of International Law* 65 (1930).

³² Hall, *International Law*, 125 (8th ed. 1925).

³³ 200 metres, 100 fathoms, 600 feet, are all approximately equal. 600 feet = 100 fathoms; 200 metres = 656.1 feet.

aforementioned scientific knowledge, as well as the fact that many nautical charts have the two hundred metre line already indicated. At this line, however, the extent of the shelf is by no means uniform. It has been asserted that no shelf exists along some shores, while in other places, the Yellow Sea and Gulf of Siam, it extends some 800 miles. It has been estimated that the shelf area all oceans.³⁴

The late international attention given to the continental shelf is due principally to two factors: the needs of an ever-increasing population, confined within the limited availability of land, have turned scientific research to methods of utilizing the natural resources of the sea-bed and subsoil; considerations of national defense, though not generally emphasized, have been no small consideration. National hopes of locating rich oil fields, sulphur beds, and other heavy minerals, even uranium, are even now materializing.²⁸ As of June 1, 1950, twenty-two oil fields west of the Mississippi River on the Gulf of Mexico were producing on the continental shelf. In August, 1954, the United States Government announced the future construction of radar installations upon the continental shelf as a means of furthering national security. Today many such radar installations are in operation, some as far as 110 miles out at sea.

For our purpose, the continental shelf claims can be divided into three groups: (1) those claiming sovereign rights over the shelf alone, (2) those claiming sovereign rights over the shelf as well as the epicontinental waters, and (3) those claiming sovereign rights over a specific area of water, irrespective of the continental shelf. Properly speaking, this third group has no connection with the doctrine of the continental shelf as it is generally understood, unless it be a causal one. *Gratis dicta* to sovereignty over a broad expanse of high seas, without regard to the continental shelf as a basis of such claims, are obviously contrary to International Law, as seen by section one of this article. Consequently, no attempt will be made to directly discuss those claims categorized in group three, but rather limit the comparisons to ones

³⁴SU.Egrove, *The Pulse of the Earth* 99 (2nd ed., 1947).

between group one and group two above, and the effect of each on freedom of navigation.

The major difference between the United States Presidential Proclamation and the Argentina Declaration is in the purported sovereignty over the waters above the shelf, though both decrees expressly state that rights of free navigation are in no way affected. The operative section of the Truman Proclamation is: "The character is high seas of the water above the continental shelf and the right to their free and unimpeded navigation are in no way thus affected", while the operative wording of the Argentina Declaration is, "For purposes of free navigation the character of the waters situated in the Argentine Epicontinental Sea and above the Argentine Continental Shelf, remains uneffected by the present declaration."

The exploitation of natural resources within the shelf will necessarily cause some obstruction to navigation; yet it is insisted that this obstruction should never be unreasonable. The tendency is to view the setting up of oil wells or pumping stations on waters over the shelf, as merely another use of the high seas, in the same manner that free navigation for transportation and commerce is a use. Which use in each case will prevail shall be determined by an equitable balance of the conflicting interests. What is and what is not unreasonable, must ultimately be decided on the merits of each case. It is conceivable that substantial interference with navigation could be justified in one case, while insignificant interference in another could be found totally unjustifiable. The decision of justification will initially lie with the coastal state, however, the International Law Commission provided in Article 73 concerning the Law of the Sea, that disputes not otherwise peacefully settled concerning the "reasonableness of interference" be referred to the International Court of Justice.

2.6 The United Nations: A New Era of Codification

The codification of international law was to become a much more prominent and permanent feature of the international system following the Second World War. The International Law Commission was established by

the UN General Assembly in 1947 for the purposes of advancing the codification and progressive development of international law.³⁵ The ILC is composed of thirty-four independent experts on international law appointed by the General Assembly.

At its first meeting in 1949, the Commission identified a provisional list of fourteen topics as suitable for codification. This list included the regime of high seas and the regime of territorial seas. It decided to priorities the codification of the regime of the high seas and J.P.A. François was appointed as special rapporteur on the subject. Following a recommendation from the General Assembly³⁶, the Commission started work on the regime of the territorial sea at the third session of the Commission in 1951 and François was appointed as special rapporteur on this topic as well.

The Commission proceeded with these two topics simultaneously, albeit continuing to treat them as separate subjects on its work programme. In furtherance of its work on the high seas, the Commission submitted draft articles on the continental shelf and fisheries to the General Assembly in 1953. The Commission recommended that the General Assembly adopt the articles on the continental shelf in the form of a resolution. In addition, the Commission proposed that the articles on fisheries should be forwarded to the FAO for adoption. The General Assembly, however, refused. Citing “the physical, as well as the juridical, linking of the problems related to the high seas, territorial waters, contiguous zones, the continental shelf and the superjacent waters”, the General Assembly resolved that “it would not deal with any aspect of the regime of the high seas or of the regime of territorial waters until all problems involved has been studied by the Commission and reported by it to the General Assembly.”³⁷ In this way, the General Assembly made it clear that it preferred a comprehensive and coherent approach to codifying the law of the sea. Following this recommendation, the ILC duly

³⁵General Assembly Resolution 174 (II), 1947, to which is annexed the Statute of the International Law Commission. The first members of the International Law Commission were elected in 1948.

³⁶General Assembly Resolution 374 (IV), (1949).

³⁷General Assembly Resolution 798 (VIII), 1953, cited in Sinclair, *The International Law Commission* 44-55 (Grotius Publications, 1987).

submitted a single set of draft articles on the law of the sea to the General Assembly in 1956 along with a detailed set of commentaries.

The draft articles formed the basis for discussions at UNCLOS I which was convened by the General Assembly in order to “examine the law of the sea, taking account not only of the legal but also of the technical, biological, economic and political aspects of the problem, and to embody the results of its work in one or more international conventions or such other instruments that the conference may deem appropriate.”³⁸ The mandate of the conference is important in a number of respects. Firstly, the General Assembly recognized that the law of the sea raised issues of a political or technical nature, as well as pure questions of law. Secondly, the General Assembly, in a significant u-turn, also abandoned its determination to treat the law of the sea as a coherent whole. The mandate foresaw the adoption of more than one international convention on the subject. Indeed, the General Assembly left open the question of whether the outcome of the Conference would be legally binding at all by indicating that the Conference could adopt other such instruments that it deemed appropriate.

UNCLOS I took place in Geneva in 1958. In accordance with Resolution 1105 (XI), an invitation was sent to all Members of the United Nations. The final list of participants included eighty-six states³⁹ as well as observers from seven specialized agencies.⁴⁰ Like the previous attempt at codification through the League of Nations, it was recognized that the rules of the law of the sea should be developed with the involvement of as many states as possible. Four principal treaties were negotiated, dealing with the territorial sea and the contiguous zone, the continental shelf, the high seas and fishing.⁴¹ The Conference also adopted an optional protocol on dispute settlement. All

³⁸General Assembly Resolution 1105 (XI), 1956.

³⁹At the time, only eighty-two states were members of the United Nations.

⁴⁰Official Records of the United Nations Conference on the Law of the Sea, vol. 2, at p. xiii.

⁴¹O'Connell, *The International Law of the Sea* 22(1995).

substantive decisions of the Conference were subject to a vote of a two-thirds majority.⁴²

The success of UNCLOS I was marred by the failure to solve some small, yet highly significant issues, in particular the width of the territorial sea and the important question of fishing rights. A resolution was adopted requesting the General Assembly to study the advisability of convening a second international conference⁴³, which it did in 1960.⁴⁴

2.7 The Impact of the 1958 Conventions

The overall reception of the 1958 Conventions was underwhelming.⁴⁵ The High Seas Convention, with 62 ratifications, was the most widely accepted of the four treaties. The Fisheries Convention, on the other hand, only managed to attract 37 contracting parties.

However, it is certainly not true that they had no normative impact. Many of the rules in the 1958 Conventions would be reproduced in some form in the 1982 LOS Convention. Moreover, some of the proposals on which states could not come to an agreement would have an impact on the formation of customary international law. At the same time, some of the more controversial provisions of the 1958 Conventions would be the catalyst for a more wide-ranging reformulation of the law of the sea in the following decades.

2.8 The Second United Nations Conference on the Law of the Sea

A Second United Nations Conference on the Law of the Sea (UNCLOS II) was convened in Geneva only two years after UNCLOS I. The UNGA called for the convening of the conference in December 1958, however, there was no intention of reopening the recently concluded Geneva Conventions but rather to focus on only two issues: the breadth of the territorial sea and fishery limits⁴⁶. The conference, which lasted for six weeks, was split between two groups, those favouring a six nm territorial sea and those supporting a 12 nm

⁴²Rule 35, Rules of Procedure, in Official Records of the United Nations Conference on the Law of the Sea, vol. 2, at p. xxxiii.

⁴³Records of the United Nations Conference on the Law of the Sea, vol. 2, at p.145.

⁴⁴General Assembly Resolution 1307 (XIII), 1958, at para.1.

⁴⁵For a list of ratifications and accessions, Churchill and Lowe, *The Law of the Sea*, Appendix 2, Table B.

⁴⁶UNGA Resolution 1307 (XIII) (1958).

territorial sea. The conference was dominated by concerns with respect to security, fisheries, and associated economic problems.⁴⁷ Ultimately, the principal proposal was a compromise put forward by the United States and Canada in which the limit of the territorial sea was proposed as being six nm beyond which a six nm fishing zone would exist. However, the so-called 'Six plus Six' proposal failed to achieve the necessary two thirds support by a single vote, as a result of which UNCLOS II failed to reach agreement on any reforms or modifications to the Geneva Conventions. The conference was therefore effectively a failure and made no contribution to the development of the law of the sea, although it did highlight the importance of seeking to gain agreement on key aspects of the law of the sea such as the limits of maritime zones when any future conference was convened.

2.9 The Third United Nations Conference on the Law of the Sea

In 1967, the Maltese ambassador Arvid Pardo addressed the First Committee of the General Assembly, demanding urgent action to ensure the peaceful development of the law of the sea and in particular the legal regime relating to the deep seabed. In response to this speech, the General Assembly created the Committee on the Peaceful Uses of the Seabed⁷⁵ whose initial mandate was to prepare a survey of state practice on the deep sea-bed and the ocean floor, an account of the scientific, technical, economic, legal and other aspects of the issue, and an indication of practical means of promoting international co-operation in the exploration, conservation and exploitation of the ocean floor.⁴⁸

In 1970, the General Assembly also decided to convene another conference on the law of the sea. The mandate of the Conference was not limited to the deep seabed. UNCLOS III was instructed to "adopt a convention dealing with all matters relating to the law of the sea."⁴⁹ Thereby, the General Assembly sanctioned the reform of the whole law of the sea in order to address

⁴⁷ DW Bowett, *The Second United Nations Conference on the Law of the Sea* 9 International and comparative Law Quarterly 415, 416-21 (1960).

⁴⁸ General Assembly Resolution 2340 (XXII), 1967, at para. 2.

⁴⁹ General Assembly Resolution 3067 (XXVIII), 1973, at para. 3.

the concerns of states over the 1958 Conventions. According to one author, “nothing was now to be taken for granted; everything was to be looked at again in the light of new political, economic and technological realities.”⁵⁰

UNCLOS III was described by one of its participants as “the most comprehensive political and legislative work undertaken by the United Nations in its 38 years of existence.”⁵¹ Clearly there was a lot at stake for all states concerned and UNCLOS III was “as much a daring venture of international politics and international relations as an exercise in international law.”⁸⁴ The politically charged atmosphere also affected the methods of law-making to be adopted by UNCLOS III. From the start, it was a drastically different process from previous attempts at codifying the law of the sea.

The law of the sea is partially reflected in the preparatory process of UNCLOS III. In contrast to UNCLOS I, the task of preparing for the conference was not delegated to the International Law Commission. It was thought the balancing of competing state interests could not be undertaken by a body of independent legal experts. As one commentator says, “states were simply unwilling to leave the promotion of their vital interests to the International Law Commission because they reasoned that only governmental representatives could effectively formulate solutions.”⁸⁵ In particular, developing countries doubted the representativeness of the Commission and they had serious reservations about its conservative approach to codification.⁵² Instead, the preparatory work for the Conference was entrusted to the Seabed Committee, whose membership was increased in size to ninety-one members for this purpose. General Assembly Resolution 2750 (XXV) mandated the Committee to prepare draft treaty articles embodying the international regime for the deep seabed area and resources of the seabed beyond the limits of national jurisdiction as well as a comprehensive list of subjects and issues relating to the law of the sea to be dealt with by the

⁵⁰Sanger, *Ordering the Oceans* 40 (Zed Books, 1986).

⁵¹Koh and Jayakumar, *An Overview of the Negotiating Process of UNCLOS III*, in *United Nations Convention on the Law of the Sea 1982 - A Commentary*, ed. Rosenne and Sohn 50 (Martinus Nijhoff Publishers, 1985).

⁵²Sinclair, *The International Law Commission* 28(1985).

Conference, including draft articles on such subjects and issues.⁵³ The Seabed Committee met for six sessions between 1971 and 1973. Its final report consisted of six volumes of proposals and counter-proposals submitted by states, as well as a number of studies prepared by the UN Secretariat at the behest of the Committee. Crucially, it failed to produce a draft treaty text.⁵⁴ A further reflection of the political character of UNCLOS III was the fact that oversight of the Conference was undertaken by the First (Political) Committee of the UN General Assembly, rather than the Sixth (Legal) Committee.⁵⁵

2.9.1 UNCLOS III Conference Dynamics

UNCLOS III was a very different conference and negotiation from its predecessors. Unlike UNCLOS I there were no ILC draft articles up in which to base a convention text. Accordingly, the negotiation of the convention text had to take place within the Conference framework. The conference was conducted over a nine year period between 1973 and 1982, with 11 negotiating sessions spread across 585 days and held in three countries.⁵⁶ One consequence of the length of the negotiation was that state practice evolved significantly over the life of the conference.

UNCLOS III was far more representative than the earlier conferences. A much larger gathering of states attended the conference compared to both UNCLOS I and II, with the final numbers at the last substantive sessions in 1982 totalling . There were also many more observers in attendance.⁵⁷ A number of national liberation movements, specialised agencies and United Nations organisations, intergovernmental organisations and nongovernmental organisations were also admitted as observers. With such a large number of states present at the negotiations, there was also a very different political dynamic than at UNCLOS I or II. At the first session, five regional groups were

⁵³General Assembly Resolution 2750 (XXV), 1970.

⁵⁴Oxman and Stevenson, "The Preparations for the Law of the Sea Conference", *American Journal of International Law* 11(1974)

⁵⁵Churchill and Lowe, *The Law of the Sea*, 17(1974).

⁵⁶Whilst the principal conferences venues were the United Nations Headquarters in New York and Geneva, the Second session (20 June-29 August 1974) was held in Caracas, Venezuela.

⁵⁷Such as Papua New Guinea which originally attended as a territory of Australia but by the end of the conference was in attendance as an independent state.

recognised for the purpose of distributing seats in the various conference committees. These were the African group, the Asian group, the Latin American group, the Western European group and the Eastern European group.

State practice in the law of the sea was in considerable flux in the period immediately prior to UNCLOS III, as reflected in the widely varying claims to different maritime zones and the equivocal decision of the ICJ in the *Fisheries Jurisdiction* case.⁵⁸ Nevertheless, by the time UNCLOS III convened in 1973 there was a developing momentum within the international community for recognition of an expanded offshore resources zone that encompassed elements of the existing fishing zone claims and also the continental shelf. This was consistent with the development of a ‘New International Economic Order’ within the international community. This found expression in a law of the sea context in the 1970 Montevideo Declaration on the Law of the Sea which called for the development of a new law of the sea recognising as a basic principle ‘the right of the coastal states to avail themselves of the natural resources of the sea adjacent to their coasts’⁵⁹. Latin American states further developed this principle with their endorsement of the concept of a ‘patrimonial sea’ that encompassed claims to a 200 nm zone over which sovereignty could be exercised with respect to the natural resources of the area.⁶⁰ These debates, which eventually formed the basis for the recognition of the Exclusive Economic Zone (EEZ), had a significant impact upon how coastal state claims to regulate offshore fishing activities were eventually perceived. With rapid agreement reached at UNCLOS III on the EEZ, many states in the 1970s unilaterally proclaimed expanded fisheries zones or an EEZ. These claims were reflected both in individual maritime claims, and also in bilateral and regional agreements. The effect of this state practice was that even prior to the conclusion in 1982 of UNCLOS III there was considerable acceptance of either a separate fisheries zone or the more complex EEZ.

⁵⁸ *Fisheries Jurisdiction (United Kingdom vs Iceland)* (Merits) [1974] ICJ Rep 3.

⁵⁹ MS Houston Lay, Robin Churchill and Myron Nordquist (eds), *New Directions in the Law of the Sea* vol 1 (Dobbs Ferry, NY, Oceana, 1973) 235.

⁶⁰ ‘Text of the Declaration of Santo Domingo approved by the Meeting of Ministers on June 7, 1972’ in *New Directions in the Law of the Sea*, vol 1, *ibid* 247.

Notwithstanding the long agenda and the duration of the negotiations, for the most part debate at UNCLOS III was harmonious. Agreement was reached at an early stage on the breadth of the territorial sea as 12 nm, thereby immediately addressing one of the dominant sticking points at UNCLOS I and II. There was agreement that once the territorial sea was extended then greater attention needed to be given to the innocent passage navigation regime through the territorial sea and international straits, and so consideration was given to clarifying the navigational regime throughout the proposed convention. The rights of archipelagic states were also acknowledged as being in need of recognition, as were landlocked and geographically disadvantaged states. The debates of the 1950s and 1960s over an EEZ were subsumed into support for a more comprehensive offshore resources zone in the form of an EEZ, and it was seen as important to have a clear relationship between the EEZ and the continental shelf. There was also general consensus on the need to address the regime of the deep seabed, and the common heritage of humankind principles, which Pardo had promoted in 1967, received general endorsement.

Given the wide range of ocean governance challenges addressed at UNCLOS III, touching upon the interests of virtually all states, it was recognised throughout the negotiations that the outcome would have to be a 'package deal' if it were to be widely accepted. Hence a consensus position was reached on many issues which reflected that the interests of all states had been taken into account to ensure an appropriate balancing of those interests in the final draft convention. Accordingly, the interests of coastal states in attaining a 12 nm territorial sea were counter-balanced against the interests of maritime states which were guaranteed navigational freedoms. Likewise, archipelagic states such as Indonesia and the Philippines achieved recognition of their unique maritime status for the first time in return for maritime states being able to enjoy navigational freedoms through waters that previously would have been high seas or at least territorial sea.

International Atomic Energy Agency, contracting parties to the ICFJ Statute, as well as Guinea-Bissau and North Viet-Nam, who at the time were

not yet members of the United Nations.⁶¹ In addition, invitations were sent to certain inter-governmental and non-governmental organisations and the UN Council for Namibia. In other words, this was intended to be an attempt at law-making by the international community as a whole.

The negotiations at UNCLOS III were politically charged. Traditional groupings, such as the G77 or the geographical groups inherited from the UN system, did play a role in the negotiations. More importantly, several interest groups spontaneously emerged from the negotiating process such as the coastal states, the strait states, the archipelagic states, and the landlocked and geographically disadvantaged states.

The conflict between the developing countries and industrialised states was one of the most striking dynamics at the Conference. The chief area of controversy between these two factions was the somewhat unusual topic of deep seabed mining, an issue that would ultimately cause the failure of the Conference to agree a text by consensus. However, political alliances and divisions often varied depending on the issues under discussion. Whilst the industrialised states were largely unified on the issue of deep seabed mining, divisions arose over questions of maritime pollution depending on whether a state identified itself as a coastal state or a maritime state. The challenge for the Conference was to balance all of these diverse interests.

2.9.2 The United States Position on Common Heritage and the Deep Seabed

The emerging consensus within the conference was challenged in 1981 following the election of the Reagan administration in the United States. The United States delegation to UNCLOS III began to express significant reservations about the deep seabed mining regime of the proposed convention, especially those aspects which gave effect to certain 'common heritage' principles such as technology transfer. Whilst the United States sought certain adjustments to the convention text, this proved impossible given the advanced state of the negotiations and the apparent about-turn by

⁶¹General Assembly Resolution 3067 (XXVIII), 1973, at para. 7.

the United States delegation on the common heritage regime. However, the United States was able to force UNCLOS III to a vote on the convention text at the eleventh session in New York in April 1982, with 130 states in favour, 4 against and 17 abstentions. Israel, Turkey and Venezuela joined the United States in voting against the convention text,⁶² however this did not prove to be an impediment to the eventual conclusion of the conference negotiations. UNCLOS III resumed its eleventh session in New York in September 1982, where the convention text was concluded, as was the Final Act. The Convention opened for signature at a further meeting at Montego Bay, Jamaica on 10 December 1982. In a speech to the assembled states during the signing ceremony, then United Nations Secretary-General, Javier Perez de Cuellar, was able to proclaim with ample justification that 'international law is now irrevocably transformed, so far as the seas are concerned'.

2.9.3 The United Nations Convention on the Law of the Sea

The LOSC remains one of the most comprehensive international law-making instruments of its time. The Convention comprises 320 articles, and nine additional annexes and establishes a truly comprehensive regime for the law of the sea that both reaffirms well settled completely new international law.

2.9.4 Entry into Force

The conclusion of UNCLOS III resulted in an initial burst of enthusiasm for the LOSC from states which had much to gain from its acceptance and entry into force. Fiji, for example, ratified the Convention on the day it was concluded on 10 December 1982, becoming the first state to do so. However, it soon became apparent that the concerns expressed by the United States over the provisions of Part XJ were gaining support from other states. In the early 1980s the United States and some other western states enacted legislation permitting the issuing of licences for deep seabed mining, and in order to reduce possible conflict over exploitation of deep seabed areas an agreement was reached in 1984 between many of these states to avoid overlapping licences. Throughout the 1980s the status quo with respect to the

⁶² Morell, *The Law of the Sea*; 32 (1995).

Convention and the deep seabed remained in place. The LOSC had not entered into force, although the number of ratifications and accessions were growing, and the deep seabed legal regime was not being tested due to a lack of interest in exploration. However, in the early 1990s this position began to shift due to the realisation that the LOSC had attracted sufficient levels of support to bring it into force in the near future. Although this was a positive development for the law of the sea, the fact that a large number of western states still had not ratified the Convention meant there was the prospect that it would enter into force without large-scale support, and that its various institutions would struggle to command legitimacy without the full backing of the international community.

2.9.5 1994 Implementing Agreement

Some form of breakthrough was required in this impasse and this occurred with the intervention of the United Nations Secretary-General, who was able to bring together key states and broker a resolution which effectively resulted in modifications and adjustments to Part XI of the LOSC prior to its entry into force. This occurred in a 1994 UNGA resolution that formally agreed upon an Agreement Relating to the Implementation of Part XI of the United Nations Convention on the Law of the Sea of 10 December 1982. This Agreement sought to address many of the key concerns which had been raised by the United States and others in the aftermath of UNCLOS III dealing with issues such as the institutional costs for state parties in giving effect to the Part XI arrangements, the operation of the Enterprise, decision-making procedures within the Assembly of the International Seabed Authority, the transfer of technology, and the production and economic assistance policies of the Authority. Procedurally, the 1994 Implementing Agreement also needed to address its relationship with Part XI of the LOSC and it provided that the two were to be 'interpreted and applied together as a single instrument with the Agreement to prevail in the event of any inconsistency. Provision was also made in the Agreement for its adoption, which could occur through LOSC ratification or accession, or, in the case of

those states which had already become parties to the LOSC at the time of the Agreement's adoption, by way of separate procedures indicating acceptance of the Agreement."

The LOSC eventually entered into force on 16 November 1994, consistent with the provisions of Article 308, one year after the date of deposit of the sixtieth instrument of ratification or acceptance. By January 2015 a total of 167 states and the European Union had indicated their acceptance of the Convention. Allied with the LOSC is the 1994 Implementing Agreement, which entered into force on 28 July 1996 and has 147 parties. The most recent party to accede to the LOSC and the 1994 Implementing Agreement is the State of Palestine, which joined both conventions on 2 January 2015. Palestine joins three other parties to the LOSC and 1994 Implementing Agreement that are not members of the United Nations. In respect of Palestine, it should be recalled that the Palestinian Liberation Organization was one of several national liberation movements invited to participate in the deliberations at UNCLOS III and which signed the Final Act of the conference.

Notwithstanding the high level of acceptance of the LOSC, there are several key states which remain outside of the Convention. In all there are 14 coastal states that are not parties to the LOSC. Whilst United States opposition to the Convention has been reversed, as seen in the attitudes of recent Republican and Democrat administrations, the United States has not been able to ratify the Convention because of opposition within the United States Senate. Israel, Turkey and Venezuela have also not yet become parties to the Convention and have maintained their opposition to the Convention expressed at the conclusion of UNCLOS III.

2.9.6 Fish Stocks Agreement 1995

To complete a missing plank in the LOSC framework of instruments, in 1995 an additional agreement was negotiated to supplement the provisions of the Convention relating to straddling and highly migratory fish stocks. Whilst the LOSC makes reference to these fish stocks, there was no

comprehensive regime agreed upon to regulate these high seas and related fisheries during UNCLOS III. This reflected an understanding during the conference that it would not be possible to resolve every law of the sea issue, and that some matters would need future resolution via additional agreements or protocols. To that end, Articles 63 and 64 of the LOSC provided only for very broad principles for the management of straddling stocks' and highly migratory fish stocks, whilst several Part VII provisions dealing with high seas fish stocks also provided a framework for management of these fisheries. Accordingly during the early 1990s, once again in contemplation of the pending entry into force of the LOSC but also in response to growing concerns about the management of these fisheries, the United Nations facilitated the negotiation and eventual conclusion of an Agreement for the Implementation of the Provisions of the United Nations Convention on the Law of the Sea of 10 December 1982 Relating to the Conservation and Management of Straddling Fish Stocks and Highly Migratory Fish Stocks (Fish Stocks Agreement). The Agreement reflects some of the significant advances in marine living resource management since the 1970s, and also relevant developments in international environmental law. Its core objective is the 'long-term conservation and sustainable use of straddling fish stocks and highly migratory fish stocks'⁶³ and it seeks to achieve that objective through the application of the precautionary principle in the management of these stocks. Enhanced compliance and enforcement mechanisms are provided for, with the role of flag, port and coastal states all expanded. In an interesting point of distinction from the 1994 Implementing Agreement, the 1995 Fish Stocks Agreement is to be 'interpreted and applied in the context of and in a manner consistent' with the LOSC. The Fish Stocks Agreement entered into force on 11 December 2001 and had 82 state parties as at 1 July 2015.

⁶³Art. 2, Fish Stocks Agreement,(1995).

2.10 The Role of the International Court of Justice and the International Tribunal in the Progressive Development of the Law of the Sea

The principal role of courts and tribunals is to resolve the disputes submitted to them by applying the existing rule of law⁶⁴. However, in every legal system, and most prominently in the international legal order, their contribution to the law-making process, be it customary or conventional, is fundamental. The term “progressive development”, borrowed from the United Nations Charter, is closely related to the codification of international law, it being one of the missions of the General Assembly through the creation of the International Law Commission and the organization of international conferences.

Major issues of the law of the sea have been put both before the Permanent Court of International Justice (PCIJ) and the International Court of Justice (ICJ), each of them having been for a long time the only international judicial forum with broad jurisdiction. In the *S.S. Wimbledon* case (1923), the Permanent Court has had the opportunity to declare that an artificial channel used for international navigation between two parts of the high seas should be assimilated to an international strait, where freedom of navigation exists even for warships of belligerent States⁶⁵. In the *Lotus* case (1927), the PCIJ discussed the exercise of criminal jurisdiction of States vis-à-vis foreign nationals in the case of collision in the high seas. The Court held that jurisdiction of the national State of the responsible person (France) runs concurrent to the jurisdiction of the State of the victims⁶⁶. It should be noted, though, that the decision of the Court was eventually reversed by international practice and later codification, which reserves the exercise of criminal jurisdiction only to the flag State and the national State of the person responsible for the collision (article 11 of the 1958 Geneva Convention on the

⁶⁴Statement of M. Bedjaoui, (former) President of the International Court of Justice to the General Assembly, 15 October 1996, p. 3.

⁶⁵ PCIJ, Series A, 1923, No 1, p. 28.

⁶⁶ PCIJ, Series A, 1927, No 10, p. 30.

High Seas and article 97 of the 1982 United Nations Convention on the Law of the Sea, hereinafter cited as “LOS Convention”)⁶⁷

2.10.1 The Contribution of the International Court of Justice to the Codification of the Law of the Sea

In its early days already, the International Court of Justice was seized with cases concerning the law of the sea. In the *Corfu Channel Case* (1949) the parties, United Kingdom and Albania, had discussed the elements necessary for a natural strait to qualify as a strait in the legal sense. The Court admitted that both criteria, “the geographical situation as connecting two parts of the high seas and the fact of its being used for international navigation”, were important and declared that innocent passage could not be suspended there-in⁵. The Court’s *dicta* were subsequently included in article 16 paragraph 4 of the 1958 Geneva Convention on the Territorial Sea and the Contiguous Zone (hereinafter cited as “TSC”) and later incorporated in the relevant articles of Part III of the LOS Convention on straits used for international navigation, *inter alia* articles 37 and 45.

In the *Anglo-Norwegian Fisheries Case* (1951), the Court innovated by admitting the validity in international law (and its opposability to the United Kingdom) of the outer limit of the territorial sea of Norway, drawn by reference to the new, at the time of the judgment of the Court, straight baselines system. Against strong reaction by three dissenting judges⁶, the Court’s decision contributed in introducing the straight baselines system in article 4 of the TSC and eventually in article 7 of the LOS Convention.

The Court’s case law contributed further to the definition of the continental shelf, this being made in the context of its delimitation between States. After the 1958 Geneva Convention on the Continental Shelf has been adopted and entered into force, in the North Sea Continental Shelf cases (1969) the Court defined the continental shelf as being “the natural prolongation of the

⁶⁷ R.R. Churchill and A.V. Lowe, *The Law of the Sea* 208 (3rd ed., Manchester University Press, 1999).

land territory under the sea”⁶⁸. Even though the law on the delimitation of the continental shelf has been through a dramatic evolution since the 1960s, one can still trace these terms in article 76 of the LOS Convention.

In the continuous interaction between the Court’s decisions and international law-making, the case law on the maritime zones delimitation between States constitutes the richest and most interesting contribution of the Court to the law of the sea. Its impact consists, among other, on the one hand, in the clarification of the principles and rules of delimitation through the reconciliation between customary and conventional law and, on the other hand, in the unification of the rules concerning the delimitation of all the maritime zones.

As far as clarification of the law is concerned, the Court’s work has been the result of a long and difficult course, which began with the North Sea Continental Shelf cases (1969)⁶⁹. In that case, the first to be submitted to it in this area, the Court pronounced in favour of the discrepancy between customary and conventional law and introduced in the legal scene of general international law the equitable principles as being something different from the rule expressed in the conventional law of 1958, that mentioned the line of equidistance/special circumstances⁷⁰.

The awkwardness of the situation was acknowledged by the President of the Court Judge Guillaume, who declared at his speech before the Sixth Committee of the United Nations General Assembly on 31 October 2001: “At this stage, case law and treaty law had become so unpredictable that there was extensive debate within doctrine on whether there still existed a law of delimitation or whether, in the name of equity, we were not ending up with arbitrary solutions. Sensitive to these criticisms, in subsequent years, the Court proceeded to develop its case law in the direction of greater certainty”⁷¹.

⁶⁸ICJ Reports 6 (1969).

⁶⁹*Fisheries Jurisdiction* cases, Germany/UK v. Iceland, ICJ Reports 3 (1974).

⁷⁰Article 6 of the CSC.

⁷¹www.icj-cij.org/Statements of the President of the Court.

By then, the Third UN Conference for the Law of the Sea (“UNCLOS III”) had reached consensus on the introduction in the law of the sea of the Exclusive Economic Zone (EEZ), the definition of which was not based on physical characteristics but mainly on the distance, 200 nautical miles from the baselines used for the measurement of the territorial sea. In view of the fact that the legal regime of the continental shelf is intimately related to that of the EEZ, the Court abandoned the bed of the sea in favour of its surface and from the geological factors turned to geography. The judgment in the Libya/Malta case (1985) was a turning point⁷², the one in the Maritime De-limitation in the Area between Greenland and Jan Mayen case (1993) proved to be a break with the past⁷³. In this last case, the Court found that the rules on the delimitation of the continental shelf and the EEZ in the LOS Convention⁷⁴ and the ‘line of equidistance special circumstances’ rule in article 6 of the CSC have the same finality, to obtain an equitable delimitation. The special circumstances of conventional law and the relevant circumstances of customary law, that have to be taken into account in order to achieve an equitable result (an expression inherited from the ICJ case law and codified in the relevant articles of the LOS Convention), have the same meaning and are mostly of geographical nature. The median line in both must be the point of departure, in cases where continental shelf and/or EEZ delimitation takes place within a area where the distance is shorter than 400 miles between opposite coasts.

From this point on, in the subsequent cases, the Court applied almost automatically the median line at the first stage of the delimitation process, then corrected it in order to serve equity. In the Qatar/Bahrain case (2001)⁷⁵ the Court applied also this solution in a situation where the coasts of the two States are adjacent.

In the case concerning the Land and Maritime Boundary Between Cameroon and Nigeria (2002), where applicable law were for the first time the

⁷²ICJ Reports 4 (1985).

⁷³ ICJ Reports 4 (1993).

⁷⁴Articles 74 and 83 of the LOS Convention with identical texts.

⁷⁵ICJ Reports 6 (2001).

LOS Convention rules on delimitation, the Court proceeded also by drawing a line of equidistance between the (adjacent) coasts of the two States. In this application of the equidistance line, it went even further by refusing to correct it, having denied to retain criteria that it had admitted as relevant in its previous case law, such as the concavity of the coasts, oil practice, even the existence of an important island, Bioko Island, belonging to a third State, namely Equatorial Guinea.

In its recent case law, the Court also seized the opportunity to make a step further towards the unification of the rules of delimitation by declaring that the above method is to be followed, not only for continental shelf and exclusive economic zone delimitation purposes but also for the delimitation of the territorial sea.

To sum up, one might observe that the interrelation between the Court's judicial activity and the law-making process passed through different stages. Having started from a more or less precise conventional framework, that of article 6 of the CSC, the Court introduced in customary law the equitable principles that resulted in legal uncertainty. The latter is being reflected in the text of both articles 74 and 83 of the LOS Convention, which were "consciously designated to decide as little as possible"⁷⁶. To redress this situation, the ICJ interpreted the provisions of these articles, to which it added, as stated above, article 15 on the delimitation of the territorial sea, by reintroducing in the legal landscape the principle of the median line.

For a long time the ICJ was the only international judicial body with broad jurisdiction and the choice of States was necessarily focused between the Court and international arbitral tribunals. Their contribution to the law of the sea is also of importance. Let us simply recall the Arbitral Tribunal between France and the UK on the Delimitation of the Continental Shelf in the English Channel and North Western Approaches (1977), which was the first

⁷⁶According to the Arbitral Tribunal on Eritrea/Yemen Maritime Delimitation case, *ibid.*, paragraph 116.

international tribunal that tried to reconcile the conventional rule of article 6 of the CSC and customary law⁷⁷.

2.10.2 The Contribution of the International Tribunal for the Law of the Sea

The proliferation of norms, through codification and regionalization, in many fields of international law gave birth to a multiplication of judicial organs. The law of the sea is an interesting example. Since 1996 the contribution of the ICJ to the law of the sea is being enriched and completed by the case law of the International Tribunal for the Law of the Sea (ITLOS)⁷⁸. It is expected that arbitral tribunals, to be constituted under the dispute settlement system of the 1982 LOS Convention, will also play an important role in this regard⁷⁹.

2.10.2.1 Prompt Release of Vessels and their Crews

The International Tribunal for the Law of the Sea had up to this date the opportunity to clarify, through the cases adjudicated, the rules on the prompt release of vessels arrested for (alleged) violations of the legislation adopted by coastal States in exercising their rights to explore, exploit, con-serve and manage the living resources in the EEZ. Under article 73 paragraph 1 of the LOS Convention, enforcement measures in accordance with such legislation may consist in boarding, inspection, arrest and judicial proceedings. But arrested vessels and their crews must be promptly released “upon the posting of reasonable bond or other security” (paragraph 2) and the penalties for fisheries laws and regulations may not include imprisonment or other corporal punishment (paragraph 3). Under article 292 of the LOS Convention, the disputes related to the duty to release and the assessment of the reasonableness of the bond fall, as a last resort, within the compulsory jurisdiction of the ITLOS.

⁷⁷Award of 1977, La Documentation française 80 (1977).

⁷⁸Th. Mensah, *The International Tribunal for the Law of the Sea: Its Role for the Settlement of Law of the Sea Disputes*, AYYL 227-242 (1998).

⁷⁹E.D. Brown, *Dispute Settlement and the Law of the Sea: The UN Convention Regime*, 21 *Marine Policy* 17-43 (1997).

Using a teleological interpretation, the ITLOS declared that the object of both articles 73 and 292 of the LOS Convention is to reconcile the interests of the coastal State in enforcing its laws and regulations with those of the flag State to see its vessel and crew promptly released. The bond serves the interest of the detaining State to secure appearance in its courts and the payment of penalties and for its assessment this compromise must be born in mind⁸⁰.

The Tribunal further clarified the factors that have to be taken into account in order to assess the reasonableness of the bond for the release of a vessel under article 292 of the LOS Convention: The gravity of the alleged offences; the penalties imposed or imposable under the laws of the detaining State; the value of the detained vessel and the cargo seized; the amount of the bond imposed by the detaining State and its form⁸¹; this list being not exhaustive but excluding the right for the detaining State to impose non-financial conditions as components of a bond or other financial security, e.g. the obligation for the vessel to carry a Vessel Monitoring System (VMS)⁸². The form of the bond will be a bank guarantee from a bank operating in the detaining State or a bank having corresponding arrangements with it.

2.10.2.2 Means of Enforcement of Laws and Regulations of the Coastal State

In the *Saiga 2* (Merits) case, where the issue put before the Tribunal was the lawfulness of the arrest and detention of the vessel *Saiga*, the ITLOS had the opportunity to pronounce on the conditions of the exercise of the right of hot pursuit and the use of force as means of arresting a vessel. The Tribunal found that the conditions contained in article 111 of the LOS Convention are cumulative: The vessel has to be warned that it will be pursued, the pursuit has to be uninterrupted and force has to be resorted to only as the last resort and after warning⁸³.

⁸⁰Judgment in the case of the *Monte Confurco*, paragraphs 70-73.

⁸¹Judgment in the case of the *Camouco*, (7 February 2000), paragraph 67.

⁸²Judgment in the case of the *Volga*, paragraph 77.

⁸³Judgment in the Case of the *Saiga 2*, Merits, paragraph 83.

The use of force is not mentioned among the means of enforcing protection measures by the coastal State within the EEZ provided for in article 73 of the LOS Convention. Let us be reminded that the ICJ, in the Fisheries Jurisdiction case (1998), had simply declared that recourse to use of force, if authorized by the coastal State's legislation, "falls within the ambit of what is commonly understood as enforcement of conservation and management measures"⁸⁴.

The ITLOS proceeded a step further and pronounced that international law prescribes that use of force should be avoided, as far as possible, that it "must not go beyond what is reasonable and necessary in the circumstances and also that considerations of humanity must apply in the law of the sea, as they do in other areas of international law"⁸⁵. This declaration, together with those mentioned above on the considerations of humanity that underline the obligation of the prompt release and the extent of the protection of the flag State to the members of the crew, irrespective of their nationality, undoubtedly shows the sensitivity and the will of the judges of the ITLOS to play an active role in the development of the law of the sea through the incorporation into it of principles safeguarding the protection of seamen and their rights.

2.10.2.3 Preservation and Protection of the Marine Environment

In the case law of the International Court of Justice, environmental concern have been treated with restraint, the Court having confined itself to limited declarations on the existence of very general obligations concerning the protection and the preservation of the environment. It is true that in its early jurisprudence it had acknowledged the existence of the principle according to which "a State must not allow its territory to be used for acts contrary to the acts of other States"⁸⁶, and more recently that "the existence of a general obligation of States to ensure that activities within their jurisdiction and control respect the environment of other States or of areas beyond national jurisdiction

⁸⁴ *Fisheries Jurisdiction* case, Spain v. Canada, Jurisdiction, Judgment of 4 December 1998, paragraph 84.

⁸⁵ Judgment in the case of the *Saiga 2*, Merits, paragraph 155.

⁸⁶ *Corfu Channel* case, UK v. Albania, Merits, Judgment of 9 April 1949, ICJ Reports (1949).

as being part of the corpus of international law relating to the environment”⁸⁷. It admitted also that vigilance and prevention are required in order to avoid damage that might be irreversible⁸⁸. But it simply conceded to the idea of sustainable development a conceptual character rather than a genuine legal identity, by acknowledging that this idea under-lines the need to reconcile economic development with the protection of the environment. Finally, although it recognized that new environmental standards, including that of assessment of the risks, have been developed over the last years, the Court adopted a rather “minimalist approach”⁸⁹ by failing to admit the existence in positive customary international law of the precautionary principle, pleaded by New Zealand in the Nuclear Tests II case (1995) and by Hungary in the Gabcikovo-Nagymaros case (1997).

The contribution of the ITLOS to the development of the law of the sea concerning the marine environment is to be found in the Orders on provisional measures the Tribunal may prescribe under article 290 of the LOS Convention. Paragraph 1 of this article gives the Tribunal, or indeed another prima facie competent court or tribunal, the power to prescribe provisional measures to preserve the rights of the parties or to prevent serious harm to the marine environment, pending its final decision. Paragraph 5 gives the ITLOS, or any other court or tribunal agreed upon by the parties, the power to prescribe provisional measures, pending the constitution of an arbitral tribunal to which the dispute is submitted, if it considers that the tribunal under constitution has prima facie jurisdiction and that the urgency of the situation so requires. In this case, the ITLOS may prescribe provisional measures, assuming that another international tribunal has jurisdiction⁹⁰.

⁸⁷ Advisory Opinion on the *Legality of Threat or Use of Nuclear Weapons*, ICJ Reports 29 (1996).

⁸⁸ *Gabikovo-Nagymaros case*, Hungary v. Slovakia, Judgment of 25 September 1997, ICJ Reports 140 (1997).

⁸⁹ P.M. Dupuy, *The Danger of Fragmentation or Unification of the International Legal System and the International Court of Justice*, 31 *New York University Journal of International Law and Politics* 72 (1999).

⁹⁰ R. Wolfrum, *Provisional Measures of the International Tribunal of the Law of the Sea*, *IJIL* 420-434 (1997).

From the examination of its case law, it appears that the ITLOS seems more desirous to play a progressive role in the development of the principles on the protection and preservation of the marine environment. It first declared, in the Southern Bluefin Tuna Order (1999) for provisional measures under article 290(5), that is pending the constitution of another arbitral tribunal, that the conservation of the living resources of the sea is an element in the protection and preservation of the marine environment; thus, it established a link between these two concepts⁹¹. Since the parties in the dispute, namely New Zealand, Australia and Japan, agreed that the stock of Southern Bluefin Tuna (SBT) is being severely depleted, the ITLOS prescribed provisional measures in that case consisting in the abstention from any action that might prejudice the carrying out of any future decision that the arbitral tribunal (to be constituted) might render and limitation of the quantity of catch for all the three parties as well as the abstention from conducting experimental fishing programmes, except with the agreement of all parties to the dispute. Regrettably, the provisional measures prescribed by the ITLOS have been eventually revoked by the Arbitral Tribunal constituted under article 287 and Annex VII of the LOS Convention, which found that it did not have jurisdiction to adjudicate the case on the merits⁹².

The Mox Plant case is about a dispute between Ireland and the UK concerning the authorization of a MOX (Mixed Oxide Fuel) Plant in the North-West of England on the coast of the Irish Sea, whose operation, including transportation of radioactive material to and from the plant, would, according to Ireland, pollute the Irish Sea. Pending the constitution of an arbitral tribunal under article 287 and Annex VII of the LOS Convention, Ireland asked the ITLOS to prescribe provisional measures under article 290 paragraph 5, consisting mainly in the suspension of the authorization of the plant and the cessation of marine transport of radioactive substances in connection with its operation.

⁹¹Order of 27 October 1999, paragraph 70.

⁹²ICSID, Award of the Arbitral Tribunal in the Case *Southern Bluefin Tuna*, of 4 August 2000, available on www.worldbank.org/icsid. (Visited on July 15, 2020).

In its Mox Plant Order on provisional measures (2001), the ITLOS declared that the duty to cooperate is a fundamental principle in the prevention of pollution of the marine environment under the LOS Convention and general international law⁹³. On the other side, it also linked the requirement to cooperate for Ireland and the UK with the prudence and caution necessary for the prevention of serious harm to the marine environment. The ITLOS found that in this case there was no urgency requiring the measures requested by Ireland. It nevertheless prescribed a different provisional measure, consisting in improved cooperation and the provision of information.

Finally, the ITLOS unanimously prescribed a provisional measure under article 290 paragraph 5 of the LOS Convention in the case concerning Land Reclamation by Singapore in and Around the Straits of Johor, Malaysia v. Singapore (2003), consisting in the duty to cooperate and enter into consultations in order to establish a mechanism for exchanging information and on assessing the risks or effects of land reclamation on the marine environment⁹⁴. Following the Order of the Tribunal, the two States established a Group of independent experts (GOE), which conducted a study on the reclamation activities and recommended, as required by the Order of the Tribunal, measures to deal with any adverse effects. Interestingly enough, this procedure enabled the two States to exchange views and information in such a way as to agree ad referendum on the text of a draft Settlement Agreement. Accordingly, in January 2005, the Arbitral Tribunal meanwhile established and for which the Permanent Court of Arbitration serves as registry, decided to abstain from further action on this case for the moment.

One should emphasize the eminent role played by the ICJ and other arbitral tribunals) to the progressive development of the international law of the sea. Especially in the area of maritime delimitation, the impact of the ICJ on the law making process, after an initial period of hesitation and staling, ended up in both clarification and unification of the law of the sea in that field.

⁹³Order of 3 December 2001, paragraph 82.

⁹⁴Order of 8 October 2003, paragraphs 96 and 99.

As far as the ITLOS is concerned, its case law is mainly limited, for the moment, to prompt release judgments under article 292 of the LOS Convention and Orders on provisional measures under article 290 thereof. The Tribunal has nevertheless seized the opportunity to present interesting interpretations of relevant articles of the LOS Convention on the enforcement means in the EEZ and prescribe provisional measures, promoting the progressive development of the law of the protection and preservation of marine environment. Furthermore, the Tribunal serves also as a forum, which facilitates exchange of views and information between the parties and its provisional measures may act as a catalyst, through the creation of appropriate mechanisms, promoting the settlement of environmental disputes.

The ITLOS, under article 290 paragraph 5 of the LOS Convention, which prescribed provisional measures after having found that the arbitral tribunal which was to be constituted to adjudicate the dispute had prima facie jurisdiction to do so. After having been constituted under Annex VII of the LOS Convention, the Arbitral Tribunal suspended its proceedings because of serious doubts concerning its jurisdiction, due to the fact that the dispute comprises also some aspects of European community law. It has been brought to the attention of the Arbitral Tribunal that the European Commission was studying the possibility to seize the Court of Justice of the European Communities under article 226 of the European Community Treaty. "Bearing in mind considerations of mutual respect and comity which would prevail between judicial institutions", in its Order of 24 June 2003, reiterated in November 2003, the Arbitral Tribunal suspended its own proceedings in order to have a clearer picture of the position regarding the European law and possible proceedings there under. As for the provisional measure prescribed by the ITLOS, the Arbitral Tribunal aligned itself to the ITLOS Order by affirming the measure.

2.11 Present Perspective

The entry into force of UNCLOS has been lauded as "the most important development in the settlement of international disputes since the

adoption of the UN Charter and the Statute of the International Court of Justice⁹⁵." The Convention could even be "important in preparing the ground for compulsory third party settlement in other areas of international cooperation."⁹⁶ Many benefits have been identified in what is generally described as a flexible, comprehensive, and binding dispute settlement system for the oceans. One claim is that the availability of compulsory arbitration or adjudication may prevent the destabilization of the Convention by unilateral action in the absence of agreed authoritative collective mechanisms for interpretation⁹⁷. Dispute settlement proceedings could further prove useful to States in political matters, as it would provide a means of resolving a crisis without imposing direct responsibility upon the governments involved. In this regard, States could be provided with a "graceful retreat" as they "yield to the rule of law as embodied in the binding judgment of a disinterested tribunal" rather than the political or economic pressure of another State.⁹⁸ The availability of compulsory procedures under the Convention is meant to provide States with another means, in addition to coercive economic or military measures, to enforce their rights or to prevent violations of the Convention. For these assorted reasons a system of compulsory, impartial third-party adjudication was deemed essential to the overall structure of the Convention.⁹⁹

Despite this enthusiasm, it has also been argued that the Convention does not meet these many expectations but lacks both comprehensiveness and effectiveness. Oda has noted that UNCLOS was "not so very different from the 1958, Conventions on the Law of the Sea, in that not all ocean disputes are necessarily made subject to compulsory settlement."¹⁰⁰ The exceptions to and limitations on the mandatory system in UNCLOS may demonstrate that the

⁹⁵Boyle, *Dispute Settlement* 37(1987).

⁹⁶Marcel M. T. A. Brus, *Third Party Dispute Settlement in an Interdependent World* 23(1995).

⁹⁷Bernard H. Oxman, Commentary," in *Implementation of the Law of the Sea Convention Through International Institutions* 648-651 (1990).

⁹⁸Statement by Expert Panel, *U.S. Policy on the Settlement of Disputes in the Law of the Sea*," 81 Am. J. Int'l L. 438, 440 (1987).

⁹⁹John R. Stevenson and Bernard H. Oxman, *The Preparations for the Law of the Sea Conference*," 68 Am. Int'l L. I, 31 (1974).

¹⁰⁰Shigeru Oda, *Dispute Settlement Prospects in the Law of the Sea*, 44 Int'l & Comp. L.Q. 863, 863 (1995).

system in Part XV is unlikely to function well, if at all. Courts and tribunals will only be vested with mandatory jurisdiction if States fail to resolve any differences through diplomatic channels.¹⁰¹ In accordance with Article 281, for States Parties to institute compulsory proceedings entailing binding decisions under Section 2 when a separate agreement governs an aspect of the oceans, they must have exhausted attempts at dispute settlement under the separate agreement and that agreement cannot exclude resort to the procedures in UNCLOS. Furthermore, if States are parties to a general, regional, or bilateral agreement that provides for a dispute settlement procedure entailing a binding decision, then that procedure applies in lieu of the mechanism in the Convention. These exclusions were necessary in light of the large number of multilateral, regional, and bilateral treaties that relate to the law of the sea and often have their own dispute settlement procedures. In the Southern Bluefin Tuna case, the Tribunal reasoned that since States had adopted these agreements with the idea that there would not be a unilateral resort to compulsory procedures, it was contrary to what these States had consented to permit recourse to the mandatory UNCLOS mechanism. In taking this approach, the Tribunal effectively rejected arguments that UNCLOS created a comprehensive and effective regime for the resolution of all disputes, as well as the argument that decisions on jurisdiction "should lean in favour of the effectiveness and comprehensive character of the dispute settlement regime, itself a key aspect of the UNCLOS regime."¹⁰² Views supporting the comprehensive nature of the Convention are further undercut by Section 3 of Part XV of the Convention, which specifically sets out the limitations and exceptions to the applicability of compulsory procedures entailing a binding decision in Articles 297 and 298.¹⁰³ Rather than allowing all disputes of interpretation and application of the Convention to be submitted to mandatory

¹⁰¹UNCLOS, arts. 279 and 280.

¹⁰²Southern Bluefin Tuna Case, Australia and New Zealand v. Japan, Australia and New Zealand, Reply on Jurisdiction, vol. 1, Text, March 31, 2000, para. 31.

¹⁰³Oda, Dispute Settlement Prospects 863(1985).

third party procedures, Part XV had to be designed to protect the primary interests at stake for each issue area. Richardson has noted as much:

Various forms of dispute settlement fall along a continuum of strength that is defined by the degree to which the particular form of dispute settlement intrudes upon a nation's sovereignty. The more comprehensive, mandatory, and binding the form of dispute settlement, the less willing nations will be to submit to its jurisdiction when the substantive interests involved are considered too important an aspect of sovereignty to risk an unfavorable outcome. Thus, the particular form of dispute resolution must be tailored to the problems it is intended to deal with. Otherwise, nations will refuse to utilize the procedures.¹⁰⁴

From this perspective, mandatory jurisdiction will only be necessary for a limited number of disputes arising under the Convention. Convention is the "pivot" or "cement" of the new law of the sea. The answer cannot be provided in a manichean fashion. The dispute settlement system in UNCLOS relies on a spectrum of resolution techniques ranging from formal adjudication or arbitration, to compulsory conciliation, to voluntary conciliation, to diplomatic initiatives and negotiation. What procedure is available depends on the substantive question in dispute. Clearly, States were not of the view that mandatory jurisdiction was essential for every issue regulated under the Convention. In some instances, mandatory jurisdiction is an essential complement in the regulation of specific issue areas either to guarantee the substantive rules formulated in the Convention or to elaborate on the provisions of the Convention if no other international forum is available. In other instances, the emphasis has been placed on national decision-making rather than the use of international processes. A preference for diplomatic settlement or other consent-based methods of dispute resolution also remains evident with respect to a range of issues.

Part XV had to be constructed to reflect the political dynamic of the Third Conference and while the result cannot be described as perfect, it is

¹⁰⁴Richardson, *Dispute Settlement*, 153(1975).

evident that the dispute settlement regime is carefully tailored to specific issue areas to ensure the greatest workability possible. Although resort to mandatory arbitration or adjudication has been excluded for some questions when this avenue could have served a valuable purpose, States rejected this approach because it did not accord with political realities or because binding dispute settlement was not necessary. Such a selective approach does not undermine the viability of the Convention for those issues. International regimes have been able to function quite successfully regardless of the availability of a system of mandatory jurisdiction. Instead, external regulating factors, mutual interests, and diplomatic avenues facilitate dispute settlement. The normative rules governing the uses of the oceans thus remain effective regardless of whether there is mandatory jurisdiction available or not. The Convention certainly represents the new law of the sea but compulsory dispute settlement procedures entailing binding decisions are only essential to some aspects of this law and not others.

2.13 Conclusion

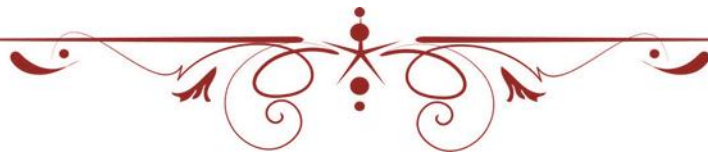
Through the centuries the law of the sea has been a battleground in which the interests of the main maritime powers have measured their strength and, at the same time, a laboratory for the development of international law rules. From the beginning of its evolution up to the mid-twentieth century, the international law of the sea. Although applying to all the seas of the world, remained mostly Euro/North American-centric. The basic legal concepts and technique that made the essence of this branch of international law were, nonetheless, strong and resilient enough to adapt to the broadening to all States of the world of the community directly interested in the law of the sea and to the extension of maritime activities, and the changing priorities between them, beyond the traditional ones, which marked the post-colonial and post-Geneva era of the law of the sea.

Reliance on customary law in combination with a growing network of conventional rules and on the contribution made by codification efforts and international judgments and awards, developed in the traditional law of the sea

provided the legal framework for the nuanced, and changing, degrees of coastal State exclusive rights on areas adjacent to the coasts, for the notions of the freedoms of the sea and of the exercise of such freedoms without prejudice to the corresponding freedoms of other States in the high seas, for the requirement of cooperation and the benefits of international adjudication. With necessary additions, such as the notion of the common heritage, the traditional legal framework and technique could adapt to encompass the coastal States' claims to exclusive rights over broad areas of the sea and combine these claims with the needs of international communication and with those of intensified and more institutionalized cooperation for the exploitation of common resources and the protection of the marine environment which characterize the law of the sea of the final decades of the twentieth century and of today.



CHAPTER-III
MARINE ENVIRONMENT:
AN OVERVIEW



CHAPTER-III**MARINE ENVIRONMENT: AN OVERVIEW****3.1 Introduction**

The marine environment has unique characteristics that distinguish it from other elements of nature. Since seas and oceans cover more than two thirds of the earth, the marine environment, thus, plays a vital role in achieving¹ a sort of biological balance on the planet². It also plays an important role in human life, since it has plenty of nutritious and industrial resources that are important to human life and welfare³.

For several decades, seas and oceans are thought to be able to absorb the pollutants thrown in them due to their vast area without any changes to their natural components⁴. Recent studies, however, have shown that this belief was wrong, because the marine environment suffers greatly due to pollutants thrown in them during the past century and a half. The studies have also shown the extent to which this pollution adversely affects man and other beings.

3.2 Meaning of the Marine Environment

The term 'environment' has a wide meaning but basically it includes air, water and land. Since the Vedic period, it has been the main motive of human kind to protect the environment and to live in harmony. However, in modern times, the concept of environment has changed and now it is being greatly analysed and interpreted by various scientists, environmentalists and researchers. About seventy percent of the total earth's surface has been taken by the oceans, creating its own biological diversity cycle and contributing in the development process of human life. Presently, over-exploitation and man-made pollution is responsible to a huge extent for the degradation of environment. Due to excessive pollution some species of birds, animals, fishes, plants, corals etc. are already extinct and many are becoming 'rare species'.

¹Dr.Salah Elddine Hashem, Economic and Environmental Importance of Seas and Oceans 19 (1997).

²Dr.Mohamed Younus and Moheb Elddine, *Environment in Criminal Law* 20, (Anglo Egyptian Bookshop, 1995).

³Salah Elddine Hashem, Protection of Environment during Armed Disputes, *Security and Law magazine*, Issue1 185(1995).

⁴Jilda Zikhiya, Problem of Pollution in the Mediterranean Sea 25 (1982).

These types of extinctions cause huge imbalance in the environment. Therefore, immediately it is necessary to take preventive and protective measures for the preservation and conservation of the environment. Humankind has to live in harmony with the environment. There is need for making a balance between environment and development. Currently, it is the main duty of humankind to provide and ensure protection and conservation of the environment and its biodiversity.

In international law, the Stockholm 1972 Declaration on the Human Environment defines environment as “a number of natural, social, and cultural systems in which human and other living organisms live and from which they get their resources and carry out their activities.”

This definition of environment, pursuant to the international law, shows that environment includes whatever surrounds humans, including their accommodations, streets, food, drinks, and biological and chemical substances. In view of the above, the environment from a legal perspective can be defined as “whatever things that surround humans, including conditions, civilization, geographical, social, or cultural variables”. The environment as an object of legal protection is generally defined as “the surroundings that relate to man’s life and health in society, whether these surroundings are natural or man-made⁵.”

Therefore, “environment” includes all surroundings, such as the houses in which we live, the places where we work, the air that we breathe, the water that we drink, the land on which we live, and all geographical and human phenomena that affect us. In other words, the environment on the regional or national level is the state itself with all its elements land, water, and air and on the global level, environment is the earth, in which all countries share responsibility to protect man through the international law, which is concerned with the common heritage of humanity and the protection of this planet in the

⁵Dr.Ahmed Mahmoud Saad, Reflections on Civil Liability Rules in Disputes of Environment Pollution 39 (Dar Al Nahda,1999).

scope that comprises the borders of man's state of residence through the internal law with its several branches.

3.2.1 Definition of the Marine Environment

The marine environment has become one of the recent concerns in international and national laws. It is part of the international ecosystem and consists of seas, oceans, and their tributaries in addition to what they contain of living organisms, whether plants or animals, and other resources, such as minerals of different kinds⁶.

According to this definition, the marine environment includes all saline water areas connected to each other, whether naturally or artificially though man-made channels; the surface of the sea and its bottom; all marine living organisms, such as fish; coral reefs; crustaceans; salt lakes connected to the sea; the areas of mouths of rivers, and all enclosed and semi-enclosed seas.

3.2.2 The Importance of the Marine Environment

The marine environment is part of the ecosystem and consists of seas and oceans with their tributaries in addition to their contents of living organisms, whether plants or animals, and other resources, such as metals of different kinds. These living organisms depend on and interact with each other in a balanced relationship.⁷ The marine environment is important both economically and biologically.

3.2.3 Biological Importance of the Marine Environment

The marine environment is characterized by a natural free connection that links its parts and allows mutual effect, since the marine environment plays an important role in achieving climatic balance through its high specific heat on surface and its coldness at the bottom. This enables the marine environment to absorb a huge amount of sun rays falling on the earth, and thus a part of its waters evaporates into the air by the rising wind and forms clouds that move

⁶Available at http://www.marbef.org/wiki/Why_is_Marine_biodiversity_important (last visited Dec. 29, 2018.)

⁷Ronald Mitchell et al, 'International Vessel-Source Oil Pollution' in Oran R Young (ed), *The Effectiveness of International Environmental Regimes: Casual Connections and Behavioral Mechanisms* 33 (Cambridge, MA, MIT Press, 1999).

toward the mainland, producing rain, which is the source of freshwater for other living organisms on land.

The marine environment is also characterized by the absorption of carbon dioxide through a process called photosynthesis carried out by phytoplanktons, which exist in seawater in large numbers. Phytoplankton's remove carbon dioxide from sea water and release oxygen as a by-product, which other living organisms in the marine environment breathe. Carbon atoms are freed and become organic material⁸.

3.2.4 Scientific Importance of the Marine Environment

Information about the earth and the environment has been and continues to be greatly expanded by the exploration of the seas and oceans. The Marine Scientific Research program (MSR) has played an important role in this regard by studying seas and oceans. The MSR has helped man to understand necessary information about the weather, wind movement, and the effects of the seas and oceans on the earth's climate. The program has helped study the seabed, measure the depth of oceans, and learn more about ecological systems to improve the management of fisheries and spot the locations of hydrocarbon resources. Studying the marine environment also helped to improve the scientific understanding of man's effect on many aspects of his surrounding environment.

In this regard, Chapter 17 of Agenda 21 emphasizes throughout its plan for integrated management and sustainable development of the oceans that scientific capacity should be enhanced, particularly in developing states, and that sound science should be at the centre of assessments of environmental risks and the making of management decisions.

3.2.5 Global Importance of the Marine Environment

The marine environment is an important source of the food for humans and other living organisms. It contains huge amounts of different species of sea living organisms with high nutritional value, the most important of which is fish. Also, seas contain huge amounts of mineral resources, the quantity of

⁸ Available at: http://en.wikipedia.org/wiki/Solubility_pump. (last visited Dec. 29, 2018).

which sometimes exceed the amounts found on land, such as tin, which is found in the Thailand Sea and Malaysia, sponge, and diamond. Although the fastest and newest means of transport have been invented, the marine environment is still a very useful means of transport in the world. Ships can carry overseas what planes cannot carry. The marine environment contains huge amounts of oil and natural gas, which has played a major role in the economic prosperity of the world. Seas are also a source of freshwater through evaporation and rain. Desalination of seawater is very useful for countries that suffer from shortage of freshwater resources.

Historically, the oceans have been and continue to be fundamental to human life. The ever increasing use of the oceans necessitates international rules governing various human activities in the oceans. The body of international rules that bind States and other subjects of international law in their marine affairs are called the international law of the sea. Like the international law of armed conflict and the law of diplomacy, the law of the sea is one of the oldest branches of public international law. Furthermore, like international human rights law and international environmental law, the law of the sea is a dynamic field of international law. The law of the sea can be said to mirror both classical and novel aspects of international law. Thus the law of the sea must be studied from the perspective of the development of public international law as a whole.

3.3 Sources of the International law of the Sea

3.3.1 Formal sources

Accordingly, the law of the sea is generated from the same sources of international law set out in Article 38(1) of the Statute of the International Court of Justice. Whilst, strictly speaking, Article 38(1) involves only the ICJ, this provision is generally accepted as the statement of sources of international law. Article 38(1) enumerates three formal sources of law, i.e. legal procedures by which a legal rule comes into existence it is conceivable that general principles of law are of limited value in the context of the law of the sea. Thus, the principal focus must be on customary law and treaties.

3.3.1.1 Customary law

Customary international law can be divided into two categories-

The first category is general customary law. While treaties are binding only upon the parties to them, it is widely accepted that rules of general customary law are binding upon all States in the international community. In this regard, the ICJ, in the North Sea Continental Shelf cases, stated that general or customary law rules and obligations by their very nature, must have equal force for all members of the international community, and cannot therefore be the subject of any right of unilateral exclusion exercisable at will by any one of them in its own favour.⁹ Thus, rules of general customary law are also binding upon newly independent States, even though they did not participate in the formation of these rules concerned. Given that in the context of the law of the sea, there is no treaty to which all States are parties; rules of general customary law continue to be important. Customary law also comes into play in a situation where there is no specific rule in relevant treaties.

The second category involves special or local customary law, which is applicable only within a defined group of States. The well-known example of local customary law may be the practice of diplomatic asylum in Latin America. A special or local customary law may exist between only two States. In this regard, the ICJ in the *Right of Passage over Indian Territory* case held that: 'It is difficult to see why the number of States between which a local custom may be established on the basis of long practice must necessarily be larger than two'.¹⁰

Concerning the objective element, at least three issues arise. The first issue involves the question of what constitutes State practice. Some writers consider that only physical acts can count as State practice in the making of customary law. However, it appears that this restrictive view is not supported by the ICJ and States. The better view appears to be that, broadly, State practice includes not only physical acts, namely what they do, but also what

⁹ICJ Reports , 38–39 63(1963).

¹⁰ICJ Reports,39(1960).

they say. State practice also includes omissions because some rules of international law prohibit certain conduct by States. Specifically, evidence of State practice can be detected in diplomatic correspondence, policy statements, press releases, official manuals on legal questions, the opinions of official legal advisers, comments by governments on drafts produced by the International Law Commission, State legislation and national judicial decisions, etc.

The second issue involves a degree of uniformity of State practice. Whilst generality cannot be determined in abstract, it is generally recognized that universality is not required to establish a new rule of customary law. According to the ICJ, in order to deduce the existence of customary rules, it is sufficient that the conduct of States should, in general, be consistent with such rules¹¹. In this regard, the Court further specified that general State practice includes the practice of States whose interests are specially affected¹². Historically the practice of maritime States had great influence in the development of the law of the sea. However, as will be seen, the traditional law of the sea, which was designed to safeguard interests of maritime States only, was strongly criticised by the decolonised new States.

The third issue involves a time element in customary law-making. It can be presumed that normally a long passage of time is needed to formulate rules of customary international law. However, it appears that the ICJ, in the North Sea Continental Shelf cases, took a more flexible approach, stating that the passage of only a short period of time is not necessarily, or of itself, a bar to the formation of a new rule of customary international law. The flexible approach may facilitate the formation of rules of customary law which may be suitable for a rapidly changing international society. However, care should be taken that the reduction of the time-element requirement does not directly support the doctrine of instant custom.

The subjective element, i.e, *opinio juris*, has been the subject of extensive debate among legal writers. The well-known paradox of *opinio juris*

¹¹ ICJ Reports 29 (1985).

¹² The Nicaragua case (Merits), ICJ Reports 98 186 (1986).

is that States cannot trust in the existence of a rule of customary law requiring them to act or refrain from acting, before a customary rule is established. At the initial stage of the formation of a rule of customary law, it is illogical to consider that States feel a conviction to comply with a rule of law since there is as yet no legal obligation. In response to this question, it would be sufficient to consider that, at the initial stage, the States concerned regard the practice as conforming to a rule which is a useful and desirable rule and one that should exist. Considering that the formation of customary law is a gradual process, it may be argued that a legal conviction matures gradually.

An obvious difficulty concerning *opinio juris* involves finding the evidence for it. In spite of this difficulty, the majority opinion generally recognizes the need for the subjective element in order to make custom as law distinct from custom as a mere fact. In this regard, it is notable that to a certain extent, the process of the formation of customary international law is being more institutionalized under the auspices of international organizations, such as the UN General Assembly. In fact, the ICJ in the *Legality of the Threat or Use of Nuclear Weapons* held that UN General Assembly Resolutions provide evidence important for establishing the existence of a rule or the emergence of *opinio juris*¹³. Hence the difficulty in finding evidence for *opinio juris* would not be a decisive reason to abandon this element.

In relation to this, it is to be noted that the ICJ did not mechanically apply the two-element test to the identification of a rule of customary law. For instance, the Court, in the *North Sea Continental Shelf* cases, rigidly applied the two element test of customary law to the equidistance method and refused to admit the customary law character of that method. However, the Court did not apply to the equitable principles the rigid test of the two elements of custom and regarded the principles as a rule of customary law. While a comprehensive analysis of the ICJs application of the two-element test is beyond the scope of

¹³J.I.Chamey, *The Persistent Objector Rule and the Development of Customary International Law* 56 (1985).

this chapter, care should be taken in noting that in ICJ case law, the manner of the application of the test may vary on a case-by-case basis¹⁴.

3.3.1.2 Treaties

Treaties constitute another principal source of the law of the sea. According to Paul Reuter, 'A treaty is an expression of concurring wills attributable to two or more subjects of international law and intended to have legal effects under the rules of international law'. At the global and regional levels, various aspects of the law of the sea are currently governed by a considerable number of treaties. Undoubtedly, the LOSC is the most important treaty in this field¹⁵. Rules of international law governing treaties are codified in the 1969 Vienna Convention on the Law of Treaties.

The first issue involves the interaction between treaties and customary law. A treaty may generate three effects in relation to rules of customary law¹⁶. First, a treaty may embody already established rules of customary law. This is called the declaratory effect. In the context of the law of the sea, a good example is the Geneva Convention on the High Seas. In fact, the Preamble of the Convention on the High Seas explicitly refers to the codification of the rules of international law relating to the high seas. As we shall discuss later, the LOSC also contains quite a few provisions embodying well-established rules of customary law. Second, where a treaty states rules reflecting State practice prior to the adoption of the treaty, such rules may be ripe for transition from *lex ferenda* to *lex lata*. This is called the crystallizing effect. It can be seen in some provisions of the Geneva Convention on the Continental Shelf. In fact, the ICJ, in the North Sea Continental Shelf cases, ruled that Articles 1 to 3 of the Convention on the Continental Shelf were regarded as reflecting, or as crystallizing, received or at least emergent rules of customary international law relative to the continental shelf¹⁷. Third, a treaty may generate a new rule of customary law. It is possible that, where after a convention has come into force,

¹⁴ ICJ Reports 31 (1951).

¹⁵ Y. Dinstein, "The Interaction between Customary International Law and Treaties" 322 *RCADI* 243-427 (2006).

¹⁶ The North Sea Continental Shelf cases, ICJ Reports 38-39 (1969).

¹⁷ ICJ Reports 63 (1969).

States other than the parties to it find it convenient to apply the convention rules in their mutual relations. Such State practice may lead to the development of a new customary rule. This effect is called the generating effect.

A second issue concerns the interrelationship between relevant treaties. The growing number of treaties will necessitate coordination between treaties. Such coordination is required at the interpretation level. For instance, the LOSC makes frequent reference to generally accepted international rules and standards. Such rules and standards are elaborated by specific treaties relating to marine issues. Hence the provisions of the LOSC must be interpreted taking these agreements into account. The provisions of the LOSC must also be read together with the subsequently adopted 1994 Implementation Agreement and the 1995 Fish Stocks Agreement. Further to this, treaty coordination may be needed at the procedural level. In particular, it is important to address the question whether provisions relating to dispute settlement of a treaty should exclude the application of dispute settlement procedures set out under the LOSC.

3.3.2 Material sources

3.3.2.1 Judicial decisions and the writings of publicists

Material sources provide evidence of the existence of rules, which, when proved, have the status of legally binding rules of general application. Article 38(1)(d) of the Statute of the ICJ refers to judicial decisions and the teaching of the most highly qualified publicists of the various nations, as subsidiary means for the determination of rules of law. Judicial decisions have had an important influence on the law of the sea and international law in general. Three functions of judicial decisions must, in particular, be highlighted.

First, the existence of rules of law, in particular, rules of customary international law is often a matter for discussion. By applying a specific rule to a particular case or determining the breach of the rule concerned, international courts identify the existence of the rule in positive international law. Second, it is not infrequently that the meaning of rules of international law, customary or conventional, becomes a subject of international disputes. International courts

have a valuable role to clarify the meaning and scope of relevant rules through international adjudication. Third, judicial decisions may have a formative effect on the development of international law. Because of the lack of supreme legislative and judicial authorities in the inter-national community, it is often difficult to identify and interpret rules of customary international law. It is also not uncommon that a treaty provision may allow more than two different interpretations. Thus, even though there is a need for caution, academic writings may have a significant role to play in the identification and interpretation of rules of international law.

3.3.2.2 Non-binding instruments

Another material source which needs particular notice is non-binding instruments; such as resolutions, declarations and guidelines adopted under the auspices of the United Nations or other international organisations. The non-binding nature of instruments does not mean that they are without legal significance. In fact, non-binding instruments have an influence on the making of international law¹⁸.

- First, some non-binding instruments lead to the conclusion of a new multilateral treaty or specific provisions of the treaty. An example can be seen in the 1970 Declaration of Principles Governing the Deep Seabed. The 1970 Declaration formed the basis for Part XI of the LOSC concerning the Area¹⁹.
- Second, some non-binding instruments may provide guidance on interpretation of a treaty and amplify the terms of a treaty. A good example is the 1970 Declaration on Principles of International Law Concerning Friendly Relations and Co-operation among States in Accordance with the Charter of the United Nations²⁰. This Declaration further elaborates the meaning of the UN Charter. In the field of the law of the sea, for instance, the 1995 FAO Code of Conduct for Responsible

¹⁸A.Boyle, *Soft Law in International Law-Making*, 118-136 ((Oxford University Press, 4th edn ,2014).

¹⁹ UN Resolution 2749 (XXV) adopted on 17 December(1970).

²⁰UN General Assembly, 2625 (XXV) adopted on 24 October (1970).

Fisheries amplifies relevant provisions of the LOSC and the 1995 Fish Stocks Agreement. Furthermore, where a non-binding instrument forms generally accepted standards established through the competent international organisation, such as the IMO, the instrument must be read together with relevant provisions of the LOSC by rule of reference.

- Third, some non-binding instruments confirm existing rules of customary international law. For example, the Arbitral Tribunal, in the 1977 *Texaco Overseas Petroleum Company* case, declared that the UN General Assembly Resolution on Permanent Sovereignty over Natural Resources (1803 (XVII)) reflected the state of customary law existing in this field²¹.
- Fourth, non-binding instruments may provide for emergence of new rules of customary international law. By way of example, one may quote the 1960 Declaration on the Granting of Independence to Colonial Countries and Peoples, which seems to have given a strong impetus to the establishment of the right of self-determination as a principle of international law²².

3.4 Principles of International Marine Environmental Law

“The dark oceans were the womb of life: from the protecting oceans life emerge”.²³ As can be seen in the words of Arvid Pardo, the former Maltese Ambassador to the United Nations, a healthy marine environment provides a foundation for all life. Thus protection of the marine environment is of vital importance for mankind as a whole. As the International Tribunal for the Law of the Sea (ITLOS) stated in the *Southern Bluefin Tuna* cases, ‘the conservation of the living resources of the sea is a clement in the protection and preservation of the marine environment’.²⁴ By the same token, it can be considered that the

²¹Texaco Overseas Petroleum Company/California Asiatic Oil Company v Libyan Arab Republic (1978) 17 ILM, 30, para. 87.

²²UN General Assembly Resolution 1514 (XV) adopted on 14 December (1960).

²³United Nations General Assembly 22nd Session, First Committee, 1515th Meeting, A/C.1/PV.1515, 1 November 1967, 2, para. 7.

²⁴The *Southern Bluefin Tuna* cases (New Zealand v. Japan) (Australia v. Japan), ITLOS Case Nos. 3 and 4, 27 August 1999, (1999) 38 *International Legal Materials* 1624, 1634, para. 70.

concept of the marine environment also covers marine biological diversity.²⁵ Hence one can argue that the concept of marine environment covers not only the environment per se but also marine living resources and biological diversity.

In this regard, it is important to note that, like international law in general, international law governing marine environmental protection is not merely a mosaic of specific rules; rather it must be considered as a *system* governing international relations among States and other entities in respect of their activities both on and in relation to the oceans.²⁶ In order to properly understand the systemic aspects of the international law of marine environmental protection, it is important to examine the cardinal principles of the international legal system in this field.

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

- (1) States have sovereignty over their natural resources and the responsibility not to cause transboundary environmental damage;
- (2) The principle of preventive action;
- (3) The principle of cooperation;
- (4) The principle of sustainable development;
- (5) The precautionary principle;
- (6) The polluter pays principle; and
- (7) The principle of common but differentiated responsibility.²⁷

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

²⁵ Article 194(5) of the UN Convention on the Law of the Sea.

²⁶ Ronald Dworkin, *Taking Rights Seriously* 24-26 (Bloomsbury, 1997).

²⁷ Philippe Sands and Jacqueline Peel, with Adriana Fabra and Ruth MacKenzie, *Principles of International Environmental Law* 187 (3rd edn CUP, 2012).

- (1) conditional freedom of activity on the high seas;
- (2) protection and preservation of the marine environment;
- (3) international cooperation;
- (4) science-based approach to management;
- (5) public availability of information;
- (6) transparent and open decision-making processes;
- (7) precautionary approach;
- (8) ecosystem approach;
- (9) sustainable and equitable use; and
- (10) responsibility of States as stewards of the global marine environment.²⁸

Whilst, in broad terms, the principles enumerated above may all be relevant to marine environmental protection, their legal status varies. Whilst some principles can be considered as a rule of customary international law or an emerging rule of the law, other principles seem to perform as policy guidelines.

3.4.1 The Principle of *Sic Utere Tuo Ut Alienum Non Laedas*

3.4.1.1 *Sic Utere Tuo Ut Alienum Non Laedas* as a Fundamental Principle in Environmental Protection

It is well established that no State has the right to use or permit the use of its territory in such a manner as to cause injury in or to the territory of another State. This is called the principle of *sic utere tuo ut alienum non laedas*, which means 'use your own property so as not to injure that of another' and is commonly referred to as 'the no harm principle'. The principle, first articulated in the *Trail Smelter* arbitration (1938-41) was explicitly reflected in Principle 21 of the 1972 Stockholm Declaration and Principle 2 of the 1992 Rio Declaration. Principle 2 of the Rio Declaration states: "States have, in accordance with the Charter of the United Nations and the principles of international law, the sovereign right to exploit their own resources pursuant to their own environmental and developmental policies, and the responsibility to

²⁸Available at: https://cmsdata.iucn.org/downloads/IO_principles_for_high_seas_governance_final.pdf (last accessed May18, 2020).

ensure that activities within their jurisdiction or control do not cause damage to the environment of other States or of areas beyond the limits of national jurisdiction”.

Whereas the older formulation articulated in the *Trail Smelter* arbitration dealt only with Transboundary harm to other States, the formulation set out in Principle 2 of the Rio Declaration requires States to protect the environment beyond the limits of national jurisdiction. It seems to follow that the obligation not to cause environmental damage is no longer solely bilateral in nature but relates to the protection of the high seas or the global atmosphere. The formulation of the Rio Declaration was echoed by the International Court of Justice (ICJ) in its *Advisory Opinion concerning the Legality of the Threat or Use of Nuclear Weapons*, stating that the existence of the general obligation of States to ensure that activities within their jurisdiction and control respect the environment of other States or of areas beyond national control is now part of the corpus of international law relating to the environment²⁹.

3.4.1.2 The Limits of the Principle of *Sic Utere Tuo Ut Alienum Non Laedas*

While the statement of the principle is easy, determining its precise content is less so. It is generally understood that the no harm principle is not absolute, but rather provides an obligation to exercise due diligence to avoid causing transboundary damage.³⁰ Indeed, the obligation of due diligence lies at the heart of the principle of *sic utere tuo ut alienum non laedas* since a State is not responsible for damage if it has exercised such due diligence.

However, 'due diligence' is an elusive concept and the degree of 'due diligence' may vary depending on the nature of specific activities, technical and economic capabilities of states, and the effectiveness of territorial control etc. In this regard, the view of the ITLOS Seabed Disputes Chamber deserves quoting: “Among the factors that make such a description difficult is the fact that 'due diligence' is a variable concept. It may change over time as measures considered sufficiently diligent at a certain moment may become not diligent

²⁹Legality of the Threat or Use of Nuclear Weapons, Advisory Opinion of 8 July 1996, [1996] ICJ Reports.

³⁰Phoebe Okowa, *Procedural Obligations in International Environmental Agreements* 67 (1996).

enough in light, for instance, of new scientific or technological knowledge.”³¹ The light of its variable nature, it is less easy for an international court or a tribunal to determine the breach of the general obligation of 'due diligence'. Thus there is a need to explore an evolving standard of due diligence which can take account of changes in technology and environmental knowledge over time in order to enhance the effectiveness of the obligation of due diligence.

A possible solution to this difficulty may be to link the obligation of due diligence with the obligation to apply best environmental practices. Indeed, the inter linkage between these two elements was highlighted by the Seabed Disputes Chamber which stated:” The adoption of higher standards in the more recent Sulphides Regulations would seem to indicate that, in light of the advancement in scientific knowledge, member States of the Authority have become convinced of the need for sponsoring States to apply 'best environmental practices' in general terms so that they may be seen to have become enshrined in the sponsoring States' obligation of due diligence.”

As articulated by the OSPAR Convention, the obligation to apply best environmental practices requires States to review the relevance of environmental measures taking into consideration technological, economic and social elements, and to apply the most appropriate measures. Likewise, the obligation to apply best available technologies may also provide an evolutionary standard of due diligence since, as the OSPAR Convention provides, what are 'best available techniques' for a particular process will change with time in the light of technological advances, economic and social factors, as well as changes in scientific knowledge and understanding.³²

Where States are under the obligation to apply best environmental practices and best available techniques, they are required to review and update their technology and practice with regard to environmental protection in the light of technological and scientific advances. If a State whose activities had

³¹ITLOS, above n 12, 36, para. 117.

³²Emphasis added. Appendix I, paragraph 3.

caused serious environmental damage had failed to fulfill this obligation, it would be difficult to claim that due diligence had been exercised.

Further, it must be noted that, in essence, the breach of the obligation of due diligence by a State will only be at issue after environmental damage has arisen. However, given that damage to the environment may be irreversible, the traditional State responsibility oriented approach, by which States are only responsible for damage that has already occurred, is of limited value where the environmental protection is concerned.

3.4.2 The Precautionary Principle

The precautionary principle or approach characterizes a new dimension of international environmental law. Whilst the definition of the precautionary approach varies depending on the instruments, in essence, it seeks to ensure the taking of early action in order to address serious environmental threats which may emerge in cases where there is on-going scientific uncertainty concerning proof of cause and effect. Principle 15 of the 1992 Rio Declaration on Environment and Development formulates this approach as follows:” In order to protect the environment, the precautionary approach shall be widely applied by states according to their capabilities. Where there are threats of serious or irreversible damage, lack of full scientific certainty shall not be used as a reason for postponing cost-effective measures to prevent environmental degradation”.

Although the precautionary principle is not explicitly provided in the LSOC, that principle has been incorporated in a growing number of international instruments dealing with environmental protection and conservation of marine living resources.¹⁸ The context of marine environmental protection, for instance. Article 2(2)(a) of the OSPAR Convention places an explicit obligation upon the Contracting Parties to apply the precautionary principle.³³ Likewise Article 3(2) of the 1992 Convention on the Protection of the Marine Environment of the Baltic Sea (the 1992 Helsinki Convention) explicitly obliges the Contracting Parties to apply the precautionary principle as

³³Preamble and Annex V, Article 3(1)(b)(ii) of the OSPAR Convention.

one of the fundamental principles and obligations³⁴. In addition, Article 3(1) of the 1996 Protocol to the Convention on the Prevention of Marine Pollution by Dumping of Wastes and Other Matter (1996 London Protocol) places an explicit obligation upon the Contracting Parties to apply 'a precautionary approach to environmental protection from dumping of wastes or other matter.'³⁵

In the context of conservation of marine living resources, it is of particular importance to note that the precautionary principle is closely linked to the ecosystem approach which aims to conserve ecosystem structure and functioning within ecologically meaningful boundaries in an integrated manner. In fact, there is a trend that international instruments adopting the ecosystem approach refer to the precautionary principle at the same time.³⁶ For instance, Article 5(d) of the 1995 Fish Stocks Agreement³⁷ obliges coastal States and States fishing on the high seas to "assess the impacts of fishing, other human activities and environmental factors on target stocks and species belonging to the same ecosystem or dependent upon or associated with the target stocks'. Under Article 5(e) Coastal States and States fishing on the high seas are obliged to adopt, where necessary, conservation and management measures for species belonging to the same ecosystem or dependent on or associated with the target stocks. Article 5(g) places a further obligation upon coastal States and States fishing on the high seas to protect biodiversity in the marine environment. At the same time, Article 6(1) of the Fish Stocks Agreement places a clear obligation upon States to apply the precautionary approach widely to conservation, management, and exploitation of straddling fish stocks and highly migratory fish stocks. In this regard, Annex II of the Agreement provides Guidelines for the Application of Precautionary Reference

³⁴Entered into force on 17 January 2000, 1507 UNTS 166.

³⁵Entered into force 24 March 2006, IMO Doc. LC/SM 1/6 14 November 1996, (1996) 36 *International Legal Materials* 1.

³⁶Yoshifumi Tanaka, *A Dual Approach to Ocean Governance: The Cases of Zonal and Integrated Management in International Law of the Sea* 82(Ashgate 2008).

³⁷Agreement for the Implementation of the Provisions of the United Nations Convention on the Law of the Sea of 10 December 1982 Relating to the Conservation and Management of Straddling Fish Stocks and Highly Migratory Fish Stocks (entered into force 11 December 2001), 2167 UNTS 3.

Points in Conservation and Management of Straddling Fish Stocks and Highly Migratory Fish Stocks. To take another example, the 1995 FAO Code of Conduct for Responsible Fisheries stresses the ecosystem approach as one general principle, by stating that: 'management measures should not only ensure the conservation of target species but also of species belonging to the same ecosystem or associated with or dependent upon the target species. At the same time, the Code of Conduct clearly states that 'States should apply the precautionary' approach widely to conservation, management and exploitation of living aquatic resources in order to protect them and preserve the aquatic environment. The absence of adequate scientific information should not be used as a reason for postponing or failing to take conservation and management measures'. In light of the scientific uncertainty relating to the mechanisms of marine ecosystems, it appears logical that the ecosystem approach should be connected to the precautionary approach.³⁸

3.4.2.1 The Limits of the Precautionary Principle

Despite its articulation in treaties, to date both the KM and ITLOS have been wary of applying the precautionary principle in international disputes. In neither the *Nuclear Tests II* case³⁹ nor the *Gabcikovo-Nagymaros Project* case,⁴⁰ did the ICJ make any explicit mention of the precautionary principle, although the applicability of this principle was at issue before the Court. In the *MOX Plant* case, Ireland argued that the manufacture of MOX fuel at Sellafield involved significant risks for the Irish Sea, since such manufacture would inevitably lead to some discharges of radioactive substances into the marine environment, both via direct discharges and through the atmosphere. According to Ireland, the precautionary principle was applicable as a rule of customary international law. However, ITLOS declined to prescribe the provisional measures requested by Ireland on the ground that there was no urgency of the

³⁸Stuart M. Kaye, *International Fisheries Management* 273-274 (Kluwer 2001).

³⁹Request for an Examination of the Situation in Accordance with Paragraph 63 of the Court's Judgment of 20 December 1974 in the *Nuclear Tests (New Zealand v. France)* Case, 11995 ICJ Reports, 288. For New Zealand's argument on the precautionary principle, see 298, para. 34.

⁴⁰*Gabcikovo-Nagymaros Project (Hungary v. Slovakia)*, [1997] ICJ Reports, 7.

situation in the short period before the constitution of the Annex VII arbitral tribunal. It is true that ITLOS considered that 'prudence and caution require that Ireland and the United Kingdom co-operate in exchanging information concerning risks or effects of the operation of the MOX Plant and in devising ways to deal with them, as appropriate'. However, no explicit mention was made with respect to the precautionary principle or approach in this case. Again, in the *Land Reclamation* case,' ITLOS made no explicit reference to the precautionary approach, while the application of the precautionary principle was discussed by Malaysia.⁴¹

The customary status of the precautionary principle has similarly been a matter of consternation in the WTO. In the *Beef Hormones* case, for instance, the WTO Appellate Body took the view that: 'Whether it [the precautionary principle] has been widely accepted by Members as a principle of general or customary international law appears less than clear'.⁴²" Similarly, the WTO Panel in the *EC-Approval and Marketing of Biotech Products* considered that the 'legal debate over whether the precautionary principle constitutes a recognized principle of general or customary international law is still ongoing. Notably, there has, to date, been no authoritative decision by an international court or tribunal which recognizes the precautionary principle as a principle of general or customary international law. This judicial reticence is not without reason. In fact, the precautionary principle is not free from difficulty with regard to its practical application at least in three respects-

- First, the application of the precautionary principle may entail the risk of restricting economic and industrial activities of States. A difficult question thus arises as to how it is possible to reconcile environmental protection with economic interests. In response, there is a need to consider not only scientific factors but also, inter alia, the cost effectiveness of proposed measures, their economic and social priorities,

⁴¹Request for Provisional Measures by Malaysia, 4 September 2003, para. 18; Presentation by Professor Sehrijver, Verbatim Record, ITLOS/PV.03/02/Corr.1,(25 September 2003).

⁴²Report of the Appellate Body, *EC Measures Concerning Meat and Meat Products (Hormones)*, WT/DS26/AB/R, WT/DS48/AB/R. 16 January 1998, 45-6, para. 123 (original footnotes omitted).

and their technical capabilities. As a consequence, the decision-making process involved in the application of the precautionary principle is highly complicated. In essence, this process is a matter of national policy, not law. In light of this political nature, it is less easy for international courts to judge the validity of any national decisions respecting the application of this principle.

- Second, the inter-temporality of the precautionary principle must be noted. This principle aims to take preventive measures in order to respond to probable or potential risks which cannot be objectively identified through present-day science but which might create environmental damage in the future. However, 'risk' is a complex concept which comprises the probability and scale of harm, the causes and effects of harm on human health, processes in question and their interaction over time. The assessment of potential risks which may trigger the application of the precautionary approach is often difficult to make since such risks may not be well known or it may not be possible to discover them through present-day science. Non-foreseeability of potential risks can be considered an essential element of uncertainty with regard to the implementation of the precautionary approach. Moreover, since scientific knowledge and technology are constantly developing, appropriate preventive measures to respond to potential risks also change over time. The level of environmental risks which is socially acceptable also varies over time. In short, inter-temporality poses an inherent difficulty with the application of the precautionary approach. Hence it seems difficult for international courts and tribunals to judge the breach of the obligation to apply the precautionary approach in a particular case.
- Third, the precautionary principle contains no legal guidance about how to control the environmental risks. The application of this principle itself does not automatically specify measures that should be taken. In other words, the precautionary approach can be applied in different ways in

different contexts. In light of the differentiated economic and technological capacities between States, not all States can adopt the same measures with regard to the implementation of the precautionary principle.⁴³ Thus it is less easy for international courts and tribunals to decide whether or not a State breached the obligation to apply the precautionary principle in a particular case.

3.4.3 Sustainable Development

3.4.3.1 The Concept of Sustainable Development in Marine Environmental Protection

The reconciliation between environmental protection and the need for development is a fundamental issue in the international law of the environment and the same applies to international law of marine environmental protection. Sustainable development is a key concept which seeks, in essence, to reconcile the need for development with environmental protection.⁴⁴ The basic idea of sustainable development is echoed by the ICJ in the *Gabtikovo-Nagymaros Project* case, stating that: 'This need to reconcile economic development with protection of the environment is aptly expressed in the concept of sustainable development.'

The basic idea of this concept can already be seen in the 1972 Stockholm Declaration of the UN Conference on the Human Environment, although the term 'sustainable development' was not used.⁴⁵ Later, the concept of sustainable development was given currency by the Report of the World Commission on Environment and Development (WCED). 'Our Common Future', in which the WCED defined this concept as 'development that meets the needs of the present without compromising the ability of future generations to meet their own needs'.⁴⁶ The reference to 'future generations' suggests that the concept of sustainable development is inter-temporal in nature. It may be

⁴³Fernando Conslez-Laxe, *The Precautionary Principle in Fisheries Management* 29 *Marine Policy* 495 (2005).

⁴⁴Philippe Sands, *International Law in the Field of Sustainable Development* 65 *British Yearbook of International Law* 303 (1995).

⁴⁵Principle 13 of Stockholm Declaration (1972).

⁴⁶The World Commission on Environment and Development. *Our Common Future* 43 (Oxford University Press, 1987).

said that the concept of sustainable development reflects 'inter-generational equity'.⁴⁷

Currently the concept of sustainable development or 'sustainable use' is being increasingly incorporated into treaties and non-binding documents relating to the conservation of marine living resources. For instance, the reference to 'sustainable use' can be seen in Articles 2 and 5(h) of the 1995 Fish Stocks Agreement. Likewise the 1992 Convention on Biological Diversity (CBD) - which is applicable to marine biological diversity also makes clear that one of its objectives is the sustainable use of components of biological diversity.⁴⁸ Concerning non-binding documents, the concept of sustainable development or sustainable use can be seen, inter alia, in Chapter 17 of Agenda 21 of 1992, "the 1995 FAO Code of Conduct,"⁴⁹ the 1999 Rome Declaration on the Implementation of the Code of Conduct for Responsible Fisheries," and the 2001 Reykjavik Declaration on Responsible Fisheries in the Marine Ecosystem.

3.4.3.2 The Limits of the Concept of Sustainable Development

Despite its frequent reference in international instruments, this concept contains some issues which need further consideration with respect to its normativity. A first issue pertains to the uncertainty of the contents of the concept of sustainable development. Whilst some writers attempt to enumerate relevant components of the concept, it appears that there is no uniform understanding on this matter. For example, P.M. Dupuy considered that the concept of sustainable development would include the following 'principles':

- (i) Principle of integration between the environment and development
- (ii) Precautionary principle
- (iii) Principle of common concern of humanity
- (iv) Principle of State sovereignty with State responsibility
- (v) Principle of common but differentiated responsibility

⁴⁷Yoshiro Matsui, *The Road to Sustainable Development: Evolution of the Concept of Development in the UN*, 69 (Kluwer, 1995) .

⁴⁸CBD, Art. 1. 1760 UNTS 79. Entered into force 29 December 1993.

⁴⁹Code of Conduct for Responsible Fisheries, (FAO, Rome 1995) Art. 7.2.1.

- (vi) Principle of global partnership and cooperation;
- (vii) Polluter-pays principle
- (viii) Principle of participatory and informed decision making.

Boyle and Freestone have extrapolated substantive and procedural elements of the concept of sustainable development from the Rio Declaration. The substantive elements are: (i) the sustainable utilization of natural resources; (ii) the integration of environmental protection and economic development; (iii) the right to development; and (iv) the pursuit of equity in the allocation of resources both within the present generation and between present and future generation. The procedural elements include public participation in decision-making and EIA.

Although some common elements may be identified in the opinions of these writers, there remains considerable uncertainty as to the normative content of the concept of sustainable development. The concept of sustainable development seems to be no more than a label for a set of various components of international environmental law at a high level of abstraction. However, the label is itself not law. Hence it seems debatable whether and to what extent this concept can legally constrain the behaviour of States.

3.4.4 International Co-Operation and Protection of the Marine Environment

The pollution of the seas and oceans has become the ultimate world issue in the post-war decades. Two are the main reasons: First, marine pollution has no borders, and, second, the nature of contemporary pollutants, wherever they come from, has surpassed the capabilities of any advanced technology in dealing with them directly and efficiently. Section 2 of Part XII of the LOS Convention dealing with the protection and the conservation of the marine environment refers specifically to the adoption of a policy of global and regional cooperation in addressing these kinds of issues⁵⁰.

⁵⁰Articles 197 to 201 of the LOS Convention 1982.

The philosophy of the Convention in this section remains the promotion of the core principles of environmental law, with emphasis on information and prevention; thus, the provisions on the exchange of information and data acquired about pollution of the marine environment and the obligation to adopt international and national regulations for preventing marine pollution.

3.4.4.1 International cooperation in the field of information

One of the fundamental principles of environmental law is the right to information, and more specifically, to prompt notification on incidents that may cause environmental damage either originating from human intervention or from natural incidents and phenomena⁵¹. Article 198 of the LOS Convention reiterates the obligation of all States to show vigilance when the marine environment is in direct risk due to pollution. Accordingly, when a State becomes aware of cases in which the marine environment is in imminent danger of being damaged or has been damaged by pollution, it must inform other States, which it deems likely to be exposed to such hazards as well as the appropriate international organizations.

3.4.4.2 International cooperation in the field of prevention

Another fundamental principle of environmental law is the principle of prevention. The notion of prevention involves two specific actions that, according to the LOS Convention, require the strengthening of international cooperation in this field.

The first action refers to the process of taking specific measures for the prevention, reduction and control of marine and ocean pollution, wherever this may originate. These measures may be taken either individually or jointly, thus developing a policy for international cooperation in a field that is considered of the utmost importance. Coordination of such efforts may be achieved through the actions of the competent international organizations within the UN system, especially the IMO, or even through intergovernmental regional organizations.

⁵¹G.Samiotis & G.Tsaltas, *International Protection of the Environment* 132-145 (Papazissis Publications, Athens 1990).

The second action is related to the minimization of damages resulting from a polluting incident. In this field, international cooperation seems to be the basis for the effective treatment of any environmental injury. The cooperation established either directly or through the competent international organizations, purports to establish “appropriate scientific criteria for the formulation and elaboration of rules, standards and recommended practices and procedures”⁵². These practices are reflected in the joint development and promotion of contingency plans in order to cope with pollution incidents in the marine environment⁵³.

3.4.4.3 International cooperation in the adoption of rules for the prevention, reduction and control of marine pollution

The promotion of the fundamental principle of prevention is also achieved through the direct obligation⁵⁴ of States to act, individually or through the competent international organisation or diplomatic Conference⁵⁵, in order to adopt rules, standards and recommended practices and procedures for the prevention, reduction and control of marine pollution both at international and regional level.

The coordination of these measures presupposes a mutual recognition of the different types of marine pollution, as set out in the LOS Convention. Articles 207 to 212 analyse in detail six categories of pollution. The coordinated response required led to the identification of three large systems of marine pollution, namely pollution from land-based sources, pollution from seabed activities and pollution from vessels.

The first from these systems requires coordination mostly in the field of national rules. The combating of pollution from land-based sources engages the responsibility of each and every State in an effort to reinforce and modernize the already existing domestic legislation.

⁵²Article 201 of the LOS Convention,1982.

⁵³Article 199 of the LOS Convention,1982.

⁵⁴Articles 207-212 of the LOS Convention,1982.

⁵⁵Articles 207(4) and 211(1) of the LOS Convention,1982.

In the case of pollution from seabed activities subject to national jurisdiction, the application of the relevant LOS provisions on the exclusive economic zone and the continental shelf⁵⁶ are the first substantial guarantees for conserving the marine environment and its living natural resources. The same applies for pollution from activities in the Area⁵⁷.

Pollution from vessels is quite significant because of frequent accidents usually near the coastline of coastal States. Article 211 of the LOS Convention deals with the different types of marine pollution from vessels for which States must develop appropriate institutional mechanisms and adopt regulations. Special reference is made to the necessity of adopting international rules and standards to prevent, reduce and control vessel-source pollution, mostly through the International Maritime Organization (IMO), in addition to the promotion of routing systems on the domestic level. Such rules and standards may be re-examined from time to time as necessary.

3.4.4.4 Transfer of technology related to the protection of the marine environment to developing countries

The question of transfer of scientific and technical data on environmental issues to developing countries was considered significant during UNCLOS. This was due to the importance and emergency character of the protection and preservation of the marine environment both in terms of prevention and mitigation and in view of the inability of these States to deal with such conditions directly and effectively.

Section 3 of Part XII (“technical assistance”) of the LOS Convention pro-motes international cooperation with the aim to provide scientific and technical assistance to developing States by preferential treatment, so that the marine environment may be protected from the risk of suffering irreparable damage or even general degradation.

Two articles are dedicated to this form of international cooperation, which must be further developed through competent international

⁵⁶Article 79 of the LOS Convention, 1982.

⁵⁷Article 145 of the LOS Convention, 1982.

organizations; articles 202 and 203. Article 202 adopts a policy of scientific and technical assistance to developing States by: a) promoting projects of scientific, educational, technical and other assistance⁴⁰; b) underlying the importance of the duty to provide appropriate assistance for the minimization of the effects of major incidents which may cause serious pollution to the marine environment; c) providing appropriate assistance for the preparation of environmental assessments, in particular in order to minimize pollution from land sources.

Article 203 of the LOS Convention attempts to establish preferential treatment for developing States in the field of prevention, reduction and control of pollution of the marine environment or minimization of its consequences. Such preferential treatment may be granted by the competent inter-national organisations and refers to the allocation of appropriate funds and technical assistance, as well as to the utilisation of their specialised services. Contemporary international community demands the development of co-operation in every field by all international actors and not only by States. This is due to the strong interdependence and interaction manifested in all activities taking place on our planet, which require exceptional international cooperation, especially in the field of the protection and management of the environment.

3.4.5 Polluter Pays Principle

3.4.5.1 Concepts of Polluter Pays Principle

The polluter pays principle, as an element of the modern approaches of environmental protection,⁵⁸ was firstly formally articulated, in 1972, by the Council of the Organization for Economic Co-operation and Development (OECD). According to the OECD Recommendations,⁵⁹ the polluter pays principle is an “economic policy and principle used for allocating or internalizing ‘economic costs of pollution prevention and control measures to encourage rational use of scarce environmental resources and to avoid

⁵⁸Malgosia A. Fitzmaurice, *International Protection of the Environment*, 285-287(Martinus Nijhoff Publishers, 2002).

⁵⁹UN Doc. A/ CN.4/SER.A/1995/Add.1 (Part 1), Yearbook of the International Law Commission, Volume II, Part One, Documents of the forty-seventh session, 1995, p. 80, citing OECD and the Environment (Paris, 1986).

distortions in international trade and investment' by subsidizing the environmental costs." This principle means that the polluter, those "who directly or indirectly damages the environment or those who creates conditions leading to such damage should bear the expenses of carrying out the measures decided by public authorities to ensure that the environment is in an acceptable state." In other words, the cost of these public measures should be reflected in the price of goods and services which results from pollution occurring in the process of production and consumption.

The polluter pays principle consists of two component elements, namely the right to equal access and civil liability. Equal access to national remedies has been considered as one method of implementing the polluter pay principle, as it aims to "afford equivalent treatment in the country of origin to transboundary and domestic victims of pollution damage, or to those likely to be affected by such a principle." The equal right of access may involve "access to information, participation in administrative hearings and legal proceedings and the application of non-discriminatory standards for determining the illegality of domestic and transboundary pollution. Civil liability regimes have been used in dealing with the pollutions resulting from nuclear power and oil spills. Of further note, it has been argued that "the civil liability conventions do not necessarily implement the polluter pays principle, since States and voluntary contributions from other sources pay for the polluter." While this may be true, considering that the payment made by the public sectors, e.g. States, for the costs of pollution may constitute a form of subsidy and distort international trade and investment; therefore, the civil liability conventions should still take into consideration the implementation of the polluter pays principle. Besides, making the real polluter pay can have a deterrent effect and help to avoid such consequences from illegal acts, in addition to contributing to the better enforcement of environmental regulations. The polluter pays principle, hence, should be taken into consideration in civil liability conventions.

3.4.5.2 Legal Status under International Law

3.4.5.2.1 Agenda 21

Agenda 21 was adopted in the 1992 UN Conference on the Environment and Development (UNCED), held in Rio de Janeiro⁶⁰. Chapter 17 of Agenda 21, titled “Protection of the Oceans,” also called the “Oceans Chapter,” holds that the unity of the ocean would be a starting point for a new approach to international law of the sea⁶¹. It initially emphasizes that “the marine environment including the oceans and all seas and adjacent coastal areas forms an integrated whole that is an essential component of the global life-support system and a positive asset that presents opportunities for sustainable development.”⁶² Chapter 17 also requires the adoption of the approach to marine environmental protection as one of the new programme areas in the marine and coastal area management.⁶³ Moreover, this decree is aware of the fact that “land-based sources contribute 70 per cent of marine pollution, while maritime transport and dumping-at-sea activities contribute 10 per cent each.”⁶⁴

3.4.5.2.2 Rio Declaration on Environment and Development

The UNCED, Principle 16 of the 1992 Rio Declaration on Environment and Development provides that “National authorities should endeavour to promote the internalization of environmental costs and the use of economic instruments, taking into account the approach that the polluter should, in principle, bear the cost of pollution, with due regard to the public interest and without distorting international trade and investment.” This wording, reflecting the definition provided by the OECD Recommendations, is rather soft than absolute and obligatory.

Moreover, according to the International Law Commission, the polluter pays principle may be seen as a general principle of international

⁶⁰United Nations Conference on Environment and Development, Rio de Janeiro, Braz., June 3-14, 1992, Agenda 21, UN Doc. A/CONF.151/26 (Vol. II) (August 13, 1992).

⁶¹Yoshifumi Tanaka, Zonal and Integrated Management Approaches to Ocean Governance: Reflections on a Dual Approach in International Law of the Sea, 19 INT’L J. OF MARINE & COASTAL L. 4, 16 (2004).

⁶²Chapter 17 of Agenda 21, para. 17.1.

⁶³Chapter 17 of Agenda 21, para. 17.1.

⁶⁴Chapter 17 of Agenda 21, para. 17.18.

environmental law designed to ensure that victims who suffer harm resulting from incidents involving hazardous activities are able to obtain “prompt and adequate compensation.” This principle has thus been incorporated into certain environmental treaties, in particular those on marine pollution.

3.4.5.3 Liability and Compensation Mechanism on Marine Pollution under International Law

Since the 1970s, international legal system has reacted to the problem of marine pollution via two aspects: international environmental law and law of the sea. These two regimes both contain the concepts of establishing the liability and compensation mechanism. This section looks into the relevant provisions on establishing the liability and compensation mechanism under international law to view to what extent this mechanism is required under international law and how it reflects to the polluter pays principle.

First of all, the regime of international environmental law does not explicitly deal with ocean issues. However, it contains some important principles under international declarations which impact the further development of the liability and compensation mechanism. Furthermore, by adopting enabling clauses, a number of multilateral environmental conventions on the basis of these principles require States to establish relevant national legislations and through cooperating to develop international law on the liability and compensation mechanism.

3.4.5.3.1 Principles in International Declarations

Principle 22 of the 1972 Stockholm Declaration provides that the “States shall cooperate to develop further the international law regarding liability and compensation for the victims of pollution and other environmental damage caused by activities within the jurisdiction or control of such States to areas beyond their jurisdiction.” As an implication, several recommendations as its action plan were made to act in the area of marine pollution and several conventions in addressing marine pollution, e.g. 1973 International Convention for the Prevention of Pollution from Ships (MARPOL) were, therefore, adopted. Furthermore, Principle 13 of the 1992 Rio Declaration reaffirms

Principle 22 of the 1972 Stockholm Declaration and provides that “States shall develop national law regarding liability and compensation for the victims of pollution and other environmental damage” and that “States shall also cooperate in an expeditious and more determined manner to develop further international law regarding liability and compensation for adverse effects of environmental damage caused by activities within their jurisdiction or control to areas beyond their jurisdiction.” These two provisions urge States to legislate the liability and compensation mechanism for environmental damage both through (1) developing national law and (2) cooperating to develop international law.

3.4.5.3.2 Concepts under Customary International Law

In the 2006 Draft Principles on the Allocation of Loss in the Case of Transboundary Harm Arising out of Hazardous Activities adopted by the International Law Commission (ILC), the UN General Assembly reaffirms Principle 13 of the Rio Declaration, and requires that efforts should be made to conclude specific global, regional or bilateral agreements in order to provide effective arrangements concerning compensation, response measures and international and domestic remedies. The ILC still commented that the Stockholm Declaration and Rio Declaration, although both are not intended to have legally binding forces, they nonetheless express the aspirations and preferences of the international community⁶⁵. It is also considered that these Declarations, being nonbinding soft-law instruments, contain very few principles which are, on the basis of customary international law, legally binding⁶⁶. Only the principle of the prohibition of transboundary environmental harm to other States and in the areas outside the States’ jurisdiction, based on Principle 21 of the Stockholm Declaration and Principle 2 of the Rio Declaration, forms such acknowledged status of customary international law. Indeed, there are still legal uncertainty existing in terms of the detailed and

⁶⁵Draft Principles on the Allocation of Loss in the Case of *Transboundary Harm Arising out of Hazardous Activities*, with Commentaries, 142 (2006).

⁶⁶Malgosia Fitzmaurice, *Contemporary Issues in International Environmental Law* 177 (Edward Elgar Publishing 2009).

specific elements of building the liability and compensation mechanism. Thus, it is then deemed necessary to investigate whether or not international conventions provide more specific regulations

3.4.5.3.3 UN Convention on the Law of the Sea

The most comprehensive legal instrument in the regime of the law of the sea is the LOS Convention. Part XII of the LOS Convention, going far beyond the 1958 Geneva Conventions on the Law of the Sea, is the first thorough framework of rules on the protection and preservation of the marine environment. Under the LOS Convention, the “pollution of the marine environment” is defined as the introduction by man, directly or indirectly, of substances or energy into the marine environment, including estuaries, which results or is likely to result in such deleterious effects as follows:

- (1)Harm to living resources and marine life,
- (2)Hazards to human health,
- (3)Hindrance to marine activities, including fishing and other legitimate uses of the sea,
- (4)Impairment of quality for use of sea water and
- (5)Reduction of amenities.

This provision adopts an open definition, including all sources of marine pollution, from vessel-source pollution, pollution from land-based activities and from the atmosphere. Furthermore, Part XII of the LOS Convention provides the rather generic provisions relating to cooperation on matters of marine environmental protection. It is supplemented, based on different sources of marine pollution, by more specific articles addressing pollution from land-based sources,⁶⁷ pollution from seabed activities subject to national jurisdiction, pollution from activities in the deep seabed (the ‘Area’), pollution by dumping, pollution from vessels, and pollution from or through the atmosphere.

The foregoing articles, adopting the enabling clause, require States to adopt international rules and national legislation to prevent, reduce and control

⁶⁷Article 207 of the LOS Convention ,1982.

marine pollution. This reflects the fact that the LOS Convention has a framework nature as an “umbrella convention” and that its provisions are of general nature and its implementation, hence, depends on specific operative regulations in other international agreements. Therefore, the drafting of the LOS Convention incorporates by rule-reference the latest “generally accepted international rules, standards and recommended practices and procedures” established through the “competent international organizations” or general diplomatic conferences. In the cases of marine pollution, these are references to the international rules and standards adopted through global pollution control conventions and soft-law instruments under the auspices of the IMO and other competent international organizations. Furthermore, various provisions of the LOS Convention require States to “take account of,” “conform to,” “give effect to” or “implement” the relevant international rules and standards developed by or through the “competent international organization.”

In order to safeguard against the excessive or inappropriate exercise of enforcement powers, Article 232 requires States to be liable for damage or loss attributable to them resulting from enforcement measures in cases that “such measures are unlawful or exceed those reasonably required in the light of available information.” It also requires States to provide for recourse in their courts for actions in respect of such damage or loss. Under Article 235, the provision on responsibility and liability, States bear the responsibility for “the fulfillment of their international obligations concerning the protection and preservation of the marine environment” and the liability “in accordance with international law.” In order to deliver and ensure prompt and adequate compensation or other relief, States, on the one hand, are obliged to provide legal mechanisms relating to damage caused by marine pollution resulting from natural or juridical persons under their jurisdiction. On the other hand, the LOS Convention also requires States to cooperate for enforcing existing international law and for further development of international law with respect to “responsibility and liability for the assessment of and compensation for damage and the settlement of related disputes, as well as, where appropriate,

development of criteria and procedures for payment of adequate compensation, such as compulsory insurance or compensation funds.” In other words, these provisions to a certain degree reflect the provisions of Principle 22 of the 1972 Stockholm Declaration and Principle 13 of the 1992 Rio Declaration.

Moreover, the pollution from seabed activities subject to national jurisdiction which is the major public concerns for the marine pollution has not been much addressed by international regulations and mostly been relying on the national laws, even though Article 208(5) of the LOS Convention has required States to “establish global and regional rules, standards and recommended practices and procedures to prevent, reduce and control pollution of the marine environment” through “competent international organizations or diplomatic conference” and to re-examine these rules, standards and recommended practices and procedures from time to time as deemed necessary. Unlike the international regime to deal with the vessel source pollution, which at least has adopted certain conventions and mechanisms through the IMO, the international regime to deal with the pollution from seabed activities subject to national jurisdiction is still absent and can learn from the experiences of the international regime of the vessel source pollution to develop “rules, standards and recommended practices and procedures” through diplomatic conference. In this case, the concepts of the polluter pays principle and the liability and compensation mechanism can be taken into account in the international regime to deal with the pollution from seabed activities subject to national jurisdiction.

In order to enforce environmental standards, particularly in regards to marine pollution, the establishment of the liability and compensation mechanism is provided under some significant international documents, in particular Principle 13 of the 1992 Rio Declaration and Principle 22 of the 1972 Stockholm Declaration. Based on this requirement, some multilateral environmental conventions also adopt the enabling clauses to further develop this mechanism which relies on the international cooperation among States. For instance, the LOS Convention incorporates into its framework by rule reference the IMO instruments that establish the liability and compensation mechanism.

This mechanism is also one of the components of the polluter pays principle endorsed by Principle 16 of the 1992 Rio Declaration. This development in international law demonstrates that both the polluter pays principle and the liability and compensation mechanism have gained certain legal effects.

3.4.6 Common but Differentiated Responsibility

According to the concept of common but differentiated responsibility, States take on different obligations depending on their socio-economic situation and their historical contribution to the environmental problem at stake.⁶⁸ This principle is clearly embodied in Principle 7 of the Rio Declaration which provides: “States shall co-operate in a spirit of global partnership to conserve, protect and restore the health and integrity of the Earth's ecosystem. In view of the different contributions to global developed countries acknowledge the responsibility that they bear in the international pursuit of sustainable development in view of the pressures their societies place on the global environment and of the technologies and financial resources they command.

An early formulation of the concept of common but differentiated responsibility can be found in Article 207(4) of the LOSC which requires States to endeavour to establish global and regional rules and standards to prevent land-based marine pollution, 'taking into account characteristic regional features, the economic capacity of developing States and their need for economic development'. It is also to be noted that under Article 194(1) of the LOSC, States are obliged to take all measures to prevent marine pollution 'in accordance with their capabilities'. In addition, Article 2 of the 1996 London Protocol obliges Contracting Parties to protect and preserve the marine environment from all sources of pollution and take effective measures, 'according to their scientific, technical and economic capabilities'.

In broad terms, the concept of common but differentiated responsibility creates two legal consequences: a 'dual standard' in favour of developing

⁶⁸Ellen Hey, '*Common but Differentiated Responsibilities*' Max Planck Encyclopedia of Public International Law 1 (2012).

States; and the responsibility of developed States to assist developing States. The notion of a 'dual standard' implies the application of different standards for environmental protection as between developed and developing States. Two types of dual standards exist.

- The first type is to provide different substantive obligations between developed and developing States. A striking example on this matter may be the Kyoto Protocol. Under Article 3(1) of the 1997 Kyoto Protocol, only certain Annex I parties to the 1992 Climate Change Convention which are listed in Annex B of the Protocol developed States and States in transition to a market economy agreed to reduce their overall emissions of greenhouse gases by at least five per cent below 1990 levels in the commitment period of 2002-12⁶⁹.
- The second type is to provide a grace period for developing States. For instance, the 1987 Montreal Protocol allows certain developing country parties to delay their compliance with the control measures set out in Articles 2A to 2E of the Protocol for ten years by virtue of Article 5(1).

On the one hand, the application of dual or differentiated standards might entail the risk of undermining the effectiveness of international rules respecting environmental protection. On the other hand, the existence of technological and economic gaps between States is an undeniable fact in the international community. Thus, assistance to developing States, which is the second consequence of the principle of common but differentiated responsibilities, is of particular importance. In this respect, the Seabed Disputes Chamber clearly stated that 'developing States should receive necessary assistance including training'.⁷⁰

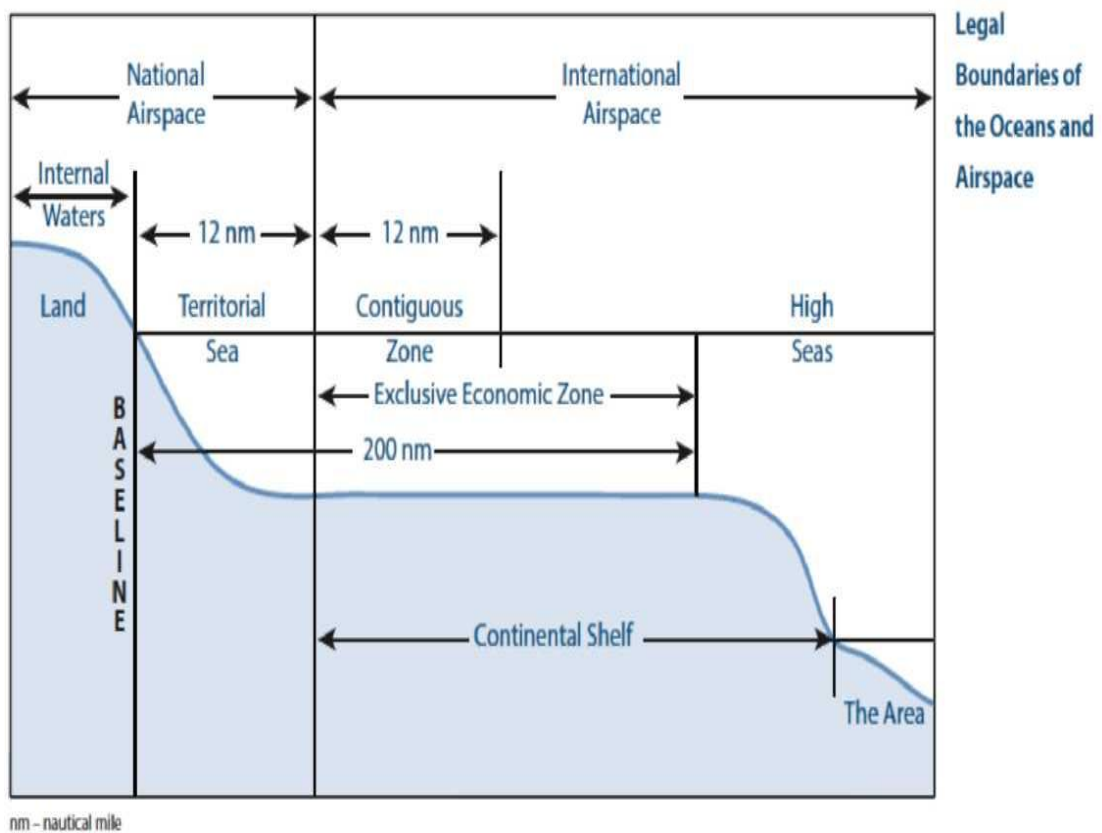
3.5 Maritime Zones under the United Nations Conventions

The Geneva Conventions on Territorial Sea and Contiguous Zone, Continental Shelf and High Sea, and the United Nations Conventions on the law of the sea which was adopted on 29 April 1958 and 10 December 1982

⁶⁹L'irich Beyerlin and Thilo Marauhn, *International Environmental Law* 67 (Hart and Beck, 2011).

⁷⁰*ITLOS, above n 12, 49, para. 163.*

respectively, were recognized as universal legal documents on the seas. The Conventions contain provisions on the recognition of maritime zones such as internal waters, territorial sea, contiguous zone, exclusive economic zone, continental shelf, and archipelagic waters, which shall be established by coastal states. The Conventions also state the rights and obligations of the states on managing and governing their activities including protection and preservation natural resources in the zones. Furthermore, the states enjoy their rights in the Area and high sea which are beyond their national jurisdiction, for the purpose of exploitation and exploration.



3.5.1 Internal Waters

Internal waters are deemed to be such parts of the seas as are not either the high seas or relevant zones or the territorial sea, and are accordingly classed as appertaining to the land territory of the coastal state. Internal waters, whether harbours, lakes or rivers, are such waters as are to be found on the landward side of the baselines from which the width of the territorial and other zones is measured, and are assimilated with the territory of the state. They differ from

the territorial sea primarily in that there does not exist any right of innocent passage from which the shipping of other states may benefit. There is an exception to this rule where the straight baselines enclose as internal waters what had been territorial waters.

The article 5 of 1958 Geneva Convention and the article 8 and 47 of 1982 United Nations Convention provide that Internal Waters are waters on the landward side of normal baseline, straight baseline and archipelagic baseline from which the territorial sea is measured.

Based on the foregoing provision, the Internal Waters are waters on the landward side of the normal baseline which is low water line along the coast as mark on large scale charts officially recognized by the coastal state; waters on the landward side of straight baselines accepted to calculate the breadth of the territorial sea; waters of bays to which the breadth of the entry does not exceed 24 miles; waters considered to be historic gulfs, bays, inlets, and strait even if the breadth of entry exceed 24 miles; waters of ports limited by a line passing through the most extended port installations seaward; waters of the deeply indented and enclosed by the territory of single state; waters in the case of islands situated on atolls or of islands having fringing reefs; mouth of river; waters of which is considered highly unstable ; and archipelagic waters which is closed by closing line. The said provisions of the Convention and the geographical nature of the coastline allow the coastal states to establish their internal water according to the circumstances of their own coastline. In some case, however, the establishment of internal water of states is considered not appropriate with international laws and regulations.

The coastal state exercises full sovereignty over its internal waters, and foreign ships while in this water, is to observe the laws and regulations of this state as its land territory. The regime of the maritime port is usually established under maritime regulations. However, the development of economic requires the coastal state to establish the best conditions port and also to adopt laws and regulations aimed at facilitating the procedure involved in the entry and stay of foreign merchant vessels. Foreign merchant vessels and all its crewmembers

are fully subject to the criminal, civil and administrative jurisdiction of the coastal state. The 1982 United Nations Convention contains an article on the duty of state to adopt reasonable standard, rules and procedures to assist marine research and, when necessary, to facilitate entry into their ports of marine research vessels.

A merchant ship in a foreign port or in foreign internal waters is automatically subject to the local jurisdiction (unless there is an express agreement to the contrary), although where purely disciplinary issues related to the ship's crew are involved, which do not concern the maintenance of peace within the territory of the coastal state, then such matters would by courtesy be left to the authorities of the flag state to regulate. Although some writers have pointed to theoretical differences between the common law and French approaches, in practice the same fundamental proposition applies.

However, a completely different situation operates where the foreign vessel involved is a warship. In such cases, the authorisation of the captain or of the flag state is necessary before the coastal state may exercise its jurisdiction over the ship and its crew. This is due to the status of the warship as a direct arm of the sovereign of the flag state⁷¹.

3.5.2 Baselines

The rules and regulations for establishing offshore jurisdictional zones involve three types of geographical issues. One type concern the width of the various zones, a second issue pertains to the seaward and lateral limits of the zone, and the third involves the baseline along the coast⁷². Baseline is a coastal state's fundamental water line from which territorial sea, contiguous zone, exclusive economic zone and continental shelf are measured. It is also used as a border of sovereignty of the coastal states between internal water and other zones. The line is related to the circumstances of geography of the coastlines and sea areas, such as some coast are rugged and deeply indented, others are smooth and unbroken, and the other coasts are the delta of river or

⁷¹The Schooner Exchange v. McFaddon 7 Cranch 116 (1812).

⁷²Lewis Alexander, Baseline Delimitation and Maritime Boundaries.

may be fringed by islands, rock and coral reefs. The United Nations Conventions on law of the sea provides for baseline delimitation almost all types of coastline even though, in some case, countries have delimited their baselines in way which appears inconsistent with convention provision⁷³.The following are the definitions of baseline under the concept of modern international law of the sea:

3.5.2.1 Normal Baselines

In accordance with article 3 of 1958 and article 5 of 1982 United Nations Convention on law of the sea, except where otherwise provided, the normal baseline for measuring the breadth of the territorial sea is the low-water line along the coast as marked on large-scale charts officially recognized by the coastal state. Besides, the convention contains articles concerning low water line basis. In the case of islands situated on atolls or of islands having fringing reefs, the baseline is the seaward low-water line of the reefs (article 6 of 1982 Convention). In the case of river flowing directly into the sea, the baseline shall be a straight line across the mouth of the river between points on the low water line of its banks (article 9 of the 1982 Convention).

3.5.2.2 Straight Baselines

Article 7 of 1982 United Nations Convention states that in localities where the coastline is deeply indented and cut into, or if there is a fringe of islands along the coast in its immediate vicinity, the method of straight baselines joining appropriate points may be employed in drawing the baseline from which the breadth of territorial sea is measured. This provision is mainly based on the 1958 Convention on the Territorial Sea and Contiguous Zone. The new provision has been made to meet the concern of some coastal states whose coastlines are highly unstable. The paragraph 2 of the article 7 of 1982 Convention states that where because of the presence of a delta and other natural condition the coastline is highly unstable, the appropriate points may be selected along the farthest seaward extent of the low-water line and, notwithstanding subsequent regression of the low-water line, the straight

⁷³Y.Tanka, Baselines under the International Law of the Sea,14-15(1994).

baselines shall remain effective until changed made by the coastal state in accordance with this Convention. Moreover, the Convention has clauses on the restrictions for the coastal states in the establishment of their straight baseline. Straight baseline must not depart to any appreciable extend from the general direction of the coast, and the sea areas lying within the lines must be sufficiently closely linked to the land domain to be subject to the regime of internal waters. Straight baseline shall not be drawn to and from low-tide elevation, unless lighthouse or similar establishments are built there on or except in instance where the drawing of such baselines to and from such elevations has received general international recognition. Where the method of straight baseline is applicable, account may be taken, in determine particular baseline of the economic interests peculiar to the region concerned, the reality and importance of which are clearly evidenced by long usage. The straight baseline shall not cut off the territorial sea of another state from the high sea or an exclusive economic zone

3.5.2.2 Archipelagic baselines

The development of the United Nations Convention has been made detailed the provisions regarding the drawing of archipelagic baselines enclosing the archipelagic waters. Within the archipelagic waters, the archipelagic state may draw closing lines across the mouth of rivers, bays, or outermost harbor works for delimitation of its internal waters (article 50). The breadth of the territorial sea and other maritime zones of an archipelagic state shall be drawn from the archipelagic baselines (article 48). The archipelagic state may draw straight archipelagic baseline joining the outermost points of the outermost islands and drying reefs of the archipelago provided that within such baselines are included the main islands and an area in which the ratio of the area of the water to the area of the land, including atolls, is between 1 to 1 and 9 to 1. The length of such baselines shall not exceed 100 nautical miles, except that up to 3 percent of the total number of baselines enclosing any archipelago may exceed that length up to a maximum length of 125 nautical miles. In order to meet concerns of some states whose parts of their state

separated by sea, the article 99 of 1982 Convention provides that if a part of the archipelagic waters of an archipelagic states lies between two parts of an immediately adjacent neighboring states, existing rights and all other legitimate interests which the latter state has traditionally exercised in such waters and all rights stipulated by agreement between those states shall be continue and be respected.

The Anglo-Norwegian Fisheries case (1951)

When considering rules governing straight baselines, the 1951 Anglo-Norwegian Fisheries case merits particular attention because it has had a decisive effect on the development of the straight baseline system. The coastal zone concerned in the dispute, which lies north of latitude 66° 28.8'N, is of considerable length, and includes the coast of mainland Norway as well as all the islands, islets, rocks and reefs, known by the name of the skjergaard (literally, rock rampart). The number of islands, large and small, which make up the skjergaard, is estimated by the Norwegian government to be 120,000⁷⁴

The Court further elaborated its view as follows: The principle that the belt of territorial waters must follow the general direction of the coast makes. It possible to fix certain criteria valid for any delimitation of the territorial sea; these criteria will be elucidated later. The Court will confine itself at this stage to noting that, in order to apply this principle, several States have deemed it necessary to follow the straight base-lines method and that they have not encountered objections of principle by other States. This method consists of selecting appropriate points on the low-water mark and drawing straight lines between them⁷⁵.

3.5.3 Territorial Sea

The Territorial Sea is an area extending from internal waters to the seaward side. The coastal state enjoys its sovereignty over the area subject to the right of the ships of other states to engage in innocent passage. According to the 1958 Convention, the breadth of territorial sea has not been stated how

⁷⁴ICJ Reports 127 (1951).

⁷⁵ICJ Reports 136 (1951).

far from the baseline it is measured, but it could be inferred from the breadth of the contiguous zone which was established in article 24, paragraph 2 that the territorial sea cannot exceed 12 nautical miles from the baseline. It means that the territorial sea and contiguous zone under this convention are the same area. However, article 3 of 1982 United Nations Convention clearly defined, every state has the rights to establish the breadth of its territorial sea up to the limit not exceeding 12 nautical miles, measured from baseline determined in accordance with the convention, and the outer limit of the territorial sea is the line every point of which is at the distance from the nearest point of the baseline equal to the breadth of the territorial sea.

According to article 12 of the 1982 United Nations Convention, the territorial sea can be extended beyond 12 nautical miles. Roadsteads, which are normally used for the loading and unloading and anchoring of ships and would otherwise be situated wholly or partly outside the outer limit of the territorial sea, are included in territorial sea. The territorial sea could, nevertheless, be less than 12 nautical miles in the situation of the two states have opposite or adjacent coasts. The article 15 of 1982 United Nations Convention provided that, where the coasts of the two states are opposite or adjacent to each other, neither of the two states is entitled, failing agreement between them to the contrary to extend its territorial sea beyond the meridian line every point of which is equidistant from the nearest points on the baseline from which the breadth of the territorial sea is measured. Moreover, states sometimes do not have their territorial sea in case the low water line is wholly situated at a distance exceeding the breadth of the territorial sea from the mainland or an island. In practical, this provision has not applied to any coastal states. All coastal states have their territorial sea.

The Convention requires the coastal states to adopt laws and regulations which comply with the international rules in the purpose of ensuring the innocent passage of foreign vessels, with respect the followings:

- Safety of navigation;
- The protection of navigation and facilities

- The regulation the maritime traffic;
- The protection of cable and pipeline;
- The conservation of living resource
- The prevention of infringement of fisheries law and regulation of coastal state;
- The maritime scientific research and hydrographic survey;
- The prevention of infringement of the customs, fiscal, immigration, or sanitary law.

In addition, having regard to the safety of navigation, the coastal states may establish sea lands and traffic separation schemes in its territorial sea to ensure the safety of navigation especially, tankers, nuclear power ship and ships caring nuclear or other inherently dangerous or noxious substances or materials (article 22 of 1982 United Nations Convention).

Besides the above necessity, the coastal states have their rights to prevent passage in which engage in the any of the following activities as stated in article 19 of 1982 United Nations Convention:

- any threat or use of force against the sovereignty, territorial integrity of political independence of the coastal state or in any other manner in violation of the principles of international law embodied in the Charter of the United Nations;
- any exercise or practice with weapons of any kind;
- any act of propaganda aimed at affecting the defense or security of the coastal state;
- the launching, landing or taking on board of any aircraft;
- the launching, landing or taking on board of any military device;
- the loading or unloading of any commodity, currency or person contrary to the customs, fiscal, immigration or sanitary laws and regulations of the coastal state;
- any act of willful and serious pollution contrary to this convention;
- any fishing activities;
- the carrying out of research or survey activities

- any act aimed at interfering with any systems of communication or any other facilities or installations of the coastal state;
- any other activity not having a direct bearing on passage.

The article 27 and 28 of 1982 United Nations Convention also provides the coastal states with criminal and civil jurisdiction on board a foreign ship in cases:

- the sequences of the crime extend to the coastal states;
- there are request for assistance from Master of the ship or from a diplomatic agent of the flag state or consular officer of the flag state;
- suppression of illicit traffic in narcotic drugs or psychotropic substances;
- foreign ship lying in the territorial sea or passing through the territorial sea after leaving internal water.

Relating to the warship which does not comply with law and regulations of the coastal state concerning the passage through the territorial sea and disregard any compliance therewith which is made of it, the coastal state may require that warship to leave the territorial sea immediately (article 30 of 1982 Convention). The case of innocent passage of warship through the territory of the coastal state has been discussed during the establishment of international convention on Law of the sea but there was not consensus.

The maritime power claimed innocent passage for warships, whereas the others, particular the developing ones, emphasized that the importance of their coastal security necessitated imposing conditions on the passage of warships through its territorial sea. The differences caused the Convention on Law of the Sea has no provision on allowing or denying warships a rights of innocent passage. As practice, some coastal states require the warships to give prior notification for innocent passage of warships through their territorial sea. For example, China and Vietnam require foreign vessels for military use to obtain prior permission before they transit through the Chinese territorial sea. The requirement of China was stipulated in Law on Maritime Traffic Safety, entered into force in January 1984, which reads “.No military vessels of

foreign nationality may enter the territorial sea of People's Republic of China without being authorized by the Government thereof".

3.5.4 Contiguous zone

3.5.4.1 The concept of the contiguous zone

The contiguous zone is a marine space contiguous to the territorial sea, in which the coastal State may exercise the control necessary to prevent and punish infringement of its customs, fiscal, immigration or sanitary laws and regulations within its territory or territorial sea.⁷⁶ The development of the contiguous zone was a complicated process of concurrence of different claims by coastal States.⁷⁷ Whilst it has been considered that the origin of the concept of the contiguous zone dates back to the Hovering Acts enacted by Great Britain in the eighteenth century, it was not until 1958 that rules governing the contiguous zone were eventually agreed. The rules governing the contiguous zone were enshrined in Article 24 of the TSC. Later, this provision was, with some modifications, reproduced in Article 33 of the LOSC.

The landward limit of the contiguous zone is the seaward limit of the territorial sea. Under Article 33(2) of the LOSC, the maximum breadth of the contiguous zone is twenty-four nautical miles. Article 33 of the LOSC contains no duty corresponding to Article 16, which obliges the coastal State to give due publicity to charts. It would seem to follow that there is no specific requirement concerning notice in the establishment of the contiguous zone.⁷⁸ The contiguous zone is an area contiguous to the high seas under Article 24(1) of the TSC. Under the LOSC, the contiguous zone is part of the EEZ where the coastal State claims the zone. Where the coastal State does not claim its EEZ, the contiguous zone is part of the high seas. As of 15 July 2011, some eighty-nine States claim a contiguous zone.⁷⁹

⁷⁶LOSC, Article 33(1); H. Caminos, 'Contiguous Zone', in *Max Planck Encyclopaedia*, para. 1.

⁷⁷D.P.O'Connell, *The International Law of the Sea*, vol. 2 1034 (Oxford, Clarendon Press, 1984).

⁷⁸Virginia Commentaries, vol II, p.274.

⁷⁹United Nations, *Table of Claims to Maritime Jurisdiction as at 15 July 2011*.

3.5.4.2 Coastal State jurisdiction over the contiguous zone

Article 33(1), which follows Article 24(1) of the TSC, provides that:

In a zone contiguous to its territorial sea, described as the contiguous zone, the coastal State may exercise the control necessary to:

- a) prevent infringement of its customs, fiscal, immigration or sanitary laws and regulations within its territory or territorial sea;
- b) punish infringement of the above laws and regulations committed within its territory or territorial sea.

This provision requires three brief comments.

- First, Article 33(1) contains no reference to internal waters. However, it would be inconceivable that the drafters of this provision had an intention to exclude the internal waters from the scope of this provision since these waters are under the 'territorial sovereignty of the coastal State. Thus it appears to be reasonable to' consider that internal waters are also included in the scope of 'its territory or territorial sea'.
- Second, Article 33(1) literally means that the coastal State may exercise only enforcement, not legislative, jurisdiction within its contiguous zone. It would follow that relevant laws and regulations of the coastal State are not extended to its contiguous zone; and that infringement of municipal laws of the coastal State within the zone is outside the scope of this provision. Considering that an incoming vessel cannot commit an offence until it crosses the limit of the territorial sea, it would appear that head (b) of Article 33(1) can apply only to an outgoing ship. By contrast, head (a) can apply only to incoming ships because prevention cannot arise with regard to an outgoing ship in the contiguous zone.
- Third, Article 33(1) does not make the further specification with regard to 'control necessary to punish infringement' of municipal law of the coastal State in its contiguous zone. In this regard, Article 111(1) makes clear that the coastal State may undertake the hot

pursuit of foreign ships within the contiguous zone. Article 111(6), (7) and (8) further provides the coastal State's right to stop a ship, the right to arrest the ship, and the right to escort the ship to a port. One can say, therefore, that the coastal State jurisdiction to punish the infringement of its municipal laws in the contiguous zone includes these rights. On the other hand, Article 111(1) does not specify the place where the infringement of laws and regulations of the coastal State must have occurred. In view of maintaining consistency with Article 33(1), it appears reasonable to consider that the coastal State may commence the hot pursuit of a ship only where that ship has already breached the laws and regulation of that State within its territory or territorial sea.⁸⁰

A coastal state has its rights in a contiguous zone to defend its interests by stopping foreign ship supposed to be an offender in order to search, inspect or punish the offenders against its laws and regulations. In addition, in case the suspect foreign ships have intention to evade the responsibility and leave the contiguous zone, the coastal state has the rights to pursuit beyond the limit of contiguous zone. The article 111 of 1982 Convention stipulated that pursuit must be commenced when the foreign ship or one of its boats is within the internal water, territorial sea or contiguous zone of the pursuing states, and may be only be continued outside the territorial sea or contiguous zone if the pursuit has not been interrupted. In the establishment of the contiguous zone, the coastal state has to take into account the fact of the sea areas, which are, in some case, bordered, by two or more states whose breadth does not exceed twice the breadth of the territorial sea. The Strait of Malacca, for example, used for international navigation is less than 24 nautical miles wide⁸¹. In this case the bordering states have to undertake their agreement in the delimitation of maritime boundary and to cooperate in the establishment of international sea route pass.

⁸⁰G. Fitzmaurice, *'Some Results of the Geneva Conference on the Law of the Sea'* 8 *ICLQ* 114 (1959)

⁸¹Lee Yong Leng, *South East Asian and Law of the Sea* 26 (2006).

3.5.5 Exclusive Economic Zone

3.5.5.1 Concept of the EEZ

The concept of the Exclusive Economic Zone is the most important pillars of the United Nations Convention on the Law of the Sea. The Convention contains the articles on legal regime of the Exclusive Economic Zone; the limitation of the Zone, the sovereign rights of the coastal state to manage the zone in good faith; the regard for the economic interests of the third states; regulations of the certain activities in the zone, such as marine scientific research, protection and preservation of the marine environment, and the establishment and use of artificial islands; freedom of navigation and over flight; the freedom to lay submarine cables and pipelines; military and strategic use of zone; and the means of settlement of disputes.

The EEZ is an area beyond and adjacent to the territorial sea, not extending beyond 200 nautical miles from the baseline of the territorial sea.⁸² The origin of the concept of the EEZ may go back to the practice of the Latin American States after World War II.⁸³ Originally the figure of 200 nautical miles appeared in 1947, when Chile, Peru and Ecuador claimed such an extent for the exercise of full sovereignty. The figure of 200 nautical miles relied on scientific facts: it would enable the Andean States to reach the Peruvian and the Humboldt Currents, which were particularly rich in living species. Furthermore, the guano birds, whose deposit is an important fertilizer, feed on anchovy. Scientific research has shown that anchovy larvae had also been located in up to a 187-mile width. The three Andean States thus inferred that a perfect unity and interdependence existed between the seas living resources and the coastal populations. For the three countries of Latin Americas Pacific c coast, the claim for a 200 nautical mile zone was considered as a means to correct an inequity inflicted upon them by geography, namely the lack of a continental shelf.

⁸²Articles 55 and 57of the LOSC,1982.

⁸³R.J.Dupuy and D. Vignes, *A Handbook on the New Law of the Sea*, vol. 1 275 (Dordrecht, Nijhoff, 1991).

Currently the contiguous zone is part of the EEZ when the coastal State claimed the zone. As will be seen, in the EEZ the coastal State may exercise both legislative and enforcement jurisdiction for limited matters provided by the law of the sea. Considering that the contiguous zone is becoming important for the purpose of regulation of illegal traffic in drugs, claims to legislative jurisdiction in the Zone will not cause a serious problem in reality.⁹ If this is the case, as a matter of practice, it may not be unreasonable to extend the legislative jurisdiction of the coastal State over the contiguous zone for the limited purposes provided in Article 33 of the LOSC. In any case, it must be remembered that disputes with regard, to the exercise by a coastal State of its jurisdiction over the contiguous zone fall within the scope of the compulsory settlement procedure in Part XV of the LOSC.

3.5.5.2 Legal status of the EEZ

The landward limit of the EEZ is the seaward limit of the territorial sea. The seaward limit of the EEZ is at a maximum of 200 nautical miles from the baseline of the territorial sea. Given that the maximum breadth of the territorial sea is 12 nautical miles, the maximum breadth of the EEZ is 188 nautical miles, that is to say, approximately 370 kilometers. The outer limit lines of the EEZ and the delimitation lines shall be shown on charts of a scale or scales adequate-for ascertaining their position. Where appropriate, lists of geographical coordinates of points may also be substituted for such outer limit lines or delimitation lines pursuant to Article 75(1) of the LOSC. The coastal State is also obliged to give due publicity to such charts or lists of geographical coordinates and shall deposit a copy of each such chart or list with the UN Secretary-General under Article 75(2).

The concept of the EEZ comprises the seabed and its subsoil, the waters superjacent to the seabed as well as the airspace above the waters. With respect to the seabed and its subsoil, Article 56(1) provides that 'in the exclusive economic zone' the coastal State has sovereign rights for the purpose of exploring and exploiting, conserving and managing the natural resources, whether living or non-living, of the waters superjacent to the seabed and of the

seabed and its subsoil' (emphasis added). It would follow that the concept of the EEZ includes the seabed and its subsoil. The rights of the coastal State with respect to the seabed and subsoil are to be exercised in accordance with provisions governing the continental shelf by virtue of Article 56(3). Article 58(1) stipulates that 'in the exclusive economic zone', all States, whether coastal or land-locked, enjoy 'the freedoms referred to in article 87 of navigation and overflight' Article 56(1) further provides that the coastal State has sovereign right with respect to other activities for the economic exploitation and exploration of the zone, such as the production of energy from the water, currents and winds. One can say, therefore, that the concept of the EEZ also includes the airspace.

The coastal state has broad regulatory and management power to conserve and utilize the living resources on the Exclusive Economic Zone. With respect to the conservation, the coastal state has to design some measures to ensure that the populations of harvested species are maintained or restored at a levels which can produce the maximum sustainable yield as qualified by relevant environmental and economic factors (article 61). With regard the utilization, the coastal state has the obligation to promote the objective of optimum utilization of the living resources. The coastal state is obliged to determine its capacity to harvest the living resources. If the coastal state does not have capacity to harvest the entire allowable catch, it could, by agreement, give access to the other states to the surplus of the allowable catch (article 62).

The land locked states and geographically disadvantaged states are given the rights to participate, on an equitable basis, in the exploration of an appropriate part of surplus of the living resources in conformity with the regulations and management laws designed by the coastal state.

The convention also has articles on the conservation of the Stocks such as, straddling stocks, Anadromous stocks, catadromous species, sedentary species, and highly migratory species. With respect to the marine mammals, the coastal states and other organizations have the rights to prohibit, limit, or regulate the exploitation of this species more strictly. In exercising its

sovereign rights and in ensuring the sustainable conservation of living resources, the coastal state is empowered to take some measures of law enforcement such as boarding, inspection, arrest and judicial proceedings over the foreign fishing vessels.

As the other zones, Convention on the Law of the Sea establishes the articles on the delimitation of the Exclusive Economic Zone between the states with opposite or adjacent coastlines. According to the article 74, the delimitation of the Exclusive Economic Zone between the states with opposite or adjacent coastlines shall be effected by agreement on the basis of international law. In case there is no agreement, the states concerned could follow the procedure provided in Part XV. With regard the fisheries disputes concerning the interpretation and application of the convention, the states concerned are to be settled by a binding form of disputes settlements.

3.5.6 Continental Shelf

3.5.6.1 The concept of the continental shelf

Geologically the continental shelf is an area adjacent to a continent or around an island extending from the low-water line to the depth at which there is usually a marked increase of slope to greater depth. Before World War II, natural resources in the seabed and its subsoil had attracted little interest between States. However, natural resources in the seabed and its subsoil, in particular, an extensive reserve of oil and gas, have attracted growing interest since World War II because of the increased demand for petrol. Further more, technological progress at the turn of the twentieth century has enabled the continental shelf s hydrocarbon resources to be extracted from the surface of tht that background, on 28 September 1945, the United States took the decisive step with the Truman Proclamation to extend its jurisdiction over the natural resources of the continental shelf⁸⁴.The Truman Proclamation declared that:” Having Concern for the urgency of conserving and prudently utilizing its natural resources, the Government of the United States regards the natural

⁸⁴US Presidential Proclamation No. 2667, Policy of the United States with Respect to the Natural Resources of the Subsoil of the Sea Bed and the Continental Shelf.

resources of the subsoil and sea bed of the continental shelf beneath the high seas but contiguous to the coasts of the United States as appertaining to the United States, subject to its jurisdiction and control”.

This proclamation precipitated a whole series of claims by states to their continental shelves, some in similar terms to the US assertions, and others in substantially wider terms. Argentina and El Salvador claimed not only the shelf but also the waters above and the airspace. Chile and Peru, having no continental shelf to speak of, claimed sovereignty over the seabed, subsoil and waters around their coasts to a limit of 200 miles, although this occasioned vigorous protests by many states. The problems were discussed over many years, leading to the 1958 Geneva Convention on the Continental Shelf.

The development of the concept of the exclusive economic zone has to some extent confused the issue, since under article 56 of the 1982 Convention the coastal state has sovereign rights over all the natural resources of its exclusive economic zone, including the seabed resources. Accordingly, states possess two sources of rights with regard to the seabed, although claims with regard to the economic zone, in contrast to the continental shelf, need to be specifically made. It is also possible, as will be seen, that the geographical extent of the shelf may be different from that of the 200-mile economic zone.

The concept of the establishment of the continental shelf in the international law of the sea is a result of the activities of exploitation natural resources in the seabed of the developed countries. For the purpose of preventing the danger of the division of the continental shelf, the International Law Commission was tasked to prepare the draft in the purpose of controlling such exploration and exploitation. As a result of the work of Commission and the discussion at the conference, the Convention on the Continental Shelf was adopted in 1958 in Geneva and get into force in 1964. The coastal states are given the sovereign rights to explore and exploit the natural resources of the seabed and subsoil in the submarine area adjacent to the mainland or islands, but outside the area of territorial sea, to a depth of 200 meters, or beyond that limit, to a point where the exploitation of such resource become impossible.

Article 1 of the 1958 Convention on the Continental Shelf defined the shelf in terms of its exploitability rather than relying upon the accepted geological definition, noting that the expression referred to the seabed and subsoil of the submarine areas adjacent to the coast but outside the territorial sea to a depth of 200 metres or 'beyond that limit to where the depth of the superjacent waters admits of the exploitation of the natural resources of the said areas'.

In accordance with the 1958 Convention, the outer limit of the continental shelf is not defined precisely. It depends on the rate of scientific and technological progress in the exploitation of resource in seabed and ocean floor. The definition of continental shelf in the convention is far from adequate. As Gutteridge noted : "The definition is bound to result in uncertainty; and may lead to disputes between states in cases where the same continental shelf is adjacent to the territories of opposite or adjacent states, or, at the least to difficulties in fixing by agreement the boundaries of such shelves. Moreover, exploitability is a subjective criterion. It may well be asked, as it was asked at the conference, how is to be determined that a particular submarine area beyond the depth of 200 meters admits of exploitation"⁸⁵.

At the third United Nations Convention on the Law of the Sea, the long discussion of the opposite positions on the delimitation of the outer limits of the continental shelf came closer together through the a reasonable compromise which was proposed that the coastal state have the rights to extend its jurisdiction over the continental shelf beyond the exclusive economic zone on the condition that parts of the benefits derive from the exploitation of mineral resources beyond the 200 nautical miles be shared with the international community⁸⁶. According to the article 76 (1) of 1982 United Nations Convention, the continental shelf of a coastal state comprises the seabed and subsoil thereof extending beyond its territorial sea throughout the natural prolongation of it land territory up to the outer edge of the continental margin

⁸⁵J.A.C.Gutteridge 'The 1958 Geneva Convention on the Continental Shelf' quoted by Hugo Caminos in *Law of the Sea*, 28 (1998).

⁸⁶Jamaica, reported by E.P. Andreyev, *the International law of the sea* 71 (1999).

or to a distance of 200 nautical miles from the baseline from which the territorial sea is measured where the outer edge of the continental margin does not extend up to that distance.

Where the outer edge of the continental shelf margin extends beyond 200 nautical miles from baseline, the outer boundary of its shelf is to be delimited by the coastal state by either of the outermost fixed points at each of which the thickness of sedimentary rock is at least 1 percent of the shortest distance from such point to the foot of the continental slope, or the fixed point not more than 60 nautical miles from foot of the continental slope, and to define these points by coordinate of longitude and latitude. However, according to the article 76(5), if the underwater edge extends more than 200 nautical miles from coastline the outer limit may not exceed 350 nautical miles from baselines of territorial water or 100 nautical miles from 2,500 meters isobaths (line connecting depth of 2,500 meters). According to the article 76, on the submarine ridge, other than submarine elevation that are natural components of the continental margin, such as its plateau, rise, caps, blank and spurs, only 350 miles applies.

3.5.6.2 The Commission on the Limits of the Continental Shelf

The coastal State intending to claim a continental shelf beyond 200 nautical miles is required to submit informatics on the limits of the shelf to the Commission. The Commission consists of twenty-one members who shall be experts in the field of geology, geophysics or hydrography. The members of the Commission are to be elected by States Parties to the LOSC from among their nationals, having due regard to the need to ensure equitable geographical representation, and they shall serve in their personal capacities in accordance with Article 2(1) of Annex II. The members are to be elected for a term of five years and can be re-elected (Article 2(4) of Annex II). Whilst the tasks of the Commission are not completely separated from the legal interpretation of relevant rules of the Convention, the Commission contains no jurists. No representative of the International Seabed Authority (thereafter the Authority) is included in the membership of the Commission, while the Authority is directly

affected by the recommendation of the Commission.

The Commission is conferred with two functions by Article 3(1) of Annex II. First, the Commission is to consider the data and other material submitted by coastal States and to make' recommendations to the coastal States in this matter in accordance with Article 76 and the Statement of Understanding adopted on 29 August 1980 by UNCLOS III. Second, the Commission is to provide scientific and technical advice, if requested by the coastal State concerned.

The information on the limits of the continental shelf where it extends beyond 200 nautical miles is to be submitted to the Commission on the Limits of Continental Shelf composed of experts in geology, geophysics and hydrographic, which is formed by coastal state to the convention. The Commission may issue recommendation to coastal state on the delimitation of the outer boundary of continental shelf, and the limits established by a state on the basis of these recommendations shall be final and binding. According to the article 82, any exploitation of non-living resources of the continental shelf beyond 200 nautical miles from the baseline is subject to make payment or contribution in kind through the Authority in order to distribute them, on a basis of equitable sharing criteria, to the State Parties to this Convention. However, the action of the Commission shall not prejudice matters relating to the delimitation of boundaries between the States with opposite or adjacent coasts. The Commission must, therefore, avoid dealing with submissions that may prejudice matters relating to the delimitation of boundaries between States⁸⁷. In accordance with the rule of procedure of the Commission, there are some clauses dealing with disputes that may arise in connection with the establishment of outer limits of the continental shelf, such as in case where a land or maritime dispute exists, the Commission shall not examine and qualify a submission made by any of the states concerned in the dispute. However, the

⁸⁷L.D.M.Nelson, The Role of the Commission on the limits of the Continental Shelf in the interpretation and application of the Convention "Current Maritime Environment and the ITLOS, 257(2006).

Commission may examine one or more submission in the areas under dispute with prior consent given by all States that are parties to such a dispute⁸⁸.

To date, there are four states have submitted their claim of outer continental shelf to the Commission. Those countries are Russia, Brazil, Australia, and Iceland. Of those four submissions, only Russia's has been subject to a full review by the Commission. The others are currently undergoing review by the sub commissions of the Commission⁸⁹. Under the 1982 Convention, the coastal state exercises sovereign rights over the continental shelf in the exploration and exploitation of its natural resources. The coastal state has exclusive rights in the sense that the other states may not explore or exploit in the continental shelf unless there is express consent of the coastal state. In addition, the rights of coastal state over the continental shelf do not depend on occupation, effective or notional, or any express proclamation. However, this provision indicates that the exercise of rights of the coastal state over the continental shelf shall not infringe on freedom of navigation, or on other rights and freedom of foreign states. As for the rights to lay submarine cables and pipelines of the other states, the coastal states are entitled the rights to establish conditions for cables and pipelines entering its territory or territorial sea, or its jurisdiction over the construction of those cables and pipelines. The Convention acknowledges that, in case this conditions or regulations are not respected, the coastal state may refuse to allow the laying underwater cables and pipelines. The Convention allows the coastal state to process exclusive rights to permit and regulate all types of drilling on its continental shelf, and to take some measures to prevent, reduce and control marine pollution. The dumping on the continental shelf of wastes or debris of destroyed ships, aircrafts or others structures is possible with the consent of the coastal state. So, the laws and regulations of the coastal state limit the exercises of rights of the other states on the continental shelf.

⁸⁸Rule of Procedure of the Commission, annex I, para. 5.

⁸⁹Lindsay Parson, *National Oceanographic Center*, Southampton, UK, email: lmpAnoc.soton.ac.uk.

Besides the above precise limitation of and the increase the rights of the coastal state over the continental shelf, the convention contains articles on the settlement of disputes over the delimitation of continental shelf between states with opposite or adjacent coastlines. The article 83 provides that the limitation of the continental shelf between states with opposite or adjacent coastlines shall be effected by a agreement on the basis of international law as referred to the article 38 of the statute of International Court of Justice, in order to achieve an equitable solution. In case there is no agreement reached within a reasonable period of time, the states can concerned to resort to the procedures provided for in Part XV of this convention.

3.5.7 High Sea

High Seas are the sea water beyond the limit of the national jurisdictions and excluded from the state sovereignty. It is not included in the territorial sea, contiguous zone, exclusive economic zone, and archipelagic water. The high sea is open to all states, whether coastal or land locked states and is an area reserved for peaceful purpose. All states have freedom to conduct all types of activities with due regard for the interests of the other states. Moreover, all states have duty to conserve and manage the living resources in the zone, and to combat and prevent the international transnational crimes at sea.

The high seas are governed by the principle of freedom. However, it is not suggested that there is no legal order on the high seas. The order on the high seas is essentially ensured by the principle of the exclusive jurisdiction of the flag State. Thus this principle and its exceptions become principal issues in the international law governing the high seas.

However, the Area, namely ‘the seabed and ocean floor and subsoil thereof, beyond the limits of national jurisdiction’,⁹⁰ is governed by the principle of the common heritage of mankind. As will be seen, this principle is an important innovation in the law of the sea in the sense that it introduces the concept of ‘mankind’ as an emerging actor in international law. The principle of the common heritage of mankind will provide a touchstone to consider the

⁹⁰Article 1(1) of LOSC,1982.

question whether and to what extent international law in the twenty-first century is moving toward an international law for mankind, which is beyond the State-to-State system. Against that background, this chapter focuses on legal regimes governing the high seas in section 2 and the Area in section 3.

3.5.7.1 Spatial Scope of the High Seas

The LOSC devotes Part VII to the high seas. Under Article 86, the high seas are defined as ‘all parts of the sea which 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’. Where a coastal State has established its EEZ, the landward limit of the high seas is the seaward limit of the EEZ. Where the coastal State has not claimed its EEZ, the landward limit of the high seas is the seaward limit of the territorial sea. In this case, the seabed of the high seas is the continental shelf of the coastal State up to the limit fixed by the international law of the sea. The seabed and subsoil beyond the outer limits of the continental shelf are the Area, which is the common heritage of mankind. The superjacent waters above the Area are always the high seas. Where the continental shelf extends beyond the limit of 200 nautical miles, the superjacent waters and the airspace above those waters are the high seas under Article 78 of the LOSC.

3.5.7.2 Principle of the freedom of the high seas

The principle of the freedom of the high seas was established in the early nineteenth century. This principle has two meanings.

- First, the freedom of the high seas means that the high seas are free from national jurisdiction. In this regard, Article 89 of the LOSC makes clear that: ‘No State may validly purport to subject any part of the high seas to its sovereignty’.
- Second, the freedom of the high seas means the freedom of activities there. This is a corollary of the fact that the high seas are free from the national jurisdiction of any State. Consequently, each and every State has an equal right to enjoy the freedom to use the high seas in conformity with international law.

In accordance with article 87 of the 1982 United Nations Convention, the freedom of the high seas consists of: (1) freedom of navigation; (2) freedom of over flight; (3) freedom to lay submarine cables and pipelines; (4) freedom to construct artificial islands and other installations permitted under international law; (5) freedom of fishing; and (6) freedom of scientific research.

The freedom of navigation is the most important for all merchant and naval vessels. They have the rights to sail ships flying their flag in the high sea and participate in navigation by granting its nationality to vessels which are registered in their territory and which fly their flag. Warships in accordance with this Convention have on the high seas completely immunity from jurisdiction of any state other than the flag state. At the meantime, the Convention requires the flag state to exercise its jurisdiction and control in administrative, technical and social matters over ships flying its flag (article 94). In doing so, every state shall take some measures, which conform with generally accepted international regulations and practice, to ensure the international order or safety at sea, such as maintain the registration of ship; construction, equipment and seaworthiness of ships; manning of ships, labor conditions and the training of crews; the use of signals, the maintenance of communications and the prevention of collisions.

Furthermore, the Convention calls for the cooperation of all states for the purpose of conservation and management the living resources. The states have to take some measures to manage the resources such as, the establishment of sub regional or regional fisheries organizations, provide information on the fishing statistic, the effect of harvested species. In addition, the states have duty to cooperate in combating against piracy, trafficking in illegal narcotic drugs or psychotropic substances, and also against the unauthorized broadcasting from the high sea (article 99, 100, 108 and 109).

3.5.8 The Area

The Area is the deep seabed area adjacent to the continental shelf beneath the high sea. It is beyond the national jurisdiction. The Area and its resources are the common heritage of mankind. No state or juridical person

shall claim or exercise the sovereignty or sovereign rights over any part of the Area or its resources. However, the Area is open to use exclusively for peaceful purposes by all states, whether coastal or land locked, without discrimination and without prejudice to the other provision of this Part⁹¹.

The concept of common heritage of mankind was seriously discussed for years and subsequently the Declaration of Principle was adopted at the General Assembly in 1970 by 108 votes to none with 14 abstentions⁹². The different arguments between the developed countries and developing countries over the interpretation of common heritage of mankind continued. As the United States stated that the common heritage did not a common property.

Eventually, the concept became the principle of the international law and was inserted in the United Nation Convention on Law of the Sea. The Convention contains 58 articles on the management and control of resources in the seabed and subsoil thereof, which was known as the Area, for the purpose of mankind as a whole.

The principle of common heritage of mankind, set forth in the Convention, is really meaningful for all states, particularly, for developing countries which are lesser in technology and lack of fund to explore the resources in the deep ocean floor. In addition, the Convention also requires the industrialized countries that undertake the exploration of natural resources in the seabed areas to transfer their technology and scientific knowledge to the developing countries so that they are able to benefit there from⁹³.

The Area is believed to have rich resources which are necessary for industrial purposes. Recently study claimed that there are approximately 1.5 trillion tons of nodules in the Pacific Ocean alone. According to the indication of eminent scientists and researchers who were invited to give a presentation on the nature and occurrence of these resources, there are cobalt rich ferromanganese crusts, occur throughout the global oceans on seamounts, ridges, and plateaus. The crusts precipitate out of cold ambient seawater onto

⁹¹Article 136 of the UNCLOS,1982.

⁹²Said Mahmoudi, the Law of the Deep Seabed Mining, 134 (2003).

⁹³Article 144 of the UNCLOS,1982.

hard rock substrates forming pavement up to 250 millimeters thick. These crusts form at water depths of between 400 to 4000 meters, with the thickest and most cobalt rich occurring at depths of 800 to 2500 meters. It also contains titanium, cerium, nickel, platinum, manganese, thallium, tellurium, and other rare earth elements.

3.6 Conclusion

The law of the sea has a dual function, namely the spatial distribution of State jurisdiction and ensuring international cooperation in marine affairs. Basically, the first function of the law aims to reconcile the various interests of individual States, by dividing the ocean into multiple jurisdictional zones. The second function seeks to protect the common interests of the international community as a whole, by focusing on the unity of the ocean. These two functions are not mutually exclusive, but coexist in the law.

Like other branches of international law, the principal sources of the law of the sea consist of customary law and treaty law. Further to this, judicial decisions also have an important role to play in the identification, clarification and formation of rules of law.

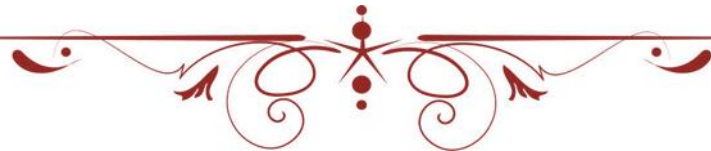
Moreover, non-binding instruments, such as resolutions and guidelines adopted by international organisations, also affect the formulation and interpretation of relevant rules in this legal field. In addition to this, unilateral acts and considerations of humanity have some influence on the development of the law of the sea.

The law of the sea is essentially governed by three principles, namely the principle of freedom, the principle of sovereignty, and the principle of the common heritage of mankind. Whilst the principle of freedom seeks to ensure various uses of the oceans by States, the principle of sovereignty seeks to promote the interests of coastal States. In essence, the two principles seek to safeguard interests of individual States. However, the principle of the common heritage of mankind seeks to protect the common interest of mankind as a whole. In this sense, it may be said that this principle provides a perspective beyond, the traditional State-to-State system in the law.



CHAPTER-IV

LEGAL FRAMEWORK FOR THE PROTECTION OF MARINE ENVIRONMENT



CHAPTER IV**LEGAL FRAMEWORK FOR THE PROTECTION OF MARINE ENVIRONMENT****4.1 Introduction**

To maintain a healthy and pollution-free environment for the good of humanity, most countries of the world have been keen on protecting the components of the marine environment from pollution. This has been achieved through enacting regulations and laws that limit the pollution of the marine environment, the negative effects of which have expanded to all countries of the world. The pollution that happens in the marine environment of a certain country causes harm not only to that country, but to other countries, as well even to other continents. This has negative effects on the survival of the living creatures on the earth. Therefore, the pollution of the marine environment is one of the main problems that we face in modern life and it has arisen from increasing misuse of the natural resources on earth¹. The harms arising from the pollution of the marine environment have pushed the researchers of the environment to draw the attention of the authorities to the seriousness of these harms and the necessity of facing them at all levels.

4.2 Definition of the Pollution of Marine Environment**4.2.1 Definition provided by the International Convention for the Prevention of Pollution from Ships, London (MARPOL 1973)²**

The International Convention for the Prevention of Pollution from Ships defines pollution of the marine environment as “any substance which, if introduced into the sea, 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, and includes any substance subject to control by the

¹Oil in the Sea, inputs, Fates, and Effects, National Research Council, et al.,472 (National Academy Press, 1985).

² Available at : [http://www.imo.org/en/About/Conventions/ListOfConventions/Pages/International-Convention-for-the-Prevention-of-Pollution-from-Ships-\(MARPOL\).aspx](http://www.imo.org/en/About/Conventions/ListOfConventions/Pages/International-Convention-for-the-Prevention-of-Pollution-from-Ships-(MARPOL).aspx) (last visited Dec. 30, 2019).

present Convention³. On the other hand the MARPOL Convention defines dumping as “any incident that involves the actual or possible dumping of a harmful substance in the sea or any flows of this substance⁴.” This definition is based on two essential elements: the first is that the act of dumping is considered pollution of the marine environment, and the second is that the harmful substance is dumped in the sea⁵. The Convention clarifies the meaning of “dumping” as the process of sewage, draining, flowing, or pumping this harmful substance in the sea. The Convention also defines the “harmful substance” as the substance that causes risks to man’s health when mixed with the seawater, causes harm to the marine creatures, or prevents the normal use of the sea⁶.

4.2.2 Definition under United Nations Convention on the Law of the Sea (1982)

“Pollution of the marine environment is the introduction by human, directly or indirectly, of substances or energy into the marine environment, including estuaries, which results, or is likely to result, in deleterious effects. These effects could be 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 of sea water; and reduction of amenities”⁷. This definition is one of the most common definitions of pollution of the marine environment⁸.

³H.A.Cole *Marine Pollution Oceanology International*. 11 (1969).

⁴Article (2) of the International Convention for the Prevention of Pollution from Ships, (MARPOL 1973) Convention.

⁵Boyle, Alan E. "Marine pollution under the Law of the Sea Convention." *American Journal of International Law*(1985): 347-372.

⁶Clause B of Article II, MARPOL Convention, 1973.

⁷Clause 4 of Article I of Convention of the Law of Sea, 1982.

⁸Miles, Edward ., and William L. Burke,"Pressures on the United Nations Convention on the Law of the Sea of 1982 arising from new fisheries conflicts: the problem of straddling stocks" *Ocean Development & International Law* 204 (1989).

4.2.3 Definitions of Pollution of the Marine Environment Provided by Jurists

Defining marine pollution is one of the main difficulties encountered when dealing with this kind of pollution. Consequently, jurists have not agreed on a common definition of pollution of the marine environment⁹.

Some jurists define pollution of the marine environment as “the introduction of any substance or energy by human to the marine environment, whether directly or indirectly, in a way that causes harmful effects on living organisms or threaten man’s health, hinder the marine activities such as fishing, or spoil the quality of water and reduce its advantages.¹⁰ This definition has been widely endorsed and adopted. However, the definition suffers from deficiencies which become increasingly apparent as new technologies and processes emerge. For example, dredging the sea floor to extract sand or gravel falls outside of the "introduction of substances or energy," but is still a cause of serious impairment.

Some other jurists also define pollution of the marine environment as “the presence of any substance or energy in the marine environment, whether intentionally or unintentionally, whether directly or indirectly, in a way that harms the living and non-living resources or threaten human health, hinders the marine activities such as fishing and tourists activities, or spoils the quality of seawater or change the water properties”¹¹.

By reviewing these definitions provided by jurists, we prefer define pollution of the marine environment as “the addition of a substance or energy by human, whether directly or indirectly, to the marine environment, including estuaries, in a way that has harmful effects. These effects can be on the living

⁹Available at-<http://www.startimes.com/?t=30804013> (last visited Dec. 30, 2018).

¹⁰Dr. Mamdouh Shawky, Protection of the Mediterranean Environment in View of Barcelona Convention, 408(1976).

¹¹Dr. Adel Maher Alalfy, criminal protection of the environment, University publishing house , 137 (2009).

resources or man's health; or on the marine activities, including fishing; or on the properties of the seawater, thereby reducing the uses of it¹².”

4.3 Kinds of Marine Pollution

Marine pollution can be categorized into several kinds. First, According to the characteristics of the pollution, it can be categorized in three categories: biological, physical, and chemical. Second, based on its source, it can be natural or industrial. Third, based on its effects, it can be average, hazardous, or destructive. Finally, When considering the geographical scope of pollution, which can be local, transnational, or cross-border¹³.

4.3.1 Kinds of Marine Pollution Based on Its Characteristics

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

1. Biological pollution

Biological pollution is one of the oldest forms of pollution. It is caused by pollutants coming from living organisms, such as viruses and bacteria; if these exist in the marine environment, they can cause harm to man, plants, and animals¹⁴.

2. Physical or radioactive pollution

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

¹²Miller, Jeffrey G., Ann Powers, and Nancy Long Elder. Introduction to environmental law: cases and materials on water pollution control. Environmental Law Institute, (2008).

¹³ Dr. Ahmed Abel Kareem Salama, Id, 75(1995).

¹⁴ Dr. Yousri Debas, Pollution of Marine Environment and Challenges to Survival, 19(1995).

3. Chemical pollution

Chemical pollution of the marine environment is one of the most threatening kinds of pollution due to the increased levels of chemicals currently and the variation of such chemicals. Some chemical substances may join together to form compounds that are more toxic and more dangerous to human health. What makes it worse is that the number of chemical pollutants resulting from modern civilization is estimated to be in the thousands, and the number of new chemical products is growing at a rate that exceeds the estimates reached by a number of studies focused on the risks of such products and their toxicity. Chemicals can be divided in two categories according to their solubility in water: soluble and non-soluble. The non-soluble chemicals, which may accumulate in living organisms in the marine environment, are more dangerous. Among the dangerous polluting chemical compounds are cadmium compounds, insecticides, mercury, and petroleum products.

4.3.2 Kinds of Marine Pollution, Based on Its Source

Marine pollution can be categorized as natural pollution and industrial pollution:-

1. Natural pollution

The source of this kind of pollution is nature itself. This kind of pollution changes the natural characteristics of the marine environment and happens without human intervention. Pollutants of this kind include gases and dust thrown by volcanoes in the marine environment, affecting the ecological balance of this environment and threatening some of its natural components. This kind of pollution is not considered pollution from a legal perspective because human is not its source. Laws only address man and concentrate only on human actions. Therefore, some international conventions excluded from liability such cases in which the cause of pollution is out of man's control or comes from nature itself¹⁵.

¹⁵Dr.Farag Hareesh, Crimes of Environment Pollution under Libyan Law, 55 (1998).

2. Industrial pollution

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

4.3.3 Kinds of Marine Pollution, Based on Its Effects

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

1. Limited or average pollution

This is the lowest level of pollution and is not often accompanied by obvious threats the marine environment. Few areas across world environments are free from non-industrial sources of pollution. Seas have the capability to contain limited pollution. Self-purification of the sea is able to contain pollution, if it is limited. A level of pollution that is not dangerous is accepted in most countries of the world. However, some countries of the world apply penalties regarding this kind of pollution to ensure that it will not be increased¹⁶

2. Dangerous pollution

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

¹⁶ Dr.Ibrahim Ali Hasan, Islam and Environment 77 (2000).

dangerous disasters in marine environments include the sinking or the burning of oil tankers and the spill of their loads in the seawater¹⁷. Examples are the Torrey Canyon oil spill on the southwest coast of the UK in the spring of 1967¹⁸; the Exxon Valdez oil spill in 1989¹⁹ and the explosion of a French oil tanker near the Yemeni coasts in 2002,²⁰ as over 50000 barrels of crude oil spilled and caused pollution in Hadhramaut Coast, killing marine creatures in the process. Despite the growing interest in fighting and containing pollution before it escalates, man does not yet seem to have learned the lesson and his actions in this regard do not seem to be on the level of responsibility. Pollution has even become deadly in some environments.

3. Destructive or very dangerous pollution

In this kind of pollution, pollutants exceed the dangerous limit to reach a destructive or deadly level. Here in lies the disaster, since the ecological system becomes no longer able to thrive, largely due to imbalance. In fact, the signs of this level of pollution, although not widely spread, are looming in some regions; and this can be considered as a warning of the consequences of carelessness or laxity in fighting this kind of pollution..Pollution that happened in Lake Erie is one example of this kind of pollution. Industrial cities in the United States once dumped their wastes into this lake, wrongly believing that the lake waters had the capability of self-purification. However, accumulating wastes caused a deficiency in the ecological system of the lake due to a shortage of oxygen. Thus, the lake could not sustain life. The lake also lost life features due to this kind of destructive pollution. The Chernobyl nuclear reactor in the former Soviet Union is another example of this kind of pollution²¹.

¹⁷Vrijhof, "Organotin compounds and international treaties on the pollution of water by dangerous substances:black or grey list substances?." *Science of the total environment* 43.3 (1985).

¹⁸Available at-http://en.wikipedia.org/wiki/SS_Torrey_Canyon (last visited Jan. 4, 2016)

¹⁹Piatt, John , et al. "Immediate impact of the Exxon Valdez'oil spill on marine birds." *The Auk* 397 (1990).

²⁰Sinai, Joshua. "Future trends in worldwide maritime terrorism." *The Quarterly Journal* 3.1 (2004).

²¹Vrijhof, "Organotin compounds and international treaties on the pollution of water by dangerous substances,black or grey list substances?." *Science of the total environment* 43.3 (1985).

4.3.4 Kinds of Pollution, Based on Geographical Scope

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

1. Internal pollution

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

2. Transboundary pollution.

This kind of pollution arises inside a province of a country or under a country's control. It causes harm to other areas of the marine environment outside the territorial sovereignty of this country, such as overseas regions. Pollution in such cases does not cross the borders of another country but stretches to reach areas that are not under the territorial sovereignty of a country, according to the regulations of the international common law²².

4.4 Causes of Pollution of Marine Environment

The causes of pollution of the marine environment can be categorized as intentional voluntary actions and non-voluntary actions arising from unintentional incidents. This can be explained, as follows:

4.4.1 Pollution of the Marine Environment through Voluntary (intentional) Actions

These actions mean every intentional disposal of hazardous substances and harmful wastes into the sea, such as the ship captain's disposal of harmful substances in small amounts from his ship into the sea. However, in the framework of familiar operational operations of ships to dispose the sewage waters or the balance waters; or cleaning the ship from wastes of some cargoes, such as living animals, compliance with instructions given by the arrival ports authorities and before entering the port or getting ready for the operations of the following cargo after the unloading of the transported cargo or the disposal

²²Merrill, Thomas W. "Golden rules for transboundary pollution." *Duke Law Journal* 931 (1997).

of the waste of shipping and unloading wastes, especially for the goods that contain harmful substances²³

The disposal of wastes is undoubtedly considered to be one of the intentional voluntary actions taken by the ship's captain, the navy's aircrafts, docks, and the structures built inside the sea. The Convention on the Prevention of Marine Pollution by Dumping of Wastes and Other Matter 1972 stressed this point, since it included in its first addendum a table of substances considered among these wastes²⁴. This also includes the pollution expected from facilities or structures constructed at seas for oil exploration, natural gas excavation, and electricity generation, whether these structures are fixed at the seabed or floating on the surface. Therefore, the United Nations Convention on the Law of the Sea (1982) authorized coastal states to establish facilities in internal waters away from the shore, along with taking necessary measures to reduce pollution in the continental shelf and the exclusive economic zone²⁵.

The United Nations Convention on the Law of the Sea (1982) also addressed the pollution arising from Seabed Mining. International systems specializing in sea depths have drawn attention to the circulation of regulations and instructions concerning the side effects of mineral extraction from the seabed and the ocean bottom. These international systems have obligated the states to issue laws and standards that control the seabed activities and comply with the international standards and measures applicable in this regard²⁶.

The United Nations Convention on the Law of the Sea (1982) obligates the states that ratified it to control pollution of the marine environment by taking appropriate measures that contain international and regional regulations and immediate measures, and procedures that help prevent and reduce the marine pollution arising from the disposal of wastes²⁷.

²³S.Z. Pritchard: Load on Top – From the Sublime to the Absurd , J. M. L. and C. Vol. 9,185 (1978).

²⁴First Addendum of the International Convention for Prevention of Marine Pollution by Dumping Waste, 1972.

²⁵Article 244 of Convention of the Sea Law, 1982.

²⁶Demestral,"Prevention of Pollution of the Marine Environment Arising from Offshore Mining and Drilling." Harv. Int'l. LJ 20 (1979).

²⁷Charney, Jonathan I. "Marine Environment and the 1982 United Nations Conventions on the Law of the Sea, Int'l L.Vol. 28(1994).

4.4.2 Pollution of the Marine Environment through Non-Voluntary Actions

Pollution of the marine environment arising from non-intentional incidents is one of the most common causes of pollution that afflicts the marine environment. International organizations concerned with protecting the marine environment have taken actions since the Torrey Canyon oil spill on the southwest coast of the UK in the spring of 1967²⁸.

4.5 Types of Pollutants

Marine pollution must remain an elusive idea without reference to the major substances that actually cause pollution. Many noxious or hazardous substances find their way into the sea from the above-mentioned sources. The account is limited to those substances considered to be environmentally and toxicologically most significant, namely hydrocarbon compounds, persistent toxic substances, heavy metals, radioactive materials and nutrients. It should be kept in mind that very few substances are added to the sea in a chemically pure state, but most are part of complex liquid or gaseous solutions.

4.5.1 Hydrocarbon Compounds

By far the most familiar hydrocarbon compounds are petroleum hydrocarbons, commonly referred to as oil. These hydrocarbons are grouped into four chemical classes: alkanes, naphthenes, aromatics and alkenes.²⁹ Crude oil, which constitutes the original form of oil before it is refined to yield, e.g. petrol, contains a complex mixture of these classes. Sulphur, nitrogen, oxygen and vanadium compounds may also be present; these and other compounds comprise up to 25% of crude oil.³⁰ Released into the sea, it usually floats, although parts may eventually sink, as certain fractions evaporate over time.³¹ All components of crude oil are, at varying rates, degradable by bacteria. Numerous contributory sources can be identified; it may be discharged into the

²⁸Available at-http://en.wikipedia.org/wiki/SS_Torrey_Canyon (last visited Jan. 4, 2016).

²⁹W.Doerffer, *Oil Spill Response in the Marine Environment* 65 (Oxford et al: Pergamon Press 1992).

³⁰Alkenes are gaseous at room temperature and are relatively rare in crude oil, but common in many refined products.

³¹James W. Nybakken and Mark D. Bertness, *Marine Biology:- an Environmental Approach*, 365 (San Francisco: Benjamin Cummings 2005).

sea by vessels either accidentally or willingly, or leaked from offshore oil platforms or on-shore refineries. The refined products of crude oil share some of crude oil's features but are unique inasmuch as they have well-defined, predictable characteristics and tend to be less toxic. Petroleum products include gasoline, kerosene, diesel fuel and fuel oils.³²

4.5.2 Persistent Toxic Substances

The term “persistent toxic substances” (PTS) refers to a wide range of diverse substances that are mainly long-lived, noxious substances, but also less persistent substances that, because of their continuing use and dissemination, may give rise to chronic exposures over large temporal and spatial scales. Prevalent chemicals include perfluorooctanyl sulfonates, used in the surface treatment of fabric, and brominated flame retardants, often integrated into components of electronic goods. While the production of some PTS has been banned, others continue to be used. Their existence in terrestrial, as well as aquatic ecosystems is thus widespread.³³

4.5.3 Heavy Metals

Definitions of the term “heavy metals” differ.³⁴ Most often they are referred to as a group of metallic elements having atomic weights between 63.546 and 200.590 and specific gravities greater than 4.0; the term excludes alkali metals, alkaline earths, lanthanides and actinides. Heavy metals are natural components of the Earth's crust. Trace amounts of some of them, including cobalt, copper and zinc, are essential micronutrients maintaining critical metabolic functions, while excessive levels can have detrimental effects. In contrast, other heavy metals such as mercury, lead and cadmium have no known vital or beneficial effect on organisms, but may have severe adverse impacts.³⁵ Heavy metals generally share most of the features of

³²IMO, *Manual on Oil Pollution – Section IV, Combating Oil Spills 6* (London: IMO Publication 2005).

³³Karla Pozo et al, “Toward a Global Network for Persistent Organic Pollutants in Air: Results from the GAPS Study”, *Environ. Sci. Technol.* (2006).

³⁴John H. Duffus, “‘Heavy Metals’ – A Useless Term?”, *74 Pure and Applied Chemistry* 793-797 (2002).

³⁵G.W. Bryan, “Pollution due to Heavy Metals and their Compounds”, *Marine Ecology, Volume V, Part 3* 17(2003).

persistent toxic substances, since they are non-degradable, they bioaccumulate and they produce acute or chronic toxic effects.

4.5.4 Radioactive Materials

Alpha, beta and gamma radiation (radioactivity) due to the emission of both particles and electromagnetic waves from unstable isotopes of some chemical elements is a common natural phenomenon. Thus, seawater is naturally radioactive; this so-called background radioactivity mainly stems from potassium-40, as well as from decay products of uranium and thorium. Human activities, however, have led in some areas to a marked increase in radioactivity. Scientific developments in the last century have enabled humans to create unstable isotopes, whose instability is remedied by returning them to a stable state; during this process, radiation energy is emitted that can be utilised, for instance, to produce electricity or to fuel engines. Anthropogenic sources of marine radioactive pollution include discharges of cooling water from nuclear power plants and waste water from reprocessing plants, loss of radioactive cargo from ships, military weapons testing and dumping of solid nuclear waste³⁶, even though the latter is by now largely prohibited by the London Dumping Convention.³⁷

4.5.5 Nutrients

Although in a strict sense not as toxic as the pollutants discussed above, nutrients can have severely damaging effects on the marine environment. Inputs of high levels of nitrogen and phosphorus compounds, in particular, often result in “eutrophication”. This term denotes a process that significantly changes growth conditions for phytoplankton.³⁸ Nutrients in high concentrations, depending on the physical and chemical properties of the marine area affected, may lead to excessive growth of algae (“algae bloom”) and phytoplankton. As a consequence, oxygen concentration decreases, while

³⁶OSPAR Commission, *Quality Status Report 2000 97* (London: OSPAR Commission 2000).

³⁷Adopted on 29 December 1972, in force as from 30 August 1975, 1046 *UNTS* 120; hereafter LDC. There is currently a binding moratorium on the dumping of nuclear waste for parties to the LDC, adopted by amendment of Annex I of the LDC in 1993.

³⁸GESAMP, *supra*, note 17, p. 8 et seq.

concentrations of hydrogen sulphides increase. Many aquatic organisms have low resistance against hydrogen sulphides and may therefore just die off. Compounding this problem, dead algae floats on the surface and thus covers the water, making it difficult for sunlight to penetrate into the sea. Consequently, in addition to oxygen shortage, phytoplankton also lacks adequate amounts of light energy to maintain photosynthesis processes.³⁹

4.6 Legal frameworks of protection of marine environmental

For long, one of the fundamental propositions in ocean law was the inexhaustible nature of ocean resources and their ability to assimilate and absorb pollutants of all hues and types. Even though realization that this was essentially incorrect and misleading, oceans continue to be used as receptacles into which wastes are dumped. In fact, pollution of the oceans was one of the freedoms that states enjoyed for long. In the early days of the development of the law of the sea, the concern was on accessing ocean spaces and its resources. In several ways, this trend towards securing jurisdiction indirectly furthered the cause of marine environmental protection; for states could exercise greater control over ocean spaces and resources under its jurisdictional ambit. In due course, as part of the need to optimally utilize these resources, states developed an interest in maintaining the environmental quality of that ocean space under its control. Moreover, some of the principles and rules of customary international law were also found pertinent to the protection of the marine environment like the principle of *sic uteretur*, or good neighbourliness, even though, there were inherent limitations in using this concept as normative solution to the multifaceted issues confronting the marine environment.

As far as the development of the international law relating to protection to the marine environment is concerned, the initial focus was on oil spillage and pollution. Emphasis on this stream was occasioned by high profile leaks from tankers and ships, even though land based sources of marine pollution remains as the single most important contributor of pollution to the marine environment. In 1926, an international conference was convened to deal with

³⁹GESAMP, *supra*, note 19, p. 9.

oil pollution damage. However, it was not until the aftermath of the second world war, that environmental matters in relation to the sea became a matter of concern. The 1958 Convention on High Seas required states to take measures to regulate oil pollution and prevent pollution ensuing from the dumping of radioactive wastes. It also incorporated general prohibitions on the abuse of rights and provided some basis for limiting land-based pollution or dumping, which interfered with fishing or other legitimate uses of the seas.

4.6.1 Land-based pollution and the marine environment

Pollution from land-based sources remains one of the most pressing threats to the health, resilience and services of the marine environment. It is simultaneously localized yet global, variable yet ubiquitous. It is heterogeneous to the point that writing about it collectively is scarcely defensible. The solutions are complex, demanding multilateral, collaborative and proactive policy responses, ranging from education and awareness campaigns, to financial and economic incentives, to legislative and regulatory regimes underscored by resolute punitive measures for environmental negligence and industrial laggards. Against these demands, this chapter explores the framework of both hard and soft international law against which both regional and domestic 'policy cocktails'⁴⁰ are constructed and contends that the framework requires further elaboration and a rejuvenated, modernized commitment to multilateral cooperation.

Kimball lists the following sources of marine pollution linked to land-based activities: (1) Pollution discharged directly to the sea from point sources like outlets for industrial wastewater, When addressing the multifarious topic of marine pollution in a text on international marine environmental law, it is important to begin with an appreciation that, for the vast majority of marine pollutants, one must explore a wide-ranging legislative and regulatory array as pertinent to coastal watersheds and atmospheric emissions as to the marine environment. The reason for this is simple. The overwhelming majority of

⁴⁰ D.Osborn and A. Datta, 'Institutional and policy cocktails for protecting coastal and marine environments from land-based sources of pollution' 49 (2006).

marine pollution is derived not from maritime activities, but from anthropogenic activities linked to land-based urban centres, factories, docklands and farmlands⁴¹. Often far removed in both space and time from where the pollution eventually impacts sensitive coastal and marine ecosystems.

At the macro-scale it is estimated that land-based sources contribute about 77 per cent of marine pollution. However, the absolute ratio of land-based to sea-based sources of pollution fluctuates dramatically dependent on physical location, the pollutant concerned, seasonal variability and a suite of other factors. In many cases, 100 per cent of marine pollution is derived from land-based sources.

Transported to the marine environment on the wind, along rivers, canals, subterranean aquifers, through sewerage outfalls, storm water channels and industrial discharge pipes, a toxic soup” ‘of anthropogenic effluent and jetsam eventually makes its way to the marine environment. Upon reaching coastal waters this soup feeds alga blooms, generates hypoxic dead-zones, contaminates seafood products, reduces fish stocks, renders swimming and other recreational pursuits unsafe, destroys valuable aesthetics. Coastal lagoons, estuaries, harbours, semi-enclosed seas, and even the open ocean with its pollution transporting currents and continental scale gyres, become mirrors of anthropogenic activities on land that pollute the life-giving channels that serve as one-way vectors to the oceans.

Unfortunately, if simply for the convenience of 'out-of-sight, out-of-mind', the absorptive capacity of the oceans is finite and land-based sources of pollution cannot continue unabated. Marine ecosystems and the communities and economic sectors dependent on them have both ecological tipping points⁴² and socially determined limits of acceptable change⁴³ that should not be crossed. Healthy coastal and oceanic systems remove CO₂ from the

⁴¹Jeffrey D. Sachs, *Common Wealth: Economics for a Crowded Planet* (Penguin Press, 2008).

⁴²Available at-<http://oceantippingpoints.org/conceptual-framework>(last accessed May 13, 2016).

⁴³G.Stankey, D. Cole, R. Lucas, M. Petersen and S. Frissell, *The Limits of Acceptable Change (LAC) System for Wilderness Planning*, General Technical Report, Rep. INT-176 (US Department of Agriculture, Forest Service, Intermountain Forest and Range Experiment Station, 1985).

atmosphere, generate oxygen, transport energy and recycle nutrients.⁴⁴ They provide cultural backdrops, renewable food supplies, tourism opportunities, transportation highways, biotechnology supermarkets, and many more benefits that must be protected through timely and effective intervention,⁴⁵ by governments, industry and civil society. Finally, the broad range of land-based pollutants poses challenges that demand multidisciplinary, cross-sectoral and adaptive approaches.⁴⁶

4.6.1.1 The Law of the Sea Convention and Land-Based Pollution

Contemporary multilateral mechanisms for protecting the marine environment from land-based sources of pollution whether hard law or soft law inevitably reflect the rights and principles found in the 1982 United Nations Convention on the Law of the Sea (LOSC).⁴⁷ Adopted in Monleago Bay, Jamaica, following extensive negotiations over many years, there is almost universal agreement that the LOSC - the 'constitution of the oceans'⁴⁸ - sets the legal framework within which all activities in the oceans and seas must be carried out. At Rio+20, the United Nations Conference on Sustainable Development held in Rio de Janeiro, Brazil, in June 2012, States reaffirmed in "The Future We Want"⁴⁹ that oceans, seas and coastal areas form an integrated and essential component of the Earth's ecosystem and are critical to sustaining it, and that international marine law, as found in the LOSC, provides the legal framework for both the conservation and sustainable use of the oceans and their resources. Importantly, the LOSC provides a legally binding and strategic

⁴⁴Millennium Ecosystem Assessment, *Ecosystems and Human Well-being: Synthesis* (Island Press, 2005).

⁴⁵M.Lockwood. et al. "Marine biodiversity conservation governance and management: Regime requirements for global environmental change" 69 *Ocean and Coastal Management* 160(2012).

⁴⁶S.B. Olsen, G.G. Page, and E. Ochoa, *The Analysis of Governance Responses to Ecosystem Change: A Handbook for Assembling a Baseline, LOICZ Reports & Studies No. 34 (GKSS Research Centre, 2009)*.

⁴⁷United Nations Convention on the Law of the Sea, Monleago Bay, 10 December 1982, entered into force 15 November, 1833 UNTS 397(1994).

⁴⁸Tommy T.B. Koh, 'A Constitution for the Oceans' Remarks made by the President of the Third United Nations Conference on the Law of the Sea, in *Official Text of the United Nations Convention on the Law of the Sea with Annexes and Index* (1983) UN Sales No E.83. (Martinus Nijhoff, 2005).

⁴⁹Available at-<http://www.uncsd2012.org/content/documents/727The%20Future%20We%20Want%2019%20June%201230pm.pdf>(last accessed May 13, 2016).

framework for national, regional and global action and cooperation in the marine sector.

The relevance of the land to the ocean is addressed in Part XII of the LOSC on the 'Protection and Preservation of the Marine Environment', which uses cascading levels of detail. At the broadest level, the opening article of Part XII, Article 192, declares that 'States have the obligation to protect and preserve the marine environment.'

At first blush this broad statement appears of little real value. However, two key words change this. The first word is 'obligation'. The LOSC goes to great lengths to spell out the inward looking rights and entitlements of coastal states. However, Part XII also speaks of outward looking obligations, implying that states must deliberately and actively address various threats to the marine environment. The second word is one easily overlooked by the casual reader. Article 192 speaks of 'the' marine environment, and not 'their' marine environment. This is significant because the LOSC effectively carves up the world's oceans and seas, graduating from the doctrine of *Mare Liberum*⁵⁰ to the codification of a system of boundaries, authority and ownership of resources by coastal states. Yet here in the opening article of Part XII, the LOSC advances beyond ownership to a concept of shared resources⁵¹ and stewardship. It reflects the interconnectedness of the oceans and obligates nation states to protect not only their immediate territorial waters or even their more expansive Exclusive Economic Zones (EEZs), but to protect 'the' marine environment, a shared asset, as a whole. It implies collaboration and a mutual obligation to protect - to defend or guard against temporary or persistent threats and to preserve to keep the environment in such a condition that future generations might also benefit from the ecosystem services it freely provides.

Sitting under the general obligation to 'protect and preserve the marine environment', Article 194 requires states to take measures to prevent, reduce

⁵⁰R. Rayfuse, 'Moving Beyond the Tragedy of the Global Commons: The Grotian Legacy and the Future of Sustainable Management of Biodiversity of the High Seas', 201 (United Nations University Press, 2010).

⁵¹M. Borgese, *The Oceanic Circle: Governing the Seas as a Global Resource* 85 (United Nations University Press, 1998).

and control pollution of the marine environment. States are obliged to take, individually or jointly as appropriate, all measures consistent with this Convention that are necessary to prevent, reduce and control pollution of the marine environment from any source, using for this purpose the best practicable means at their disposal and in accordance with their capabilities, and they shall endeavour to harmonize their policies in this connection.

They are further obliged to take all measures necessary to ensure that activities under their jurisdiction or control are so conducted as not to cause damage by pollution to other States and their environment, and that pollution arising from incidents or activities under their jurisdiction or control does not spread beyond the areas where they exercise sovereign rights in accordance with this Convention.

At the level specifically addressing pollution from land-based sources, Article 207 requires states to 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, and to take other measures as may be necessary to prevent, reduce and control such pollution. To that end states must endeavour to harmonize their policies in this connection at the appropriate regional level and endeavour to establish global and regional rules, standards and recommended practices and procedures to prevent, reduce and control pollution of the marine environment from land-based sources, taking into account characteristic regional features, the economic capacity of developing states and their need for economic development. These rules, standards and recommended practices and procedures must, in particular, include those 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, and are to be re-examined from time to time as necessary.

Furthermore, the requirement articulated in Article 207 to harmonize policies and establish global and regional rules, standards, practices and

procedures, reflects and reaffirms the obligation stated in Article 192 to protect and preserve 'the', and not 'their' marine environment, in other words, to protect and preserve the joined-up, shared asset.

4.6.1.2 THE REQUIREMENT OF COOPERATION

4.6.1.2.1 The MOX Plant Case

The relevance of 'the' versus 'their' marine environment and the need for cooperation was tested and affirmed in 2001 when the Republic of Ireland filed with the International Tribunal for the Law of the Sea (ITLOS) a request for the prescription of provisional measures in a dispute concerning the MOX⁵² plant in North-West England, international movements of radioactive materials, and the protection of the marine environment of the Irish Sea between Ireland and the United Kingdom.⁵³ Among other things, Ireland requested the Tribunal to declare that the United Kingdom had breached its obligations under Articles 192 and 193 and/or Article 194 and/or Article 207 and/or Articles 211 and 213 of the LOSC in relation to the authorization of the MOX plant, by failing, inter alia, to take the necessary measures to prevent, reduce and control pollution of the marine environment of the Irish Sea from either intended discharges or accidental releases of radioactive materials and or wastes from the MOX plant.⁵⁴

Ireland contended that the United Kingdom had failed to cooperate in the protection of the marine environment of the Irish Sea by refusing to share information and refusing to carry out a proper environmental assessment of the impacts on the marine environment of the MOX plant and associated activities. Ireland requested, inter alia, that the United Kingdom immediately suspend authorization of the operation of the MOX plant until such time as (1) a proper assessment of the environmental impact of the operation of the MOX plant had been carried out. (2) It was demonstrated that the operation of the MOX plant

⁵²Mixed oxide (MOX) fuel is a blend of plutonium and natural uranium or depleted uranium which behaves similarly to the enriched uranium feed for which most nuclear reactors were designed.

⁵³ Available at- https://www.itlos.org/lileadinin/itlos/documents/cases/case_no_10/reciieest_ireland_e.pdf(last accessed May 13,2016).

⁵⁴MOX Plant (Ireland v. United Kingdom), Provisional Measures, Order of 3 December 2001, 2001 ITLOS Reports 95, para. 26(1).

and related international movements of radioactive materials would result in the deliberate discharge of no radioactive materials, including wastes, directly or indirectly into the marine environment of the Irish Sea. And (3) a comprehensive strategy or plan to prevent, contain and respond to a terrorist attack on the MOX plant and international movements of radioactive waste associated with the plant had been agreed and adopted jointly with Ireland. The United Kingdom countered that Ireland had failed to supply proof that there would be serious harm to the marine environment resulting from the operation of the MOX plant and that, on the facts of this particular case, the precautionary principle had no application.

In ruling on Ireland's request for provisional measures, ITLOS found that the urgency of the situation did not require the prescription of the provisional measures as requested by Ireland, but noted that the duty to cooperate is a fundamental principle in the prevention of pollution of the marine environment under Part XII of the LOSC and general international law. It was the view of the Tribunal that prudence and caution required the two nations to cooperate.⁵⁵ The Tribunal unanimously prescribed that Ireland and the United Kingdom must consult and cooperate in: the exchange of further information with regard to possible consequences for the Irish Sea arising out of the commissioning of the MOX plant; the monitoring of risks or the effects of the operation of the MOX plant for the Irish Sea; and the devising, as appropriate, of measures to prevent pollution of the marine environment which might result from the operation of the MOX plant.⁵⁶

4.6.1.2.2 Regional Cooperation

The need for cooperation and harmonized approaches is most evident in geographically confined and shared waters, such as the Irish Sea discussed above, or the Mediterranean, Black and Caribbean Seas. However the mobility, persistence and ubiquitous nature of many pollutants make the need for cooperation equally applicable in more open waters, such as the South Pacific

⁵⁵*Ibid*, para. 84.

⁵⁶*Ibid*, operative para. 1(a)-(c).

or the western Indian Ocean. The obligation to cooperate is made explicit in Article 197 of the LOSC which requires states to cooperate on a global basis and, as appropriate, on a regional basis, directly or through competent international organizations, in formulating and elaborating international rules, standards and recommended practices and procedures for the protection and preservation of the marine environment, taking into account characteristic regional features.

The most visible and comprehensive mechanisms for implementing Article 197 are the 18 regional conventions and/or action plans,⁵⁷ known collectively as the Regional Seas Arrangements. The Regional Seas Arrangements had their genesis 40 years ago. prior to the adoption of the LOSC', in the Mediterranean Sea, and expanded rapidly to other regions such as the North Atlantic, the Baltic and the Caribbean. The respective Regional Seas Arrangements provide a multilateral platform for neighbouring coastal states to reconcile global conservation priorities with the realities of implementation at the regional level, and to fulfill their responsibilities stemming from other contemporary multilateral mechanisms, such as UNEP Governing Council Decisions, relevant targets of Agenda 21⁵⁸ the Johannesburg Plan of Implementation⁵⁹ the Millennium Development Goals,⁶⁰ and the post-MDG Sustainable Development Goals currently being negotiated.⁶¹

The first regional regimes addressing land-based sources of marine pollution were adopted in 1974 for the Baltic Sea and the North-East land-based sources of marine pollution under Regional Sea Conventions are now in place in the Mediterranean (1980 Athens Protocol)⁶² the South East Pacific

⁵⁷These include the Antarctic, Arctic, Baltic, Black Sea, Caspian, Eastern Africa, East Asian Seas, Mediterranean.

⁵⁸UN GAOR, 46th Sess., Agenda 21, UN Doc A/Conf.151/26 (1992).

⁵⁹Available at-http://www.un.org/esa/sustdev/documents/WSSD_POI_PD/EnglishAVSSD_PlanImpl.pdf

⁶⁰Available at: <http://www.un.org/millenniumgoals/pdf/report-2013/mdg-report-2013-english.pdf> (last accessed May 13, 2016).

⁶¹J.D. Sachs, *The Age of Sustainable Development* (Columbia University Press, 2015).

⁶²Available at: <http://www.ccolcx.org/srvcr2.php/libcat/docs/TRE/Full/En/TRE-000544.txt> (last accessed May 13,2016).

(1983 Quito Protocol), the Arabian Gulf (1990 Kuwait Protocol),⁶³ the Black Sea (1992 Bucharest Protocol"), the Red Sea and Gulf of Aden (2005 Jeddah Protocol)⁶⁴ and the Western Indian Ocean (2010 Nairobi Protocol).⁶⁵

4.6.1.3 Legal Network of Indirect Influence

Multilateral instruments relevant to land-based sources of marine pollution, but not specifically focused on the marine environment, include the 1989 Convention on the Control of Transboundary Movements of Hazardous Wastes and their Disposal (Basel Convention),⁶⁶ the 1998 Convention on the Prior Informed Consent Procedure for Certain Hazardous Chemicals and Pesticides in International Trade (Rotterdam Convention).⁶⁷ and the 2001 Convention on Persistent Organic Pollutants (Stockholm Convention). Also relevant to the network of legal instruments affecting land-based sources of marine pollution are multilateral instruments targeting atmospheric pollutants. Examples include the 1979 Convention on Long-range Transboundary Air Pollution (LRTAP)⁶⁸ in Europe, initially negotiated in response to concerns regarding acid rain, and the 1992 United Nations Framework Convention on Climate Change (UNFCCC). Negotiators to the UNFCCC were 'aware of the role and importance in terrestrial and marine ecosystems of sinks and reservoirs of greenhouse gases'⁶⁹. But perhaps did not fully appreciate at that time the significance of the convention to saving the world's oceans from land-based sources of pollution. Ocean acidification, a direct effect of increased CO₂ releases from mostly land-based activities, is emerging as one of the greatest threats to marine biodiversity and trophic integrity. The interplay of these legal instruments is central to the future of the world's oceans acidification, all other

⁶³Protocol to the Kuwait Regional Convention for the Protection of the Marine Environment Against Pollution from Land-Based Sources, adopted 21 February 1990, entered in force 2 January 1993, available at: http://ropme.org/uploads/protocols/land_based_protocol.pdf (last accessed May 13, 2016).

⁶⁴Available at: <http://vwww.persga.org/inner.php?id=62> (last accessed May 13,2016).

⁶⁵ Available at: <http://www.ecolex.org/server2.php/libcat/docs/TRE/Full/En/TRL-157174.pdf> (last accessed May 13,2016).

⁶⁶Adopted 22 March 1989, entered into force 5 May 1992.

⁶⁷Adopted 11 September 1998, entered into force 24 February 2004.

⁶⁸Adopted 13 November 1979, entered into force 16 March 1983.

⁶⁹ *Ibid*, Preamble.

activities to address marine pollution may be of little value. On the other hand, urgent action is needed to reduce marine pollution so that marine ecosystems and coastal communities " are more resilient to the threat of increased temperatures, sea level rise, increased storm events and ocean acidification.

The most recent MEA to be thrust upon domestic implementers, which will also contribute to efforts to reduce land-based sources of marine pollution, is the Minamata Convention on Mercury.⁷⁰ Opened for signature in October 2013 the objective of the Minamata Convention is to protect human health and the environment from anthropogenic emissions (to the air) and releases (to land and water) of mercury and mercury compounds. Similar to most MEAs, Article 9 of the Minamata Convention calls for parties to take measures" to control releases of mercury and suggests the preparation of a 'national plan' setting out the measures to be taken together with expected targets, goals and outcomes. Measures to be taken include, as appropriate, the setting of release limits, the use of best available techniques and best environmental practices to control releases from relevant sources, development of a multi-pollutant control strategy that delivers co-benefits for control of mercury releases and alternative measures to reduce releases from relevant sources.

The underlying rationale for language such as Article 19 of the Minamata Convention is self-evident. Responding effectively and efficiently to the transboundary nature of pollution requires multi-faceted and sustained domestic environmental reforms complemented by targeted bilateral, regional and global cooperation.⁷¹ However, notwithstanding the prudence of multilateral cooperation, it can be extremely complex and expensive. This requirement to cooperate, combined with other complex domestic implementation challenges, such as development and implementation of multi-pollutant control strategies (as suggested in the Minamata Convention), presents a rapidly growing challenge in international environmental law:

⁷⁰ Available at <http://www.mercuryconvention.org/Convention/tabid/3426/Default.aspx>(last accessed May 13,2016).

⁷¹ M.Waldichuk, 'International approach to the marine pollution problem' 1 *Ocean Management* 211(1973).

overlap and confusion. This is an unintended but perhaps inevitable consequence of the complex network of multilateral environmental agreements (MEAs) and other rules of international environmental law having either direct or indirect relevance to marine pollutants.⁷² The labyrinth of international law against a backdrop of linguistic and cultural diversity has significant potential, especially for countries with limited capacity for implementation, to generate confusion in terminology, definitional variations or generalities. Moreover, there is a seemingly endless spectrum of possible measures available, leading to endless debate over decision-making processes and decisions, and resulting ultimately, and unhelpfully, in variable interpretation by international tribunals.⁷³ To receive unacceptable levels of pollutants from land-based activities via subterranean, and atmospheric vectors. This rather begs the question as to the relevance and efficacy of the international legal regime in spawning or shaping domestic action relating to land-based sources of pollution.

4.6.1.4 The Global Programme of Action

The non-binding 1995 Washington Declaration and Global Programme of Action for the Protection of the Marine Environment from Land-based Activities (GPA) was and remains the primary global instrument recommending practices and procedures for addressing land-based sources of marine pollution in a holistic manner at national and regional scales. Governments recognized that the impact of land-based activities on the marine environment was a local, national and regional problem with global ramifications. In short, governments promised to initiate comprehensive and sustained action, in the form of national programmes of action, and to cooperate at the regional level to prevent the degradation of marine and coastal environments from land-based activities.

The GPA outlines a logical adaptive management framework that

⁷²W.B. Chambers, *Interlinkages and the effectiveness of multilateral environmental agreements* 407 (United Nations University Press, 2008).

⁷³D.Vander "The Precautionary Principle and marine environmental protection: Slippery shores, rough seas, and rising normative tides" 33(2) *Ocean Development and International Law* 165(2002).

encourages governments to assess their respective problems, identify priorities for action, develop strategies, monitor implementation and reassess the effectiveness of management actions based on empirical data from the marine environment. It does not, however, articulate specific strategies for action for each pollutant source category, nor does it provide guidance on appropriate policy combinations and permutations. The flexible nature of the GPA reflects the fact that the type and quantum of pollutants entering the marine environment from land-based activities is a function, not only of the extent of industrial development, urbanization and consumerism, but of the combined policies adopted by governments, industry and civil society. A tangled web of cause-and-effect links these stakeholders in a way that it is extremely difficult, if not impossible, to predict the effect that any one domestic policy, regulation or initiative enacted by any one of the stakeholders will have on the others.

The non-binding and non-prescriptive nature of the GPA seeks to translate the obligation articulated in Article 207 of the LOSC, as well as regional obligations as determined by the respective Regional Seas conventions discussed above, into national frameworks in an entirely flexible way that reflects the reality of domestic environmental regimes.

While none of the pollutant sources categories addressed by the GPA can be ignored, nutrient over-enrichment of marine waters is a problem that rightly demands increased attention due to its accelerating nature.¹⁰⁰ The increased availability of nutrients in the marine environment, such as nitrogen and phosphorus, from point sources (eg, sewage and some industrial practices), non-point or diffuse sources (eg, agricultural fertilizers), and the burning of fossil fuels can cause eutrophication, or increased biological production in sun-lit coastal and near shore waters. As the increased biomass eventually dies, the microbial decomposition process robs the water column of much needed oxygen, generating hypoxic or anoxic 'dead zones' where other forms of marine life struggle for survival.⁷⁴ It is worth noting, however, that monitoring of

⁷⁴ Robert J. Diaz and Rutger Rosenberg, 'Spreading dead zones and consequences for marine ecosystems' 321 *Science* no. 5891 926-9(2008)

nutrient levels where rivers meet the sea is done on a limited scale and there remains considerable uncertainty in estimating spatial and seasonal fluxes, as well as the proportions of natural and anthropogenic inputs from rivers.⁷⁵

4.6.1.5 Taking it Home - Enforcement and Compliance

As stated above, most MEAs call on parties to take measures at the national or local level. Whether manifest as binding hard law or non-binding soft law, 'in order for an MFA to have impacts on the ground, legislation, administrative measures, and capacity building for implementation and enforcement at the local and national levels are essential'."

With respect to pollution from land-based sources, Article 213 of the LOSC requires all States to 'enforce their laws and regulations' adopted in accordance with article 207, and to adopt laws and regulations and take other measures necessary to implement applicable international rules and standards to prevent, reduce and control pollution of the marine environment from land-based sources. Unfortunately, such an edict is far easier written than implemented. Domestic laws and regulations for managing pollution have a number of inherent weaknesses, especially when they are implemented in isolation of other more exhortatory measures. First, realizing compliance is frequently expensive for both regulators and the respective target industries." As a consequence, fragmented command-and-control systems may result in the transfer of pollutants from one medium to another, ie, pollution shift, not reduction. Industry is very ingenious and when, in the absence of economic benefit, is forced to reduce pollutant loads, industry will identify alternative locations," mediums or systems to discard waste, rather than reduce waste.

Another inherent weakness is that the cost to an enterprise of compliance is distorted by the size of the enterprise. In proportion to total costs, end-of-pipe solutions are more costly to small industry. The same applies to government. Monitoring and policing industrial discharges from small factories can be excessively difficult. The installation of automatic measuring devices or the employment of large numbers of inspectors is expensive. Even at major

⁷⁵*Ibid* 17.

facilities, where the idea of controlling major pollutants is conceptually simple, refining the system procedurally, adding new substances for control, and extending the controls over facilities not originally caught in the legislation, can result in voluminous and complex laws. The outcome is that even major facilities become difficult to manage from a regulatory perspective and their pollutants contribute to that produced from the small, widespread sources.

Finally, but in no way the least, a major weakness of prescriptive legislative systems for managing pollution is that constitutional frameworks often produce implementation deficits as federal, provincial and local government authorities negotiate and compromise pollution controls.

Irrespective of the legislative system/policy cocktail adopted to translate international obligations into domestic action, the call for precautionary action in the absence of scientific certainty,⁷⁶ as articulated in Principle 15 of the Rio Declaration on Environment and Development,⁷⁷ is fundamental in combating land-based pollution. Notwithstanding the uncertain status of the precautionary principle as 'a binding principle of customary international law',⁷⁸ the precautionary principle requires an urgent 'shift away from the traditional belief in the assimilative capacity of the oceans to absorb wastes and faith in end-of-pipe standards to achieve quality standards'.⁷⁹ Successfully implementing the precautionary principle at national and sub-national scales requires not only legal reforms that emphasize cleaner production, pollution prevention, but also an array of less extreme or coercive policies and management measures.

4.6.2 Vessel source pollution

Vessel-source pollution, like shipping more generally, is mostly regulated at the international (global) level. Two very different types of global instruments dominate this field. First, the jurisdictional instruments lay down the general framework for what rules and measures states may and may not

⁷⁶Yoshifumi Tanaka, 'Principles of international marine environmental law'(Cambridge University Press, 2012).

⁷⁷Report of the United Nations Conference on Environment and Development, Rio de Janeiro 3 14 June 1992, UN Doc A/CONF.151/6/Rev.1, 13 June 1992.

⁷⁸Australia v Japan; New Zealand v Japan (Provisional Measures, Order of 27 August 1999) ITLOS cases No's 3 and 4.

⁷⁹Policy for Pollution Prevention (Cambridge University Press, 2000).

adopt to address pollution from ships, differently for each maritime zone. The jurisdictional rules are today authoritatively laid down in the 1982 UN Convention on the Law of the sea (LOSC),⁸⁰ frequently referred to as the 'Constitution for the Oceans', which is today widely ratified worldwide and, as far as its provisions on vessel-source pollution are concerned, generally considered to represent customary international law.⁸¹

Second, technical rules lay down the detailed standards for the ships and their operators, on a variety of matters which affect vessel-source pollution, such as ships' equipment and construction requirements and conditions for discharging substances into the sea. The technical rules are predominantly developed by the International Maritime Organization (IMO), the main treaty on the subject matter being the 1973/78 International Convention on the Prevention of Pollution from Ships (MARPOL).⁸² Many of the key technical rules, including MARPOL, are widely ratified and moreover include other forms of innovative (though largely undisputed) mechanisms for ensuring that the required standards are the same for the entire global commercial fleet, irrespective of formal participation in treaties⁸³.

In view of this starting point, the regulatory situation for vessel-source pollution could perhaps be characterized as being unusually settled and clearer than ever before. To some extent this is so. There is normally little uncertainty about what standards apply for vessel-source pollution or, in case of doubt, where to look for the answers. The relative stability in maritime regulation in this field does not mean, however, that there are no more legal issues to explore. Knowing which rules apply does not do away with the need for interpreting those rules for specific purposes. This task is often challenging, in

⁸⁰United Nations Convention on the Law of the Sea (adopted and opened for signature 10 December 1982, entered into force 16 November 1994) 1833 UNTS 3 (LOSC).

⁸¹As of 29 September 2014, 165 states and the European Union had become parties to the LOSC. The United States is not among these, but has consistently considered that the LOSC provisions discussed here represent customary international law.

⁸²International Convention for the Prevention of Pollution from Ships (adopted 2 November 1973, entered into force 2 October 1983) and its Protocol of 1978 (adopted 17 February 1978, entered into force 1 October 1983) 1340 UNTS 62 (MARPOL).

⁸³The precise number of parties to MARPOL and the percentage of the world fleet that these states represent were as follows as at February 2014: Annexes 1 and 11, 152 states representing.

view of the close interrelatedness between the technical rules and the jurisdictional rules, the imprecise language which is often employed and the frequent cross-references between the two categories. Nor is, of course, a level playing field in prescription a guarantee for a true harmonization of the standards. Important discrepancies still exist regarding how the rules are implemented in practice, by flag states as well as by coastal and port states or regions.

Apart from that, the tension between the interests at stake has not gone away: the interests of flag states at times still clash with those of coastal and port states. The change of forum of the discussion from a diplomatic conference specifically designing a jurisdictional framework to the largely technical meetings of the IMO has possibly introduced more pragmatism into the debate, but has also at times 'politicized' the discussions at the IMO. Regulatory revolt, or at least a threat of unilateral action by individual states or regions, has become a common feature of the IMO discussions and is in reality a significant force for driving the activities of the organization. Finally, not only the forum, but the legal issues themselves have changed. Post-LOSC state practice has demonstrated that many issues of key importance for the jurisdictional balance as regards vessel-source pollution are not conclusively regulated in the LOSC. Gaps in this area need to be filled and in doing so it seems that general international law has been gaining increased relevance lately.

Section 2 provides a general overview of the jurisdictional provisions of relevance to vessel-source pollution, based on the LOSC, with some comment on subsequent developments where relevant. The next sections review the most important developments within international organizations, in particular the IMO. in the past decades. This review is done, separately for prescriptive standards for preventing pollution of oil, hazardous substances, garbage, air emissions etc. and the measures and tools available to implement and enforce those standards. On this basis, some concluding remarks are made in section.

4.6.2.1 The Jurisdictional Scheme

The rights and obligations of flag states, coastal states and port states are dealt with in considerable detail in several different parts of the LOSC, the provisions on vessel-source pollution being among the most detailed in the entire convention. The interests of flag states in favour of ships' free and unimpeded navigation and the interests of coastal states to regulate and take enforcement measures against foreign ships are balanced differently for each maritime zone, on the basis that coastal state jurisdiction over foreign ships increases with the proximity of the ship to the land territory of the coastal state. The clear obligations of states to protect and preserve the marine environment in general, which are listed in the beginning of the LOSC Part XII,⁸⁴ have to be read together with the more specific provisions for the individual sources of marine pollution which, in the case of vessel-source marine pollution, significantly qualifies the more general environmental obligations.

4.6.2.1.1 Flag State Jurisdiction

Flag state jurisdiction represents the traditional cornerstone of regulatory authority over ships. The LOSC establishes that all states have a right to sail ships flying their flag and to fix the conditions for granting nationality to ships.⁸⁵ However, the convention also includes a number of detailed and specific duties for flag states. Apart from every state's obligation to 'effectively exercise its jurisdiction and control in administrative, technical and social matters over ships flying its flag',⁸⁶ it imposes a number of minimum criteria on flag states' legislation, by reference to the 'generally accepted' international rules and standards.⁸⁷ The minimum obligations apply irrespective of whether the flag state has formally signed up to the rules and standards in question. As regards enforcement, the LOSC similarly imposes obligations on flag states to ensure compliance with the 'applicable international rules and standards' and, in case of non-compliance by ships, to take a variety of enforcement measures,

⁸⁴ Arts 192 and 194 of the LOSC, 1982.

⁸⁵ Arts 90 and 91(1) of the LOSC, 1982.

⁸⁶ Art. 94(1) of the LOSC, 1982.

⁸⁷ Arts 94(5) and 211(2) of the LOSC, 1982.

including investigations, institution of proceedings in case of alleged violations, penalties for violations, prohibition from sailing in certain cases and co-operation with other state.

The LOSC, in other words, avoids the need to formulate more precise prescriptive and enforcement obligations by referring to an abstract, and continuously changing, set of international rules to be developed elsewhere. This was a conscious choice by the drafters, the purpose of which was to avoid 'freezing' the requirements at a given technical level or moment in time, while still preserving the international character of the rules in question."

Despite the stringency of flag state duties as set out in the LOSC, the convention is surprisingly silent on the legal consequences of a failure to meet those duties. The only immediate remedy which is provided for any state 'that has clear grounds to believe that proper jurisdiction and control with respect to a ship have not been exercised' is a formal factual report, which the flag state has to investigate and act upon as appropriate.⁸⁸ A flag state also loses its privilege to take over proceedings from a port state in case of an illegal discharge, if the flag state 'has repeatedly disregarded its obligation to enforce effectively the applicable international rules and standards'.⁸⁹

4.6.2.1.2 Coastal and Port State Jurisdiction

4.6.2.1.2.1 High seas

Where flag states' jurisdiction over ships applies irrespective of the ship's location, jurisdiction by coastal and port states presumes a certain geographical proximity of the ship to the state in question. The rules are laid down separately for each maritime zone. The high seas are open to all states and all states have certain freedoms in the high seas, including freedom of navigation.⁹⁰ Ships are subject to the exclusive jurisdiction of the flag state in the high seas 'save in exceptional cases expressly provided for in international

⁸⁸Art. 94(6) of the LOSC,1982.

⁸⁹Art. 228(1) of the LOSC,1982.

⁹⁰Art. 87(1) of the LOSC,1982.

treaties or in this Convention'.⁹¹ Two such exceptions particularly deal with vessel-source pollution-

- First, Article 221 grants specific jurisdiction for coastal states in case of 'maritime casualties' or related acts which may reasonably be expected to result in major harmful consequences for it. Under Article 221 the coastal state may in such cases 'take and enforce measures beyond the territorial sea proportionate to the actual or threatened damage to protect their coastline or related interests, including fishing, from pollution or threat of pollution'. The rule, which represents a maritime application of the doctrine of necessity and is based on the 1969 Intervention Convention⁹², accordingly sets aside the general jurisdictional regime in cases of pollution of a given severity and provides a more extensive jurisdiction by coastal states to protect its interests, including in the EEZ and on the high seas.
- Second, an important novel provision of the LOSC was Article 218 permitting port states to take enforcement measures against foreign ships for violations of international discharge standards, even if the discharge took place in the high seas or in the maritime of other states. This provision departed from prevailing theories of jurisdiction as it did not condition the enforcement actions to any effect of the pollution to the enforcing port state.

4.6.2.1.2.2 Exclusive Economic Zone

The EEZ is a jurisdictional hybrid zone. It does not form part of the coastal state's territory, yet it grants certain 'sovereign rights' for coastal states. With respect to shipping, all states are granted freedom of navigation, while coastal states are granted certain jurisdiction to regulate and enforce shipping-related laws in the zone. The coastal state shall, in exercising its rights and performing its obligations, have 'due regard' to the rights and duties of other states. Those rights and duties include the freedom of navigation of all states in

⁹¹Art. 92(1) of the LOSC,1982.

⁹²International Convention Relating to Intervention on the High Seas in Cases of Oil Pollution Damage (adopted 29 November 1969, entered into force 6 May 1975) 970 UNTS 212.

the EEZ, subject to a corresponding duty to have due regard for the rights and duties of the coastal state. The general principle as regards coastal states' jurisdiction to prescribe environmental rules for international shipping in their EEZ is laid down in Article 211(5) of the LOSC, which limits prescriptive jurisdiction to the adoption of 'generally accepted international rules and standards established through the competent international organization'. The same standards which constitute the minimum requirements for flag states, discussed above, accordingly represent the maximum level for coastal state regulation in the EEZ.

Two main exceptions to this rule exist-

- First, Article 211(6) contains specific provisions for additional measures in special areas of the EEZ. The paragraph is a complex set of essentially procedural requirements for such measures, which place key significance on acceptance by the competent international organization, ie the IMO. It has been of very limited relevance in practice.
- Second, Article 234 offers the right to prescribe more stringent rules, independent of international rules, for coastal states bordering ice-covered areas. This provision has gained significant relevance again in the past few years with the growing interest in Arctic shipping. Differences of view exist with respect to how various elements of Article 234 should be interpreted, its relationship to other LOSC provisions and hence to what extent it may be relied upon by, in particular, Canada and Russia for regulating shipping in the Arctic.

4.6.2.1.2.3 Territorial sea

The main rule is that the territorial sea is subject to the territorial sovereignty of the coastal state, subject only to specific exceptions. The main exception is that foreign ships enjoy a right of innocent passage through the territorial sea of other states. The passage shall be 'continuous and expeditious' and must not be 'prejudicial to the peace, good order or security of the coastal state'. Article 19(2) of the LOSC adds a list of activities which render passage non-innocent, which includes 'any act of willful and serious pollution contrary

to this Convention". Mere non-compliance with the applicable (national or international) pollution rules does therefore not amount to loss of the right of innocent passage under the LOSC. However, in the decades that have passed since the convention was negotiated, a lower threshold for the loss of the right of innocent passage appears to have gained ground, in legal literature as well as in state practice.

The jurisdiction of coastal states to regulate ships that are in innocent passage is laid down in Article 21 of the LOSC. This includes the right to adopt laws and regulations regarding, inter alia, 'the preservation of the environment of the coastal State and the prevention, reduction and control of pollution thereof'. A very important limitation of this jurisdiction is introduced in paragraph 2, providing that the national laws and regulations 'shall not apply to the design, construction, manning and equipment of foreign ships unless they are giving effect to generally accepted rules or standards'."

4.6.2.2 Prescriptive Standards

The LOSC regime is neither complete nor static. The convention largely leaves it to international bodies, in particular the IMO, to set the detailed limits of states' prescriptive and enforcement jurisdiction against foreign ships. This section provides a brief review of post-LOSC developments in the IMO and some other international bodies.

Roughly half of the 50 conventions adopted within the IMO specifically relate to environmental protection. They cover a broad range of themes, including accident prevention, rules for ship construction and equipment, operational and management standards, pollution response activities and civil liability rules. The conventions are commonly complemented by more detailed recommendations, guidance documents and other non-binding tools aimed at harmonizing and facilitating implementation. Here, focus will be on the technical rules which seek to prevent vessel-source pollution (sections 3.2-3.4), but some attention is also given to IMO rules which relate to and possibly affect the jurisdictional regime laid down in the LOSC (section 3.5) and the activities in this field by some other organizations. It should be noted, however,

that many IMO instruments which are primarily devoted to maritime safety also have environmental benefits, as they serve to reduce incidents and accidents at sea.

4.6.3 Prevention of Oil Pollution of the Marine Environment

Various international instruments have been created to regulate vessel source pollution. Those conventions constitute an international legal framework for vessel-source pollution. The framework comprises a series of international conventions from public international law (including pure public international law and regulatory international law) to international private law, touching every aspect of the vessel-source pollution from prevention, mitigation to remedy. Here included some list of international conventions related to ship source marine oil pollution those are:

4.6.3.1 International Convention for the Prevention of Pollution from Ships (MARPOL)

The International Convention for the Prevention of Pollution from Ships (MARPOL) is the main international convention covering prevention of pollution of the marine environment by ships from operational or accidental causes. The MARPOL Convention was adopted on 2 November 1973 at IMO. The Protocol of 1978 was adopted in response to a spate of tanker accidents in 1976-1977. As the 1973 MARPOL Convention had not yet entered into force, the 1978 MARPOL Protocol absorbed the parent Convention. The combined instrument entered into force on 2 October 1983. In 1997, a Protocol was adopted to amend the Convention and a new Annex VI, was added which entered into force on 19 May 2005. MARPOL has been updated by amendments through the years. The Convention includes regulations aimed at preventing and minimizing pollution from ships both accidental pollution and that from routine operations and currently includes six technical Annexes. Special Areas with strict controls on operational discharges are included in most Annexes.

4.6.3.2 International Convention on Civil Liability for Oil Pollution Damage (CLC), 1969⁹³

The Civil Liability Convention, 1969, hereafter CLC, was adopted to ensure that adequate compensation is 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. The Convention requires ships covered by it to maintain insurance or other financial security in sums equivalent to the owner's total liability for one incident. The 1969 Convention applies to all seagoing vessels actually carrying oil in bulk as cargo (spills from tankers in ballast or bunker spills from ships other than other than tankers are not covered by the 1969 Convention). The 1992 Protocol extends cover to spills from sea-going vessels constructed or adapted to carry oil in bulk as cargo so that it applies apply to both laden and unlade tankers, including spills of bunker oil from such ships.

The 1969 Convention covers pollution damage resulting from spills of persistent oils suffered in the territory (including the territorial sea) of a State Party to the Convention. The 1992 Protocol widened the scope of the Convention to cover pollution damage caused in the exclusive economic zone (EEZ) or equivalent area of a State Party. The Protocol of 1984 set increased limits of liability but was superseded by the 1992 Protocol. In 2000 further amendments raised the compensation limits of the 1992 Protocol (adoption of these amendments: October 2000 Entry into force: 1 November 2003), are as follows:

- For a ship not exceeding 5,000 gross tonnages, liability is limited to 4.51 million SDR⁹⁴.

⁹³International Maritime Organization (IMO), <http://www.imo.org/Pages/home.aspx>. (Accessed on Sep 11, 2018).

⁹⁴The SDR is an international reserve asset, created by the IMF in 1969 to supplement its member countries' official reserves. Its value is based on a basket of four key international currencies, and SDRs can be exchanged for freely usable currencies.

- For a ship 5,000 to 140,000 gross tonnage: liability is limited to 4.51 million SDR plus 631 SDR for each additional gross tons over 5,000.
- For a ship over 140,000 gross tonnage: liability is limited to 89.77 million SDR.

The 1992 Protocol covers pollution damage and environmental damage compensation is limited to costs incurred for reasonable measures to reinstate the contaminated environment. It also allows expenses incurred for preventive measures to be recovered even when no spill of oil occurs, provided there was grave and imminent threat of pollution damage (successful preventative measure were no actual spill occurs are not covered by CLC). As of May 1998, Parties to the 1992 Protocol ceased to be Parties to the 1969 CLC due to a mechanism for compulsory denunciation of the "old" regime established in the 1992 Protocol. However, there are a number of States which are Party to the 1969 CLC and have not yet ratified the 1992 regime which is intended to eventually replace the 1969 CLC.

4.6.3.3 International Convention on Oil Pollution Preparedness, Response and Co-operation (OPRC)

In July 1989, a conference of leading industrial nations in Paris called upon IMO⁹⁵ to develop further measures to prevent pollution from ships. This call was endorsed by the IMO Assembly in November of the same year and work began on a draft convention aimed at providing a global framework for international cooperation in combating major incidents or threats of marine pollution. Parties to the International Convention on Oil Pollution Preparedness, Response and Co-operation (OPRC) are required to establish measures for dealing with pollution incidents, either nationally or in co-operation with other countries. Ships are required to carry a shipboard oil pollution emergency plan. Operators of offshore units under the jurisdiction of

⁹⁵International Maritime Organization - IMO' a specialized agency of the United Nations that is responsible for measures to improve the safety and security of international shipping and to prevent marine pollution from ships.

Parties are also required to have oil pollution emergency plans or similar arrangements which must be coordinated with national systems for responding promptly and effectively to oil pollution incidents. Ships are required to report incidents of pollution to coastal authorities and the convention details the actions that are then to be taken. The Convention calls for the establishment of stockpiles of oil spill combating equipment, the holding of oil spill combating exercises and the development of detailed plans for dealing with pollution incidents. Parties to the convention are required to provide assistance to others in the event of a pollution emergency and provision is made for the reimbursement of any assistance provided.

4.6.3.4 International Convention on the Establishment of an International Fund for Compensation for Oil Pollution Damage (FUND)

Although the 1969 Civil Liability Convention 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 Conference adopting the CLC Convention. The 1969 Brussels Conference considered a compromise proposal to establish an international fund, to be subscribed to by the cargo interests, which would be available for the dual purpose of, on the one hand, relieving the ship owner of the burden by the requirements of the new convention and, on the other hand, providing additional compensation to the victims of pollution damage in cases where compensation under the 1969 Civil Liability Convention was either inadequate or unobtainable. The Conference recommended that IMO should prepare such a scheme and the International Convention on the Establishment of an International Fund for Compensation for Oil Pollution Damage was adopted at a Conference held in Brussels in 1971. It is supplementary to the Civil Liability Convention.

The purposes of the Fund Convention are:

- To provide compensation for pollution damage to the extent that the protection afforded by the 1969 Civil Liability Convention is inadequate.

- To give relief to ship-owners in respect of the additional financial burden imposed on them by the 1969 Civil Liability Convention, such relief being subject to conditions designed to ensure compliance with safety at sea and other conventions.
- To give effect to the related purposes set out in the Convention.

Under the first of its purposes, the Fund is under an obligation 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 owner is not sufficient to cover the damage suffered. The Fund's obligation to pay compensation is confined to pollution damage suffered in the territories including the territorial sea of Contracting States. The Fund is also obliged to pay compensation in respect of measures taken by a Contracting State outside its territory.

The Fund is not obliged to indemnify the owner if damage is caused by his willful misconduct or if the accident was caused, even partially, because the ship did not comply with certain international conventions. The Convention contains provisions on the procedure for claims, rights and obligations, and jurisdiction. Contributions to the Fund should be made by all persons who receive oil by sea in Contracting States.

Protocols to the 1971 convention were adopted in 1976 and 1984, but were superseded by the 1992 Protocol. Under the 1992 Protocol (Adoption: 27 November 1992. Entry into force: 30 May 1996), the maximum amount of compensation payable from the Fund for a single incident, including the limit established under the 1992 CLC Protocol, was raised to 135 million SDR. However, if three States contributing to the Fund receive more than 600 million tons of oil per annum, the maximum amount is raised to 200 million SDR.

4.6.3.5 HNS (Hazardous Noxious Substances) Fund

It has generally been agreed that it would not be possible to provide sufficient cover by the ship-owner liability alone for the damage that could be caused in connection with the carriage of HNS cargo. This liability, which

creates a first tier of the Convention, is therefore supplemented by the second tier, the HNS Fund, financed by cargo interests. The Fund will become involved: because no liability for the damage arises for the ship-owner. This could occur, for example, if the ship-owner was not informed that a shipment contained HNS or if the accident resulted from an act of war because the owner is financially incapable of meeting the obligations under this Convention in full and any financial security that may be provided does not cover or is insufficient to satisfy the claims for compensation for damage, or because the damage exceeds the owner's liability limits established in the Convention. Contributions to the second tier will be levied on persons in the Contracting Parties who receive a certain minimum quantity of HNS cargo during a calendar year. The tier will consist of one general account and three separate accounts for oil, liquefied natural gas (LNG) and liquefied petroleum gas (LPG). The system with separate accounts has been seen as a way to avoid cross-subsidization between different HNS substances. The HNS Convention excludes pollution damage as defined in the CLC and Fund, to avoid an overlap with these Conventions. However, HNS covers other damage (including death or personal injury) as well as damage caused by fire and/or explosion when oils are carried.

4.6.3.6 International Convention on Civil Liability for Bunker Oil Pollution Damage, 2001⁹⁶

The Convention was adopted to ensure that adequate, prompt, and effective compensation is available to persons who suffer damage caused by spills of oil, when carried as fuel in ships' bunkers. The Convention applies to damage caused on the territory, including the territorial sea, and in exclusive economic zones of States Parties.

The bunkers convention provides a free-standing instrument covering pollution damage only. "Pollution damage" means:

- loss or damage caused outside the ship by contamination resulting from the escape or discharge of bunker oil from the ship, wherever such

⁹⁶Christopher Hill, *Maritime Law*, 441 (Hong Kong, 6th Ed. 2003).

escape or discharge may occur, provided that compensation for impairment of the environment other than loss of profit from such impairment shall be limited to costs of reasonable measures of reinstatement actually undertaken or to be undertaken; and

- The costs of preventive measures and further loss or damage caused by preventive measures. The convention is modeled on the CLC and a key requirement in the bunkers convention is the need for the registered owner of a vessel to maintain compulsory insurance cover.

The convention is modeled on the International Convention on Civil Liability for Oil Pollution Damage, 1969. As with that convention, a key requirement in the bunkers convention is the need for the registered owner of a vessel to maintain compulsory insurance cover. Another key provision is the requirement for direct action this would allow a claim for compensation for pollution damage to be brought directly against an insurer. The Convention requires ships over 1,000 gross tonnage to maintain insurance or other financial security, such as the guarantee of a bank or similar financial institution, to cover the liability of the registered owner for pollution damage in an amount equal to the limits of liability under the applicable national or international limitation regime, but in all cases, not exceeding an amount calculated in accordance with the Convention on Limitation of Liability for Maritime Claims, 1976, as amended. The Convention will come into force one year after the ratification or accession by 18 states, five of which must have ships of combined gross tonnage of at least 1 million.⁹⁷

4.6.3.6.1 The Civil Liability Regime as a Legal Norm for Marine Oil Pollution

The civil liability regime as it applies under the 1992 Civil Liability and Fund Conventions¹⁹⁷³ to ship-sourced oil pollution has been recognized as being at the forefront of establishing a legal norm for marine pollution compensation, advancing private law remedies to enable victims of oil spillage

⁹⁷*Id.*

to recover financial recompense on a strict liability basis from the liability insurers of ship owners.⁹⁸ The method of compensation under this regime strict liability (without the need to prove negligence) up to a maximum limit backed by compulsory insurance has been widely acknowledged as an effective and equitable means of incorporating the 'polluter pays' principle into the field of marine environmental liability.⁹⁹

Civil liability regimes such as the 1992 Civil Liability and Fund Conventions compulsorily oblige the responsible parties (i.e. the ship-owner in the context of the 1992 Civil Liability and Fund Conventions) to maintain insurance to cover its liability and enable victims to seek recourse directly against the insurer. As such, civil liability regimes enhance the utility of the management of risk since the larger risk of oil pollution damage compensation is removed from the insured by the payment of a relatively small premium and the transaction cost is reduced as it is already decided *ex ante* through the conditions of the insurer who should intervene and bear the costs when an incident occurs. However, the adoption of a strict liability rule for oil pollution damage is not without its critics. Adopting an economic analysis of the law, note that there is a direct linear relationship between the magnitude of the accident risk and the amount spent on care by the potential polluter and criticize the orthodox rationale favoring a limited strict liability rule for oil pollution damage that only a strict liability rule would lead to full internalization of the costs involved of these highly risky activities.

4.6.3.6.2 Compensation and Liability of States for Marine Oil Pollution

Liability of the responsible parties and the compensation principals and procedures related with the damages for the ships and coastal facilities under this law have been determined with the OSRL and its implementation regulation. Liable parties of ships and coastal facilities under the OSRL (Oil Spill Response Limited) are liable jointly and separately for:

- Compensation of expenditures for cleaning;

⁹⁸S. Philippe, *Principles of International Environmental Law* 117(Cambridge University Press, UK, 2003).

⁹⁹*Id.*

- Expenditures for preventive measures;
- Any damage to living resources and marine life;
- Reinstatement of degenerated environment;
- Expenditures for transport and disposal of any waste collected;
- Damages to natural or living resources that are exploited for subsistence purposes;
- Damage to private property;
- Losses stemming from personal injury or death;
- Loss of income, damage to capacity to earn income or revenues; and
- Other public losses caused by pollution or risk of pollution stemming from any incident involving vessels or coastal facilities in any area of enforcement.

Procedures for compensation of damages and notification of the guarantees of financial liabilities will be implemented by the UMA. Establishment and working procedures of the damage identification commission are prescribed by in the OSRL Implementation Regulation. Ships carrying oil and oil products requesting entry to areas of enforcement are obliged to possess documents of financial liability pursuant to international conventions signed by Turkey and coastal facilities are obliged to have financial insurance against the damages under the law.¹⁰⁰

4.6.3.7 Effects of Oil Pollution in the Marine Environment

The environmental impacts of spilled oil can be severe. The damage caused by a spill depends on location; volume and type of oil spilled, weather conditions, season, and many other factors. Large spills cause widespread immediate impacts, and potential long-term damage to parts of affected ecosystems. However, chronic discharges such as from street runoff and improper oil disposal are also damaging. Cumulative chronic discharges far exceed major spills in volume. Cleanup operations remove some, but not all, oil from the environment; the oil that remains naturally degrades over

¹⁰⁰Available at-<http://www.imo.org> (Accessed on sep 17,2018).

time.¹⁰¹ On top of that, there is the Deep water Horizon Oil Spill of 2010 which is so far considered the largest oil spill of all times.¹⁰² In the named oil spill incidents, the adverse effects of hydrocarbons has been demonstrated evidently; the damage to shoreline, marine ecosystem, fisheries and coastal amenities are remarkable.¹⁰³ Such damage corresponds to financial, commercial, and other related losses.¹⁰⁴ Preventive measures, clean-up operations and restoration, property damage have all proved to cost to a great extent both resources and time. Besides, the cost of damage done to the environment can neither be quantified nor fully recovered.¹⁰⁵ Despite the fact that oil pollution at sea was first recognized as a problem during World War I, the first international convention on prevent oil pollution at sea was adopted after World War II.

4.6.3.7.1 Effects of Oil Pollution on Coastal Habitats

Coastal areas are particularly susceptible to oil pollution. When a large spill drifts ashore, some of the oil may become trapped and remain for years. This is in contrast to the open sea where currents and diffusion rapidly reduce the concentration of oil. While shoreline impacts are very situation-specific, immediate effects of heavy oiling may be evident by the death of plants and animals due to smothering and toxicity. In some situations, oil may persist for many years, causing less apparent but harmful chronic effects.¹⁰⁶ In rocky shore areas, stranded oil may coat the rocks and gradually harden by weathering into a tough tarry "skin." This oil is gradually removed by wave erosion, but pools of oil that collect form a skin of weathered oil and may remain for a long time. On cobble and sandy beaches, oil can sink more deeply into the sediments and can remain longer than on bare rocks. Tidal pumping and sediment grain size effect the rate of penetration. In muddy sediments, penetration is minimal. Tidal flats are broad low-tide zones, usually containing rich plant, animal and

¹⁰¹N. R. Council, *Spills of No floating Oils: Risk and Response*, (National Academy Press, Washington D.C, 1999).

¹⁰²*Id.*

¹⁰³E. Gold, and H. Kindred, *Maritime Law*,16 (Irwin Law Irwin Law, Canada, 2004).

¹⁰⁴*Id.*

¹⁰⁵*Id.*

¹⁰⁶D. Brubaker, *Environmental Protection of Arctic Waters Specific Focus the Northern Sea Route*, (Stockholm, 2002).

bird communities. Oil may seep into the muddy bottoms and have long term impacts. Salt Marshes have a wide variety of plant and animal species. Oiling of such systems may reduce the population and growth rate of the marsh plants and dependent species.¹⁰⁷

4.63.7.2 Effect of Oil Pollution on Organisms

Existence of contamination by these chemicals in the environmental media leads to potential impact on almost all species including human. All the organisms, obtain their first dosage of these chemicals from their food and water, while the mammalian species derive these toxins from their mothers through milk. While the plants and lower trophic level organisms also accumulate these chemical in their bodies, the effect of these chemicals on these organisms is not openly seen.¹⁰⁸ Organ chlorines have been found to cause microsomal enzyme induction, accelerating body steroids such as estrogens and also to have an effect on the normal reproductive activities of many experimental animals. It is generally known that 5% eggshell thinning occurs at a concentration 5 mg/g of DDE¹⁰⁹ in the bird egg.

4.6.3.7.3 Effect of Oil Pollution on Ecological Disruption

Perhaps the most important effect of pollutants in the marine environment is ecological disruption, i.e. the imbalance created between organisms and their environment, and between communities of organisms of different species. Large changes in populations of commercially important fishes. Inland bodies of water, such as Lake Erie, where fine fishes have been replaced by coarse fishes, are only too well known. It occurs by complex processes in the ecosystem which are poorly understood. Ecological effects of pollution are of the most vital concern.¹¹⁰ This is often an insidious, long-term effect which can lead to the net result of pollution in from the point of view of

¹⁰⁷Spills of No floating Oils: Risk and Response, National Research Council, (National Academy Press, Washington D.C, 1999).

¹⁰⁸Al, R. C., *The Law of the Sea*, (Manchester, UK: Manchester University Press, 2ndedn, 1988).

¹⁰⁹Dichloro Diphenylidichloro Ethylene (DDE), which is formed by the loss of one hydrogen chloride molecule from DDT. It is a common breakdown product of DDT and also builds up in fat deposits in animals.

¹¹⁰Oil pollution on birds in the San Francisco Bay region. California Fish and Game 24: 239-244(1995).

protection of living resources in the marine environment, the Substances with unfavorable ecological effects, but without proven human health hazard, meet with considerable resistance when attempts are made to curtail or ban their use.¹¹¹

4.7 Climate Change and the International Law of the Sea

The international law of the sea has been a dynamic field of international law throughout several centuries, and its flexibility to adapt to changes will once again be tested. Environmental impacts on the oceans resulting from a changing climate, and the measures necessary to address these changes, are the new challenges that must be confronted.

The impacts of a changing climate on the marine environment are multifaceted and they carry serious political, economic, and security implications. On a number of issues, the challenges that climate change presents for law-of-the-sea governance are of a magnitude unforeseen in public international law. For example, sea-level rise resulting from climate change can cause the submersion of the land territory of an entire state, thereby raising complex issues of sovereignty, self-determination, migration, and access to natural resources.¹¹²

Climate change thus poses decisive challenges to the existing international legal structures governing the oceans, as established in the UN Convention on the Law of the Sea (UNCLOS) and other international law sources.¹¹³ Some issues may be approached within existing legal frameworks, while other issues may require new law. Whether the law of the sea will be able to respond to the climate change challenge will be a topical point of debate during the twenty-first century.

4.7.1 Sea-Level Rise

In May 2013, the concentration of carbon dioxide (CO₂) in the atmosphere exceeded the 400 parts per million mark, the highest level since 3

¹¹¹A. B. Patricia Birnie, *International Law and the Environment*.(OUP 2009).

¹¹²Available at <http://law.bepress.com/unswwps-flrps10/art5z>; (last accessed May 16,2018).

¹¹³ The law on self-determination may be relevant in examining issues of sea-level rise and sovereignty, migration, and access to natural resources.

million years ago.⁶ Then, sea levels may have been as much as twenty meters above today's levels. Global warming and climate change cause sea-level rise in two principal ways, namely thermal expansion, which refers to increase in volume as water warms, and the melting of glaciers on land.

The Intergovernmental Panel on Climate Change (IPCC) concluded in its Fifth Assessment Report that “ global mean sea-level will continue to rise during the 21st century, Under all scenarios, the rate of sea-level rise will very likely exceed that observed during 1971 to 2010 due to increased ocean warming and increased loss of mass from glaciers and ice sheets.”The IPCC also estimated a maximum of 0.98m rise by 2100. Given the rates of melting in ice sheets in Greenland and Antarctica, many scientists conclude that sea-level will rise about one meter by 2100. An expert panel of NOAA adopted a two-meter rise as its highest of four scenarios by 2100. And if the Glacier in West Antarctica flows to the sea, the rise would be more than three meters. Although uncertainty remains regarding the rate and extent of the rise, there is ample consensus that sea levels are rising as a result of climate change.

4.7.2 Loss of Statehood

Rising sea levels may mean that low-lying islands will become either submerged under the waters or uninhabitable for lack of access to fresh water. The Maldives in the Indian Ocean, for example, is composed of numerous islands that lie between one and 1.5 meters above sea level.¹¹⁴ The inhabitants of these islands depend on fresh water resources found within the atoll, which may become infiltrated by salt water due to sea-level rise.

International law will face several unique challenges in addressing the issue of submerging States. First is the principle that sovereignty over the land territory gives rights over the appertaining seas and natural resources found therein, that is, the land dominates the sea. This principle has found expression in the law of delimitation, the creation of maritime zones, and the drawing of straight baselines, among other concepts and norms in the law of the sea.

Climate change potentially disrupts this principle, however, posing the

¹¹⁴Hunt Janin & Scott A. Mandia, *Rising sea level: An introduction to cause and impact* 96 (2012).

question whether a new law of the sea could be developed on the basis of entitlements to the sea based on marine occupation, rather than land occupation. Technology may enable human communities closely tied to the marine environment to continue to use the seas, including with respect to natural resources. In such a case, there may be claims to territorial seas and other maritime zones not on the basis of appurtenance to the land, but on the basis of historical occupation and equity.

4.7.3 Shifting Baselines

Baselines perform a basic function In the law of the sea: they establish the points on the coasts from which the outer limits of the coastal State's maritime zones are to be measured.¹¹⁵ Rising sea levels will impact the low-water lines along the coast that are used to define the normal baselines.¹¹⁶ Similarly, a changing coastal landscape will also impact straight baselines, given the criterion established in UNCLOS, which closely follows the International Court of Justices (ICJ) judgment in the *Anglo Norwegian Fisheries case*¹¹⁷. The Court in that case held that straight baselines should not depart to any appreciable extent from the general direction of the coast.

Accordingly, shifting baselines resulting from sea-level rise will introduce changes in the maritime zones of the coastal State, namely, (1) the territorial sea, (2) the contiguous zone, (3) the continental shelf, and (4) the exclusive economic zone (EEZ). For example, access to, and conservation of, valuable living and nonliving natural resources found in the continental shelf or EEZ may provide a fertile ground for conflict among States. Similarly, standards pertaining to navigation, such as innocent passage in the territorial sea or freedom of navigation in the EEZ, may introduce sources of tensions.

Baselines also play a key role in delimitation between opposing or neighboring States. Thus, shifting baselines will destabilize existing boundaries between States, for example where they have been calculated on

¹¹⁵R.R. CHURCHILL & AV.LOWE. THE LAW OF THE SEA 25 (1983).

¹¹⁶Available at http://siteresources.worldbank.org/INTLAWJUSTICE/Resources/L&D_number5.pdf. (last visited July 16,2018).

¹¹⁷*Fisheries (U.K. v. Nor.)*, 1951 I.C.J. 11 (Dec. 18).

the basis of equidistance. More generally, shifting baselines will unsettle the stability, certainty, and predictability sought by maritime boundaries. In this regard, climate change and shifting baselines alter the notion that geography provides a stable basis for the determination of boundaries in the law of the sea.

The shifting baselines problem is not simply one of topographic measurements in large-scale charts: it is also a political issue involving entitlement to territory and natural resources. Climate change therefore calls on the international community to revisit the basis upon which the maritime zones are calculated, in order to secure the rights of States that would otherwise suffer the loss of territory or access to natural resources.

4.7.4 Environmental Protection in UNCLOS

The Third UN Conference on the Law of the Sea was launched the year after the UN Conference on the Human Environment was held in Stockholm in 1972. Environmental consciousness was capturing the imagination of the public and policymakers at a time when the deleterious impacts of transboundary air pollution such as acid rain were beginning to be felt. Thus, it is not surprising that UNCLOS addresses environmental protection in a comprehensive fashion. Although still lacking in a number of operative elements typical of a domestic environmental regime, part XII of UNCLOS reflects broad principles that enable international cooperation and progressive development of the law of the sea in addressing what was then a novel issue, environmental protection. Climate change will test whether part XII of UNCLOS is capable of withstanding, and responding to, the challenges posed by climate change.

4.7.5 Reduction of Emissions Of Greenhouse Gases

Part XII of UNCLOS reversed the ancient regime wherein the seas could be used as a waste site, and affirmed in its stead the notion that the marine environment must be protected and preserved¹¹⁸. This change in paradigm is evident in the first provision of part XII entitled general obligation:

¹¹⁸*Id.*

“States have the obligation to protect and preserve the marine environment.”¹¹⁹ The question thus arises whether such a general provision would suffice to require States to reduce emissions of greenhouse gases (GHGs) into the atmosphere, given the increasing scientific knowledge regarding the causal connections between land-based atmospheric contamination and the harm inflicted on the marine environment. The specific context of the inquiry thus largely refers to non-accidental damage to the marine environment resulting from the emissions to the atmosphere of GHGs within a State’s territory. In addition to this focus on land-based sources of GHGs, situations involving dumping and geo engineering call for inquiry,¹²⁰ as do emissions of GHGs from vessels.

The general obligation to protect and preserve the marine environment is followed by other general provisions of part XII, including measures to prevent, reduce, and control pollution of the marine environment.¹²¹ UNCLOS employs the following formulation: “States shall take all measures necessary to ensure that activities under their jurisdiction or control are so conducted as not to cause damage by pollution to other States and their environment”¹²² This construct benefits from an explicit definition of “pollution of the marine environment” in UNCLOS article 1 as “the introduction by man, directly or indirectly, of substances or energy into the marine environment, including estuaries, which results or is likely to result in such deleterious effects as harm to living resources and marine life, hazards to human health, hindrance to marine activities, including fishing and other legitimate uses of the sea, impairment of quality for use of sea water and reduction of amenities.”

Whether climate change emissions satisfy the UNCLOS definition of pollution raises several issues. A first approach could distinguish between direct and indirect introduction of substances into the marine environment. For

¹¹⁹ Art. 192 of the UNCLOS, 1982.

¹²⁰ *Infra* Subsection B.

¹²¹ Arts. 192 of the UNCLOS, 1982.

¹²² Art. 194 of the UNCLOS, 1982.

example, the precipitation of certain chemicals from the atmosphere into the seas resulting in ocean acidification could be regarded as a form of direct introduction of pollution, while the melting of inland glaciers resulting in accelerated sea-level rise could be addressed as a form of indirect introduction of pollution. Second, the UNCLOS definition also presents the questions of what “substances,” such as CO₂ and other GHGs, have been introduced to the marine environment, in what quantity, and in what way. Yet another issue relating to the definition of pollution in the climate change context relates to the deleterious effects on the marine environment, including harm to coral reefs and migratory species, resulting from climate change.

The application of a due diligence standard to the climate change problem raises several issues. First of all, in regards to State conduct, a key question is the extent to which the State has adopted effective measures of prevention based on the best scientific evidence available, including a legal framework governing GHG emissions. The existence of an international regulatory scheme setting clear limits on the emission of GHGs to the atmosphere would further aid in evaluating the adequacy of the internal legal framework of the State. Second of all, in regards to material capacity, one of the crucial questions pertains to the level of development and resources available to the State. The relevance of the level of development and material capacity is reinforced in the principle of common but differentiated responsibilities and respective capabilities established in the UN Framework Convention on Climate Change (UNFCCC).¹²³ The greater the availability of resources and concomitant capacity to effect climate change mitigation, the higher the diligence due. This notion of due diligence also finds strong support in considerations of equity on the basis of historical contributions to the concentration of GHGs in the atmosphere.

In addition to the difficulties of proving breach of due diligence in relation to conduct and capacity, the standard also requires evidence of

¹²³Principle 15 provides that the precautionary approach shall be applied by States 'according to their capabilities'. It follows that the requirements for complying with the obligation to apply the precautionary approach may be stricter for the developed than for the developing sponsoring States.

environmental injury and causal connection between the harm and State conduct- In regards to evidence of harm to the marine environment, negligible impact is not the type of environmental damage that would qualify as a viable international claim. At the same time, international customary law does not establish with precision the requisite threshold of harm. Therefore, evidence that shows appreciable or serious injury is central to a viable claim. Given the negative impacts of climate change on the marine environment highlighted elsewhere in this volume, the application of the due diligence standard is less likely to present difficulties in the gathering of relevant evidence of harm; rather, it is likely to hinge on whether the harm is sufficiently serious as to present a cognizable claim.

Regarding the causal link required between the emissions arising in one country and environmental harm, the climate change context involves a situation where a number of States are contributing GHG emissions that result in harm to the marine environment. Would application of the Monetary Gold standard, subjecting the valid exercise of jurisdiction to the consent of each and every country whose conduct is relevant to the subject matter of the decision,¹²⁴ defeat a climate change claim? In other words, would jurisdiction pose an insurmountable bar to the viability of an international climate change claim; given that an international tribunals exercise of jurisdiction would arguably determine the legality of conduct not only of the respondent, but would also affect the legal interests of States not parties to the dispute? Alternatively, would Barcelona Traction's emphasis on *erga omnes*⁴⁸ obligations due to the international community as a whole¹²⁵ underscore the common interests at stake in climate change litigation?

The specific context of land-based pollution from and through the atmosphere that results in harm to the marine environment contemplates a general formulation: "States shall adopt laws and regulations to prevent, reduce

¹²⁴Monetary Gold Removed from Rome in 1943 (It. v. Fr., U.K., & U.S.).

¹²⁵Barcelona Traction, Light and Power Co., Ltd. (Belg. v. Spain), 1970 I.C.J. 3 (Feb. 5).

and control pollution of the marine environment from land-based sources.”¹²⁶ The text makes it plain that the obligation is to adopt laws and regulations; thereby it signals a due diligence standard. A subsequent paragraph in that same provision states: “Laws, regulations, measures, rules, standards and recommended practices and procedures shall include those 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.”¹²⁷ The use of the words “to the fullest extent possible” employed in this provision again highlights and qualifies the due diligence standard applicable in this area.

Although part XII is largely designed to offer a framework for cooperation for the elaboration of more detailed regimes for the protection of the marine environment, the obligations established in part XII would be deprived of much of their legal value if they were interpreted as mere programmatic aspirations. Still, the application of general obligations to the climate change mitigation context must overcome formidable obstacles, as examined above, evincing the weaknesses of the legal tools available in UNCLOS to address climate change. The law in this area thus needs to be strengthened, so that the commitment of the international community to the protection of the marine environment, expressed in UNCLOS and in the Rio+20 UN Conference on Sustainable Development, can transition from words to reality.

4.7.6 Iron Dumping in the High Seas

Ocean iron fertilization (OIF) refers to a controversial form of geo-engineering to reduce atmospheric carbon dioxide.¹²⁸ OIF would involve the spreading of iron dust into the ocean in order to promote the growth of

¹²⁶Art. 207(1) of the UNCLOS,1982.

¹²⁷Art. 207(5) of the UNCLOS,1982.

¹²⁸Raphael Sagarin et al., *Iron Fertilization in the Ocean for Climate Mitigation: Legal, Economic, and Environmental Challenges* z (Nicholas Inst, for Envrl. Poly Solutions, Duke University, Working Paper No. 07-07, 2007).

phytoplankton that would draw CO₂ out of the atmosphere.¹²⁹ OIF has raised several concerns, including (1) whether it would actually work effectively, (2) whether manipulating large ecosystems could result in serious environmental harm, and (3) whether it would even be possible to measure and verify any carbon reductions.¹³⁰

The United States notified the Scientific Groups of the London Convention and Protocol¹³¹ of Planktos' activities and invited them to take appropriate action. Subsequently, the Meeting of the Contracting Parties to the London Convention considered the issue, agreed that the OIF is covered by the London Convention and Protocol, in particular, in relation to their objective to protect the marine environment from all sources, and concluded that large-scale OIF projects were not currently justified.¹³²

The definition of dumping calls for a fresh reading of the aims of the London Dumping Convention. The challenge of climate change would raise issues such as (1) the relevance of the precautionary principle, (2) the holistic approach to pollution control and prevention from all sources, (3) the obligation to avoid transferring damage from one part of the environment to another, and (4) the duties regarding environmental impact assessment.

4.7.7 Carbon Capture and Storage

These issues relevant to the analysis of OIF involve broader systemic implications pertaining to carbon capture and storage. This mitigation technique would sequester carbon in the deep sea or in geological formations beneath the seabed. Carbon sequestration has raised significant controversy¹³³, mainly for two reasons: the potentially serious harmful effects of increased concentrations of CO₂ in the marine environment, and the eventual return of the

¹²⁹ *Id.*

¹³⁰ *Id.*

¹³¹ Convention on the Prevention of Marine Pollution by Dumping of Wastes and Other Matter, Dec. 29, 1972, 26 U.S.T. 2403 [hereinafter London Convention].

¹³² *Large-Scale Ocean Fertilization Not Currently Justified*, IMO News, Nov 19, 2008, at 13, available at http://www.imo.org/MediaCentre/NewsMagazine/Documents/2008/IMO_NEWS_1_2008_WEBweb.pdf.

¹³³ Nadine R. Hoffman, *The Emergence of Carbon Sequestration: An Introduction and Annotated Bibliography of Legal Aspects for CCS*, 29 *Pace Env'tl. L. Rev.* 218, 220 (2011).

CO₂ to the atmosphere through natural processes.

In 2007, the London Protocol asserted control over deep sea and sub-seabed carbon sequestration.¹³⁴ An amendment was added to Annex 1 stating that “carbon dioxide streams may be considered as dumping if disposal is into a sub-seabed geological formation ”¹³⁵ The amendment considers sub-seabed geological formations and excludes the deep sea bed. Therefore, the absence of deep sea carbon capture and storage from Annex 1 means that that specific practice is banned. The examples of OIF and carbon capture and storage show the extent to which inter-national environmental instruments may interact to respond to climate change issues. As discussed in the next section, similar issues are evident in connection with marine biodiversity.

4.7.8 Marine Biodiversity

The massive loss of biodiversity in the age of Anthropocene has been compounded by the challenges of climate change. Ocean acidification threatens the productivity and even the survival of coral reef ecosystems. Changing currents, water temperatures, and ice formations pose obstacles to the migration patterns of several species, including pelagic fish, marine mammals, and seabirds¹³⁶, Effective responses in international law have yet to be developed, however.

In the face of biodiversity loss, several questions need to be answered, including the following. How do instruments governing the protection of migratory species account for the impacts of climate change? More specifically, would the protection of habitat require measures to address climate change impacts?

Instruments and institutions governing fisheries face similar challenges. How do regional fisheries management organizations (RFMOs) account for

¹³⁴Ann Brewster Weeks, *Sub seabed Carbon Dioxide Sequestration as a Climate Mitigation Option for the Eastern United States: A Preliminary Assessment of Technology and Law*, 12 *Ocean & Coastal L. J.* 245, 261(2007).

¹³⁵Press Release, IMO, New International Rules to Allow Storage of CO₂ under the Seabed (Feb. 9, 2007).

¹³⁶Lawrence et al., *The Endangered Species Act and Climate Change- Current Issues*, SR021 AH-ABA 227,232 (2009).

climate change impacts in their modeling and conservation measures? This question raises related issues of uncertainty and the need for precaution in the management of species. A related question pertains to the ability of an RFMO to designate an area of the high seas under its jurisdiction as a protected area¹³⁷. Protected areas under the law of the sea raise issues of jurisdiction and maritime entitlement. In particular, the creation of protected areas in areas beyond national jurisdiction has been a hotly debated issue. The Convention for the Conservation of Antarctic Marine Living Resources (CCAMLR) has made progress in this regard through the protection of the South Orkney Islands Southern Shelf, but has not yet managed to set up a system of protected areas.

The 2012, UN Conference on Sustainable Development (Rio+20) reaffirmed the value of marine ecosystems and biodiversity for present and future generations and committed “to address, on an urgent basis, the issue of the conservation and sustainable use of marine biological diversity of areas beyond national jurisdiction, including by taking a decision on the development of an international instrument under the Convention on the Law of the Sea” A new instrument in this area would provide an opportunity for the international community to establish new and necessary tools to address the challenges that climate change poses to marine biodiversity.

4.7.9 Melting of Polar Ice and Arctic Navigation

One of the notorious impacts of climate change is the melting of the polar ice cap during the Northern summer.¹³⁸ The retreating ice poses an immediate threat to imperiled species, such as polar bears. The melting ice also makes commercial navigation possible in areas formerly covered by ice. This is the situation affecting the Northwest Passage, a sea route along Canadas Northern islands that links the Atlantic and Pacific Oceans. The melting ice also presents the question whether special protection for Arctic waters is necessary in the new environment posed by climate change.

¹³⁷Erick J. Molenaar & Alex G. Oude Elferink, *Marine Protected Areas in Areas beyond National Jurisdiction: The Pioneering Efforts under the OSPAR Convention*, 5 *UTRECHT L. REV.* 5, 7 (June 2009).

¹³⁸John Kostyack & Dan Rohlf, *Conserving Endangered Species in an Era of Global Warming*, 38 *Envtl. L. Rep.* 10203,10204 (2008).

The UN Convention on the Law of the Sea establishes a general obligation to protect the marine environment, as well as more specific obligations pertaining to pollution, and these obligations may carry potential implications for the emission of greenhouse gases to the atmosphere. The dumping of iron in the seas as a means of sequestering carbon similarly raises legal issues with respect to the application of specialized regimes dealing with dumping and the protection of the marine environment. The opening of navigation channels as a result of the melting of Arctic ice caps such as the Northwest Passage also poses legal questions.

4.8 Conclusion

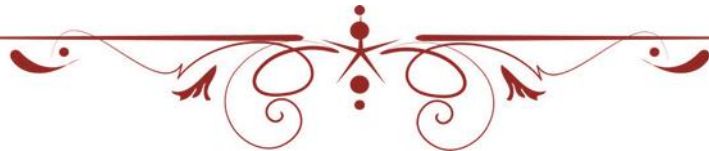
In sum, without question, a healthy, productive and resilient coastal and marine environment is needed for food security, for sustaining economic development and for ensuring the well-being of present and future generations. While the international marine environmental law protection regime has covered considerable distances in its quest to improve protection to the marine environment, much more needs to be done, in terms of responding to existing and emerging challenges. In many ways, the state of the marine environment is symbolic of the ineffective nature of international marine environment law. For the present, we have a combination of traditional hard law binding instruments that are couched at a high level of generality supported by a series of soft law non-binding instruments. Moreover, several of the existing instruments are out of sync in dealing with emerging issues and new uses of the ocean. This underscores the need to create a solid legal foundation responsive to the needs and challenges implicit in the mandate for marine environmental protection. As well, the time has arrived to focus on governance, which requires effective compliance, monitoring and enforcement. It is therefore imperative that existing formal treaties be elaborated; new international instruments developed (including the creation of new hard law instruments), and attendant administrative apparatuses strengthened. This may require assumption of more binding obligations by states, the launching of action plans and implementation in line with specific timeframes. The focus should be on realizing the

functional intent of the international instruments (hard and soft) and the principles that they embody and move towards their effective implementation at the regional and national levels. Then there is also the need for increased cooperation and coordination among the various regional seas programmes for improved integrated management and ecosystem approaches. This would enable sharing of technical, legal, scientific and management expertise between the different countries. Several states, particularly, the developing states, presently lack the political commitment to enter into new binding agreements, or even implement existing international obligations due to sovereignty, economic and poverty eradication concerns. In fact, an understanding of the problem relating to the protection of the marine environment, as opposed to the domestic dimension requires adherence to the notion of fairness, which requires that developed nations play a lead role in combating the problem and in supporting capacity building, creation of epistemic communities technology transfer and in providing aid to developing nations. This may prompt developing nations to initiate concrete measures to implement their international obligations. While the need for more normative guidance and strengthening of the legal spine is needed, basic to increasing the efficacy of the international regime is for states to focus on capacity building initiatives, information and knowledge development and dissemination, forum building, providing financial incentives, creating opportunities for greater public awareness, integrated river basin management, establishing legally binding effluent limitations and ensuring reduction and control of pollutants from point and nonpoint sources, development of new management tools such as marine spatial planning and linking it with integrated coastal zone management. Protecting the marine environment should be elevated to the status of a polemic norm a matter of high priority for all nations; lest, marine pollution and marine environmental degradation remain quintessential problems that affect not only the present, but also, future generations.



CHAPTER-V

*LEGAL FRAMEWORK FOR
THE PROTECTION OF
MARINE FISHERIES*



CHAPTER V**LEGAL FRAMEWORK FOR THE CONSERVATION OF MARINE
FISHERIES****5.1 Introduction**

The oceans which cover 70 per cent of the Earth's surface represent its most extensive but least understood ecosystem¹. It has become increasingly apparent that conservation of marine living resources presents much more complex problems of regulation and management than hitherto envisaged during the centuries over which they have been exploited by humans. The need to conserve commercial fisheries and the great whales has long attracted attention but conservation of other marine species that are not commercially attractive or particularly charismatic has garnered little support.

Most of the protein in the world's food supply is derived from either grain or animal sources, each of which provides roughly half the supply. Fish resources generally account for about 16% of the protein attributed to the animal group. Although not a dominant source of the world's protein, fisheries resources are nevertheless important in several ways. Firstly, fish and crustaceans are important and high quality sources of amino acids, which are nutritionally important types of protein found only in small amounts in cereals and grains. This turns out to be important for global nutrition and particularly important to some food deficient, low-income countries. Secondly, fisheries are locally important sources of food, trade and income in many developed and developing coastal nations. Trade in fisheries products is an important source of foreign exchange for some countries and has been of growing importance as global markets for both food fish and fishmeal have grown. Finally, fisheries provide employment and income earning opportunities for considerable numbers of people, particularly in the less developed and employment-scarce coastal countries.

¹De Klemm, in Hey (ed), *Developments in International Fisheries Law* 423 (The Hague, 1999).

In the 21st century, population and income growth and the unequal distribution of both will place increasing stresses on all global resources, including fisheries resources. The bad news is that there are daunting institutional impediments to attaining and maintaining sustainable use of the world's fisheries in the face of these inexorable driving forces. The good news is that, if these can be solved individually and cooperatively by resource users, marine resources will be able to contribute their full potential to global well-being.

Conservation of marine habitats and spawning grounds, including the very rich biodiversity found in coral reefs, seamounts and some near-coastal areas, has been similarly neglected. Coastal development, together with sea-level rise, higher ocean temperatures, and acidification caused by climate change are progressively degrading marine ecosystems such as mangrove swamps, wetlands, and estuaries, threatening the loss or destruction of many marine species, including a third of all coral species². Pollution from land-based sources adds to the destructive impact on the coastal environment. Nor is the harm limited to coastal areas. High-seas species such as sharks, rays, turtles, and various species of tuna are among the many that have suffered disastrous declines, and in some cases may face extinction. Not all of these species are directly exploited. Some, such as the albatross, are merely incidental victims of needlessly wasteful fishing methods. Many newly targeted deep-sea stocks are so poorly understood that fishing has resulted in particularly rapid declines because the fish mature and reproduce slowly. In effect they are being mined rather than managed. Fisheries science cannot realistically provide enough data about an environment that is still less well known than outer space. Uncertainty abounds, and the once-common belief that fish stocks recover rapidly has been discredited by the evidence. But, if rational management requires good science, it also requires decision-makers to follow scientific advice, which in this field they often do not do, for short-term reasons, with inevitable consequences.

²Report of UNCED, Agenda 21, Ch 17; IUCN, Press Release 10.7.08 at <<http://www.cms.iucn.org>>. (visited on 26.10.2018)

5.2 Global trends in exploitation

The rise in fish catches has been phenomenal and now represents a major threat to marine biological diversity and the sustainable use of marine resources³. In 1938 the world catch was 15 million tonnes (mt); by 1958 it had risen to 28 mt, by 1978 to 64 mt, and by 1992 to 90 mt, although by 2000 it had begun to decline. The reasons for this prolonged increase include rising demand and the growth in fishing by developing states but, above all, the enormous advances in technology for catching and processing fish. From use of rod and line and small boats operating close inshore with sisal nets and taking fish mainly for human consumption locally, developed sections of the industry have progressed to the use of sonar and satellites for locating fish shoals, and factory/freezer vessels which can store and process fish on board and stay at sea for months at a time, operating in large fleets. The increased capital cost of modern fisheries leads in turn to more intensive catching efforts, while older boats are simply sold on to other users. Fishing methods are often highly destructive. Bottom trawling damages coral reefs and seamounts; nylon driftnets float like a curtain and when lost at sea can trap a variety of species, including seals, turtles and dolphins. Longline fishing attracts and snares seabirds in large numbers. Paradoxically the viability of some stocks is threatened by certain conservation restrictions. Targeting only larger fish alters the genetic diversity of the stock and results eventually in smaller fish. ‘Discards’, fish thrown away because quotas have been exceeded, add a growing element of point-less waste to the overfishing of many traditionally rich fishing grounds, including the north-west Atlantic and north-east Pacific. In so-called ‘industrial fishing’ fish are not taken for human consumption but are processed into meal for use as cattle or poultry feed or as fertilizer; it matters little what species are taken or of what size. Such fishing has led to reductions in seabird colonies unable to feed their young.

³FAO, World Fisheries Ten Years After the Adoption of the 1982 United Nations Convention on the Law of the Sea, FAO Doc COFI/93/4 (Rome, 1992); FAO, The State of World Fisheries and Agriculture 5 (Rome,2006) .

The effect of all these developments on certain species has been devastating; not only are they taken in much larger amounts but frequently the species on which the larger fish, seabirds, and some marine mammals predate are also removed, which aggravates the decline since the biomass of a given area can only support so much fish life. The exploitation of marine living resources is thus an environmental problem pre-eminently because it has been and is increasingly pursued unsustainably with, as we can see, broader ecological effects than simply the loss of communities and livelihood for fishermen that have resulted from the collapse of major fisheries.

5.3 Jurisdiction over fisheries

5.3.1 Evolution of high-seas freedom of fishing

Modern fisheries problems originate in concepts and doctrines of the law of the sea attuned to the interests of earlier centuries. Grotius sought to establish the inclusive interest of the whole community in the ‘free seas’, ‘common property’ approach to high seas resources, based on the impossibility, as then perceived, of either occupying those areas or of exhausting their fish resources, though he accepted that if a great many people hunt on land or fish in a river the species are easily exhausted and control becomes expedient⁴. Others, however, sought to extend exclusive rights over the seas and its resources, as did King James I and VI in 1609 over the British and Irish Seas⁵. Following a change of policy in Britain later in the seventeenth century,⁶ the common interest in fisheries predominated for the next three hundred years, with major maritime states seeking to maximize the area of the high seas and minimize the breadth of the territorial sea, widely accepted until the 1960s to be three nautical miles. Given the prevailing doctrine, those few states which claimed a wider territorial sea, or sought to reserve to themselves fishing or sealing in a particular coastal area, generally encountered strong protests. Objections by Britain to Russia’s attempt to extend its jurisdiction over foreign

⁴Grotius, *The Freedom of the Sea or the Right Which Belongs to the Dutch to Take Part in the East India Trade*, trans Magoffin and Scott (New York, 1916) 1, 28, 43, 57.

⁵Selden, *Mare Clausum* (1635) cited in Fulton, *The Sovereignty of the Sea* (Edinburgh, 1911) 366–72.

⁶Fulton, *op cit*, 352ff.

vessels sealing within one hundred miles of Alaska led indirectly to the seminal Behring Sea Fur Seals Arbitration⁷.

Faced with continued decline in fur seals because of over-exploitation on the high seas, despite enactment of laws to conserve them and protect their breeding grounds, which lay within US territorial jurisdiction, the United States arrested British (Canadian) vessels taking the seals on the high seas, arguing that it had a right of protection and property in the fur seals frequenting the Pribilof Islands even when found outside the US three-mile limit. The United States contended that this right was based upon the established practice in common and civil law, the practice of nations, upon the laws of natural history, and upon the common interests of mankind, in view of the fact that the fur seals were bred within its territory, were protected there by the United States, and were a valuable resource and source of income for its people. The United States regarded itself as the trustee of the herd for the benefit of mankind. Britain (for Canada) argued that it had the right to hunt seals on the high seas; they were either *res communis* or *res nullius* in status, not the exclusive property of the United States. The United States countered that the high seas were 'free only for innocent and inoffensive use, not injurious to the just interests of any nation which borders upon it', and also that the seals had an *animus revertendi*, returning cyclically to US territory, and were thus to be equated to domesticated animals which could be the subject of property rights. The arbitral tribunal found against the US arguments. It held that as Britain had protested against the Russian decree, Russia had neither held nor exercised exclusive rights in the Behring Sea beyond areas of national jurisdiction. Thus the United States had not acquired such rights from Russia, had no property rights in the seals, and no right to protect them beyond the three-mile limit. Freedom of the high seas was held to be the prevailing doctrine.

The importance of this decision to the development of the law concerning conservation of marine living resources cannot be overstressed. It laid the twin foundations for subsequent developments over the next century.

⁷Moore, *Int Arb Awards*, I (1898) 811. Reproduced in 1 *IELR* 43(2000).

First, it confirmed that the law was based on high-seas freedom of fishing and that no distinction was to be made in this respect between fisheries and marine mammals despite the very different characteristics of the latter. Second, it recognized the need for conservation to prevent over-exploitation and decline of a hunted species, but because of the former finding, it made this dependent on the express acceptance of regulation by participants in the fishery.

The two parties in this case had asked the tribunal, if it found against the United States, to recommend the required conservation regulations. Its nine-point plan for conservation provides a model for fishery commissions to this day: a prohibited zone; a closed season in a defined area of the high seas, with specific exceptions in favours of indigenous peoples as long as they hunted for traditional purposes, using traditional methods; a limitation on the type of vessels used; a licensing system to be operated by the governments concerned; use of a special flag while sealing; the keeping of catch records; exchange of data; governmental responsibility for selection of suitable crews; and the provisions to continue for five years or until abandoned by agreement. Moreover the tribunal went on to recommend that these regulations be enacted into uniform national laws in both states and that national measures be adopted to ensure their enforcement. Thus the choice of national measures of enforcement, rather than international means, was also established. Finally, a three-year ban on all sealing was recommended, the foundation of the moratorium approach to conservation of marine mammals.

The measures recommended were not conservatory in the modern sense of being based on scientific findings, theories of sustainable yield or population, or catch quotas, but were influenced by the adoption in 1882 of the pioneering Convention on North Sea Overfishing, the first of its kind. This had introduced several progressive measures to establish order among states fishing in that area by harmonizing the registration and numbering of vessels, prescribing the use of certain kinds of gear, the salvage of derelict gear, and the supervision of these matters by national fisheries protection vessels. Attempts to follow this up by convening a conference to discuss the scientific aspects of

fisheries problems eventually led to the establishment of ICES (International Council for the Exploration of the Sea), a cooperative group of scientists drawn from North Atlantic states.

Thus, although it perpetuated the high-seas freedom of fishing and hence made conservation more difficult, especially in relation to enforcement, the Behring Sea arbitral tribunal strongly supported the need for restraint in exploitation, clearly indicated the requisite measures, and recognized that freedom was not absolute but had to be regulated to take reasonable account of the interests of other states. Its decision, however, failed in the short term to have the desired conservatory effect because it could be addressed to only two of the four states engaged in hunting the Behring Sea fur seals; Russia and Japan were not involved in the case. US and Canadian vessel owners re-registered under Japanese and other flags to evade the US and Canadian regulations. Naturally, the decline in seal stocks continued until it was eventually realized by all participants that only an international regulatory treaty among all the states involved in sealing could save them⁸. This cycle of events has been repeated in almost all exploited fisheries as the following sections illustrate.

5.3.2 Geneva conventions and jurisdiction over marine fisheries resources

The 1958 Geneva Convention on Fisheries Conservation and Management was the first multilateral treaty to attempt to codify and develop international fisheries law. It recognized only the ‘special interest’ of the coastal state in conservation of high-seas fisheries adjacent to its territorial sea⁹. Zones beyond that limit in which coastal states could assert exclusive or preferential rights to fisheries were not generally recognized, whether for conservatory or exploitative purposes. Instead, Article 2 of the 1958 High Seas Convention reiterated the customary freedom to fish on the high seas, without specific reference to conservation, but exercisable only ‘with reasonable regard to the interests of other states’.

⁸Convention on Behring Sea Fur Seals, 104 BFSP (1911).

⁹Boyle and Freestone (eds), *International Law and Sustainable Development* 113-116 (Oxford, 1999).

The 1958 Geneva Fisheries Convention was not a success. Being supported mainly by distant water fishing states, it failed to establish a balance of interests widely acceptable to coastal fishing states. Those Latin American states that had from 1947 onwards declared 200-nautical-mile maritime zones in which, inter alia, they asserted 'sovereignty' over living resources did not renounce their claims. Following the failure of the UNCLOS I and II to deal with these problems, new claims to extended fisheries jurisdiction were made by other states for a variety of reasons, including the failure of many international fishing commissions to preserve or restore stocks to MSY and thus maintain catch levels.

Iceland was one of the states which opposed the establishment of the six-plus-six-nautical-mile formula for extension of coastal state control over fisheries proposed unsuccessfully at UNCLOS I and II. For this reason it did not participate in the 1964 European Fisheries Convention. Its declaration of a twelve-mile territorial sea provoked the first dispute with the UK, but this was settled by negotiation. The further extension of its exclusive fishery zone to fifty nautical miles in 1972, however, provoked disputes with the UK and Germany which were submitted to the International Court of Justice¹⁰. The Court was asked to decide the legality of Iceland's extension of its fisheries jurisdiction and the continuing rights of the UK and the Federal Republic of Germany to fish in the area, and to pronounce on any requirements for cooperation in adopting conservation measures. In the Icelandic Fisheries Cases the Court found, after surveying existing fisheries conventions and state practice, that claims to a 12-mile exclusive zone were not unlawful, that the UK and Germany had not acquiesced in or accepted Iceland's claim to an exclusive zone beyond that limit, but that Iceland did have preferential rights in the allocation of quotas (although it did not fix any spatial limit for these). The UK and Germany retained rights to fish beyond Iceland's 12-mile zone, based on long-standing historic exercise of high-seas freedoms. The Court held, however, that the parties' respective rights were not absolute; both had to take

¹⁰Icelandic Fisheries Cases (UK v Iceland) (Merits) ICJ Reports (1974).

account of and accommodate not only each other's rights but also the needs of fisheries conservation:

Both states have an obligation to take full account of each other's rights and of any fishery conservation measures the necessity of which is shown to exist in those waters. It is one of the advances of maritime international law, resulting from the intensification of fishing, that the former laissez-faire treatment of the living resources of the high seas has been replaced by a recognition of a duty to have due regard to the rights of other states and the needs of conservation for the benefit of all. Consequently, both Parties have the obligation to keep under review the fishery resources in the disputed waters and to examine together, in the light of scientific and other available information the measures required for conservation and development of equitable exploitation of these resources¹¹.

The parties were held to be under an obligation to negotiate and cooperate in good faith, to accommodate equitably their respective rights and interests under Article 2 of the High Seas Convention, to regulate catches and to take full account of fishery conservation needs¹².

Subsequently, in the *Gulf of Maine*¹³ and *Jan Mayen Cases*¹⁴, the ICJ delimited maritime boundaries between the overlapping continental shelves and exclusive fisheries/ economic zones of the respective parties. The boundaries drawn by the court cut across fishing grounds. Rejecting American arguments in the *Gulf of Maine Case* based on the unity of the marine ecosystem, the court considered that any adverse effects on fisheries from this bisection would not be sufficiently serious to affect the proposed boundary and that any difficulties could be resolved by cooperation, which had become 'all the more necessary' as a result of its decisions¹⁵.

¹¹*Icelandic Fisheries (UK v Iceland)* 31, para 72; (*FRG v Iceland*) 200, para 64, emphasis added.

¹²*Icelandic Fisheries (UK v Iceland)* 31–3, paras 73–5.

¹³*Gulf of Maine Case*, ICJ Reports (1984) 246.

¹⁴ICJ Reports (1993) 38, Churchill, 9 *IJMCL* (1994).

¹⁵On the limited effect of fisheries on maritime boundary delimitation, Churchill, 17 *Marine Policy* 44(1993).

5.4 The development of international fisheries regimes

5.4.1 Conservatory conventions and commissions

It is essential to an understanding of the development of the law for conservation of marine living resources to examine the problems faced in achieving the necessary regulation. These problems have never been satisfactorily resolved and remain acute, exacerbated by the use of modern technology for both ships and gear, and the solutions adopted have frequently been called into question. The establishment of regional fisheries commissions, and the gradual enlargement of their powers, was a seminal development¹⁶.

There is a symbiotic relationship between the development of the law of conservation and the development of scientific knowledge. Though the former necessarily lags behind the latter for political, economic, and social reasons, it cannot progress without an appropriate scientific basis; it must respond both to new scientific data and new scientific theories and take account also of economic, social, and political factors. Regional fisheries commissions provide the forum in which the necessary discussions and decisions can take place. They face many problems, however, in reducing catch to levels that can sustain exploitation on a continuing basis.

Fisheries commissions usually have to meet annually to set new quotas and revise or adopt other measures. Conventions typically differentiate between amendment to the substantive articles of the convention, which generally requires ratification by states parties, and decisions of the parties required annually to amend regulations concerning catch, gear used, etc. The latter are usually not included in the main convention but placed in an Appendix or Annex, which forms an integral part of the convention but is amendable by a two-thirds or three-quarters majority without the need for ratification. This system provides a flexible means of adapting the conventions to changing scientific advice and other values, but its fundamental weakness is that any state is free to opt out of regulations adopted in this manner. Not infrequently

¹⁶Koers, *The International Regulation of Marine Fisheries* 56 (London, 1973).

the use of this objections procedure has destroyed the ability of such bodies to take effective measures¹⁷.

Fisheries treaties in the period before UNCLOS III were more concerned with establishing national quotas for fish stocks than with conservation of the marine environment as such; in so far as they had a conservatory effect it derived incidentally from the regulation of access. They offered a variety of approaches some were species specific (halibut, salmon, tuna); others regional (Behring Sea, North-east or North-west Atlantic, Indian Ocean); some were both. Some had closed membership, others were open to all interested states. A few provided techniques for persuading non-members to join, like prohibiting trade in fish with non-parties. Though regulatory powers of fisheries commissions were wide in scope setting a total allowable catch (TAC), allocating national quotas, regulating fishing gear and net mesh sizes, establishing closed areas or seasons, etc none limited entry or effort. Enforcement was mainly left to national means, that is to coastal states in the territorial sea/EEZ and to the flag state on the high seas; only the 1957 North Pacific Fur Seals Convention provided for international enforcement (including arrest and prosecution) though other agreements subsequently instituted limited international surveillance based on mutual inspection. Under this system, vessels of one party would inspect suspected offending vessels of the others on the high seas but could only report offences to the flag state; they could not arrest them. No independent observers or inspectors were carried on board vessels. Finally, though the promotion of scientific research was stipulated by most conventions, some left its execution to national means; some allowed for the appointment of in-house scientists; others used ICES, establishing a special liaison committee for this purpose, with ICES and government scientists on their country's delegations to these commissions meeting together. Some treaties provided for specialized committees for scientific and technical matters, which could be established by the commissions or by other organs so empowered.

¹⁷Joyner and von Gustedt, 11 *IJMCL* 425 (1996).

Despite these protective treaty provisions, many fisheries continued to decline partly because of the inadequacies of scientific knowledge and management theory; partly because such advice as scientists gave was not followed; partly because there was no attempt to limit effort and little attempt to limit the number of vessels having access; and partly because of the lack of fully international inspection and enforcement. Most of these weaknesses derived from the underlying common property/free access doctrine and the limited powers of fishery commissions¹⁸. Beyond requiring states to cooperate in the conservation and management of fish stocks¹⁹, UNCLOS did little to rectify the shortcomings of regional fisheries cooperation; nor, until the adoption of the 1995 UN Agreement on Straddling and Highly Migratory Fish Stocks.

5.4.2 The UN convention on the law of the sea

The 1982 UN Convention on the Law of the Sea is the foundation for the modern law relating to international fisheries²⁰. The 1982 UNCLOS was negotiated and adopted as a 'package deal'. States had to reach compromises on some issues to secure agreement on others of particular concern to them. Fisheries articles could not be voted on separately from those relating to the territorial sea, high seas, continental shelf, or settlement of disputes. The necessary compromises were often achieved by the use of ambiguous language or by leaving difficult issues, such as precise formulae for allocation of fish catches or calculation of MSY, to be determined by subsequent agreement or left to the discretion of coastal states or the decisions of international tribunals.

The 1982 Convention incorporates the conclusions of the Icelandic Fisheries Case only in part. While nominally retaining freedom of fishing on the high seas, it responds to pressure from coastal states by allowing them to adopt a 200-nautical-mile exclusive economic zone for fisheries, thus removing them from a high-seas common-property regime. It also adopts special rules for certain species of fish and marine mammals. Despite the coordinated

¹⁸Koers, *The International Regulation of Marine Fisheries*, 43–88 (1997).

¹⁹Articles 61(2), 63–5, 66(4), 118 of the UNCLOS, 1982.

²⁰Churchill and Lowe, *The Law of the Sea* 105 (3rd edn, Manchester, 1999).

ecosystem strategies referred to earlier, the 1982 UNCLOS does not provide any mechanism for coordinating existing fisheries commissions or the relationship between fisheries conservation and other conservatory conventions in general. Nor does it deal effectively or in detail with the crucial problem of common stocks, namely stocks that migrate between or among zones, though it does address it in general terms. It does not clearly endorse an ecosystem- or habitat-preservation approach, though its main article on conservation (Article 61) goes some way towards this and Article 194(5) is relevant to certain endangered species' habitats. Finally, it provides no mechanism for considering or clearly identifying the close interrelation-ship of the fisheries conservation (Parts V and VII) and pollution prevention articles (Part XII), although as the Convention was negotiated as a 'package deal' the relation-ship is inherent and the title of Part XII 'Protection and Preservation of the Marine Environment' is aimed at emphasizing this²¹.

Despite these limitations, it must be recalled that not only is the 1982 UNCLOS in force for a substantial number of states, but the consensus on most of its provisions during and after the UNCLOS III conference, combined with subsequent state practice, are strong evidence of the extent to which many of its provisions represent customary international law. This is especially so with regard to jurisdictional questions.²²

5.4.2.1 Competence over conservation of marine fisheries resources under UNCLOS

On one aspect of fisheries problems the attribution of jurisdiction over conservation and use of marine living resources the 1982 UNCLOS is an important step forward.

Moreover, both the obligation to conserve and manage and, to some extent, its specific content can be identified. The relevant provisions for fisheries are as follows.

²¹Nordquist (ed), UN Convention on the Law of the Sea: A Commentary 192 (Dordrecht, 1991).

²²In the Malta-Libya Continental Shelf Case, ICJ Reports 13 (1985).

5.4.2.1.1 Territorial sea (TS)

Article 3 of the 1982 UNCLOS establishes a twelve-mile limit for the territorial sea, over which the coastal state has sovereignty, subject to any requirements of the UNCLOS and other rules of international law, including any conservatory conventions to which that state is party and which by their terms apply within that area. Foreign fishing vessels must refrain from fishing activities in the territorial sea²³. The coastal state can adopt laws and regulations, consistent UNCLOS and other inter-national rules, to prevent infringement of its fishery laws²⁴.

5.4.2.1.2 Archipelagic waters

Archipelagic states, as defined in the UNCLOS, can draw straight baselines joining the outermost points of their outer islands and reefs²⁵. Within the area enclosed the waters fall within the sovereignty of the archipelagic state, with a status akin to that of the territorial sea, but subject to UNCLOS provisions on jurisdiction and on the right of innocent passage. As the baselines enclosing the archipelago now also form the baselines for the territorial sea, the continental shelf and the exclusive economic zone, archipelagic states control fishing in vast areas of sea. Article 51, however, requires them to respect existing agreements with other states, including those on fisheries, and to recognize in certain areas the traditional fishing rights of immediately adjacent neighbouring states, which can be regulated by bilateral agreement. Though no specific reference is made to conservation this could be required under the relevant agreements. An archipelagic state has the same powers to prohibit fishing and scientific research by vessels in passage through any archipelagic sea lanes it may designate as have coastal states over transit passage through international straits.²⁶ The conservation of fisheries in the EEZ of archipelagic states is, of course, subject to the requirements of Article 61 of the UNCLOS.

²³ Articles 19(2)(i); 42(1)(c) of UNCLOS, 1982.

²⁴ Article 21(1)(e) of the UNCLOS, 1982.

²⁵ Articles 46–53 of the UNCLOS, 1982.

²⁶ Article 54 of the UNCLOS, 1982.

5.4.2.1.3 Exclusive economic zone (EEZ)

In establishing the EEZ, subject to coastal-state jurisdiction, in an area not exceeding 200-nautical-mile from the low-water baseline of the territorial sea,²⁷ the UNCLOS negotiators sought to provide a more effective basis for conservation and sustainable management of marine living resources. The EEZ is not an area in which the coastal state has territorial sovereignty but a more limited functional zone,²⁸ in which the coastal state is accorded ‘sovereign rights for the purpose of exploring, exploiting, conserving and managing the natural resources, whether living or non-living, of the water overlying to the seabed and its subsoil’²⁹. It also exercises jurisdiction, as provided for in the Convention, with regard to marine scientific research and protection and preservation of the marine environment. Coastal states must have ‘due regard’ to the rights and duties of other states and their actions must be compatible with UNCLOS. In the EEZ there is neither freedom of fishing for all states, nor unfettered freedom of scientific research³⁰. To that extent fish within the zone thus cease to be high-seas common property. Although other states may in certain circumstances have a claim to share in EEZ fishing,³¹ the coastal state determines the total allowable catch (TAC) for harvesting the living resources and allocates fishing rights³².

5.4.2.1.3.1 International Legal Regime Governing Fisheries in the EEZ

The provisions of the 1982 UN Convention on the Law of the Sea (LOSC)¹ that concern fisheries conservation and management in an Exclusive Economic Zone (EEZ), focusing on the general regime as opposed to the specific regimes provided for in Articles 64 to 67. These regimes have been supplemented in important ways by the Agreement for the Implementation of the United Nations Convention on the Law of the Sea of 10 December 1982

²⁷Articles 55 of the UNCLOS,1982.

²⁸Barnes, in Freestone, Barnes and Ong (eds), *The Law of the Sea*, Ch 13; Christie, in Hey (ed), *Developments in International Fisheries Law*, 395–419 (1995).

²⁹Article 56(1)(a), of the UNCLOS,1982.

³⁰Articles 58, 87 of the UNCLOS,1982.

³¹Articles 62(2), 69–70 of the UNCLOS,1982.

³²Article 61(1) of the UNCLOS,1982.

relating to the Conservation and Management of Straddling Fish Stocks and Highly Migratory Fish Stocks.

5.4.2.1.3.2 The Rights and Duties of States in the EEZ

The provisions of the LOSC - and its predecessor draft texts - were carefully drafted in order to achieve a balance between the resource interests of the coastal state in its offshore waters and the interests of those states who wished to ensure that any new oceans regime did not encroach unduly on the traditional freedoms of the high seas. Article 55 of the LOSC emphasizes this by describing the EEZ as an area beyond and adjacent to the territorial sea, subject to the specific legal regime established in this part under which the rights and jurisdiction of the coastal state and the rights and freedoms of other States, are governed by the relevant provisions of this Convention.

The rights and duties of the coastal state are set out in Article 56. Paragraph (a) of that article gives to the coastal state sovereign rights for the purpose of exploring and exploiting, conserving and managing the natural resources, whether living or non-living, of the sea-bed and sub-soil and the overlying waters, and with regard to other activities for the economic exploitation of the zone such as the production of energy from the water, currents and winds.

Although these sovereign rights are described in wide terms, it is nonetheless only in respect of these predominantly economic rights that the coastal state has sovereign rights. Thus, the military interests of the non coastal states are to a large extent preserved in the EEZ. Article 56 proceeds in Paragraph (b) to set out certain jurisdictional powers that the coastal state has in its EEZ regarding:

- (i) The establishment and use of artificial islands, installations and structures,
- (ii) Marine scientific research;
- (iii) The protection and preservation of the marine environment.

These matters are elaborated upon in more detail elsewhere in the LOSC, though each is capable of having a significant impact on the coastal state's powers with respect to fisheries. Paragraph c of Article 58(1) provides that the coastal state has 'other rights and duties provided for in this Convention'. Although the EEZ brings considerable advantages to the coastal state, it does also assume certain obligations, which under the LOSC regime are inseparable from its rights.

5.4.2.1.3.3 Conservation, Management and Utilization of the Living Resources Of The EEZ

At the core of the LOSC provisions on fisheries are Articles 61 and 62 that deal with conservation, management and utilization of the living resources of the EEZ. These three concepts are not defined as such in the LOSC, and a degree of overlap exists between them as they are used there. Article 61 deals primarily with conservation, while Article 62 is concerned primarily with utilization, though both articles contain management provisions.

Article 61(1) requires that 'The Coastal State shall determine the allowable catch of the living resources in its exclusive economic zone'. The use of 'shall' suggests that such a determination is mandatory. Article 297(3)(a) which deals with settlement of fisheries disputes refers to the 'discretionary powers for determining the allowable catch' of the coastal state which might suggest that Article 61(1) was not intended to be mandatory. Provision is made, however, in Article 297(3)(b) for a conciliation procedure where a coastal state has 'arbitrarily refused to determine the allowable catch...' Despite the use of the term discretionary, therefore, it is arguable that the power in Article 61(1) is only discretionary as to the result achieved though mandatory as to the fact of its exercise. Such a view is supported by the consideration that if the coastal state fails to determine the allowable catch in its EEZ, the ensuing provisions of Articles 61 and 62 become redundant to a large extent.

The fundamental importance of conservation of the living resources under the LOSC is underlined by a reference to it in its preamble. The objective of conservation and management measures is set out in Article 61(2), and is said

to be to 'ensure...that the maintenance of the living resources in the exclusive economic zone is not endangered by over exploitation'. Paragraph 3 of the same article also requires that the measures of the coastal state shall be designed to maintain or restore populations of harvested species at levels which can produce the maximum sustainable yield, as qualified by relevant environmental and economic factors including the economic needs of coastal fishing communities and the special requirements of developing States, and taking into account fishing (patterns, the interdependence of stocks and any generally recommended international minimum standards, whether sub regional, regional or global.

Article 61(4) requires the coastal state to take 'into consideration the effects on species associated with or dependent upon harvested species with a view to maintaining or restoring populations of such associated or dependent species above levels at which their reproduction may become seriously threatened'.

Article 62, which deals with utilization, is a key article, not only in relation to fisheries management, but also in regard to the LOSC as a whole, for it contains the requirement that the coastal state will grant access to fishermen from other states to any declared surplus.

Article 62(1) states that without prejudice to Article 61 (which includes the important power to determine the allowable catch), the coastal state 'shall promote the objective of optimum utilization of the living resources of the zone'. As with 'conservation' and 'management', 'optimum utilization' is not defined. It is possible to give it some content, however, by reference to other provisions in Articles 61 and 62. First, Paragraph 2 of Article 62 requires the coastal state to allow other states access to any living resources that are surplus to its own national requirements as determined by it. This requirement is both central to the concept of optimum utilization and forms one of the more important restrictions on the sovereign rights of the coastal state that resulted from the negotiations at the Third UN Conference on the Law of the Sea (UNCLOS III). Secondly, in granting access to the surplus, the coastal state is to take into account all relevant factors, including, *inter alia*, 'the significance

of the living resources of the area to the economy of the coastal state concerned and its other national interests'. Thus, it is apparent that the notion of optimum utilization allows the coastal state to take into account important economic and arguably also political factors that might justify a utilization of the surplus that is less than the maximum. This is supported by the reference in Article 61 (already mentioned) that conservation and management measures are to be 'designed to maintain or restore populations of harvested species at levels which can produce the maximum sustainable yield as qualified by relevant environmental and economic factors'. In short, a considerable amount of flexibility is retained by the coastal state in achieving the objective of optimum utilization.

As regards highly migratory species, it may be noted that Article 64 of the LOSC also sets the objective of optimum utilization for such species throughout the region, both within and beyond the EEZ.

5.4.2.1.3.4 Conditions of Access

Under the LOSC, the coastal state is left with considerable latitude in choosing the particular measures to achieve the stipulated conservation and utilization objectives. A non-exhaustive list of measures that the coastal state may adopt is set out in Article 62(4). These include: licensing, payment of fees and other forms of remuneration, determining species to be caught, fixing catch quotas, regulating seasons and areas of fishing, gear characteristics, vessel type and number, fixing the age and size of fish and other species that may be caught, specifying information to be provided, requiring fisheries research programmes and regulating their conduct, placing observers or trainees on board fishing vessels, requirements for landing catches in the ports of the coastal state, stipulating the terms and conditions of joint ventures or other cooperative arrangements, requirements concerning the training of personnel and transfer of fisheries technology, and enforcement procedures.

5.4.2.1.3.5 Criteria for Granting Access

While the LOSC grants to the coastal state the right to determine the allowable catch, and its own capacity to harvest the living resources of its EEZ,

it is nonetheless under an obligation to give other states access to the surplus of the allowable catch 'having particular regard to the provisions of Articles 69 and 70 especially in relation to the developing States mentioned therein' (Article 62(2)). Article 62(3) makes further reference to access by other states. That paragraph requires that in granting access, the coastal state shall take into account all relevant factors including inter alia: the significance of the living resources of the area to the economy of the State concerned, and its other national interests, the provisions of Articles 69 and 70, the requirements of developing States in the region or sub-region in harvesting part of the surplus, the need to minimize economic dislocation in States whose nationals have habitually fished in the zone or which have made substantial efforts in research and identification of stocks.

The various references to developing states and to Articles 69 and 70, which deal with landlocked states and states having special geographical characteristics reflects the objective stated in the preamble to the LOSC of realizing a just and equitable international economic order which would take into account the interests and needs of mankind as a whole, and in particular the special interests and needs of developing countries, coastal or landlocked.

5.4.2.1.3.6 Collection of Scientific Data

The words 'available scientific information' was probably employed in part to avoid imposing too onerous a burden on countries in the collection of data, especially developing states, or in the need to undertake scientific assessments of the living marine resources. This phrase was most probably linked to the requirement in Article 61(2) that the coastal state shall take 'into account the best scientific information available to it'.

Article 61(5) reflects the increasing importance that was attached to the exchange of information through international organizations. The reference to 'including states whose nationals are allowed to fish in the exclusive economic zone' does not of itself emphasize a primary role of the flag state in providing data, indeed, it seems merely to underline the intention at that time for available information to be exchanged.

Overall, Part V of the LOSC does not mandate any specific or primary responsibility to collect data with respect to fishing in the EEZ. Thus, it would be open to the coastal state to do this, either in respect of its own vessels fishing in the EEZ or in respect of foreign vessels being authorized to fish in the EEZ as a condition of fishing. It would also be open to the flag state of a foreign fishing vessel to collect data, either as a condition of a licence imposed by the coastal state under a bilateral access agreement or under a joint venture agreement. Alternatively, it could be provided voluntarily.

What is made clear, however, is that there exists an obligation to exchange available information through competent international organizations, and that would imply the capacity on the part of such bodies to set data reporting standards for states to follow.

For the sake of completeness, it should be added that a coastal state does have the power to control marine scientific research in its EEZ or on its continental shelf. The coastal state should in normal circumstances grant its consent to undertake marine science research projects, though it has the discretion to withhold that consent if it is of direct significance for the exploitation of the natural resources of the zone (LOSC: Article 246).

The 1995 UN Fish Stocks Agreement reflects a much more elaborate and sophisticated approach to the collection of data. Whereas the LOSC only addressed the question of collection and exchange of data in passing, it has come to be recognized that it should be addressed much more vigorously. Further, it imposes quite specific obligations on states, in contrast to those found in the LOSC, some of which, we have seen, are at best implied.

The 1995 UN Fish Stocks Agreement is also quite complex in its operation. There is nothing to prevent states from collecting and sharing the information required under the Fish Stocks Agreement even though they are not yet parties to it. Indeed, with respect to sharing of information under the 1993 Compliance Agreement,³³ some states were already providing the

³³Agreement to Promote Compliance with International Conservation and Management Measures by Fishing Vessels on the High Seas of 1993.

information required under that agreement before it entered into force, and there is no reason why states should not be able to do the same (unless their national law imposes a restraint) with respect to the obligations under the 1995 UN Fish Stocks Agreement.

5.4.2.1.3.7 Enforcement

Article 73 allows the coastal state in the exercise of its sovereign right to explore and exploit, conserve and manage the living resources of the EEZ, to take measures, including boarding and inspection, arrest and judicial proceedings; as may be necessary to ensure compliance with its laws and regulations adopted in conformity with the LOSC.

Important limitations are however imposed. First, arrested vessels and their crews are to be released promptly upon the posting of a reasonable bond or other security. Although worded generally, it is probable that this requirement is intended to operate only in respect of foreign vessels and their crews, and it would seem that the coastal state would retain the power to take more drastic action with respect to its own fishers and vessels should it choose to do so, though whether it would want to do that is another matter.

Secondly, coastal state penalties for violations of fisheries laws and regulations may not include imprisonment in the absence of agreements to the contrary by the states concerned or any other form of corporal punishment. The key question here is what is a violation of a fisheries law or regulation? Some guidance on the meaning of this phrase can be gained from Article 62(4), which sets out a list of matters that coastal state laws may deal with regarding conservation and management measures. Although the matters referred to on this list are stated to be '*inter alia*', it would seem reasonable to assume that the list provides a useful guide to the content of the concept 'fisheries laws and regulations' in Article 73(3).

5.4.2.1.3.8 Some Conclusions

To assess the success or failure of the EEZ regime would be a massive task in its own right. Some aspects of such an assessment would require the collection of considerable material. For example, the delimitation of EEZs is

one area that would be difficult to assess in terms of success or failure in the absence of considerable information of both geological and political character from different countries. Even then, a judgment could prove difficult. There is also the problem of how you would judge success. The delimitation provisions set out in Article 74 of the LOSC could hardly be put forward as an instance of clear drafting.³⁴ Indeed, the language is highly opaque. However, it would be possible to assert that the provisions, along with the provision for compulsory dispute settlement have worked reasonably well in addressing the formidable problem of boundary delimitation, even if certain boundary disputes have proved to be intractable.³⁵

To focus specifically on the fisheries provisions of the EEZ, from a purely legal point of view, the fisheries provisions of the EEZ regime have been a success. Like the so-called 'Castaneda Compromise'¹⁰ which hammered out the overall relationship between the rights of the coastal states to the economic resources of the zone and the protection of the navigational rights and other freedoms of the international community as a whole, the basic regime has stood up well from a legal point of view. Since its formulation in the late seventies, the fisheries provisions have been adopted in state practice. To some extent it could be argued that these provisions had already become part of customary law through state practice even before the adoption of the LOSC, or its entry into force in 1994.

In sum, the text of Part V of the LOSC represented a very careful balance of different interests, which on the whole has been respected. Practice on the whole has adapted to this regime, rather than the regime crumbling in the light of a contrary practice.

5.4.2.1.3.9 Conservation and Management

The evolution of management concepts, especially those now found in the 1995 UN Fish Stocks Agreement has generally been accepted at a

³⁴Art 74.1 states: 'The delimitation of the EEZ between States with opposite or adjacent coasts shall be effected by agreement on the basis of international law, as referred to in article 38 of the statute of the International Court of Justice in order to achieve an equitable solution'.

³⁵The cases of Turkey and Venezuela, it led to the non-participation of these two countries in the LOSC.

theoretical level. For example, while there is much debate about whether the 1995 UN Fish Stocks Agreement applies to states which are not Parties to it, few would seriously contest the relevance of the precautionary approach, and the principles set out in article 5 of that agreement, even though these are specifically asserted with respect to straddling fish stocks and highly migratory fish stocks. The debate revolves more around the application of the LOSC provisions to particular instances of fisheries management decision making. In fact, this evolution has occurred by relying on a number of different instruments, ranging from the Rio Declaration, General Assembly resolutions, the voluntary Code of Conduct for Responsible Fisheries, the more recent international plans of action (IPOAs), especially the latest on Illegal, Unregulated, Unreported Fishing (IUU) fishing, and now by the World Summit on Sustainable Development (WSSD) held in Johannesburg.

It is not enough merely to point to some successful legal drafting if the basic regime is not delivering the goods in other ways. Fisheries scientists would rightly point to some dramatic failures in management which would hardly support a rosy assessment of the regime. One of the more startling failures in fact occurred with the closure of the Canadian Atlantic Northern Cod fishery. As the point was put by J. Caddy and K. Cochrane, 'What makes this event particularly significant was that the Canadian approach to fisheries assessment and management was seen by many as being among the best in the world'

In fact, at the level of the application of conservation and management measures, as opposed to a purely legal analysis of its provisions, there is little doubt that the EEZ regime has been a failure if viewed from a global perspective. Bringing vast areas under the control of coastal states might have been thought once to have brought about improved management, inasmuch as coastal states would have a greater incentive to manage their resources more effectively than if they were left to the vagaries of the freedoms of fishing on the high seas, but there scant evidence for that.

A. The Duty to Cooperate

One aspect of the regime that has not been successful is in respect of the duty of states to cooperate with respect to fisheries management. This problem is as much a result of the state of the law as with the regime itself. It is hardly surprising, for example, that it has been found necessary to address cooperation amongst states through regional fisheries bodies in the 1995 UN Fish Stocks Agreement, at least as regards straddling fish stocks and highly migratory fish stocks. However, there exists in both the EEZ and the high seas regime a problem that derives from the weakness of international law, namely, that, while international law recognizes a duty to negotiate in good faith, it does not as such require the parties to reach agreement provided that efforts to reach agreement have been bona fide. This traditional view of international law is of course open to question but is generally accepted. For example, if ITLOS were presented with a case in which this question of the duty to cooperate arose in the context of seriously declining stocks, they might consider that this traditional view of international law is no longer tenable; they might place a heavier duty on states to cooperate. In this regard, ITLOS might draw upon numerous declarations and statements that have been made by the international community and use them to bolster an approach that stresses a community interest in dwindling fish stocks rather than merely reiterate a classical application of international law on a duty to cooperate.

B. The Objective of MSY

At the heart of the conservation and management regime of the EEZ is the objective of achieving MSY. This objective was already regarded as outmoded by some scientists by the time of UNCLOS III, however, its inclusion in the LOSC gave it a semi-sacrosanct status for the simple reason that to tamper with it involved the risk that other language or concepts in the LOSC could be tampered with. It is interesting, therefore, to see how MSY was dealt with in the 1995 UN Fish Stocks Agreement. While MSY remains one of the general principles, indeed in language that is identical to language found in article 61, it is now supplemented by other important new principles. The most

important of these are: the precautionary approach, the need to adopt, where necessary, measures for associated species, minimization of pollution, waste, discards, catch by lost or abandoned gear and the need to protect biodiversity. These principles are backed up by Article 6, which elaborates on the precautionary approach in some detail. In addition, the precautionary approach is further addressed in an annex focused on its implementation. These provisions are of course stated to apply only with respect to straddling fish stocks and highly migratory fish stocks.

C. Access to the Surplus of the Allowable Catch

Granting access to the fisheries 'surplus' in article 62 of the LOSC was a major reason for the negotiation of the LOSC, along with securing for landlocked and geographically disadvantaged states a preferential access to the living resources in the same region. It is difficult to assess the extent to which access to the surplus has been an issue in the negotiations of coastal states and other fishing nations as it was contemplated during the negotiations in UNCLOS III. There is anecdotal evidence that provisions such as the access provisions, which limit the right of the coastal state, are often not acted upon. There is, in any event, evidence that the emphasis is shifting from 'access' to the establishment of partnership agreements. In this regard, the introduction by the European Commission on 23 December 2002 of so-called fisheries partnership agreements is important. Outcome of Agreements

1. First and foremost, we need a better management of resources based on sound scientific and technical advice.
2. Secondly, we need to improve the control and surveillance of fishing activities. Only then can we tackle the issue of illegal fishing and only then can we avoid the overexploitation of stocks, which clearly runs against the interest of your local population.
3. Thirdly, we need to involve public and private stakeholders in the design and monitoring of our fisheries partnership agreements. We should promote the transfer of technology, capital and knowhow from the EU for the benefit of your local fishing industry.

5.4.2.1.3.10 Overall Assessment

To give an overall assessment of the performance of the EEZ even as regards its fisheries provisions would of necessity involve a mixed conclusion. Legally, the basic regime has stood up well. However, the issues, which so dominated the negotiations such as access to fisheries surpluses and that of landlocked and geographically disadvantaged states, no longer have the same prominence, or, perhaps more accurately, have disappeared as issues of concern, and have been replaced by other concerns.

One test of a regime that is quasi-constitutional in its scope and impact is how it is able to absorb or adapt to change. The EEZ regime clearly constitutes a fundamental shift in the regime of the oceans. With all of the imperfections and new emphases that can be detected, the EEZ regime, if viewed as similar to a constitutional text intended to survive for decades, or even centuries, while revealing its preoccupations with the seventies (and all constitutions can be expected to reveal the preoccupations of the era of their negotiation), then the EEZ, has survived remarkably well. A fisheries scientist with a focus on whether the regime has delivered effective conservation and long-term sustainable use, could, of course, see the regime very differently

5.4.2.1.4 Continental shelf

The continental shelf is a relatively shallow area of seabed over which a great deal of marine life is found. Adjacent coastal states have sovereign rights over the seabed mineral resources of the shelf³⁶. The 1982 UNCLOS makes no reference to the precise status of these waters³⁷. As the waters above the continental shelf are not included in the areas to which Part VII (high seas) is specifically applied,³⁸ marine living resources found over the continental shelf will either have the status of EEZ resources, or of high-seas resources. However, 'living organisms belonging to sedentary species' are within the definition of the 'natural resources' of the continental shelf over which the

³⁶Article 77 of the UNCLOS,1982.

³⁷Article 78(1) of the UNCLOS,1982.

³⁸Article 86 of the UNCLOS,1982.

coastal state exercises sovereign rights³⁹. As the coastal state now has wide powers to take conservatory measures (taking account of the interdependence of species, etc) and to control pollution and scientific research in the EEZ (see below) this should improve conservation of sedentary species,⁴⁰ most of which are found well within the 200-mile limit.

5.4.2.1.5 The high seas

Many fishes migrate between EEZs and the high seas and many species of marine mammals spend a considerable part of their lives there during migrations. Though Part VII of UNCLOS recognizes that all states have the right for their nationals to engage in fishing on the high seas, this is subject to existing treaty obligations and to the rights, duties, and interests of coastal states in conserving stocks that migrate between EEZs (or EFZs) and the high seas, as set out in Article 63.⁴¹ Article 117 lays down the duty of states to take, or to cooperate with other states in taking, the measures for their nationals that may be necessary to conserve high-seas living resources. This includes marine mammals.⁴²

About 400 species are found outside 200-mile zones including cephalopods, sharks, marine mammals, but also many species of fish, such as tuna, swordfish, halibut, and turbot. The increased scale of high-seas fishing beyond 200 miles and within EEZs has put pressure on some of these stocks and shown that some form of integrated management is essential⁴³. No harmonized standards for conservation of such stocks on the high seas are laid down in the UNCLOS, nor are they obligatory in EEZs. Article 63(2) obliges coastal states and states fishing stocks beyond EEZs to seek 'to agree on the measures necessary to coordinate and ensure the conservation and development of such stocks', but allows them to do this either 'directly' or through

³⁹Article 77 of the UNCLOS, 1982.

⁴⁰Though Article 56(3) subjects EEZ rights relating to the seabed and subsoil to the provisions of Part VI concerning the continental shelf, which make no reference to any obligation to conserve sedentary species.

⁴¹Articles 87, 116. Article 119(3) also requires that conservation measures do not discriminate in form or in fact against fishermen of any state on the high seas.

⁴²Article 120 of the UNCLOS, 1982.

⁴³Saunders, Policy Options For the Management and Conservation of Straddling Fisheries Resources (St John's, 2003).

appropriate regional or sub regional organizations; in other words, they are not required to use the latter process. Article 118 also spells out a duty to cooperate in the management of high-seas fisheries and requires that states exploiting the same resources or resources in the same area ‘enter into negotiations with a view to taking the measures necessary for the conservation’. This somewhat imprecise formulation reflects the terminology used in the 1958 Fisheries Conservation Convention⁴⁴. States are also required to cooperate in establishing regional and sub regional fisheries organizations for this purpose but only ‘as appropriate’, and coverage of the high seas by regional fisheries bodies remains fragmentary.⁴⁵ However, Article 119 does specify the factors that states must take into consideration in determining the TAC and other conservation measures for the high seas, in terms somewhat similar to Article 61 (though unlike that article, it does not clearly require states to establish a TAC). These articles do not expressly require, as does Article 61, that states ‘ensure through proper conservation and management measures that the maintenance of living resources is not endangered by over-exploitation’. The concept of management based on MSY qualified by both economic and environmental factors is, however, retained along with reference to interdependence of stocks, effects on associated species, and any ‘generally recommended international minimum standards’.

These provisions of the 1982, UNCLOS neither clarify the rights of coastal states if agreement on high-seas conservation measures is not possible, nor do they address the broader objectives of ecosystem protection and conservation of biological diversity which cannot be achieved without coordinating law and policy for the EEZ and the adjacent high-seas area. The 1995 UN Fish Stocks Agreement is intended to remedy these defects of the UNCLOS text, whose articles must now be interpreted from the perspective of that treaty⁴⁶.

⁴⁴Article 4 of the UNCLOS,1982.

⁴⁵Article 118. of the UNCLOS,1982.

⁴⁶Article 6 of the UNCLOS,1982.

5.4.2.1.6 Deep seabed

Questions have arisen concerning the legal status of living resources found at great depths in the vicinity of hydrothermal vents on the deep seabed⁴⁷. Over 200 species of micro-organisms, crustaceans, molluscs, and other species have been identified in these vent areas. Because of their genetic material they are of great interest for biotechnological purposes, with potential pharmaceutical applications. Neither the UNCLOS nor the Biodiversity Convention specifically covers their use for pure scientific research or commercial purposes. Nor is research or exploitation of these species constrained by the UNCLOS provisions governing the deep seabed in areas beyond national jurisdiction. Those provisions apply only in respect of mineral resource activities ‘in’ the deep seabed.⁴⁸ Deep-seabed species are thus not common heritage resources and do not fall directly within the management responsibilities of the International Seabed Authority;⁴⁹ rather they appear to be EEZ or high-seas resources depending on where they reside. As such, relevant provisions of the 1982 Convention and customary law concerning equitable utilization and conservation of marine living resources will apply⁵⁰. However, the International Seabed Authority’s jurisdiction to carry out research, regulate pollution or prevent interference with the ecological balance of the marine environment would apply to living organisms found around deep-sea vents if affected by seabed mineral resource activities⁵¹.

It is clear that the Biodiversity Convention also applies in principle to these resources. Deep-seabed species have a potentially high value as ‘genetic resources’ and ‘genetic material’ within the objectives of the Convention. As such they are subject to relevant obligations such as sustainable use, maintenance of variability among living organisms, ‘appropriate access’, fair and equitable sharing of benefits arising from their use, and, to the extent applicable, the ‘appropriate’ transfer of technologies. However, unless

⁴⁷Glowka, 12 *Ocean Yb* (1996).

⁴⁸Articles 133 of the UNCLOS, 1982.

⁴⁹Articles 136 of the UNCLOS, 1982.

⁵⁰Articles 61, 117 of the UNCLOS, 1982.

⁵¹Articles 143, 145 of the UNCLOS, 1982.

exploitation of deep-seabed vent resources would seriously damage or threaten marine biodiversity, the CBD in effect defers to the UNCLOS⁵².

5.5 The species approach

It was agreed at UNCLOS III that special regimes should be laid down for certain species that migrate in various ways. The origins of this approach lie more in allocation of access and jurisdictional rights than in conservation, but the provisions, of course, also allocate control for this purpose. The 1982 Convention specifically addresses the following five categories.

5.5.1 Highly migratory species (HMS)

These are listed in Annex I and include various species of tuna, marlin, sailfish, sword-fish, dolphin, shark, and cetacea. The Annex is, however, neither comprehensive nor easily amendable.⁸⁸ In addition to the other EEZ requirements, Article 64 requires coastal and other states fishing in a region for HMS to cooperate directly or through ‘appropriate’ international organizations ‘with a view’ to ensuring and promoting optimum utilization, within and beyond the EEZ thus giving this aim priority over conservation. Unlike marine mammals (Article 65) HMS are not removed from the requirement of optimum use. If no relevant organization exists, the states involved must cooperate to establish one and participate in it; the alternative of direct cooperation means that some HMS may not be conserved throughout their entire range.⁵³ Conservation objectives may thus be compromised if no agreement is concluded for high-seas areas (as is required under Article 63(2) for stocks within the EEZ) and if the wide discretion accorded to coastal states within their EEZ undermines the aims of Article 64. The problem of by-catches of dolphins, etc is not directly addressed; the US of driftnets has, however, become such a serious problem that it has been the subject of UNGA resolutions and a regional convention.⁵⁴

⁵²Article 22 of the CBD, 1992.

⁵³Burke, 14 ODIL (1984) 283–93. Relevant organizations cover Atlantic tuna (ICCAT), Inter-American tropical tuna (ITTTC).

⁵⁴Wellington Convention for the Prohibition of Fishing with Long Drift nets in the South Pacific, 1984 UNGA Res 44/225 (1989); 45/197 (1990); 46/215 (1991); 59/25 (2004).

The weaknesses of Article 64 stem from the United States wish to remove HMS as far as possible from coastal state control in the EEZ and subject their management to international regulation. The coastal state thus cannot exercise its right to make decisions until it has discharged its duty to cooperate with other states in promoting conservation and use. Developing coastal states, however, wanted to protect their sovereign rights to tuna, etc as EEZ resources and had been seeking in the tuna commissions higher quotas for 'resource adjacent nations'. Article 64 tries to accommodate both views. Following the establishment in 1987 of the South Pacific Forum Fisheries Agency (SPFFA)⁵⁵ under the auspices of FAO, it introduced a licensing system for the catching, inter alia, of tuna in the Convention area, which comprises the 200-mile zones of participating states and entities, the high-seas areas enclosed by these, and certain other specified areas in the Pacific Ocean. The United States initially objected but eventually paid a considerable sum to the Commission in return for access to a fixed quota of tuna.

5.5.2 Marine mammals

These include the twelve species of great whales, many of which were previously hunted to near extinction, as well as small cetaceans, dolphins, porpoises, seals, dugongs, and marine otters. Some of these species are listed in the 1982 UNCLOS as highly migratory and are thus covered by Article 64. However, it is Article 65 which gives more general protection to all marine mammals. It is not limited to the EEZ⁵⁶. These species are thus, for the first time, fully protected in a UN Convention. Article 65 provides that: "Nothing in this Convention restricts the right of a coastal state or international organization, as appropriate, to prohibit, limit or regulate the exploitation of marine mammals more strictly than provided for in this part. States shall cooperate with a view to the conservation of marine mammals and in the case of cetaceans shall in particular work through the appropriate international organization for their conservation, management and study".

⁵⁵Swan, in Soons (ed), *Implementation of the Law of the Sea Convention Through International Institutions* 318-43 (Honolulu, 1990).

⁵⁶Article 120 of the UNCLOS specifically extends this article to the high seas.

Article 65 does not in terms require states to join any particular international body merely to cooperate and, for cetaceans, to ‘work through’ the ‘appropriate body’. In the view of many, the International Whaling Commission (IWC) is that body. However, some states argue that as Article 65 refers to ‘organizations’ in the plural, it does not exclusively envisage the IWC and that the state concerned can determine which organization is appropriate.⁵⁷ Moreover, the Canadian view on withdrawing from the IWC in the 1980s was that the obligation to ‘work through’ is fulfilled if the organization is merely consulted or its scientific advice sought. For small cetaceans within the Canadian EEZ it would thus be for Canada to manage them; consultation could be with NAFO, would be voluntary and on Canada’s initiative.

The IWC was established by the 1946 International Convention for the Regulation of Whaling, the principal treaty under which states cooperate in the management of the marine mammals pursuant to Article 65.⁵⁸ Adopted for the purpose of restoring depleted whale stocks to a level that would permit hunting, the Whaling Convention provides a unique example of the use of conservation techniques borrowed from fishery commissions in order to achieve a strongly preservationist objective. It empowered the IWC to regulate whaling. As one commentator has remarked, although its full procedures have been unaltered for fifty years, ‘de facto the IWC has become a new organization’,⁵⁹ and had it not been for the conflicts in it ‘we would have known far less than we do today about the status of the various stocks of whales’. The IWC has continued to focus on the twelve large whale species that were originally the targets of the whaling industry and it has not regulated (with minor exceptions) the small cetaceans. The votes necessary to amend the schedule for this purpose have never been obtainable. Attempts have instead been made to protect at least some of these species by listing them on the appendices of the Bonn, Berne, and CITES Conventions.

⁵⁷North Atlantic NAFO or NAMMCO.

⁵⁸Birnie, *International Regulation of Whaling*, 2 vols 56 (Dobbs Ferry, 1985).

⁵⁹Andresen, in Andresen, Skodvin, Underdahl, and Wettestad (eds), *Science and Politics in International Environmental Regimes* 65 (Manchester, 2000).

The Whaling Convention includes a schedule of regulations which can be added to or amended annually by a three-quarter majority vote in the IWC. Objecting states may opt out of IWC regulations under Article 3,¹⁰² but this option is used much less than in the past because of conservationist pressure from NGOs and non-whaling states. Catches can be limited by quotas and stocks are assessed in relation to maximum sustainable yield, with due allowance being made for environmental factors affecting this calculation. As quotas can be set at zero, all taking of exploited species can be totally prohibited by issuing no permits. Since 1985 an IWC moratorium on commercial whaling has been in force, reviewed at each meeting of the Commission. In effect a treaty originally intended to regulate whaling has through this simple device become a treaty to protect whales, albeit with strenuous objections from Japan, Iceland, and Norway. Some former whaling states have instead turned to promoting whale watching as an acceptable non-consumptive alternative. In 1994 the Southern Ocean was declared a whale sanctuary in which all whaling would be banned as a pre-cautionary measure, although Japan continues to permit the taking of whales there for scientific research purposes under Article VIII of the ICRW⁶⁰. Proposals for a South Pacific sanctuary have not yet been approved. A proposal for the establishment of a whale sanctuary in the South Atlantic also failed to achieve the required three-quarter majority votes during the 59th Annual Meeting in 2007.

In the course of time and in the light of changing opinions about whaling, the IWC has also passed several non-binding resolutions (which require only a simple majority for their adoption). Inter alia, these ban transfer of vessels, equipment, and know-how to non-member states; prohibit trading in whales and whale products (the EC has implemented this by adopting a regulation banning their import into member states);⁶¹ call for humane killing, and require collection of data on small cetaceans.⁶² Following the model of the

⁶⁰Gillespie, 15 *IJMCL* 293(2000).

⁶¹Council Regulation No 348/81, Article 1; OJ EEC No L 39 (12 Feb 1981) 1 as corrected on OJ No L 132 (19 May 1981) 30.

⁶²Birnie, *International Regulation of Whaling*, ii, 775–97(1995).

1911 Fur Seals Convention, the Schedule itself was also used to permit, exceptionally, aboriginal subsistence whaling in Siberia and Alaska, but only if using traditional, simple means of killing the whales. More controversially the Makah tribe of native Americans was permitted to take a gray whale, after a gap of over seventy years.

5.5.3 Anadromous species

Anadromous species spawn in freshwater rivers, but spend the major part of their lives at sea, passing through territorial sea and EEZ to the high seas before returning to die in the rivers in which they originated. Conservatory measures adopted by the state of origin are rendered useless if the species are over-exploited in the EEZ or on the high seas. Article 66 of the 1982 UNCLOS provides that the state in whose rivers the stocks originate has the primary interest in and responsibility for these stocks⁶³ but, in return, it must ensure their conservation by establishing appropriate regulatory measures for this purpose and for determining access to these stocks landward of the outer boundary of its own EEZ.⁶⁴ Anadromous species can only be taken on the high seas in exceptional circumstances,⁶⁵ but fishing in other states' EEZs or in the rivers of downstream states is not banned. Where the stock migrates through the EEZ of another coastal state, the parties must cooperate on conservation and management.⁶⁶ It is not clear whether other coastal states can exercise jurisdiction over stocks not originating in their territory and which they have never fished.⁶⁷ TACs can be set by the state of origin in consultation with other interested states,⁶⁸ but it is not obliged either to do so or to determine its own harvesting capacity. It retains the discretion to adopt other measures that ensure conservation.

⁶³Article 66(1) of the UNCLOS,1982.

⁶⁴Article 66(2) of the UNCLOS,1982.

⁶⁵Article 66(3)(a) of the UNCLOS,1982.

⁶⁶Article 66(4) of the UNCLOS,1982.

⁶⁷Hey, *The Regime for the Exploitation of Transboundary Marine Fishery Resources*, 64(1999).

⁶⁸Article 66(2) of the UNCLOS,1982.

If banning fishing on the high seas causes economic dislocation in other states,⁶⁹ the state of origin must consult them ‘with a view to achieving agreement on terms and conditions of such fishing’, including determining the necessary conservation measures. Enforcement (which must respect high-seas freedoms) must be agreed among the state of origin and the others concerned. The state of origin must also cooperate in minimizing economic dislocation to all other states where fishing has taken place.⁷⁰ Special arrangements for harvesting the stock must be made with states which have invested in stock renewal in cooperation with the state of origin.⁷¹

Article 66 thus establishes a special discrete conservatory regime, apart from others in Part V; conservation is the main aim here, with the secondary interests of other states balanced by cooperation through consultation. Most fisheries conventions do not apply to salmon and we have to look for evidence of state practice in the conclusion of specific conventions, in particular the innovatory 1982 Reykjavik Convention for the Conservation of Salmon in the North Atlantic Ocean (NASCO)⁷² and the 1992 Convention for the Conservation of Anadromous Stocks in the North Pacific.

5.5.4 Catadromous species

Catadromous species are the opposite of the above; they are spawned at sea and spend the major part of their lives in rivers and lakes. The species of main commercial interest are eels on which coastal industries are based in several states. Article 67 provides that coastal states in whose waters these species spend the major part of their life-cycle are responsible for their conservation and management;⁷³ they have the primary interest. Exploitation is permitted only to landward of the outer limit of the EEZ. Exploitation in the EEZ is subject to the provisions of Article 67 and those relating to the EEZ.⁷⁴ When migrating through another state’s EEZ, they are to be regulated both by

⁶⁹ Article 66(3)(a) of the UNCLOS, 1982.

⁷⁰ Article 66(3)(b) of the UNCLOS, 1982.

⁷¹ Article 66(3)(c) of the UNCLOS, 1982.

⁷² Churchill, EEC Fisheries Law, 18(1989).

⁷³ Article 67(1) of the UNCLOS, 1982.

⁷⁴ Article 67(2) of the UNCLOS, 1982.

the state in whose waters they spend the major part of their life-cycle and the state through whose waters they migrate, which must conclude agreements providing for rational management, taking account of the special interest of the former state. As exploitation beyond the EEZ is banned, no agreements will be needed for high-seas stocks. As no particular manner of cooperation is prescribed states can act bilaterally or through international organizations.

5.5.5 National implementation of UNCLOS fishery provisions

It is clearly important for conservation of high seas and EEZ fisheries that states implement in good faith a conservatory and management regime based on the principles and considerations set out in Articles 61 and 119 of UNCLOS. It is apparent from the compendia of national fisheries legislation produced by the FAO and the UN and various individual analyses of state practice, that states are not doing so in any uniform fashion. That is not to say that in their administrative practice they do not heed these conservatory requirements, but that they do not obligate themselves to do so in their relevant national legislation partly because of the difficulties encountered in interpreting these provisions.

Over one hundred states have now asserted sovereign rights over fisheries up to 200 miles from their coastline. Since the 1970s many of these have sought advice from FAO, either on the drafting of their new legislation, or the management and development of their fisheries or both. Whilst FAO cannot take any particular view on the interpretation of ambiguous provisions in the UNCLOS, it can advise on the choices facing its member states concerning interpretation and the complex problems of enactment and implementation of these provisions. It has done, encouraging multidisciplinary studies, introduction of legal and administrative measures, reviewing existing agreements, evaluating the enforcement problems, and providing reports and draft laws.

Most developing states inherited their legislation from the former colonial powers, based on the pre-1982 UNCLOS regime and inappropriate to extended coastal-state management powers. Modern fisheries legislation,

especially if drafted under FAO auspices, now typically provides for a Fisheries Management and Development Plan related to a specific management area and to exploited fisheries only. The United States Marine Mammal Protection Act 1972¹²⁹ and the Fishery Conservation and Management Act 1976 provided models for this, although more recent examples in developing country practice are simpler.⁷⁵ There has thus been a move away from the old-style conservation statute, as exemplified in UK fisheries laws, based on highly specific prohibitions of the various fishing techniques, etc, outlined earlier in this chapter, towards a more general enunciation of objectives and the means of achieving them, an approach hitherto more familiar in civil than common-law systems. This leaves details to be worked out in the light of subsequent experience but results in a diversity of solutions which makes evaluation of state practice difficult. It is important, given the multiplicity of factors affecting fishery conservation, that flexibility be maintained in national legislation and that it be constantly revised.

5.6 Post UNCLOS Developments

5.6.1 UNCED and the conservation of high seas fisheries resources

The Rio Conference treated the 1982 UN Convention on the Law of the Sea as a codification of the existing law relating to the marine environment, but Agenda 21 nevertheless placed new emphasis, inter alia, on ecosystem and biodiversity protection, application of the precautionary approach, and sustainable use of marine living resources. It was noted in particular that the management of high-seas fisheries had been inadequate. Problems identified included a failure to adopt, monitor and enforce effective fisheries conservation measures, unreliable data regarding high-seas stocks and catches, evasion of controls by re-flagging of vessels, excessive fishing-fleet size, and a lack of sufficient cooperation between states. While acknowledging that the relevant provisions of the 1982 UNCLOS represented the rights and obligations of states with respect to conservation and sustainable use of high seas living resources, Agenda 21 called for the convening of a UN conference on

⁷⁵FAO, Legislative Series No 21 120 (Rome, 1990).

straddling and highly migratory fish stocks, and for more effective cooperation through regional fisheries organizations and agreements.⁷⁶ The Rio Conference thus initiated some important developments in the law relating to marine living resources, including not only the conclusion in 1995 of the UN Agreement on Straddling and Highly Migratory Fish Stocks ('UN Fish Stocks Agreement') but also the adoption by FAO of the 1993 Agreement to Promote Compliance with International Conservation and Management Measures by Fishing Vessels on the High Seas,⁷⁷ the 1995 Code of Conduct for Responsible Fisheries,⁷⁸ and the International Plan of Action on Illegal, Unregulated and Unreported Fishing.⁷⁹ In the assessment of one writer,

There can be little doubt that the sum total of the changes introduced has substantially strengthened the regime of the 1982 UN Convention. These instruments have ensured that the importance of the long-term sustainable use of marine living resources has been placed in the forefront of any serious analysis of the legal regime.

5.6.2 Alternative approaches to management of high seas fisheries

Notwithstanding the very widespread adoption of the 200 mile EEZ, the over exploitation of fish stocks in the North Pacific, the Behring Sea, the Antarctic, the North Atlantic and the North Sea shows that the UNCLOS strategy for sustain-able fishing has not worked as intended.⁸⁰ As we saw earlier, one reason for this failure is that some coastal states have failed to ensure sustainable fishing within their own EEZs. Another closely connected problem is that some important fish stocks are not confined to the EEZ but can also be taken on the high seas. Highly migratory species such as tuna clearly fall into this category, but other less-mobile stocks are also found straddling the remaining high-seas areas and adjacent EEZs. Fishing effort on the high seas has not been eliminated by the extension of coastal-state jurisdiction, but

⁷⁶Rept. of UNCED, UN Doc A/CONF 151/26/Rev 1, Vol I 44-63 (1992).

⁷⁷Boyle and Freestone (eds), *International Law and Sustainable Development*, 165(1997).

⁷⁸Edeson, 11 *IJMCL* 97 (1996).

⁷⁹Edeson, 16 *IJMCL* 603 (2001).

⁸⁰Ulfstein, Andersen, and Churchill, *The Regulation of Fisheries: Legal, Economic and Social Aspects* (Council of Europe, 1986).

transferred beyond 200 miles, and competition for stocks made more intense. This has seriously affected the viability of some adjacent EEZ fisheries. Redrawing the boundary between coastal-state jurisdiction and the high seas has not done away with the unavoidable facts of geography: in a divided ocean, most fish are inevitably at least a shared EEZ resource and will in some cases also be a high seas common property resource.

One possible response the further extension of coastal state jurisdiction adopted so far only by Chile and briefly by Canada, would destroy the consensus arrived at in the UNCLOS Convention, and once again generate serious conflict with distant-water fishing states.⁸¹ Another solution would entail the abolition or suspension of high seas exploitation rights, based on a 'precautionary approach' to environmental risks.⁸² At its strongest, the precautionary approach may result in a 'preservationist' model of sustainability if, for example, a workable scheme of sustainable exploitation proved impossible to devise. The moratorium on whaling in force since 1983 arguably reflects this form of precaution; so for somewhat similar reasons does the prohibition of sealing or the taking of salmon on the high seas under an increasing number of regional agreements.⁸³ Limited versions of the same approach are evident in the revival of the high seas abstention doctrine to contain Japanese, Korean, and Taiwanese fishing in the North Pacific and in the attempt to outlaw mainly Japanese drift-netting in the South Pacific. All of these possibilities were rejected during negotiation of the 1995 Fish Stocks Agreement in favour of a more moderate version of the precautionary approach, considered.⁸⁴

The most radical alternative to 'the old rules of the game' would involve extending the common heritage concept to high-seas fisheries. As this would entail surrendering management and regulatory authority to an international

⁸¹Saunders, Policy Options for the Management and Conservation of Straddling Stocks (St John's, 2003).

⁸²FAO, The Precautionary Approach with Reference to Straddling Fish Stocks and HM Fish Stocks, UN Doc A/Conf 164/INF/8 (1994).

⁸³Article 66 of the UNCLOS 1982.

⁸⁴Convention for the Prohibition of Fishing with Long Drift Nets in the South Pacific, 1989.

body, comparable to the International Seabed Authority,⁸⁵ or to similar regional bodies, it was not a solution proposed either at UNCED or during negotiation of the 1995 Fish Stocks Agreement. This is politically understandable, but only at the cost of ignoring the economic logic of separating the right to fish from the right to own or profit from the catch.⁸⁶ Without such a separation it will always be in the economic interest of distant-water fishing nations to tolerate unrestrained fishing on the high seas, whatever international law may provide. It is against this economic logic that the 1995 Agreement must be assessed.

5.6.3 Agreement on straddling and highly migratory fish stocks (UNFSA)

The 1995 UN Fish Stocks Agreement represents an attempt to deal with the serious problems of sustainable fishing by building on the existing provisions of the 1982 UNCLOS.⁸⁷ Nevertheless, the Agreement is in many respects radical in its reform of international fisheries law; it introduces new obligations of sustainable use; requires a precautionary approach to be applied to the conservation and management of stocks and broadens this obligation to include associated ecosystems; seeks to ensure compatibility between EEZ and high-seas conservation measures, and places on parties a more extensive obligation of cooperation through regional fisheries bodies, without which they risk losing the right to fish on the high seas. Although the 1995 Agreement is to be interpreted and applied ‘in the context of and in a manner consistent with the 1982 Convention’ and is without prejudice to the rights, jurisdiction and obligations of parties to the 1982 UNCLOS,⁸⁸ in effect it not only amplifies that convention, but amends other regional fisheries treaties covering straddling and highly migratory stocks. Moreover, in accordance with the general rules on interpretation of treaties, the 1995 Fish Stocks Agreement can provide guidance on, or confirmation of, the inherently evolutionary meaning of Articles 63 and 116–19 of the 1982 UNCLOS.⁸⁹ The fact that it was negotiated

⁸⁵UN Doc AC 138/53, 5 (1973).

⁸⁶Compare the 1957 North Pacific Fur Seals Convention, *supra*, section 4(4).

⁸⁷Anderson, 45 *ICLQ* 465 (1996).

⁸⁸Article 4 of the UNCLOS, 1982.

⁸⁹Boyle and Freestone(eds), *International Law and Sustainable Development*, 160(1998).

and adopted by consensus, including all the major distant water and coastal fishing states, reinforces this conclusion.

5.7 New Approaches to Conservation of Marine Fisheries Resources

In response to the limits of the traditional approaches, more conservation-oriented approaches are being developed in post-LOSC treaties concerning conservation of marine living resources. In particular, the ecosystem and precautionary approaches merit serious consideration. In this regard, it must be stressed that the purpose of these new approaches is not to replace the zonal management and species specific approaches, but to resolve the problems that cannot be resolved under the traditional approaches. In other words, the new approaches should be considered as an element so as to supplement the traditional approaches. Thus, the question is whether and to what extent the new approaches can contribute to enhance the effectiveness of conservation of these resources in international law.

5.7.1 The Ecosystem Approach

The ecosystem approach differs from the traditional species specific approach in the sense that the ecosystem approach focuses on biological interactions between all marine species in the same as well as in neighbouring zones and the ecological conditions of the physical surroundings.⁹⁰ While there is no universally agreed definition of an ecosystem approach, for instance, the FAO Expert Consultation on Ecosystem-Based Fisheries Management defined this approach as follows: “An ecosystem approach to fisheries strives to balance diverse societal objectives, by taking into account the knowledge and uncertainties about biotic, abiotic and human components of ecosystems and their interactions and applying an integrated approach to fisheries within ecologically meaningful boundaries.”⁹¹

⁹⁰N.Matz, The Interaction between the Convention on Biological Diversity and the UN Convention on the Law of the Sea, 17(2002).

⁹¹FAO, Fisheries Report No. 690, Report of the Expert Consultation on Ecosystem Based Fisheries Management, Reykjavik, Iceland, 2 (16.-19.9.2002), available at: <ftp://ftp.fao.org/docrep/fao/005/y4491t/y4491t00.pdf>.

It can be observed that the ecosystem approach is being enshrined in post-LOSC instruments respecting conservation of marine species. At the treaty level, the case in point is the 1995 Fish Stocks Agreement. This Agreement clearly notes “the need to avoid adverse impacts on the marine environment, preserve biodiversity, maintain the integrity of marine ecosystems and minimize the risk of long-term or irreversible effects of fishing operations”. Art. 5 (d) thus obliges coastal States and States fishing on the high seas to “assess the impacts of fishing, other human activities and environmental factors on target stocks and species belonging to the same ecosystem or dependent upon or associated with the target stocks”. Art.5 (g) places an obligation upon coastal States and States fishing on the high seas to protect biodiversity in the marine environment. Similarly, Art.4(a) of the 2006 Southern Indian Ocean Fisheries Agreement provides that “measures shall be adopted on the basis of the best scientific evidence available to ensure the long-term conservation of fishery resources, taking into account the sustainable use of such resources and implementing an ecosystem approach to their management”.⁹²

Concerning non-binding documents, the ecosystem approach is highlighted by the 1995 FAO Code of Conduct for Responsible Fisheries,⁹³ the 1999 Rome Declaration on the Implementation of the Code of Conduct for Responsible Fisheries,⁹⁴ and the 2001 Reykjavik Declaration on Responsible Fisheries in the Marine Ecosystem.⁹⁵ It is also notable that the United Nations General Assembly resolutions repeatedly refer to the application of the ecosystem approach to conservation of marine living resources. For example, Resolution 62/177 recognized “the need to further integrate ecosystem approaches into fisheries conservation and management and, more generally, the importance of applying ecosystem approaches to the management of human activities in the ocean”.

⁹²For the text of the Agreement, Official Journal of European Union, L 196/17,

⁹³Para. 6 of the Rome Declaration, 1999.

⁹⁴Para. 6 of the Rome Declaration, 1999.

⁹⁵Paras. 16 and 17 of the Preamble.

5.7.1.1 The Normativity of the Ecosystem Approach as a Rule of Conduct

The first issue that needs to be addressed involves the normativity of the ecosystem approach as a rule of conduct. As there is no universally agreed definition of an ecosystem approach, it is to be interpreted differently in different contexts.⁹⁶ In this regard, the Report on the Work of the United Nations Open-ended Informal Consultative Process on Oceans and the Law of the Sea stated that an ecosystem approach should consider, *inter alia*, the following elements: (a) conservation of ecosystem structures and their functioning and key processes in order to maintain ecosystem goods and services; (b) application within geographically specific areas based on ecological criteria; (c) the interactions between human activities and the ecosystem and among the components of the ecosystem and among ecosystems; (d) factors originating outside the boundaries of the defined management area that may influence marine ecosystems in the management areas; (e) balance of diverse societal objectives; (f) stakeholder and local communities' participation; (g) best available knowledge; (h) risk assessment and the precautionary approach; (i) integrated decision-making processes; (j) restoring degraded marine ecosystems; (k) assessment of the cumulative impacts of multiple human activities on marine ecosystems; (l) ecological, social, cultural, economic, legal and technical perspectives, (m) the appropriate balance between conservation and sustainable use of marine biological diversity; and (n) minimization of adverse impacts of human activities on marine ecosystems and biodiversity.⁹⁷ However, the catalogue of elements which should be taken into account is itself not law. The interrelationship between elements also remains obscure.⁹⁸ It may be forced to accept that specific implications of the ecosystem approach remain unclear. Thus, if the ecosystem approach is enshrined in treaties, it appears

⁹⁶United Nations, Report (note 1), 2, para. 6.

⁹⁷ United Nations, Report (note 1), 2 et seq., para. 6.

⁹⁸ The same criticisms will apply to the concept of Large Marine Ecosystems (LME).

debatable whether and to what extent this approach can legally direct the conduct of States.

5.7.1.2 The Normativity of the Ecosystem Approach as a Rule for Adjudication

The second issue pertains to the normativity of the ecosystem approach as a rule for adjudication. In practice, the implementation of the ecosystem approach is to be determined taking various scientific, economic and social factors into account. Indeed, as quoted earlier, the FAO Expert Consultation stated that the ecosystem approach must strive to balance “diverse societal objectives”. This is in essence a matter of national policy, and it appears difficult to *a priori* determine specific measures under the ecosystem approach. If this is the case, it will be difficult, if not impossible, for international courts and tribunals to judge the violation of the obligation to apply the ecosystem approach when the application of this approach has been disputed between States. Hence, it may be questionable whether the ecosystem approach can be an independent rule for adjudication.

5.7.1.3 Scientific and Technological Difficulties

Third, ecosystem processes and functions are complex and variable in space and time.⁹⁹ Accordingly, the whole mechanism of an ecosystem is difficult to understand. A concern is also voiced that effective management of marine species has been deterred in some areas by the lack of accurate data.¹⁰⁰ Thus, the ecosystem approach may encounter scientific uncertainties as to its effective implementation.¹⁰¹ In relation to this, it must also be noted that the implementation of the ecosystem approach may still be a difficult task even for the developed States with substantial resources for ocean management.¹⁰² It may be debatable whether developing States can

⁹⁹ R. Haeuber, Setting the Environmental Policy Agenda: the Case of Ecosystem Management, N. Res. J. 36 (1996).

¹⁰⁰ UN General Assembly Resolution, Sustainable Fisheries, including through the 1995 Agreement for the Implementation of the Provisions of the United Nations Convention on the Law of the Sea of 10 December 1982 relating to the Conservation and Management of Straddling Fish Stocks and Highly Migratory Fish Stocks, and Related Instruments.

¹⁰¹ H. Wang, Marine fisheries 56(2003).

¹⁰² W. T. Burke, Evolution in the Fisheries Provisions of UNCLOS, 131 (2002).

implement the ecosystem approach in light of their limited capabilities of marine scientific research.

5.7.1.4 Consistency of Conservation Measures

Where marine ecosystems straddle man-made limits or delimitation lines in the oceans, the ecosystem approach encounters a considerable difficulty with regard to its practical implementation. Specifically a question arises how it is possible to ensure consistency of conservation measures for species which straddle the EEZ and the high seas or EEZs of two or more coastal States. This question is particularly at issue in relation to conservation of straddling and highly migratory species. In this regard, Art. 7 (2) of the 1995 Fish Stocks Agreement stipulates that: “Conservation and management measures established for the high seas and those adopted for areas under national jurisdiction shall be compatible in order to ensure conservation and management of the straddling fish stocks and highly migratory fish stocks in their entirety. To this end, coastal States and States fishing on the high seas have a duty to cooperate for the purpose of achieving compatible measures in respect of such stocks.

States are thus obliged to make every effort to agree on compatible conservation and management measures within a reasonable period of time pursuant to Art.7(3). In relation to this, Art. 7 (2) enumerates factors to be taken into account in determining compatible conservation and management measures in some detail. On the other hand, it remains unclear how it is possible to balance these elements. In this regard, some argue that Art. 7 (2) (a) will lead to a result in favour of coastal States.¹⁰³ However, such an interpretation will considerably limit the scope of the negotiation on this subject because the validity of conservation measures in marine spaces under national jurisdiction is already presumed and the issue remaining is whether or not fishing States on the high seas accept these measures. If this is the case, the negotiation would seem to become pointless. Accordingly, there

¹⁰³H. Gherari, L'accord du 4 août 1995 sur les stocks chevauchants et les stocks de poissons grands migrants, 100 R.G.D.I.P. 100 (1996).

may be room for the view that Art. 7 (2) should be construed in such a way that conservation and management measures established for the high seas and those adopted for areas under national jurisdiction must be mutually compatible, not that measures adopted for the high seas have to be compatible with measures adopted for areas under national jurisdiction.¹⁰⁴ In any case, without an institutional mechanism for governing straddling and highly migratory fish stocks, it appears difficult to ensure compatibility of conservation measures between marine spaces under and beyond national jurisdiction. At least, it must be remembered that the application of the ecosystem approach itself cannot automatically overcome the weakness of the zonal management approach with regard to the conservation of straddling and highly migratory species.

5.7.1.5 Marine Protected Areas as an Implementation of the Ecosystem Approach

Concerning the implementation of the ecosystem approach, special attention must be devoted to the inter-linkage between that approach and marine protected areas (MPAs). While the MPA-related concepts are diverse in international law, in broad, these concepts can be divided into two main categories, namely, MPAs purporting to protect the marine environment (category 1),¹⁰⁵ and MPAs relating directly to conservation of marine biological diversity (category 2). The second category of MPAs can be divided into two sub-categories.

A first sub-category concerns species-specific MPAs (category 2-1). This type of MPAs seeks to protect specific marine life, such as marine mammals, in the certain region.¹⁰⁶ It appears that basically MPAs in this sub-category are in line with the traditional species specific approach.

¹⁰⁴A.G.Oude Elferink, The Impact of Article 7 (2) of the Fish Stocks Agreement on the Formulation of Conservation and Management Measures for Straddling Highly Migratory Fish Stocks.

¹⁰⁵At least five MPA-related concepts must be noted: "Clearly Defined Area" in Art. 211 (6) of the 1982 LOSC, Ice-Covered Areas in Art. 234 of the LOSC, Special Areas under MARPOL 73/78, Particularly Sensitive Sea Areas (PSSA) in IMO Guidelines, and Specially Protected Areas in the 1985 Montreal Guidelines.

¹⁰⁶Agreement on the Conservation of Seals in the Wadden Sea, 1993.

A second sub-category relates to MPAs which seek to protect rare or fragile ecosystems and the habitat of depleted or endangered species and other marine life in a particular region or area (category 2-2). In essence, this category of MPAs seeks to protect marine ecosystems of a certain area as a whole. In this sense, this type of MPAs can be regarded as a tool to implement the ecosystem approach. As shown in the table, MPAs for the conservation of marine biological diversity are increasingly enshrined in various treaties at the global and regional levels.

5.7.1.5.1 Definition of Marine Protected Areas

There is no universally agreed definition of 'marine protected area'¹, though a number of definitions have been developed by different organizations and institutions.¹⁰⁷

At the international level, the CBD defines the broader term 'protected area' in its Article 2 as 'a geographically defined area which is designated or regulated and managed to achieve specific conservation objectives'. In Decision VII/5 adopted by the Conference of the Parties in 2004, reference is made to the definition given by the Ad Hoc Technical Expert Group on Marine and Coastal Protected Areas (the Ad-Hoc Group) in its 2003 report¹⁰⁸ which defines an MPA as: "an area within or adjacent to the marine environment, together with its overlying waters and associated flora, fauna, and historical and cultural features, which has been reserved by legislation or other effective means, including custom, with the effect that its marine and/or coastal biodiversity enjoys a higher level of protection than its surroundings".

The FAO defines MPAs as 'temporally and geographically defined areas that afford natural resources greater protection than is afforded in the rest of an area as defined in relation to fisheries management'.¹⁰⁹ The International Union for Conservation of Nature (IUCN) proposes a definition according to which an MPA is 'any area of intertidal or sub-tidal terrain, together with its overlying

¹⁰⁷ P. Druel, 'Marine protected areas in areas beyond national jurisdiction: The stale of play' IDDR1 Working Paper 7 (2011).

¹⁰⁸ Document UNEP/CBD/SBSTTA/8/INF/7 (last accessed 26 May 2015).

¹⁰⁹ FAO website: <http://www.fao.org/fishery/topie/4400/en> (last accessed 26 May 2015).

water and associated flora, fauna, historical and cultural features, which has been reserved by law or other effective means to protect part or all of the enclosed environment'.

5.7.1.5.2 Marine Protected Areas in ABNJ

There is currently strong interest in the establishment of multi-purpose MPAs in ABNJ, or MPAs which seek to regulate a large variety of human activities with the ultimate objective to conserve marine biodiversity. However, there is no global mechanism for the establishment of such multi-purpose or multi-sectoral MPAs. Instead, the prevailing approach to conservation and sustainable use at the international level is sectoral. Several international organizations are already able to establish what can be called 'sectoral MPAs' or 'area-based management tools' in ABNJ. For example:

- The International Maritime Organization (IMO) can designate Particularly Sensitive Sea Areas (PSSA) to protect areas that, for recognized ecological, socioeconomic or scientific reasons, may be vulnerable to damage by international maritime activities.¹¹⁰ No PSSAs have been designated in ABNJ to date.
- The International Seabed Authority (ISA) can designate Areas of Particular Environmental Interest and preservation reference zones.¹¹¹ The ISA has declared nine APFIs in the Clarion-Clipperton Zone (North Central Pacific).¹¹²
- Regional Fisheries Management Organizations (RFMO) can designate closures of certain fisheries to protect or restore the stocks they manage, or to protect the vulnerable marine ecosystems (VMEs) located on the seabed (pursuant to relevant UNGA resolutions).¹¹³

¹¹⁰IMO, Revised guidelines for the identification and designation of Particularly Sensitive Sea Areas (PSSAs), 2005; A.982(24).

¹¹¹ISA, Decision of the Council of the International Seabed Authority relating to amendments to the Regulations on Prospecting and Exploration for Polymetallic Nodules in the Area and related matters. 2013; ISBA/19/C/17; Section V.31.6.

¹¹² Available at https://www.isa.org.jni/files/documents/EN/I_8Sess/Council/ISBA-18C-22.pdf (last accessed 4 June 4, 2018).

¹¹³In particular Resolution 61/105: Sustainable fisheries, including through the 1995 Agreement for the implementation of the Provisions of the United Nations Convention on the Law of the Sea of 10

Approximately 30 such closures have been made in the North-East Atlantic, the North-West Atlantic, and the South-East Atlantic.¹¹⁴

In parallel, a scientific process has been ongoing under the auspices of the CBD to identify ecologically or biologically significant marine areas (EBSAs). In 2008, the CBD adopted scientific criteria for this purpose.¹¹⁵ These criteria are: uniqueness or rarity; special importance for life-history stages of species; importance for threatened, endangered or declining species and/or habitats; vulnerability, fragility, sensitivity or slow recovery; biological productivity; biological diversity and naturalness. Regional workshops to identify EBSAs are currently organized by the CBD together with relevant international and regional organizations.¹¹⁶ Identification of an EBSA does not have any immediate legal effect, and the management of these marine areas remains in the hands of the competent authorities.

5.7.1.5 .3 A New International Legally Binding Instrument on Marine Biodiversity in ABNJ

The United Nations Conference on Sustainable Development (Rio+20), 2012 committed to address, on an urgent basis, the issue of the conservation and sustainable use of marine biological diversity of areas beyond national jurisdiction including by taking a decision on the development of an international instrument under LOSC.¹¹⁷ Three meetings of the BBNJ Working Group were held in order to discuss whether or not negotiations should commence, culminating in January 2015 with the historic step of agreeing to open negotiations for a new international legally binding instrument under the LOSC.¹¹⁷

December 1982 relating to the Conservation and Management of Straddling Fish Stocks and Highly Migratory Fish Stocks, and related instruments, UN Doc. A/RES/61/105 (2006).

¹¹⁴Glen Wright, Jeff Ardron, Kristina Gjerde, and Julien Rochette, 'Advancing marine biodiversity protection through regional fisheries management: a review of high seas bottom fisheries closures' (2014) IDDRI Working Papers.

¹¹⁵CBD COP 9, Decision IX/20 on Marine and coastal biodiversity, Annex 1.

¹¹⁶CBD COP 10, Decision FX/29 on Marine and coastal biodiversity, para. 36.

¹¹⁷Julien Rochette, Glen Wright, Kristina Gjerde, Thomas Greiber, Sebastian Unger, and Aurelie Spadone, 'A new chapter for the high seas. (1DDRI Issue Brief 2/15. Paris, (2015).

5.7.1.5.4 MPAs under a New LOSC Implementing Agreement

While the precise content of any eventual implementing agreement (IA) remains a matter of speculation, it is clear that it will include provisions on "measures such as area-based management tools, including marine protected areas'." In order to consider what the substantive content of the new LOSC IA may be in relation to MPAs, it is helpful to think of the designation of an MPA as a process requiring a number of steps to be taken. These include:

- (i) the description of a suitable area according to determined scientific criteria;
- (ii) the proposal of an MPA;
- (iii) official designation by a competent authority; and
- (iv) the adoption of a management plan and management measures aimed at meeting the objectives of the MPA.

A number of sets of scientific criteria for identifying MPAs, or similar areas, have already been developed, such as EBSAs, VMEs, and PSSAs. A new IA could utilize any one of these approaches, establish a new set of criteria inspired by them, or both. There is even the possibility that the criteria could go beyond merely scientific factors so as to include areas of socio-economic, cultural, and educational importance.¹¹⁸

As to the manner in which an MPA might be proposed, options include proposal by one or a number of states, by a specific body convened under the auspices of the IA, or by NGOs or organizations with state support. Provision may be needed to ensure that a dedicated scientific body considers proposals and that they are officially designated by a Conference of the Parties or relevant organizational meeting. Rules for decision making will also be needed, for example provision that MPA designations must be approved by two-thirds (or greater or lesser) majority of the COP or relevant organization.

¹¹⁸This is already the case for PSSAs. The IMO criteria for identification of PSSAs identifies 'social, cultural, and economic criteria' and 'scientific and educational criteria' as two of the three categories for designation of a PSSA. An area can be designated as a PSSA on the basis of one criterion alone: IMO resolution A.982 (24) of 1 December 2005, s. 44.

Given the fragmented nature of international marine governance, there are many potential structures that could be implemented for the adoption of management plans and management measures for meeting the objectives of an MPA. Indeed, adoption of a management plan may not be necessary; the focus being placed instead on the adoption of specific management measures. Alternatively, a proponent may be required to submit a management plan when proposing an MPA or one could be subsequently developed and adopted by an organ of the TA. In any event, management measures will be an essential part of ensuring the effectiveness of the MPA and mechanisms for their adoption will be needed. Such mechanisms could include proposals along with the MPA, or development by states cooperating directly and through competent international, regional, and sectoral organizations. To this end, regional working groups or advisory bodies could be established to bring together states, competent organizations, scientists, and other stakeholders in order to consider the management of MPAs in a given region.

However, care should be taken that the creation of MPAs does not always successfully protect marine species and ecosystems. In fact, a concern is expressed that in many cases, MPAs have not been effective in meeting their objectives.¹¹⁹ From a viewpoint of international law, further consideration must be given to particularly three issues.

- The first issue involves the inter-linkage between the MPAs and the regulation of marine pollution. Considering that marine species cannot be separated from the marine environment, the regulation of marine pollution is a prerequisite for the conservation of marine ecosystems. However, the establishment of MPAs itself cannot protect marine ecosystems from marine pollution. Accordingly, there will be a need to link MPAs to the regulation of marine pollution in an integrated manner, though usually the regulation of marine pollution is beyond the scope of the MPAs.

¹¹⁹The Convention on Biological Diversity, Conference of the Parties, Decision VII/5, Review of the Programme of Work on Marine and Coastal Biodiversity, 2004, para. 13.

- The second issue pertains to adverse impacts of climate change on marine ecosystems. The marine environment is sensitive to climate and atmospheric changes. For instance, it is suggested that coral would be seriously damaged if sea surface temperatures increase by more than 1°C above the seasonal maximum temperature.¹²⁰ In this regard, the UN General Assembly expressed its concern that “climate change continues to increase the severity and incidence of coral bleaching throughout tropical seas and weakens the ability of reefs to withstand ocean acidification, which could have serious and irreversible negative effects on marine organisms, particularly corals, as well as to withstand other pressures, including overfishing and pollution”.¹²¹ Nonetheless, MPAs cannot, in themselves, prevent adverse impacts upon marine ecosystems by climate change.
- Third, it seems beyond doubt that fishing activities are one of the major threats to marine ecosystems. With few exceptions,¹²² however, normally the regulation of fisheries falls outside the scope of treaties relating to the conservation of marine biological diversity; conversely, fisheries treaties do not focus on the conservation of marine biological diversity. As a consequence, there is an interruption between two legal fields¹²³. Hence, further consideration must be given to a positive co-ordination between the conservation of marine ecosystems and the regulation of fisheries.

5.7.2 The Precautionary Approach and Its Limits

Another approach that needs particular notice is the precautionary approach¹²⁴. The essence of the precautionary approach is that once a risk has been identified, the lack of scientific proof of cause and effect shall not be used

¹²⁰Convention on Biological Diversity, SBSTTA, Biological Diversity and Climate Change, Report of the *Ad Hoc* Technical Expert Group on Biodiversity and Climate Change, UNEP/CBD/SBSTTA/9/INF12, 30.9.2003, 37, para. 63.

¹²¹United Nations General Assembly Resolution, Oceans and the Law of the Sea, A/RES/64/71, 4.12.2009, 3.

¹²²Art. 5 (2.4.) of the 1990 Protocol Concerning Specially Protected Areas and Wildlife to the Convention for the Protection and Development of the Marine Environment.

¹²³Convention on Biological Diversity, Ad Hoc Open-Ended Working Group on Protected Areas, Options for Cooperation for the Establishment of Marine Protected Areas in Marine Areas Beyond the Limits of National Jurisdiction, UNEP/CBD/WG-PA/1/2, 20.4.2005, 13, para. 33.

¹²⁴P. Birnie, A. Boyle/C. Redgwell (note 19), 155(2006).

as a reason for not taking action to protect the environment. The precautionary approach is being increasingly incorporated into treaties as well as non-binding instruments respecting conservation of marine living resources. In this regard, it is interesting to note that legal instruments adopting the ecosystem approach tend to refer to the precautionary approach at the same time.

At the treaty level, for example, Art. 6 (1) of the 1995 Fish Stocks Agreement places a clear obligation upon States to apply “the precautionary approach widely to conservation, management, and exploitation of straddling fish stocks and highly migratory fish stocks in order to protect the living marine resources and preserve the marine environment”. Annex II of the Agreement provides Guidelines for the Application of Precautionary Reference Points in Conservation and Management of Straddling Fish Stocks and

Highly Migratory Fish Stocks under Art. 6 (3) (b) of the Agreement, States are obliged to “apply the guidelines set out in Annex II and determine, on the basis of the best scientific information available, stock-specific reference points and the action to be taken if they are exceeded”. When reference points are approached, States are required to take measures to ensure that such points will not be exceeded. In the event that they are exceeded, States shall, without delay, take the action determined under Art. 6 (3) (b) to restore the stocks pursuant to Art. 6 (4). While referring to the ecosystem approach under Art. 4 (a), Art. 4 (c) of the 2006 Southern Indian Ocean Fisheries Agreement explicitly provides that “the precautionary approach shall be applied in accordance with the Code of Conduct and the 1995 Agreement, whereby the absence of adequate scientific information shall not be used as a reason for postponing or failing to take conservation and management measures”. Art. 3 (1) (b) of the 2009 Convention on the Conservation and Management of High Seas Fishery Resources in the South Pacific Ocean places an explicit obligation upon the Contracting Parties to “apply the precautionary approach and an ecosystem approach”.

Concerning non-binding instruments, for instance, the 2008 International Guidelines for the Management of Deep-Sea Fisheries in the High

Seas requires States and regional fisheries organizations to implement measures in accordance with the precautionary approach and “an ecosystem approach to fisheries”. UN General Assembly Resolution 60/31 calls upon all States to “apply, in accordance with international law, the precautionary approach and an ecosystem approach widely to the conservation, management and exploitation of fish stocks, including straddling fish stocks and highly migratory fish stocks”. Similarly, Resolution 62/177 encouraged States “to apply the precautionary approach and an ecosystem approach in adopting and implementing conservation and management measures addressing, inter alia, by-catch, pollution, overfishing, and protecting habitats of specific concern, taking into account existing guidelines developed by the Food and Agriculture Organization of the United Nations”.

Owing to the scientific uncertainty relating to the mechanisms of marine ecosystems, the application of the ecosystem approach necessitates some precautionary considerations. In this sense, it appears logical that the ecosystem approach should be linked to the precautionary approach¹²⁵. In light of growing concern over the depletion of marine living resources, it is not surprising that the precautionary approach is increasingly enshrined in international instruments respecting conservation of marine species. On the other hand, the concept of the precautionary approach seems to leave some room for further consideration with regard to its normativity.

5.7.2.1 The Normativity of the Precautionary Approach as a Rule of Conduct

Due to its nature, a need for the application of the precautionary approach is to be determined on the basis of potential risks. Nonetheless, the assessment of serious risks is often difficult to make since such risks may not be well known or discoverable through present-day science.¹²⁶ Further to this, the results of the assessment of possible serious harm may change in

¹²⁵Y. Tanaka (note 7), 86 et seq.

¹²⁶P. Martin-Bidou, *Le principe de précaution en droit international de l'environnement*, R.G.D.I.P. 103 (1999).

accordance with the development of scientific technology.¹²⁷ A difficult question thus arises as to how it is possible to determine the existence of serious or irreversible risks which may trigger the application of the precautionary approach. In this regard, the precautionary approach contains no legal guidance about how to control the environmental risks. The application of the precautionary approach itself does not automatically specify measures that should be taken. As a consequence, the precautionary approach can be applied in different ways in different contexts. In this sense, there are considerable uncertainties with regard to the implementation of the precautionary approach. In summary, the precautionary approach itself contains no criterion for determining the existence of serious or irreversible risks or specific response to such risks. In this sense, the normative density of the precautionary approach remains modest as a rule of conduct.

5.7.2.2 The Normativity of the Precautionary Approach as a Rule for Adjudication

In the application of the precautionary approach, there is a need to consider not only scientific factors but also the cost-effectiveness of proposed measures, their technical capabilities, their economic and social priorities, etc. This process essentially involves a matter of national policy, not law. Considering that the decision-making process of the precautionary approach essentially involves national policy, international courts and tribunals seem to encounter considerable difficulties as to its application to a particular case where the application of this approach is at issue. Therefore, it is not surprising that international courts have been wary about applying the precautionary approach in international disputes. To date, there is no international judgment which explicitly applied this approach to a specific case, while the applicability of the precautionary approach was at issue in several cases. Hence, it may be an inescapable conclusion that the role of the precautionary approach is limited in international adjudication.

¹²⁷ P. Martin-Bidou (note 72), 651.

On the other hand, it is not suggested that the precautionary approach has no normative force in international adjudication. It is arguable that the precautionary approach can be used as an element of interpretation of existing rules of international law¹²⁸. In the context of the conservation of marine living resources, an illustrative example on this matter may be provided by the 1999 Southern Bluefin Tuna case. While the ITLOS did not explicitly refer to “the precautionary principle”, the Tribunal pronounced that: “In the view of the Tribunal, the parties should in the circumstances act with prudence and caution to ensure that effective conservation measures are taken to prevent serious harm to the stocks of southern bluefin tuna.”¹²⁹

The ITLOS further stated that: “Although the Tribunal cannot conclusively assess the scientific evidence presented by the parties, it finds that measures should be taken as a matter of urgency to preserve the rights of the parties and to avert further deterioration of the southern bluefin tuna stock.”¹³⁰

In so ruling, as Judge Treves pointed out, the ITLOS appeared to take account of the precautionary approach as an element of the interpretation of the requirement of urgency under Art. 290 of the LOSC. More recently, the ICJ, in the 2010 Pulp Mills on the River Uruguay case, explicitly stated that “a precautionary approach may be relevant in the interpretation and application of the provisions of the Statute”¹³¹.

5.7.3 New Approaches to Ensure Compliance

5.7.3.1 Limits of the Flag State Jurisdiction

As noted, the implementation of substantive rules cannot be ensured without effective compliance mechanisms. This is particularly true of conservation of living resources on the high seas since there is no centralized machinery securing compliance with relevant rules there. Thus, efforts must be made to strengthen compliance mechanisms in conservation of marine living resources.

¹²⁸ Y. Tanaka (note 75), 489 et seq.

¹²⁹ Southern Bluefin Tuna Cases (New Zealand v. Japan; Australia v. Japan) (Requests for Provisional Measures), ITLOS Case Nos. 3 and 4 (27.8.1999), ILM 38 (1999), 1634, para. 77.

¹³⁰ Southern Bluefin Tuna Cases (note 77), 1634, para. 80.

¹³¹ Separate Opinion by Judge Treves (note 77), 1645, paras. 8 et seq

Whilst the definition of the concept of compliance in international law varies amongst writers, compliance may be defined broadly as the behaviour of a State which conforms to its international obligations.¹³² Basically compliance with rules of international law, including the law of the sea, is secured by self-regulation on the basis of reciprocity. In relation to the conservation of living resources on the high seas, the flag State has the primary responsibility to ensure compliance with rules relating to conservation of marine species on the high seas by vessels flying its flag on the basis of the principle of the exclusive jurisdiction of the flag State.¹³³

Nonetheless, it appears that self-regulation alone is seen as not being adequate in securing compliance with the rules of international law on this subject. State practice shows that in particular, flag of convenience States do not adequately regulate fishing activities by vessels flying their flag due to a lack of will of flag States. Further to this, illegal, unreported and unregulated fishing (IUU fishing) remains a serious threat to conservation of marine living resources.¹³⁴ In relation to this, it must be noted that many developing States lack the necessary capability to prevent illegal fishing by foreign fleets.¹³⁵ While various treaties and non-binding instruments attempt to strengthen the flag State responsibility,¹³⁶ it is becoming apparent that the flag State jurisdiction alone is inadequate to ensure effective compliance with rules relating to conservation of marine species. Thus, there will be a need to develop more institutionalized or concerted mechanisms for ensuring effective compliance. In this regard, growing attention is devoted to non-flag State measures. These measures may be divided into two categories: inspection at sea and inspection in port. Each

¹³²P.Sands, *Compliance with International Environmental Obligations: Existing International Legal Arrangements*(1996).

¹³³Art. 94 of the LOSC,1982.

¹³⁴A definition of IUU fishing is provided in Section 3 of FAO, *International Plan of Action to Prevent, Deter and Eliminate Illegal, Unreported and Unregulated Fishing*, (2001).

¹³⁵R.Churchill, *10 Years of the UN Convention on the Law of the Sea – Towards a Global Ocean Regime? A General Appraisal*, *GYIL* 45 (2005).

¹³⁶Such attempts can be seen in the 1993 Agreement to Promote Compliance with International Conservation and Management Measures, the 1995 Fish Stocks Agreement, the 1995 FAO Code of Conduct for Responsible Fisheries, etc.

category is further divided into two sub-categories: inspection of the Contracting Party vessels and inspection of non-Contracting Party vessels.¹³⁷

5.7.3.2 Non-Flag State Measures Concerning the Contracting Parties

5.7.3.2.1 At-Sea Inspection of Vessels of the Contracting Parties

At-sea inspection of vessels of the Contracting Parties can typically be seen in the 1995 Fish Stocks Agreement. Art. 21 (1) of the Agreement provides that: “In any high seas area covered by a sub regional or regional fisheries management organisation or and inspect, in accordance with paragraph 2, fishing vessels flying the flag of another State Party to this Agreement, whether or not such State Party is also a member of, or a participant in, the organisation or arrangement, for the purpose of ensuring compliance with conservation and management measures for straddling fish stocks and highly migratory fish stocks established by that organisation or arrangement.”

States are required to establish procedures for boarding and inspection through sub regional or regional fisheries management organizations or arrangements pursuant to Art. 21(2). However, the inspection under Art. 21 may encounter difficulties as to its practical implementation without further agreement on inspection procedures. Consequently, the inspection may arguably be qualified by the need to further negotiate on this matter.¹³⁸ In practice, non-flag State inspections at sea are echoed by some regional fisheries organizations, such as the North Pacific Anadromous Fish Commission (NPAFC),¹³⁹ Commission for the Conservation of Antarctic Marine Living Resources (CCAMLR),¹⁴⁰ Northwest Atlantic Fisheries Organization (NAFO),¹⁴¹ Northeast Atlantic Fisheries Commission (NEAFC),¹⁴² At-sea inspection of Contracting. Party vessels calls for three brief observations.

- First, the inspection schemes do not purport to establish a regime applicable to high seas fisheries in general. For instance, the 1995 Fish

¹³⁷R. G. Rayfuse, *Non-Flag State Enforcement in High Seas Fisheries*, 16 (2004).

¹³⁸D. Guilfoyle, *Shipping Interdiction and the Law of the Sea*, 168(2009).

¹³⁹Article V of the 1992 Convention for the Conservation of Anadromous Stocks in the North Pacific Ocean.

¹⁴⁰Available at: http://www.ccamlr.org/pu/E/e_pubs/cm/10-11/all.pdf. (Accessed on June15,2018).

¹⁴¹Available at: <http://www.nafo.int/fisheries/CEM/CEM.pdf> (Accessed on June15,2018).

¹⁴²Available at: <http://www.neafc.org/page/3001> (Accessed on June15,2018).

Stocks Agreement regulates only straddling and highly migratory fish stocks, and the Agreement does not apply to fish stocks found on the high seas alone. Further, the scope of jurisdiction of regional fisheries organizations is limited to certain regions and specific species.

- Second, at-sea inspection schemes are costly, and may entail the risk of causing disputes relating to participation, cost recovery, objectivity of inspections, interference with fishing activity, economic loss, and evidentiary value of surveillance information as well as inspection reports.¹⁴³
- Third, it must be stressed that the ultimate discretion concerning prosecution and sanction is always left to the flag State.¹⁴⁴ To this extent, it may be said that the primacy of flag State jurisdiction is basically maintained in the inspection scheme.

5.7.3.2.2 Inspection of Contracting Party Vessels in Port

At the global level, port inspection of vessels of the Contracting Parties is enshrined in the 1993 Agreement to Promote Compliance with International Convention and Management Measures by Fishing Vessels on the High Seas¹⁴⁵ and the 1995 Fish Stocks Agreement. Take the Fish Stocks Agreement as an example again. Art. 23 provides that:

1. ‘A port State has the right and the duty to take measures, in accordance with international law, to promote the effectiveness of sub regional, regional and global conservation and management measures. When taking such measures a port State shall not discriminate in form or in fact against the vessels of any State’.

2. ‘A port State may, *inter alia*, inspect documents, fishing gear and catch on board fishing vessels, when such vessels are voluntarily in its ports or at its offshore terminals.’

¹⁴³R. G. Rayfuse (note 81), 520.

¹⁴⁴Art. XI (7) (c) of the 1994 Convention on the Conservation and Management of Pollock Resources Central Bering Sea.

¹⁴⁵Art. V (2). Entry into force, 24.4.2003. For the text of the Agreement, 2221 UNTS, 120.

With respect to action after inspection, Art. 23 (3) specifies that the port State may prohibit landings and transshipment where it has been established that the catch has been taken in a manner which undermines the effectiveness of sub regional, regional, or global conservation and management measures on the high seas. Port State inspection of Contracting Party vessels is also undertaken by regional fisheries organizations, such as the International Commission for the Conservation of Atlantic Tunas (ICCAT),¹⁴⁶ the Indian Ocean Tuna Commission (IOTC),¹⁴⁷ NAFO,¹⁴⁸ and NEAFC.¹⁴⁹

In 2009, Agreement on Port State Measures to Prevent, Deter and Eliminate Illegal, Unreported and Unregulated Fishing was adopted under the auspice of FAO.¹⁵⁰ The Agreement recognized, in its Preamble, that “port State measures provide a powerful and cost-effective means of preventing, deterring and eliminating illegal, unreported and unregulated fishing”. This Agreement is global in scope and applies to all ports under Art. 3 (5). Under Art. 3 (3), this Agreement applies to fishing conducted in marine areas that is illegal, unreported or unregulated and to fishing related activities in support of such fishing. When a Party has sufficient proof that a vessel seeking entry into its port has engaged in IUU fishing or fishing related activities in support of such fishing, the Party shall deny that vessel entry into its ports pursuant to Art. 9(4).

It appears that non-flag State inspections at sea and in port have a valuable role to play in ensuring effective compliance with relevant rules regulating conservation of marine species. Where the Contracting Parties have agreed to the inspection by vessels of other Contracting Parties at sea by becoming a Party to specific treaties or fisheries bodies, no serious question will arise because the inspection relies on the consent of the Parties. For the same reason, where the Contracting Parties have agreed to the port inspection of their

¹⁴⁶ Available at: http://www.iccat.int/Documents/Recs/ACT_COMP_2007_ENG.pdf. (Visited on July 21, 2018).

¹⁴⁷ Available at: http://www.iotc.org/files/proceedings/misc/Com ReportsTexts/resolutions_E.pdf (Visited on July 21, 2018).

¹⁴⁸ Chapter V of the Northwest Atlantic Fisheries Organisation, Conservation and Enforcement Measures (note 91).

¹⁴⁹ Chapter V of the NEAFC, Scheme of Control and Enforcement, London, February 2010.

¹⁵⁰ The text of the Agreement is available at: <http://www.fao.org/Legal/treaties/037t-e.pdf>. (Visited on July 21, 2018).

vessels by becoming a Party to the relevant global or regional agreements or arrangements, port inspection will not produce legal questions. On the other hand, the legal validity of inspections of non-Contracting Party vessels at sea or in port requires careful consideration.

5.7.3.3 At-Sea Inspection of Non-Contracting Party Vessels

Some fisheries organizations established a scheme for at-sea inspection of vessels of non-Contracting Parties. For example, Chapter VI of the NAFO Conservation and Enforcement Measures of 2010 is devoted to the Scheme to Promote Compliance by non-Contracting Party Vessels (hereafter the 2010 NAFO Scheme).¹⁵¹ Under Art. 53 (1) of the NAFO Scheme, NAFO inspectors are to request permission to board non-Contracting Party vessels that are sighted engaging in fishing activities in the Regulatory Area. If the vessel consents to be boarded, the inspectors' findings are to be transmitted to the Secretariat without delay. The Secretariat is required to transmit this information to all Contracting Parties and other relevant Regional Fisheries Management Organizations within one business day of receiving this information, and to the Flag State as soon as possible. Under Art. 53 (2), where evidence so warrants, a Contracting Party may take such action as may be appropriate in accordance with international law.

Similar procedures for inspecting non-Contracting Party vessels can be seen in the 2010 NEAFC Scheme of Control and Enforcement (hereafter the 2010 NEAFC Scheme).¹⁵² Under Art. 37 (1) of the Scheme, Contracting Parties to NEAFC are obliged to transmit to the Secretary without delay any information regarding non-Contracting Party vessels sighted or by other means identified as engaging in fishing activities in the Convention Area. The Secretary is to transmit this information to all Contracting Parties within one business day. NEAFC inspectors shall request permission to board and inspect non-Contracting Party vessels pursuant to Art. 38 (1). Under the same

¹⁵¹Statistics concerning inspection of non-Contracting Party vessels was furnished by *R. G. Rayfuse* (note 86), 252.

¹⁵²NEAFC, Scheme of Control and Enforcement (London, February 2010).

provision, if the master of the vessel consents for his vessel to be boarded, the inspection shall be documented by completing an inspection report as set out in Annex XIII. If the master does not consent for his vessel to be boarded and inspected or does not fulfil any one of the obligations laid down in Art. 19 (a) to (e) of the 2010 NEAFC Scheme, the vessel shall be presumed to have engaged in IUU activities in accordance with Art. 38 (3).

It is of particular interest to note that NAFO and NEAFC co-operate in order to exchange information on vessels engaging IUU fisheries. In this regard, the Contracting Party vessels from Contracting Parties pursuant to Arts. 52 to 55, the Secretariat of NAFO must make a Provisional List in accordance with Art. 56(1). At the same time, the Executive Secretary is to advise relevant non-Contracting Parties of the vessels flying their flag that have been included in the Provisional List and provide relevant information to the non-Contracting Party pursuant to Art. 56(3). If a non-Contracting Party agrees to a listing, the vessel concerned is to be transferred from the Provisional List to the IUU List in accordance with Art. 56 (6). If the period of 30 days set out in Art. 56 (3) (d) has elapsed, Standing Committee on International Control (STACTIC) is required to consider vessels for inclusion on the IUU list. The Executive Secretary is required to place the IUU List on the NAFO website by virtue of Art. 57(5). At the same time, the Secretariat is required to transmit the IUU List and any relevant information to the Secretariats of the CCAMLR, NEAFC and SEAFO. The Secretariat is also required to circulate the IUU list to other regional fisheries management organizations pursuant to Art. 57(6).

Similarly, Art. 44 (5) of the 2010 NEAFC Scheme requires the Secretariat to transmit the IUU B-List, which is a confirmed IUU list, to the Secretariats of the Commission of the CCAMLR, NAFO, SEAFO and other Regional Fisheries Management Organizations. A similar obligation to circulate an IUU list is provided in the 2009 Scheme to Promote Compliance by Non-Contracting Party Vessels with CCAMLR Conservation Measures (hereafter the 2009 CCAMLR Scheme).¹⁵³

¹⁵³ Available at: http://www.ccamlr.org/pu/e/e_pubs/cm/09-10/all.pdf. (Visited on July 21, 2018).

On the other hand, an issue that needs further consideration involves the presumption of undermining conservation and enforcement measures by regional fisheries organizations. In this regard, Art. 52 (1) of the 2010 NAFO Scheme provides as follows: “A non-Contracting Party vessel that has been sighted or by other means identified by a Contracting Party as engaging in fishing activities in the Regulatory Area is presumed to be undermining the effectiveness of Conservation and Enforcement Measures. In the case of any transshipment activities involving a sighted non-Contracting Party vessel, inside or outside the Regulatory Area, the presumption of undermining Conservation and Enforcement Measures applies to any other non-Contracting Party vessel that has engaged in such activities with that vessel.”

Art. 52 (2) further provides that “a non-Contracting Party vessel that has been placed on the NEAFC IUU list is presumed to be engaging in fishing activities in the NRA [NAFO Regulatory Area] and thereby undermining the effectiveness of Conservation and Enforcement Measures”.

Similarly, Art. 37 (2) of the 2010 NEAFC Scheme stipulates that the non contracting Party vessel that has been sighted or by other means identified as engaging in fishing activities in the Convention Area is presumed to be undermining the Recommendations established under the Convention.¹⁵⁴ Art. 37 (3) of the NEAFC Scheme further provides that: “In the case of a non-Contracting Party vessel sighted or by other means identified as engaging in transshipment activities, the presumption of undermining conservation and enforcement measures applies to any other non-Contracting Party vessel that has been identified as having engaged in such activities with that vessel.” The presumption is provided in regulatory measures of other fisheries organizations,¹⁵⁵ such as the Indian Ocean Tuna Commission (IOTC),¹⁵⁶ the

¹⁵⁴ However, vessels of the co-operating non-Contracting Parties under Art. 34 are exempted from the presumption.

¹⁵⁵R. G. Rayfuse, Regulation and Enforcement in the Law of the Sea: Emerging Assertions of a Right to Non-Flag State Enforcement in the High Seas Fisheries and Disarmament Contexts, *Austr. Yb Int'l L.* 24 (2005).

¹⁵⁶Para. 2 of Resolution 01/03 Establishing a Scheme to Promote Compliance by NonContracting Party Vessels with Resolutions Established by IOTC, 2001.

International Commission for the Conservation of Atlantic Tunas (ICCAT),¹⁵⁷ and CCAMLR.¹⁵⁸ Nonetheless, the validity of the presumption of undermining the effectiveness in the regulatory areas is not free from controversy.

- First, it appears that this presumption shifts the burden of proving innocence to vessels of non-Contracting Parties. Nonetheless, there is scope to consider the question whether the reversal of the burden of proof is not contrary to the principle of freedom of fisheries. In this regard, it must be remembered that with some exceptions, such as high seas fishing for anadromous and catadromous species,¹⁵⁹ fishing on the high seas is, *prima facie*, lawful in international law. It is true that all States are under the duty to cooperate with other States in taking the conservation measures concerning the living resources of the high seas in accordance with Arts. 117 and 118 of the LOSC. However, it is questionable whether the duty to co-operate will automatically lead to the reversal of the burden of proof.¹⁶⁰
- Second, as the regulatory measures are qualified by economic, political and social needs of the coastal State(s), in some cases, opinions of the Member States to a fisheries organization may be divided with respect to the validity of regulatory measures. Some fisheries organizations thus affirm that a State Party which is opposed to a regulatory measure adopted by a fisheries organization is exempted from the application of the measure.¹⁶¹ It appears unreasonable to argue that vessels of third States are automatically bound to the regulatory measures of the regional fisheries organizations, while Member States may be released from such regulations by opposition.
- Third, in accordance with the principle *pacta tertiis nec nocent nec prosunt*, the regional treaty is not binding upon non-Contracting Parties unless rules

¹⁵⁷Para. 1 of the Recommendation by ICCAT Concerning the Ban on Landings and Transshipments of Vessels from Non-Contracting Parties Identified as Having Committed a Serious Infringement, entered into Force 21.6.1999.

¹⁵⁸Para. 4 of the 2009 CCAMLR Scheme.

¹⁵⁹Fishing of anadromous and catadromous species beyond 200-nautical mile limits is in principle forbidden by Arts. 66 (3) and 67 (2) of the LOSC, respectively.

¹⁶⁰M. Hayashi, *New Developments in International Fisheries Law and the Freedom of High Seas Fishing* (in Japanese), *The Journal of International Law and Diplomacy* 102 (2003).

¹⁶¹Art. 12 (2) (b) (c) of the NEAFC Convention.

of the treaty become part of customary law. Thus, in positive international law, there is no obligation upon the non-Contracting Parties to *automatically* accept regulatory measures of regional fisheries organizations on the high seas. It appears that the presumption of undermining the effectiveness of regulations runs a risk of unilaterally imposing regulatory measures on third States without their consent.

5.7.3.3.1 Port Inspection of Non-Contracting Party Vessels

Some regional fisheries organizations apply port inspection of non contracting Party vessels. For example, Art. 54 (1) of the 2010 NAFO Scheme obliges masters of non-Contracting Party vessels intending “to call into a port to notify the competent authority of the port State Contracting Party in accordance with the provisions of Article 48”. Next, the port State Contracting Party is required to forward without delay this information to the flag State of the vessel and to the Executive Secretary. Art. 54 (2) further provides that: “The port State Contracting Party shall prohibit the entry into its ports of vessels that have not given the required prior notice and provided the information referred to in paragraph 1. The vessel shall in any case not be allowed to enter the port unless a confirmation issued by the flag State in accordance with the provisions in Article 47 (2) is presented.”

When a non-Contracting Party vessel enters a port of any Contracting Party, it is to be inspected by authorized Contracting Party officials knowledgeable of the Conservation and Enforcement measures (and the NAFO Scheme) pursuant to Art.54 (3). This provision ensures that the vessel shall not be allowed to land or tranship until this inspection has taken place; and that such inspections shall include the vessels documents, log books, fishing gear, catch on board, and any other matter relating to the vessels activities in the Regulatory Area. Under Art. 54 (4), information on the results of all inspections of non-Contracting Party vessels conducted in the ports of Contracting Parties, and any subsequent action, shall without delay be sent to the Executive Secretary who shall post the information on the secured part of the NAFO

website and inform the flag State, relevant regional fisheries management organizations (RFMOs) and other Contracting Parties.

The 2010 NEAFC Scheme contains similar procedures for inspections of non-Contracting Party vessels in port.¹⁶² Art. 40 (1) of the Scheme stipulates that: “When a non-Contracting Party vessel enters a port of any Contracting Party, it shall be inspected by authorized Contracting Party officials knowledgeable of Recommendations established under the Convention and shall not be allowed to land or tranship any fish until this inspection has taken place.” Art. 41 further provides that landings and transhipments of all fish from a non-Contracting Party vessel which has been inspected in port “shall be prohibited in the ports and waters of all Contracting Parties if such an inspection reveals that the vessel has species onboard which are subject to Recommendations established under the Convention unless the master of the vessel provides satisfactory evidence to the competent authorities proving that the fish were caught outside the Regulatory Area or in compliance with all relevant Recommendations established under the Convention”.

Further to this, para. 3 of IOTC Resolution 05/03 Relating to the Establishment of an IOTC Programme of Inspection in Part provides that each Contracting Party and Co-operating Non-contracting Parties “may, *inter alia*, inspect documents, fishing gear and catch on board fishing vessels, when such vessels are voluntarily in its ports or at its offshore terminals”. Where a port State considers that there has been evidence of a violation by a Contracting Party or a non-Contracting Party vessel of conservation measures adopted by IOTC, the port State is obliged to draw this to the attention of the flag State concerned and, as appropriate, the Commission. While inspection in port should be carried out on a non-discriminatory basis, priority should be given to inspection of non-Contracting vessels.

Moreover, the ICCAT’s Recommendation concerning the Ban on Landings and Transhipments of Vessels from non-Contracting Parties states that

¹⁶²Arts. 39, 40 and 41 of the LOSC, 1982.

when a vessel of a non-Contracting Party which has been sighted in the ICCAT Convention Area enters voluntarily a port of any Contracting Party, it shall be inspected by authorized Contracting Party officials and shall not be allowed to land or tranship any fish until this inspection has taken place.¹⁶³ Landings and transhipments of all fish from non Contracting Party vessels which have been inspected in port shall be prohibited in all Contracting Party ports if such inspection reveals that the vessel has on board species subject to ICCAT conservation measures, “unless the vessel established that the fish were caught outside the Convention Area or in compliance with the relevant ICCAT conservation measures and requirements under the Convention”.¹⁶⁴ Inspection of non-Contracting Party vessels in port is also incorporated into the 2009 CCAMLR Scheme.¹⁶⁵

Given that the port is part of internal waters which are under the territorial sovereignty of the coastal State, it is arguable the State is entitled to regulate access to its ports and landings and transhipments there. On the other hand, four points must be noted.

- First, inspection in port must be applied without discrimination among vessels. Thus, it appears that the validity of inspection against only non-Contracting Party vessels is a matter for discussion.
- Second, port inspection must be carried out by relevant port States in a uniformed manner. In this regard, a concern is voiced that the current system of port inspections is not effective very much due to insufficient vessel information and lack of compliance among port States. Vessels of non-Contracting Parties can also avoid the port State inspection simply by using ports in non-Contracting Party States which will accept their landings.¹⁶⁶ Thus, efforts, landing and transhipments in the port may run a risk of producing a dispute between the port State and the fishing State. Indeed, a question may arise whether unilateral prohibition in port by the

¹⁶³ ICCAT , para. 2.

¹⁶⁴ ICCAT , para. 3.

¹⁶⁵ Para. 5.

¹⁶⁶ S. Flothmann, Closing Loopholes: Getting Illegal Fishing under Control, Science 328 (2010).

coastal State is equivalent to *de facto* extension of its national jurisdiction toward the high seas. It is arguable, therefore, that the coastal State should be cautious about unilaterally applying its conservation measures to vessels of third States fishing on the high seas must be made in order to prevent the emergence of “ports of convenience”, undermining the effectiveness of port State inspections.¹⁶⁷

- Third, it appears that inspections in port shift the burden of proving innocence to vessels of non-Contracting Parties. In reality, however, it appears difficult, if not impossible, to establish evidence that the fish on board were caught outside the Convention Area.
- Fourth, as typically shown in the *EU-Chile Swordfish* dispute, the unilateral prohibition of access.

5.8 Regional Seas Conventions

More than 140 countries participate in thirteen Regional Seas programmes established under the auspices of UNEP regional seas programme covering Black Sea, Wider Caribbean, East Asian Seas, Eastern Africa, South Asian Seas, ROPME Sea Area, Mediterranean, North-East Pacific, North-West Pacific, Red Sea and Gulf of Aden, South-East Pacific, Pacific, and Western Africa. Six of these programmes, are directly administered by UNEP.¹⁶⁸ All of the Regional Seas programs have developed an Action Plan but most also have developed specific legal frameworks with Conventions and Protocols. In addition there are a number of 'partner programmes' of regional seas treaties which are not under the UNEP umbrella. These regional treaty regimes include those for the Antarctic,¹⁶⁹ the Baltic,¹⁷⁰ the Caspian,¹⁷¹ and the North-East

¹⁶⁷The Report of the Review Conference of the 1995 Fish Stocks Agreement recorded that a number of delegations called for the development of international standards and guidelines to prevent the emergence of “ports of convenience”. United Nations, Report of the Review Conference on the Agreement for the Implementation of the Provisions of the United Nations Convention on the Law of the Sea of 10 December 1982 relating to the Conservation and Management of Straddling Fish Stocks and Highly Migratory Fish Stocks, A/CONF.210/2006/15, 5.7.2006, 24, para. 108.

¹⁶⁸Available at <<http://www.unep.org/regionalseas/about/default.asp>> (accessed July 30, 2017)

¹⁶⁹ Convention on the Conservation of Antarctic Marine Living Resources (CCAMLR); in force 1982

¹⁷⁰ Convention on the Protection of the Marine Environment of the Baltic Sea Area (Helsinki Convention); adopted 1974, in force 1980, revised 1992, in force 2000

¹⁷¹ Framework Convention for the Protection of the Marine Environment of the Caspian Sea; adopted 2003.

Atlantic.¹⁷² It is also important to note that these conventions are primarily groupings of coastal states and their jurisdiction is generally restricted to their coastal zones. The exceptions are the following: The OSPAR Convention which has high seas areas within its remit. The Mediterranean where coastal states have for a number of reasons not claimed EEZs. The South Pacific which includes within its mandate the 'donut' holes between its members EEZs, and, of course, the Antarctic Treaty System consisting of both the Antarctic Treaty and its Protocol on Environmental Protection as well as the Convention for the Conservation of Antarctic Living Marine Resources (CCAMLR). CCAMLR which is a genuinely ecosystem based regime that regulates the Antarctic marine living resources of the area south of 60° South latitude and to the Antarctic marine living resources of the area between that latitude and the Antarctic Convergence which form part of the Antarctic marine ecosystem.¹⁷³

5.8.1 Current Reform Initiatives

5.8.1.1 UN General Assembly

International concern has been growing at the lack of an adequate comprehensive framework for high seas governance. As we have seen, neither the regional seas organizations nor the regional fisheries management organizations cover all ocean regions or activities, or even all fisheries activities. Recent activities such as bio-prospecting that may affect the seabed and its resources remain unregulated and emerging activities such as ocean fertilization and other carbon sequestration schemes are only slowly finding a home in the international regulatory regime for ocean dumping.

While the international community is beginning to respond, progress has been slow. Of course, overfishing is not the only threat to marine biodiversity, but overfishing of high seas fish stocks, particularly from IUU fishing activities, has been the subject of a number of ongoing international activities. The unregulated exploitation of deep-sea fish stocks such as orange roughy and toothfish, including by bottom trawling over unique seamount ecosystems,

¹⁷²The Convention for the Protection of the Marine Environment of the North-East Atlantic -Oslo and Paris conventions adopted 1974, revised and combined into OSPAR Convention 1992, in force 1998.

¹⁷³Art. I CCAMLR.

has prompted wide concern. In 2004, UN General Assembly (UNGA) Resolution 59/25 of 17 November 2004¹⁷⁴ called on States acting individually or through RFMOs to take action urgently, and consider on a case by case basis and on a scientific basis, including the application of the precautionary approach, the interim prohibition of destructive fishing practices, including bottom trawling that has adverse impacts on vulnerable marine ecosystems, including seamounts, hydrothermal vents and cold water corals located beyond national jurisdiction, until such time as appropriate conservation and management measures have been adopted in accordance with international law.

175

In 2006, the UNGA went further, and in paragraph 80 UNGA Resolution 61/105 called upon states: to take action immediately, individually and through regional fisheries management organizations and arrangements, and consistent with the precautionary approach and ecosystem approaches, to sustainably manage fish stocks and protect vulnerable marine ecosystems, including seamounts, hydrothermal vents and cold water corals, from destructive fishing practices, recognizing the immense importance and value of deep sea ecosystems and the biodiversity they contain. Later paragraphs in the resolution described the expected action and set deadlines of December 31, 2007 for areas where there were no RFMOs, and December 31, 2008 for areas with RFMOs.

In summary, paragraphs 80-91 of UNGA res 61/105 called for States and RFMOs to assess the impacts of individual bottom fisheries activities in order to determine if such fishing activities would cause significant adverse impacts on vulnerable marine ecosystems, and to either manage the fishery to prevent such impacts or not authorize the fishing to proceed. The UN Secretary General's report on progress with respect to implementation of UNGA res. 61/105 paragraphs 80-90 will be released in mid-August, for review by the UNGA in

¹⁷⁴GAOR 59th Session Supp 49 vol 1, 30.

¹⁷⁵At para. 66.

September-November to determine whether and what additional measures may be necessary.¹⁷⁶

The UNGA also requested the FAO to develop guidelines for managing deep sea fisheries on the high seas and the protection of vulnerable marine ecosystems.¹⁷⁷ Pursuant to this mandate, in March 2007, the FAO Committee on Fisheries (COFI) requested the development of International Guidelines for the Management of Deep-Sea Fisheries in the High Seas to assist States and regional fisheries management organizations and arrangements in sustainably managing deep-sea fisheries. These guidelines were adopted in August 2008.¹⁷⁸

To address the full realm of issues relating to biodiversity in areas beyond national jurisdiction, in 2004 on the recommendation of the UN Informal Consultative Process on the Oceans and the Law of the Sea (UNICPOLOS) the UN General Assembly agreed to establish an Ad Hoc Open-ended Informal Working Group to study issues relating to the conservation and sustainable use of marine biological diversity beyond areas of national jurisdiction. This Working Group held its first meeting in 2006, a second ran from 28 April - 2 May 2008 and a third meeting is scheduled for January 2010. A number of important proposals have been discussed at these meetings including, as mentioned above, a European Union proposal for a new Implementing Agreement to develop a more specific framework to address, *inter alia*, conservation and sustainable use of marine biodiversity beyond national jurisdiction. It is envisaged that such an implementing agreement or agreements could supplement the 1995 UN Fish Stocks Agreement (UNFSA) the implementing agreement which elaborated and modernized the 1982 Convention with respect to highly migratory and straddling fish stocks.

Other states have expressed the view that improved implementation should be the first priority, but have not provided their views on what might be done to

¹⁷⁶ Matthew Gianni, *review of the implementation of the UNGA agreement to protect deep-sea ecosystems on the high seas* (Visited on July 21, 2018).

¹⁷⁷ By UNGA Res 61/105 (8 December 2006).

¹⁷⁸ Food and Agriculture Organization of the United Nations, 'International Guidelines for the Management of Deep-Sea Fisheries in the High Seas' in Food and Agriculture Organization of the United Nations (ed) *Report of the Technical Consultation on International Guidelines for the Management of Deep-Sea Fisheries in the High Seas* 39 (FAO Rome 2009).

enhance implementation with respect to biodiversity conservation in general. Discussions on high seas fisheries have proceeded largely in parallel.

In the context of the UNGA discussions, a number of expert working groups have also suggested that it would assist in the clarification of the debates over the emerging high seas governance regime, to set out more clearly and explicitly the basic principles that the international community has already established and agreed to, in existing legal and policy instruments, in relation to the use and exploitation of the high seas. These principles could at some point be more formally enumerated whether as a free standing declaration (perhaps by the UNGA) or as a part of a new international agreement or arrangement including an implementing agreement. The issue of these applicable modern principles was discussed and elaborated upon at an International Union for Conservation of Nature (IUCN) workshop in October 2007¹⁷⁹ and further explored by a number of other international expert groups.¹⁸⁰ In September 2008, the IUCN Global Marine Programme decided to help clarify these existing principles and issued a document: '10 Principles of High Seas Governance' to assist with this process.¹⁸¹ The final section of this paper returns to this issue, briefly sets these out and explains their legal basis.

5.8.1.2 IUU Fishing Initiatives

In addition to progress on deep sea bottom fisheries on the high seas, recently steps have been taken to address the pernicious problem of IUU fishing through more thorough investigation of flag state and RFMO performance at both the global and regional levels. The UN Convention on the Law of the Sea recognizes that all States have the right for their nationals to engage in fishing on the high seas.¹⁸² However, it specifically subjects that right to three factors: (a) existing treaty obligations; (b) the rights and duties, as well as interests, of

¹⁷⁹David Freestone, "Principles Applicable to Modern Oceans Governance" 23 *International Journal of Marine and Coastal Law*, 385-392(2008).

¹⁸⁰Biliana Cicin-Sain and David Freestone. 2008. Report from the Strategic Planning Workshop on Global Ocean Issues in Marine Areas Beyond National Jurisdiction in the Context of Climate Change, Nice, France, January 23-25, 2008.

¹⁸¹At the 2008 IUCN 4th World Conservation Congress in Barcelona on October 7, IUCN President Valli Moosa of South Africa chaired a plenary session presenting the IUCN "Ten Principles of High Seas Governance."

¹⁸²Art 116 of LOSC,1982.

coastal States;¹⁸³ and (c) the other provisions of the Convention including the duty to take necessary measures for the conservation of the living resources of the high seas and to co-operate in the conservation and management of high seas living resources (i.e. through RFMOs).¹⁸⁴ Moreover the specific provisions relating to cooperative action are largely hortatory imposing an obligation simply to negotiate in good faith.¹⁸⁵ The 'unfinished agenda' of these provisions was highlighted by Agenda 21 of the 1992 UN Conference on Environment and Development and as a result supplemented by the 1993 FAO Compliance Agreement¹⁸⁶ and, after a number of negotiating sessions, by the 1995 UNFSA that introduced a large number of modern fisheries management provisions into the international regime for straddling fish stocks and highly migratory fish stocks.¹⁸⁷ The UN Fish Stocks Agreement commits its parties to the sustainable use of such stocks; it endorses an ecosystem approach¹⁸⁸ and a precautionary approach to the conservation of these stocks.¹⁸⁹ These, and other provisions of the UNFSA, are reflected in the Code of Conduct for Responsible Fisheries concluded by FAO in 1995 immediately after the finalisation of the UNFSA text.

Appreciating that overfishing and destructive fishing practices have been identified as the main causes of loss of ocean biodiversity, FAO has sought to address a number of other important threats to sustainable fisheries by a series of non-binding instruments called International Plans of Action (IPOAs). Three IPOAs were adopted in 1999, the IPOA for Reducing Incidental Catch of Seabirds in Longline Fisheries; the IPOA for the Conservation and Management of Sharks; and the IPOA for the Management of Fishing Capacity.¹⁹⁰ In June

¹⁸³ Provided inter alia in Arts 63 (2) and 64,67 of the LOSC,1982.

¹⁸⁴ Part VII Sec. 2 LOSC.

¹⁸⁵ Arts 63,64 of the LOSC,1982.

¹⁸⁶ Agreement to Promote Compliance with International Conservation and Management Measures by Fishing Vessels on the High Seas (signed 24 November 1993, entered into force 24 April 2003) 33 ILM 968.

¹⁸⁷ David Freestone and Zen Makuch, "The New International Environmental Law of Fisheries: The 1995 Straddling Stocks Agreement", (1997) 7 *Yearbook of International Environmental Law*, 349.

¹⁸⁸ Art. 5 of the UN Fish Stocks Agreement,1995.

¹⁸⁹ Art. 6 of the UN Fish Stocks Agreement, with a clear methodology for its application to capture fisheries set out in Annex II.

¹⁹⁰ At the 23rd FAO COFI session.

2001 the FAO Council endorsed the IPOA to Prevent, Deter and Eliminate Illegal, Unreported and Unregulated Fishing (IPOA-IUU). It contains an extensive 'toolkit' of actions that States can take against such vessels. The 2001 Reykjavik Declaration on Responsible Fisheries in the Marine Ecosystem included a commitment to work to include ecosystem considerations in fisheries management activities.¹⁹¹ However, little progress appears to have been made with respect to guidelines for MPAs for fisheries management purposes that the UNGA requested the FAO to develop in 2006 also as part of UNGA resolution 61/105.¹⁹²

In the fight against IUU fishing a number of further initiatives have been advanced in order to tighten the regimes of existing RFMO and to provide even more tools to states willing to enforce international conservation and management measures. Each of the RFMOs mentioned above has its own treaty-based constitution, and particularly for those established prior to 1995, ecosystem and biological diversity conservation concerns are not included within their mandate. Although many have overlapping parties, there has until recently been very little formal coordination of their conservation and management activities.

5.8.1.3 Ministerially-led Task Force on IUU Fishing on the High Sea

In 2006 at the initiative of a number of key governments and NGOs,¹⁹³ a Ministerially-led Task Force on IUU Fishing on the High Seas developed an action plan designed to combat illegal, unregulated and unreported fishing on the high seas. The Task Force identified nine practical initiatives necessary to expose IUU fishing activities, deter them and improve enforcement against those responsible. The report recommended the following actions:

¹⁹¹The 2002 Plan of Implementation of the World Summit on Sustainable Development called for, amongst other things, the application of the Reykjavik Declaration by 2010 as one of the steps essential for ensuring the sustainable development of the oceans

¹⁹²Para 92. *Encourages* accelerated progress to establish criteria on the objectives and management of marine protected areas for fisheries purposes, and in this regard; welcomes the proposed work of the Food and agriculture Organization of the United Nations to develop technical guidelines in accordance with the Convention on the design, implementation and testing of marine protected areas for such purposes, and urges coordination and cooperation among all relevant international organizations and bodies. "

¹⁹³ Available at--< <http://www.high-seas.org/> > (visited June 14,2018).

- First, that new resources be committed to the existing voluntary International Monitoring, Control and Surveillance (MCS) Network to enable it to become an international network with dedicated resources, analytical capacity and the ability to provide training and support to developing countries.
- Second, the development of a global information system on high seas fishing vessels.
- Third, encouragement to countries to become parties to relevant instruments and to collaborate in an international effort to foster better implementation of them. In particular, recognition of the need for Regional Fisheries Management Organisations (RFMOs) to perform better both individually and collectively, as well as the need for increased cooperation between them on issues of common concern. It recognised that 'RFMOs play a crucial role in effecting governance of high seas fishing in a world where fisheries are rapidly -and often uncontrollably-expanding into these regions.' It recommended guidance for RFMOs to be reflective of best practices in the implementation of international fishery instruments, with a view to encouraging self-evaluation by RFMOs and to aid internal discussions of reform by RFMOs in the near term. The objective is to encourage change from within. To this end it proposed to commission an independent high-level panel to develop a model RFMO based on a more comprehensive assessment of best practices worldwide. It recognised the need for greater coordination, cooperation and information sharing and it noted that key gaps remain in high seas governance in several regions and need to be closed. Task Force members recognised that responsible flag state and port state behaviour is central to strong deterrence of IUU fishing.
- Fourth, assistance in tackling the problem of flag states that fail to live up to their international obligations; the Task Force proposed a preliminary set of guidelines on flag state performance. Sixth, the development of a range of measures aimed at improving port state controls over IUU. These

include promoting the broad application of regional port state controls, reviewing domestic port state measures and suggestions for strengthening domestic legislation controlling the import of IUU product. Targets might include, for example, enterprises attempting to import IUU fish, or those that can be shown to be blatantly jeopardising the resource management measures adopted by a third state or RFMO. Recommendations Seven and Eight address how to secure good information on IUU activity, and how to address the specific needs of developing countries in overcoming IUU fishing. Because IUU is a covert activity, much information on it is, of necessity, anecdotal. There is a need for mechanisms to fill critical gaps in scientific knowledge and assessment, and to monitor IUU activity and inform remedial policy. The Task Force therefore suggested some approaches for improving methods of assessing and monitoring IUU fishing activity and by catch, and incorporating these into stock assessments and proposed the initiation of a process to evaluate and then support vulnerable developing countries to adopt relevant Task Force measures. Finally, it proposed a keener focus on the role of remote vessel monitoring systems in tackling IUU fishing including the development of internationally accepted codes of practice for its correct application, with particular concern for security, reliability and data sharing.¹⁹⁴

5.9 Marine Fisheries Management in India

Fishing has been considered as a primary livelihood option since time immemorial, for the occupants of the coastal belt in India, stretching along 8129 kms. Fisheries play a predominant strategic role in the economic activity of our country by its contribution to national income, food and employment. It supports the deprived coastal community and serves as an important foreign exchange earner contributing sustainably to food and nutritional security. It is also a principal source of livelihood to people in coastal areas. Fisheries contribute about 1 per cent of India's GDP, which forms about 4.12 per cent of the agricultural GDP (2003-04). The total fish production during the four

¹⁹⁴ Text above is drawn from the Report.

decades (1950-51 to 1990-91) showed an annual average compound growth rate that varied between 3.35 to 4.62 per cent. About 12.2 lakh fisher folk operate diverse types of craft-gear combinations with regional and seasonal variations all along the Indian coastline. The secondary sector provides employment to more than 15 lakh people and another one lakh people is employed in the tertiary sector.

Increasing fishing pressure has led to over exploitation of inshore resources - out of 47 commercially important species 30 per cent have been over exploited and 55 per cent have reached an optimum level. Depletion of marine fisheries is further aggravated with the increasing catch of juveniles and discards. Decline in catch rates coupled with increasing domestic and international demand of high value species has resulted into more conflicts in sharing of resources, increase in migration of fishing units and labourers, emergence of multiday fishing even extending beyond 15 days and consequent socioeconomic disturbances like increase in burden of women in household management. Fisher folk all along the Indian coast as well as Inland hamlets are similar in their socio economic backwardness. About 47 per cent of coastal fisher folk is living Below Poverty Line (BPL) with a monthly per capita income of Rs. 1000. Housing is one of the most important indicators- about 35 per cent are living in huts, 40 per cent in kutcha houses and 25 per cent in pucca houses. More than 50 per cent of total fisher population lives within the CRZ-1 and half of them are devoid of title deeds. Inequitable distribution of income is the greatest challenge by our fisher folk. With the increasing capital intensity of fishing units, the extent of ownership of means of production (crafts and gears) by fisher folk declined from 27 in 1970 to 14 per cent in 2004, which indicates growth of dispossessed labour class, like landless labourers in agriculture. With the unbridled capital penetration inter and intra sectoral marginalisation is taking place. It is ironical to note that one third of active fishermen (that is the mechanised sector) corners about 70 per cent of the earnings generated at the primary level and the other one third involved in non mechanised sector gets only 7 per cent of the common property resources. Policy interventions in the

production, distribution and marketing segments are highly essential for the rational utilisation and sustainable development of open access marine fisheries.

5.9.1 Fishery resources

India is endowed with vast and varied marine and inland fishery resources, an outline of which is given below:

Marine fishery resources

Coastline	:	8,129 km
Exclusive economic zone	:	2.02 million km ²
Inshore area (< 50m depth)	:	0.18 million km ²
Continental shelf	:	0.50 million km ²
Estimated annual production potential	:	3.90 million tones
From area within 50m depth	:	2.21 million tones
From area beyond 50m depth	:	1.69 million tones

5.9.2 Legislatives provisions in India

Constitution provision

Entry 57 of List 1 of Seventh Schedule of the Constitution specified Fishing and Fisheries beyond Territorial Waters (12 nautical miles) as Union Subject, where-as Entry 21 of List 11 speaks of fisheries within Territorial Waters as a State Subject. Reading both the Entries together, it follows that control and regulation of fishing and fisheries within territorial waters is the exclusive province of the State, whereas beyond the territorial waters, it is the exclusive domain of the Union. The Ministry of Agriculture within the purview of its allocated business helps the coastal States and Union Territories in development of the fisheries within the territorial waters, besides attending to the requirements of the sector in the EEZ.

Institutions responsible for decision-making

Organization	Responsibilities
Ministry of Environment and Forests	Management of resources in the coastal water, nodal ministry with major responsibility for protecting marine environment, includes implementation of legislative measures.
Department of Ocean Development Ministry of Agriculture	Scientific monitoring of the marine environment, Management of resources in the high seas Development of fisheries, aquaculture, fish processing
Ministry of Water Resources	Erosion
Ministry of Defence (Indian Coast Guard)	Pollution response measures, including oil pollution
Ministry of Surface Transport	Ports, shipping etc.
Ministry of Petroleum and Natural Gas Ministry of Tourism Ministry of mines	Offshore installations, coastal refineries, pipelines etc. Tourism activities in coastal regions Mining activities in coastal regions

Highlights of major initiatives

In order to protect its marine environment, the Government of India, even before 1992, had initiated a number of programmes. These acquired a new significance post-1992. To meet the objectives of Agenda 21, continuous monitoring of ongoing projects, acquiring of new technology and implementation of already-existing policies are being actively carried out. The following section highlights the major policies and programme areas of Agenda 21 that relate to marine resources, assesses the achievements, and identifies the areas that remain of concern. Table highlights the major policies and

programmes adopted. The developments in policies post-Rio reflect responses to the changing international scenario, where there is a recognition that development needs to be attentive not only to the environment, but also to the people who have a stake in any such development. The following are legislative majors-

- **Maritime Zones Act,1976**-Describes various zones such as territorial waters, EEZ, Continental shelf etc.
- **Marine fishing Regulation Act,1978** - A model act, which provides guidelines to the maritime states to enact laws for protection to marine fisheries by regulating fishing in the territorial waters. The measures include: regulation of mesh size and gear, reservation of zones for various fishing sectors and also declaration of closed seasons. Laws framed and amended from time to time by different maritime states Coastal states ban fishing during closed season Different closure period for different states.
- **Forest Conservation Act, 1980**- Protection to marine biodiversity.
- Coastal Pollution,(COPOCS programme) 1982 Started in 1982 by CPCB Aims at assessing the pollution status of coastal waters
- **The Coastal Regulation Zone 1991**- It has been notified Standards for discharging effluents are listed. Coastal Regulation Zone Notification Regulations on various activities in coastal zone. Classifies coastal zone into four categories specifying activities permitted and prohibited in each category Offers protection to backwaters and estuaries Aquaculture was allowed as foreshore activity. The Supreme Court in 1996 banned all the aquaculture activities, except traditional and modified traditional, in the coastal zone upto 500m in most places.
- **Deep Sea Fishing Policy, 1991** Allows foreign fishing vessels into Indian waters beyond 12 nautical miles. Protests from local fishermen Charter and leasing operations of foreign trawlers suspended in 1997. No granting of new licences to joint venture companies operating in the EEZ.

- **National Environmental Tribunal Act, 1995**-This has been created to award compensation for damages to persons, property and the environment arising from any activity involving hazardous substances.
- **UNCLOS, 1995**-A new international order established for oceans provides a comprehensive legal framework for integrated treatment of issues relating to oceans and seas.
- **Land Ocean Interaction in the Coastal Zone (LOICZ Project), 1995**- Aims to develop, on a scientific basis, the integrated management of coastal environments.
- **Coastal Zone Management Plans (CZMPs), 1996** Supreme Court Intervention that all the Coastal states prepare their CZMPs by 1996.
- **Turtle Exclusion Device (TED), 1998**- It is mandatory in Orissa.Orissa High Court passed judgment in 1998 that all fishing trawlers be equipped with TED
- **Integrated Coastal and Marine Area Management (ICMAM Project), 1998**-Aims at integrated management of coastal and marine areas. Model plans for Chennai, Goa and Gulf of Kutch being prepared.
- **Ninth Plan** DOD programme to assess living resources beyond 70 m depth Major objectives were to have reliable and realistic information on the potential of marine living resources in the Indian EEZ for sustainable development and management and to augment sea food production and thereby the income of the coastal fishing community and the fishing industry. Initiated during the Ninth Five-year Plan for better understanding of the resources of the Indian EEZ, since the region upto 50–70 m depth is exploited almost to the maximum sustainable levels.
- **The Coastal Aquaculture Authority Act, 2005** -The high growth rate of the economic activity of culture of shrimp in the coastal areas also led to discussions on the environmental sustainability of the aquaculture operations, Over years of discussions, The Aquaculture Authority was established and the Coastal Aquaculture Authority Act, 2005 is also in place and some of the provisions relate to preventing construction of

shrimp farms in mangrove areas, other sensitive areas and in agricultural land; compulsory EIA for larger farms; wastewater quality standards and effluent treatment plants; use of chemicals and drugs; licensing and mandatory application of code of conduct; provision for registration of shrimp farms valid for a period of 5 years which may be reviewed from time to time for a similar period.

- **The Marine Fisheries (Regulation and Management) Bill, 2019-** This Bill provides for regulation and management of fisheries in the Exclusive Economic Zone of India and the high seas and for conservation and sustainable use of marine fisheries resources; maintenance of law and order in the maritime zones of India (for fishing and fishing related activities); supporting the social security, livelihoods and safety at sea of fishers and fish-workers, in particular the traditional and small-scale fishers; and for matters connected.

5.10 Conclusions

As we have seen, developing a legal regime that provides for sustainable use and conservation of ocean-fisheries resources and biological diversity within the framework of the general law of the sea has presented virtually insuperable problems for the international community since the late nineteenth century. The ad hoc and sectoral approach to conservatory regulation of marine species, though initially regarded as a major advance, has in practice adversely influenced subsequent attempts to establish a more comprehensive and rational regime. Despite four international conferences on the Law of the Sea between 1930 and 1982 which attempted to establish jurisdictional limits within which states' responsibilities for development of a conservatory regime would be exercised, both overfishing and increasing degradation of the habitat of marine species has largely continued unabated, with disregard'.

UNCLOS III sought to deal with the problems of ocean space as a 'closely interrelated . whole' and establish a legal order which, inter alia, would at one and the same time promote 'the conservation of their living resources and protection of the marine environment'. It was and remains undoubtedly an

advance on the previous regime and its provisions concerning fisheries have led to creation of many more fisheries organizations at international, regional, and sub regional levels both under the auspices of the FAO and outside it, with the result that fewer marine areas within which fisheries are conducted now remain outside the scope of a regulatory regime.

The fisheries regime is a classic case of an enclosure of previously global commons. The enclosure is accomplished by leaving many states outside profitable fisheries areas. The enclosure is based on a tragedy of commons rationale. That is, if coastal states develop property rights over the full range of a resource, they would have more chances to succeed in the conservation and rational management of the resource. The perpetuation of an open-access regime, on the contrary, would eventually lead to the degradation and depletion of the resource. That coastal states may be better managers of fisheries resources may be true depending on the level of development of such states and the willingness to undertake a custodian attitude with regard to fishery resources.

The enclosure of fisheries resources, as with most enclosures, is primarily exclusionary. Many recent agreements, such as the 1995 Fisheries Agreement, legitimize fishery enclosures as the future method of fisheries management. Exclusionary enclosures, however, pose fundamental questions of fairness. The enclosure of fisheries resources has as an effect that a limited number of states, those belonging to regional organizations take advantage of and profit from those resources. Other states that have no historical rights to the resource and no clout in international negotiations are to stay out. Compensation is rarely offered to these outsider states that may, in return, engage in clandestine activities. States left out of regional arrangements tend to revolt when, what they have perceived as an open-access resource, is increasingly appropriated by coastal states or by the first-movers in a region. Some outsiders attempt to find compromises, especially, in areas of high seas that have been severely restricted due to EEZ extensions.

For the insiders, the establishment of RFOs has been far from easy. Flow fisheries resources would be allocated among the insiders in different regimes is bound to remain controversial. The overuse of the objection procedure has the possibility of transforming regime insiders into de facto outsiders and to undermine the general legitimacy of regulatory controls on fisheries. The regional fisheries agreements, nevertheless, are a bold attempt to regulate the “freedom of fishing in the high seas” an attempt that has been legitimized for the purposes of conservation. States generally have been eager to participate in regional agreements, even distant water fishing states, in order to render legitimate their fishing in a particular region. Participation in regional arrangements also guarantees the possibility of placing objections on TACs established and quotas assigned.

The participation in regional fisheries agreements, as a way to legitimize fishing in the high seas, provides evidence of the erosion of the sacrosanct principle in international law, which is the freedom of the high seas. And this is not theoretical erosion based on a number of agreements. Technological devices such as VMS, as they are increasingly installed in new ships, would gradually render unobserved navigation and fishing quite difficult. Not all vessels are equipped today with VMS and there is resistance to institutionalize the installment of such devices. As things evolve, however, VMS increasingly would become the device that enhances the legitimacy of vessels to engage in high seas fishing activities. Ship-owners, then, would have to decide whether they want their vessels to obtain a *carte blanche* for navigation, fishing, transit, and landing by the incorporation of state-of-the-art equipment, or if they would prefer to retain an ambiguous status that would increase the transaction costs of fishing (through repeated inspections, detentions, and fines by coastal states and port states).



CHAPTER-VI
ROLE OF ORGANISATIONS IN
THE PROTECTION OF
MARINE ENVIRONMENT
INCLUDING MARINE
FISHERIES



CHAPTER VI

ROLE OF ORGANISATIONS IN THE PROTECTION OF MARINE ENVIRONMENT INCLUDING MARINE FISHERIES

6.1 Introduction

States gathering at the 1972 Stockholm Conference on the Human Environment recognized, for one of the first times at the international level, the need to take all possible steps to prevent pollution of the seas by substances that are 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 seas. The conference sparked an explosion of international law-making. In the intervening 40 years, a large number of international instruments have been concluded to address the protection and preservation of the marine environment. In this period, international institutions have also emerged as significant actors in the negotiation, adoption and implementation of such instruments.

6.2 International Institutions Involved in the Protection of the Marine Environment

There is little doubt that the world's oceans are under significant threat. Given that the oceans and seas form an integrated whole, it is vital that the international community co-operates to protect and preserve the marine environment.¹ This need to co-operate is at the foundation of the international legal framework. As explained by the International Tribunal for the Law of the Sea (ITLOS), 'the duty to cooperate is a fundamental principle in the prevention of pollution of the marine environment under Part XII of the United Nations Convention on the Law of the Sea (LOSC) and general international law.'²

¹The World Commission on Environment and Development, *Our Common Future* 264 (OUP 1987).

²MOX Plant (Ireland v. United Kingdom) (Provisional Measures, Order of 3 December 2001) ITLOS Reports 95, para. 82 (2001).

Today, most inter-state cooperation on the protection of the marine environment takes place through international institutions. Indeed, co-operation through international institutions is explicitly encouraged by the LOSC.³ Yet, the drafters of the Convention refrained from establishing a single organization that was responsible for all aspects of oceans management. Rather, it was accepted that multiple institutions would be involved in developing the legal framework for the protection of the marine environment. The general reference to 'competent international organizations' throughout Part XII of the LOSC means that states can turn to a range of bodies to address these issues.

When the LOSC' was concluded in 1982, there were already a number of international institutions that were active in developing rules for marine environmental protection and the number of 'competent international organizations' has continued to grow. The following sections will give an overview of the range of institutional actors involved in this field, demonstrating the diversity of international institutions, at both global and regional levels. The survey goes beyond those institutions with a clear environmental focus to include a large number of sectoral bodies whose mandates encompass the environmental aspects of a particular activity. For many of these institutions, protection of the marine environment has come to play an increasingly central role in their work, even if it was not anticipated by their founders.

6.2.1 Role of the United Nations in the Marine Environment

At the centre of the network of institutions involved in the development of the international legal framework for the protection of the marine environment is the United Nations (UN) itself. Although the UN Charter does not explicitly mention the law of the sea or the protection of the environment, the UN has, since its inception, played a leading role in this field. Based on its overarching competence for the codification and progressive development of international law, the United Nations General Assembly (UNGA) has assumed

³United Nations Convention on the Law of the Sea (adopted 10 December 1982, entered into force 16 November 1994).

the role of monitoring developments in this field. The UNGA adopts annual resolutions on the law of the sea and sustainable fisheries, which address a range of environmental issues, from marine pollution to the conservation of marine biodiversity. These resolutions play an important part in trying to promote cooperation and coordination between other institutions working in this field. The UNGA is also a key forum for discussing the negotiation of new rules to promote the sustainable development of the oceans. It is the United Nations which provided the institutional framework for negotiating the two implementing agreements on the deep seabed and straddling and highly migratory fish stocks, adopted in 1994' and 1995, respectively. Furthermore, at the time of writing, negotiations on the adoption of new rules relating to the protection of biological diversity beyond national jurisdiction are being conducted through an open-ended ad hoc informal working group convened by the UNGA and it is likely that these negotiations will lead to the adoption of another implementing agreement.

It is not only the UNGA that addresses marine environmental protection. The UN sustainable development process, involving a series of global intergovernmental summits and conferences, has also identified oceans and marine resources as priorities for action. Leading to the adoption of a series of action plans, which have in turn led to further developments in the legal framework. The process is now overseen by a high-level political forum for sustainable development, which will meet annually under the auspices of the UN Economic and Social Council and the UNGA.

6.2.1.1 The 1972 UN Conference on the Human Environment (UNCHE) and the United Nations Environment Programme (UNEP)

Ocean and coastal issues and the need for marine environmental protection were emphasized at the 1972 UN Conference on the Human Environment in Stockholm. That conference, attended by representatives of over 100 nations, was also attended by a range of NGOs campaigning on issues including the protection of whales and other cetaceans from being hunted by countries such as Japan and Norway, and also campaigners calling for greater

protection of the environment from oil pollution. Two major events in 1965 and 1969 highlighted the significant damage which can be caused by oil spills and, with headlines in the press around the world together with increasing levels of television ownership and access to the broadcast media, the issue of oil pollution in the marine environment was one that had captured global attention.

A significant outcome of the 1972 Conference was the creation of a new UN body, the United Nations Environment Programme (UNEP) which, with its governing Council, was given responsibility to co-ordinate the environmental activities across the whole of the United Nations. UNEP also went on to establish a Regional Seas Programme which promotes sound environmental management of enclosed or semi-enclosed seas - seas which Article 122 of UNCLOS defines as being a "gulf, basin or sea surrounded by two or more States and connected to another sea or ocean by a narrow outlet through the territorial seas and EEZ of two or more coastal states. At the current time UNEP operates 13 Regional Sea programmes globally, with over 140 countries participating in those schemes⁴.

6.2.1.2 The United Nations Conference on Environment and Development 1992

The United Nations Conference on Environment and Development took place between 3rd and 14th June 1992 at Rio de Janeiro in order to build upon the Declaration of the 1972 UN Conference on the Human Environment (UNCHE), Stockholm. Also known more informally the Earth Summit, the UNCED Conference resulted in outputs on Climate Change, on Biodiversity and to the document entitled Agenda 21. The Conference was attended by representatives of 172 nations including 108 Heads of State, together with representatives of over 2,400 non-governmental organisations and a vast array of the world's print and broadcast media. There were five main outputs from the Rio Conference: the Rio Declaration on Environment and Development;

⁴Available online at: <http://www.unep.org/regionalseas/about/default.asp> (visited on July 26,2018).

Agenda 21; the Framework Convention on Climate Change; the Convention on Biological Diversity; and the set of Forest Principles.

6.2.1.3 Rio Declaration 1992

The Rio Declaration on Environment and Development 1992⁵ is a non-binding document which set out 27 principles intended to guide future sustainable development around the world. The first ten principles are mainly related to the issue of sustainable development and helping developing countries, acknowledging that all countries have responsibility for resolving environmental problems, and that any actions must promote a supporting and open international economic system. While none of the principles make direct reference to the marine environment, some of the key principles are outlined briefly.

Principles 10 sets out that that resolution of environmental issues is best handled at a national level, with public participation and access to information being very important, while Principle 11 notes that states should enact legislation on environmental standards, management and priorities within the context of that state, since some countries will be unable to achieve similar standards without unwarranted economic and social costs. Principle 13 sets out information on liability and compensation issues arising from pollution including international cooperation. Principle 15 sets out a precautionary approach (sometimes known as the "Precautionary Principle" which indicates that action should be taken by states when protecting the environment, even if scientific evidence is not currently available to confirm the risk of serious or irreversible damage, and that this does not mean that those states can postpone measures to prevent environmental degradation. Principle 16, sometimes known as the "Polluter Pays Principle" sets out that the polluter should bear the costs of the pollution they cause, that this should be in the public interest and that it should not have an impact on international trade or investment.

⁵ Available online at: <http://www.un.org/documents/ga/conf151/aconf15126-1annex1.htm>(visited on July 26,2018).

6.2.1.4 Environmental Treaty Bodies

Many individual treaties on the prevention of pollution of the marine environment also create their own governing bodies, often referred to as a Conference of the Parties (COP), which have powers to oversee the implementation of the treaty commitments. Examples include the Convention on Biological Diversity (CBD),⁶ the Convention on International Trade in Endangered Species (CITES),⁷ and the Convention on Migratory Species (CMS).⁸ These institutions provide a forum for the further development of the treaty regime. COPS are often the source of non-binding instruments designed to assist parties in the implementation of the treaty. For example, the CBD COP is charged with, *inter alia*, 'considering and undertaking any additional action that may be required for the achievement of the purposes of this Convention in the light of experience gained in its operation'⁹ and it has provided an important source of general guidance for states on the conservation and sustainable use of marine biological diversity, including a programme of work on marine biological diversity¹⁰ and decisions relating to specific aspects of the Convention, such as the identification of marine protected areas¹¹ or biodiversity impact assessment in areas beyond national jurisdiction.¹²

6.2.1.5 International Economic Organizations

On the face of it, international economic organizations have little to do with the protection of the environment. However, the nature of international economic law means that the rules prescribed by these institutions have the potential to constrain the discretion of states when adopting environmental measures.¹³

⁶Adopted 5 June 1992, entered into force 29 December 2003.

⁷Convention on International Trade in Endangered Species of Wild Fauna and Flora (adopted 3 March 1973, entered into force 1 July 1975).

⁸Convention on the Conservation of Migratory Species of Wild Animals (adopted 23 June 1976, entered into force 1 November 1983).

⁹CBD, Art. 23(4)(i).

¹⁰CBD COP 4 Decision TV/5 in Report of the fourth meeting of the Conference of the Parties to the Convention on Biological Diversity, Annex (15 June 1998).

¹¹CBD COP 9 Decision IX/20 in Report of the Conference of the Parties to the Convention on Biological Diversity on the Work of its Ninth Meeting (9 October 2008).

¹²CBD COP 10 Decision X/29.

¹³UNCTAD, 'Policy Space: What, for What, and Where?' Discussion Paper No. 191 (October 2008).

6.3 The International Maritime Organization

At the time UNCLOS III was convened, international co-operation in regulating shipping was already common. Many rules and regulations in the form of treaties had been negotiated at the international level to deal with shipping safety and pollution from ships. Most of these matters were dealt with by technical international organizations with considerable expertise and experience in dealing with shipping issues. In this context, the IMO stands out from other standard-setting agencies because of its sole focus on maritime issues.

6.3.1 History of the Convention on the International Maritime Organization

At the end of a UN Conference held in Geneva between February and March 1948, the Convention establishing the Inter-Governmental Maritime Consultative Organization (IMCO) was adopted. The name of the organization being changed to IMO in 1982 following entry into force of the 1975 amendments to the original convention to remove the word "Consultative" from its title. The aims of IMCO as set out in Article 1¹⁴ of the original Convention included: provision of machinery for cooperation between Governments on all aspects of the international shipping trade; encouraging the adoption of highest practicable standards for maritime safety and navigation; promoting the international shipping trade; and removing unfair restrictive practices on shipping. However, the original Convention text made no mention of marine pollution or of the environment and it was only in 1975 that Article 1 of the Convention was changed to include the aim of "prevention and control of marine pollution from ships".

The Convention finally entered into force in March 1959, 12 months after it was accepted by the 21st state - the terms of entry into force required signature by 21 states, of which 7 had to have a shipping industry with not less than 1,000,000 gross tonnes. Adoption of the Convention had been delayed for

¹⁴ Available online at: http://www.imo.org/conventions/mainframe.asp?topic_id=771 (visited on July 26, 2018).

11 years, much of the delay being due to some countries seeing Article 1 as being unacceptable to their national needs. During the 11 years prior to the adoption of the Convention concern about the marine environment and maritime safety continued to grow and two Conventions were adopted, the implementation of which was to become the responsibility of the IMO once it was established. These were the 1954 International Convention for Prevention of Pollution by Oil and the 1948 International Convention on Safety of Life at Sea (SOLAS). This latter Convention had originally been adopted in 1914, following the sinking of the *Titanic*, and had been subsequently been amended in 1929 and in 1948. Between entry into force in 1958 and September 2010, the IMO Convention had been amended 8 times. This was the result of increased membership necessitating increasing the size of the Council, and also as a result of the need to introduce new Committees or change the status or make-up of existing Committees.

The IMO is a specialized agency of the United Nations. At June 2010 it had 169 Member States (Contracting Parties) and three Associate Member.¹⁵ Member Governments are responsible for implementing and enforcing global regulations on safety, security and marine pollution from ships. The United Nations (1998¹⁶) Review of Maritime Transport notes that over 80% of world merchandise is carried by sea, amounting to some 8.02 billion tons in 2007 (Executive Summary, page xiii).

6.3.2 Structure of the IMO and its Committees

The IMO was originally established as having an Assembly, a Council and a Maritime Safety Committee (MSC), the latter having responsibility for vessel safety including: aids to navigation; prevention of collisions; handling of dangerous cargoes; and any other matters relating to maritime safety. At the current time the IMO has an Assembly consisting of all Member States which meets every two years. At each of those meetings, a Council is elected by the

¹⁵ Available online at: http://www.imo.org/About/mainframe.asp?topic_id=315(visited on July 26,2018).

¹⁶Available at-
<http://www.unctad.org/Templates/webflyer.asp?docid=10745&intItemID=4659&lang=1&mode=downloads>(visited on July 26,2018).

Assembly and this Council, which is the Executive organ of the IMO, supervises the work of the organization. The Council is made up of 40 states from three different categories, and with no duplication between categories. The categories are: 10 states with the largest interest in providing international shipping services; 10 states with the largest interest in international seaborne trade; and 20 states with special interest in maritime transport or navigation. In addition to the Assembly and Council, the IMO also has a Secretariat led by a Secretary-General and has its offices based in London. The structure of the IMO, including details of those Member States that are Council Members, is available from the IMO website¹⁷

The Maritime Safety Committee and the Marine Environment Protection Committee are the two organs which are responsible for the adoption of amendments to most regulatory treaties.¹⁸ The mandates of these committees recognise that they may perform any additional functions attributed to them by international conventions, in addition to the purely advisory functions bestowed on them by the IMO Constitution.¹⁹ Both committees include representatives from all IMO member states. In addition, when amendments to the regulatory treaties are being discussed, contracting parties that are not IMO members are granted rights of participation. Thus, the SOLAS Convention provides that “Parties to the Convention, whether or not Members of the Organization, shall be entitled to participate in the proceedings of the Maritime Safety Committee”²⁰ and similar provisions can be found in most other regulatory treaties.²¹ It follows that most states are involved in the drafting and adoption of amendments, not only the parties to the treaty.

In addition to states, many industry representatives and other interest groups actively participate in the proceedings and discussions of the IMO

¹⁷ Available online at: http://www.imo.org/About/mainframe.asp?topic_id=1639 (visited on July 26, 2018).

¹⁸ The two lead committees are also assisted by a plethora of specialized sub-committees whose role it is to consider the technical aspects of proposed amendments.

¹⁹ MEPC: IMO Convention, Article 38.

²⁰ Article 8(b)(iii) of SOLAS Convention.

²¹ For instance, MARPOL Convention, Article 16(2)(c); Anti-Fouling Convention, Article 16(2)(b); Ballast Water Convention, Article 19(2)(b).

committees²², in particular organizations representing shipping interests and the marine insurance industry.²³ Environmental groups have also started to play a prominent role in discussions of the Marine Environmental Protection Committee. Consultation and cooperation with non-governmental international organizations is provided for in Article 62 of the IMO Convention. According to the IMO rules of procedure, NGO representatives may submit written statement on items on the agenda and with permission, they may make oral contributions.²⁴ It is only states and other international organizations, however, that may submit agenda items in the first place or propose amendments to the treaties.²⁵ Guidelines adopted by the IMO to promote effective and efficient working procedures within the organization provide that new amendments should not be included as part of the work programme until a “compelling need” for the amendment has been demonstrated by the proponents.²⁶

An amendment must pass through several stages before it is finally adopted. Proposals are usually considered initially by a technical sub-committee, before the broader policy implications are discussed by the main committee. The main committee will provisionally approve an amendment before it is circulated to states for final adoption at a subsequent meeting.²⁷ The time in which an amendment is adopted depends largely on the complexity of the issue and the political will of IMO members.

Formal procedures for the adoption of amendments are specified in the regulatory treaties. They usually require amendments to be adopted by a two-thirds majority of the parties, present and voting.³⁴ However, the practice of the two main IMO committees tends to aim towards the adoption of amendments

²² De La Fayette concludes that “NGOs are generally well respected by member governments and some have a great deal of influence”; De La Fayette, "The Marine Environment Protection Committee", 166(2003).

²³ Prominent organizations are the International Chamber of Shipping, the International Council of Classification Societies.

²⁴ Rules 5 and 6 of the Rules governing relationship with non-governmental international organizations.

²⁵ In practice, NGOs may seek a sponsor state for a particular amendment.

²⁶ Guidelines on the Organization and Method of Work of the Maritime Safety Committee and the Marine Environment Protection Committee and their Subsidiary Bodies, as amended, in MSC/Circ.1099/MEPC/Circ.405, at Annex, para. 2.10.2.

²⁷ The requirement for circulation of amendments is laid down by the Conventions themselves.

by consensus.²⁸ Votes are rarely taken in the committees and the participants try to reach a compromise on the proposed changes.

Once adopted, amendments are then communicated to the parties for acceptance.²⁹ Tacit acceptance procedures were included in most IMO regulatory treaties concluded after 1972 in light of concerns that many amendments were not entering into force.³⁰ Amendments to the technical annexes will enter into force for all states who have not objected at least six months after the date on which it was deemed to have been accepted.³¹ The amendment procedures therefore facilitate the entry into force of technical amendments that have been adopted by the IMO.

The tacit acceptance procedures under the SOLAS Convention apply to any amendments to the Annexes apart from changes to chapter I.³⁹ Amendments to this chapter require the consent of individual states before changes can come into force. However, new chapters can be added to the Convention with relative ease using the tacit acceptance procedures. For instance, when a diplomatic conference agreed in December 2002 to add a new chapter on measures to enhance maritime security to the Annex of the SOLAS Convention, the amendment was able to enter into force for all parties within two years.⁴⁰ In contrast, the MARPOL Convention has several annexes, each dealing with a different source of marine pollution. The Convention specifies that the adoption of a new annex to the MARPOL Convention is to be treated in the same way as an amendment to the main text of the Convention and requires the express consent of a state before it becomes bound.⁴¹ It is not possible to add new annexes using the tacit acceptance procedure. Therefore, the new annex on the prevention of air pollution from ships adopted by the MARPOL Contracting Parties in 1997 needed to be accepted by two-thirds of the parties, the combined merchant fleets of which constitute not less than fifty

²⁸ IMO Document LEG/MISC/4, at p. 7.

²⁹ SOLAS Convention, Article 8(b)(v) and(c)(ii).

³⁰ "IMO 1948-1998: A Process of Change", Focus on the IMO Paper, 9-11 (1998).

³¹ The period for entry into force changes from treaty to treaty and it can be specified by the committee at the time of adoption. However, the treaties usually set a minimum period of time during which objections can be made. The MARPOL Convention prescribes a minimum period of ten months.

per cent of gross tonnage of the world's merchant fleet, before it could enter into force. As a result, the Annex did not enter into force until 19 May 2005 and it is moreover only formally binding on those states which have given their express consent.⁴² De La Fayette suggests that one of the reasons for choosing to frame the regulations on anti-fouling systems as a new convention rather than an additional annex to MARPOL is that "the entry into force provisions for amendments to MARPOL constitute an almost insurmountable barrier to early entry into force."⁴³ Where amendments are perceived as urgent, the Committees may also adopt resolutions encouraging states to give early and effective application to amendments.³² Such resolutions are, however, only hortatory. One significant advantage of the amendment procedures in these regulatory treaties is that it is possible to predict the date on which the amendment will enter into force. When adopting amendments, the committees will indicate the date on which the amendment will be deemed to be accepted and the date on which it will enter into force, subject to the minimum periods provided in the Conventions. This procedure allows the shipping industry to prepare for changes to the regulations. To further protect the interests of ship-owners, the SOLAS and MARPOL Conventions specify that amendments which relate to the structure of a ship shall only apply to ships the keels of which have been laid on or after the date on which the amendment enters into force.³³

Other IMO resolutions, whilst not formally binding, are directly related to the technical standards found in regulatory treaties. Sometimes, the treaty itself may make reference to guidelines or recommendations. For instance, the Ballast Water Convention includes several references to guidelines that the parties must take into account in implementing the Convention. Since the adoption of that treaty, the Marine Environment Protection Committee has been working hard to develop the necessary guidelines.³⁴ In addition, IMO

³² For example, IMO Resolution MEPC.114(50) calling for the early and effective application of regulations 13 G and H of Annex I to the MARPOL Convention.

³³ Article 8(e) of SOLAS Convention.

³⁴ The reports of MEPC 54 and 55.

committees may adopt resolutions which seek to promote a uniform interpretation of a technical regulation.³⁵ As the parties to a treaty are competent to adopt authoritative interpretations, such interpretative resolutions cannot be completely dismissed simply because of their non-binding status.

The IMO plays a more significant role in setting technical standards than was perhaps anticipated when the Organization was first created in 1948. The decision making procedures within the IMO seek to ensure that initiatives are supported by a consensus of interested actors. This is not a formal requirement of the IMO Convention or the regulatory treaties. Rather, it is a reflection of the desire for a consensual and inclusive approach to law-making in all aspects of the law of the sea. It is submitted that the use of consensus in the IMO recognises the fact that the resulting standards will have an impact on the general legal framework as a consequence of the rules of reference found in the LOS Convention.

6.3.3 The Main Conventions Administered by the IMO

The IMO has responsibility for 29 Conventions and related Protocols under the headings of Maritime Safety, Marine Pollution, Liability and Compensation, and Other Subjects. A complete list of Conventions is available from the IMO website³⁶, with links to further details of the individual Conventions also available. A Summary of Status of the various Conventions is also available and identifies date of entry into force of convention and any related protocols, the number of Contracting States (signatories to the specific Convention) and the percentage of world tonnage (world shipping fleet) represented by those states³⁷. For example, the IMO Convention, which entered into force on 17 March 1958, has 169 Contracting States which represent 97.34% of world shipping tonnage.

³⁵ Such uniform interpretations are common in relation to the technical annexes to the SOLAS Convention and the MARPOL Convention.

³⁶ Available online at: http://www.imo.org/About/mainframe.asp?topic_id=260 (visited on July 26, 2018).

³⁷ A Summary of Status of Convention at 30 June 2010.

6.3.4 International Convention on Safety of Life at Sea 1974 and its Protocols of 1978 and 1988 (SOLAS)

The SOLAS Convention was originally adopted in 1914 following the sinking of the *Titanic*, which subsequent versions being adopted in 1929, 1948 and 1960³⁸. The 1974 Convention entered into force in May 1980 and, at June 2010, had 159 Contracting Parties. SOLAS 1974, together with its 1978 and 1988 Protocols, was developed specifically so that it could be kept up to date in light of new technological developments, and uses a system of "tacit acceptance". Under this system, any amendments will automatically enter into force by a specified date unless sufficient objections have been received from an agreed number of states to prevent this from occurring. Amendments to SOLAS can come from meetings of the Maritime Safety Committee or following a Conference of Contracting Governments of the IMO.

SOLAS is designed to ensure the safety of vessels, through a system of certification and inspection. Vessels are required to meet minimum standards in the areas of construction, equipment on board and in their operations. Ships are registered to sail under the flag of a specific state (flag state) but can be inspected by other states if there are grounds to believe that a ship is not meeting the requirements of SOLAS. Customarily, a state which controls the territorial waters through which a ship is sailing is known as a Coastal State while a state into whose port a vessel calls is known as a Port State.

The SOLAS Convention contains articles on general obligations and the amendment procedure, followed by an Annex which, at September 2010, contained 12 Chapters covering areas such as General Provisions, Construction and Fire Safety measures, Life-saving appliances, Radio Communications, Carriage of Cargoes or Dangerous Goods and other measures necessary to ensure the safety and security of vessels both at sea and in ports. In total SOLAS has been adapted nearly 40 times through Protocols or amendments between 1978 and 2009. An example of an amendment to SOLAS was the

³⁸ Available online at: http://www.imo.org/Conventions/contents.asp?topic_id=257&doc_id=647 (visited on July 26,2018).

introduction of a new chapter, Chapter XI, on Special Measures to Enhance Safety, in May 1994. Chapter XI, which entered into force in January 1996, sets out regulations on vessel surveys and inspections including those for bulk carriers and tankers under MARPOL 73/78, and also allows port state control officers to inspect foreign vessels where there are clear grounds to believe that essential safety measures are not being carried out. Although it notes that port state control inspections normally only cover the checking of certificates and documents to ensure they are valid, more detailed inspections can be conducted and certain procedures such as fire and abandon ship drills or machinery operation may also be examined to ensure that these are conducted correctly. More recently measures covering Chapter XI were adopted by a Diplomatic Conference on Maritime Security in December 2002 to create Chapters XI - 1 and XI - 2 which deal with improving maritime security at the ship/port interface and for vessels at sea (including mobile offshore drilling units).

6.3.5 International Convention on the Prevention of Pollution from Ships 1973 and its Protocol of 1978 (MARPOL 73/78)

The MARPOL Convention was originally introduced in 1973 and a Protocol was introduced in 1978. These two elements now make up a main international convention which covers prevention of pollution of the marine environment from ships, either as a result of operational activities such as the cleaning out of tanks, or resulting from accidents, and the Convention also contains regulations aimed specifically at reducing pollution from oil platforms and drilling rigs. There were 150 contracting states to MARPOL Annexes I and II by June 2010, representing 99.14% of world tonnage (with smaller numbers for Annexes III to VI which entered into force between 1988 and 2005, and which are discussed later in this section).

MARPOL 73/78 was, however, pre-dated by OILPOL, a 1954 Convention which covered only pollution of the sea by oil through routine tanker operations. OILPOL came about as a result of increasing complaints about oil spills, particularly in European waters, following increased demand from Middle East crude oil after World War II. As a result of the delay in

creating IMCO (later IMO and discussed in Section 3.1) the United Kingdom government set out to develop domestic legislation on oil pollution which would also be acceptable internationally. In 1954, it sponsored the International Conference on the Pollution of the Sea which took place in London and which was attended by delegates of 31 countries representing 95% of world shipping. Despite political problems and the United States representatives being unable to sign an international convention, the OILPOL Convention was finally agreed and established "prohibited zones" (at least 50 miles from the nearest land) into which oil or oily mixtures of more than 100 parts per million (ppm) of oil could not be discharged. Secretariat functions of OILPOL (which was amended in 1962, 1969 and 1971) were dealt with by the UK Government until finally being transferred to the IMO in 1958, once the IMO Convention entered into force.

With recognition that most of the vessel-source pollution entering the marine environment came from operational discharges from ships and not from major accidents, MARPOL 1973 was adopted, incorporating OILPOL 1954 and its amendments as its Annex I. In addition, Annexes covering pollution from noxious liquid substances (Annex II), Harmful Substances in Packaged Form (Annex III), Sewage (Annex IV), Garbage (Annex V) and most recently Air Pollution (Annex VI) are covered by MARPOL 73/78 with full text of this Convention appearing in Consolidated Editions of around 500 pages in length³⁹. States which ratified the MARPOL 73/78 Convention were originally required only to implement Annex I as technical problems for some states concerning Annex II led to a three year delay before that Annex became binding. Annexes III, IV and V were made optional annexes and so that, even through states had to implement Annexes I and II, they were able to opt out of the three additional Annexes. This resulted in it taking many more years before sufficient state ratifications had occurred for those Annexes to enter into force.

³⁹Available online at: http://www.imo.org/Conventions/contents.asp?doc_id678&topic-id=258 (visited on July 26,2018).

Annex VI covering air pollution was developed and entered into force more than 25 years after the original MARPOL Convention was ratified.

Each Annex contains information on what constitutes the substances covered by it -summarised in Table 3 (which also provides brief details of Annex history including recent amendments), information on different types of vessels and standards applicable to them, certification requirements, how the Annex is to be applied by signatory states, Special Areas (where discharges may be totally prohibited), exemptions for ships such as military vessels, and many other requirements. For example, Annex I on Pollution by Oil included 9 Chapters, 26 Regulations and 9 Appendices in the 2002 Consolidated Edition⁴⁰, amounting to nearly 200 pages in that publication.

One of the main aims of MARPOL 73/78 is the elimination of intentional pollution of the marine environment by oil and other substances and to minimise the risk of accidental pollution. One of its main requirements is that all state parties to the convention should take action to prevent pollution of the marine environment resulting from ships discharging harmful substances. Also included within the various MARPOL 73/78 Annexes are regulations setting out either a requirement that the state parties to each Annex ensure that its' ports provide adequate port reception facilities, where applicable, into which wastes can be discharged and/or a regulation covering Port State Control Inspections which are generally undertaken by inspectors of the MOU Regimes examined in Section 4.

As noted previously, ships are required to carry valid certificates and normally inspections will be used to verify their validity (alongside any other inspection criteria for a particular port or port state). However, more comprehensive inspections can be conducted under MARPOL 73/78 if there are clear grounds to believe that the ship does not meet the requirements of those certificates or there are grounds to believe that the ship or its equipment present a threat of harm to the marine environment if allowed to proceed to sea. Ships may then be detailed in port until appropriate repairs or remedial action

⁴⁰MARPOL 73/78 Consolidated Edition 2002. Pub: IMO, London, 2002.

has been taken, or allowed to travel on to a new port if facilities to undertake those repairs are not available in the port where the violation of the certificate has been identified. Ships can also be inspected and detained if there is evidence to suggest that there has been an illegal discharge at sea of harmful substances such as oil, noxious liquids, or in packaged form which includes freight containers.

6.3.6 The International Maritime Organization as a forum for change

The regime of maritime zones created by the LOS Convention seeks to balance the interests of coastal states and maritime states. The Convention calls for on-going co-operation and compromise through established organizations in the implementation of its jurisdictional regime. It has been seen how international organizations, and in particular the IMO, play a crucial role in helping to maintain this delicate balance.

Whilst the LOS Convention provides some flexibility, is the regime as set out in this instrument fixed? Are the circumstances in which the IMO can authorise the application of mandatory measures limited to those that are authorized in the LOS Convention?

Claims for stronger regulation often go hand-in-hand with calls for increased jurisdiction over prescribing and enforcing standards. As a consequence, the IMO can become a forum where the boundaries of the jurisdictional regime are discussed, clarified and developed.

The PSSA is one concept that raises the extent of coastal state prescriptive and enforcement jurisdiction. A PSSA is defined as “an area that needs special protection through action by IMO because of its significance for recognized ecological, socio- economic, or scientific attributes where such attributes may be vulnerable to damage by international shipping activities.”⁴¹ Although sharing the goals of Special Areas under MARPOL and provisions adopted in accordance with Article 211(6) of the LOS Convention, the concept

⁴¹Revised Guidelines for the Identification and Designation of Particularly Sensitive Sea Areas, IMO Resolution A.982(24) at Annex, para 1.2.

of the PSSA is inspired by a wider conception of marine protected areas and it is distinct from these two types of measures.⁴²

In fact, the creation of a PSSA involves two distinct but related processes. Designation of an area as a PSSA does not in itself involve any restrictions on shipping in the area. An application for PSSA must satisfy at least one of the criteria identified in the Guidelines⁴³ as well showing that the area is at risk from international shipping.⁴⁴ The purpose of designation is more rhetorical, raising the profile of the environmental sensitivity of the area, heightening the awareness of mariners, and informing and educating policy-makers.⁴⁵

The procedures for the designation of PSSAs are important means for ensuring that all interests are taken into account in deciding whether or not such action should be taken. The Guidelines themselves specify that their aim is to “ensure that all interests those of the coastal state, flag state, and the environmental and shipping communities are thoroughly considered.

The two distinct processes involved in designating a PPSA and associated protective measures are highlighted by paragraph 7.10 which require the proposing state to “submit a separate proposal to the appropriate sub-committee to obtain approval of any new associated protective measure.”⁴⁶ However, the two processes are inter-connected as a PSSA will only be designated “in principle” until the associated protective measures have been approved.⁴⁷ On this view, the PSSA provides “a managerial framework from which to develop appropriate protective measures related to both shipping and non-shipping activities that can be taken at either the national or the international level.”⁴⁸

⁴²De La Fayette, who concludes that “a PSSA may be considered as a special type of MPA devised to protect sensitive areas from international shipping activities.

⁴³These include ecological criteria, social, cultural and economic criteria, and scientific and educational criteria.

⁴⁴Revised Guidelines, at para. 5.1.

⁴⁵Report of the Third International Meeting of Legal Experts on Particularly Sensitive Sea Areas; (1994).

⁴⁶Revised Guidelines, at para. 7.10.

⁴⁷Revised Guidelines, at para. 8.3.4.

⁴⁸Gjerde and Freestone, “*Introduction to Special Issue on Particularly Sensitive Sea Areas*”, 9 (1994).

The first two areas which were designated as PSSAs did not challenge this view of the concept. Since the Guidelines were revised in 2001, many more applications have been submitted. Calls for increased powers for coastal states in areas of environmental sensitivity have led to allegations that the concept of the PSSA is being used to undermine the jurisdictional framework in the LOS Convention. Subsequent discussions over which areas should be designated as PSSAs and what measures should be applied therein have raised heated discussions over the legality of extending compulsory navigational measures beyond the territorial sea. Two case studies will be considered in order to assess these arguments.

The first case study is the proposal for compulsory pilotage in the Torres Strait by Australia and Papua New Guinea. These states made this proposal as part of their application to extend the pre-existing Great Barrier Reef PSSA to include the Torres Strait.⁴⁹ In order to protect the vulnerable marine ecosystem in the strait, these two countries proposed a recommended two-way shipping route through the strait and the extension of the compulsory pilotage system that operated in the existing PSSA, replacing the system of recommended pilotage that already had previously been adopted for the strait.⁵⁰ As the area proposed for designation fell within an international strait, the associated protective measures were to be addressed in the context of Part III of the Convention.⁵¹

The first proposed measure was uncontroversial as it fell squarely within the ambit of Article 41 which allows strait states to apply sea-lanes and traffic separation schemes in international straits with the approval of the IMO. However, compulsory pilotage does not feature in Article 41 and the legal basis for such a measure was questioned by several states.⁵² Australia and Papua New Guinea argued that the LOS Convention did not prohibit the

⁴⁹IMO Document MEPC 49/8.

⁵⁰Under IMO Resolution A.710(17).

⁵¹IMO Document LEG 89/15, at para. 9.

⁵²IMO Document LEG/ 89/16, at para. 224.

establishment of compulsory pilotage schemes in such areas.⁵³ Opponents, on the other hand, said that the right of unimpeded transit passage was one of the most critical freedoms in the LOS Convention and they feared that failure to comply with the scheme may lead to the strait states imposing sanctions on transiting vessels.⁵⁴ Others thought that the introduction of compulsory pilotage per se was an impediment of the right to transit passage and therefore incompatible with the LOS Convention.⁵⁵ Given the polarisation of views, the IMO Legal Committee was unable to reach a conclusion on the legality of compulsory pilotage in straits used for international navigation.⁵⁶ Yet, when the Marine Environment Protection Committee and the Maritime Safety Committee came to consider the application, they were able to agree on language that left the precise legal implications of the measures ambiguous. The Marine Environment Protection Committee agreed to extend the existing system of pilotage within the Great Barrier Reef to the Torres Strait without specifying that it is compulsory.¹⁹⁴ At the same time, the United States and others stressed that they only supported the measure if it was interpreted as a recommendation.⁵⁷ The correct interpretation of this resolution is controversial.⁵⁸

In the case of the Western European Waters PSSA, the applicant states proposed inter alia an obligation for certain tankers to report to the coastal state authorities at least 48 hours before entering the PSSA.⁵⁹ Whether or not the application was based on Regulation V/11 or on Article 211(6) of the LOS Convention is unclear. In any case, it was opposed by several states as the size of the proposed PSSA covered a large proportion of the territorial seas and the EEZs of the proposing states, including several major shipping routes. In presenting their objections, Russia, Panama and Liberia, supported by private shipping interests, stressed that “if such a large and diverse area of the ocean is

⁵³IMO Document LEG/89/15, in particular at paras. 11 and 23.

⁵⁴IMO Document LEG 89/16, at para. 232.

⁵⁵*Ibid.*, at para. 233.

⁵⁶*Ibid.*, at para. 241.

⁵⁷IMO Document MEPC 53/24, at para. 8.6.

⁵⁸Roberts, *Compulsory Pilotage in International Straits: The Torres Strait PSSA Proposal* 66 (1999).

⁵⁹IMO Document MEPC 49/22, at para. 8.12.5.

designated a PSSA and associated measures restricting navigation are applicable to foreign vessels in the region, there is a danger of the exception becoming the norm and the fundamental principles of the LOS Convention being undermined.”⁶⁰ In the opinion of these states, the designation of the Western European Waters PSSA and its associated protective measures did not adequately balance ecological interests with the interests of commercial navigation.⁶¹ Another concern of these states was that the measure would be used to detain vessels which had not complied with the reporting obligation. They argued in the IMO Legal Committee that “if the intention of the proposed reporting obligation is to refuse certain ships that are in compliance with international rules and standards from entering or navigating in the PSSA, then that would be in contravention of the fundamental provisions of the LOS Convention.”⁶² The fundamental provision that is indicated is probably the right of freedom of navigation found, *inter alia*, in Article 58 of the LOS Convention. In its submission, DOALOS agreed that any attempt to arrest a vessel for failing to comply with a ships’ reporting system in the EEZ would be incompatible with the LOS Convention, but that it did not agree that this was the intention of the proposal.⁶³ In the course of the discussion, the applicant states made an undertaking that the reporting requirement would not be used to prohibit entry into the PSSA.⁶⁴ The final resolution approving the ships’ reporting system is ambiguous as to precisely what enforcement action a coastal state may take, providing that “all means will be used to obtain the full participation of ships required to submit reports and if reports are not submitted information will be passed on to the relevant flag state authorities for investigation and possible prosecution.”⁶⁵

⁶⁰Designation of a Western European Particularly Sensitive Sea Area, IMO Document LEG 87/16/1, 15 September 2003, at para. 10.

⁶¹IMO Document LEG 87/16/1, at para. 11.

⁶²IMO Document LEG 87/16/1, at para. 12.

⁶³The Division for Ocean Affairs and the Law of the Sea of the United Nations (DOALOS) in connection with issues raised in document LEG 87/16/1, IMO Document LEG 87/WP.3, at p. 2.

⁶⁴IMO Document LEG 87/17, at para. 200.

⁶⁵IMO Resolution MSC.190(79), at para. 9.

From the perspective of legislative jurisdiction, the DOALAS paper suggested that by adopting Regulation V/11 of the SOLAS Convention, states had implicitly agreed that a reporting obligation simpliciter does not offend the principle of freedom of navigation.⁶⁶ This interpretation assumes that Regulation V/11 allows mandatory ship reporting systems to be applied to the EEZ which, as it was suggested above, is unclear from the text alone. Yet, it seems that by adopting the ship reporting scheme for Western European Waters, IMO members have indeed implicitly accepted that Regulation V/11 can be applied to the EEZ and that such an extension of coastal state prescriptive jurisdiction is acceptable in these circumstances.

The debate over these proposals illustrates that although the IMO is a technical forum, legal perplexities that go to the heart of the jurisdictional regime can be raised. It should be remembered that the IMO Legal Committee was first created to deal with difficult legal issues that arose following the sinking of the *Torrey Canyon* off the coast of the United Kingdom in March 1967.⁶⁷ The adoption of the 1969 Intervention Convention provides an early precedent of the IMO tackling questions of maritime jurisdiction.⁶⁸

It has been seen how the IMO is used as a forum in which to clarify the balance between the interests of coastal states and maritime states on a case-by-case basis. Many of the legal issues raised by applications for PSSA status concern the authority to adopt associated protective measures rather than the actual legal basis for the PSSA itself. The revised Guidelines adopted in December 2005 clarify that proposed associated protective measures should have a secure legal basis.²¹³ This change places the burden firmly on the proposing state to demonstrate that such measures are available, at the same time as confirming that compulsory measures cannot be taken by the coastal state without the explicit approval of the IMO. In this context, the ability of the IMO to forge consensus will be of continuing importance in defining the

⁶⁶IMO Document LEG 87/WP.3, at p.2.

⁶⁷Balkin, "*The Establishment and Work of the IMO Legal Committee*", in *Current Maritime Issues and the International Maritime Organization*, 291-308 (Martinus Nijhoff Publishers, 1999).

⁶⁸Blanco-Bazan, "*IMO Interface with the Law of the Sea Convention*" 270 (1998).

precise scope of the jurisdictional framework for the law of the sea. Ultimately, where there is truly a desire for change to the jurisdictional framework, it is through such discussions in the IMO and similar technical institutions that a consensus will be forthcoming.

This approach has advantages over invoking the formal amendment procedures in the LOS Convention. Firstly, the IMO possesses an expertise and experience in maritime and navigational issues that the Meeting of the States Parties does not have. Secondly, the formal amendment procedures risk fragmentation of the legal framework, whereas the use of consensus decisions in the IMO promotes unity and certainty in the law of the sea. Finally, the use of consensus decision allows changes to be made quickly, without the need to wait for an instrument to come into force. Therefore, the IMO has the ability to play a significant role in clarifying and developing the legal order of the oceans.

6.4 The role of FAO in fisheries management and law

Although suggestions have been made from time to time for the establishment of a World Fisheries Organization nothing has come of them⁶⁹. However, the creation of the Food and Agriculture Organization (FAO) in 1945 provided the UN with a means of promoting the establishment of regional fisheries bodies and of monitoring and coordinating their activities. Article XIV of the FAO treaty allows the FAO Conference to approve agreements relating, inter alia, to fisheries. Not all agreements on marine living resources come under its jurisdiction however. It is notable that the International Whaling Commission, which the United States had at the outset thought should be incorporated into FAO, voted against such a move when the opportunity arose. More recently regional fisheries agreements involving ‘fishing entities’ (i.e. Taiwan) have been concluded outside FAO in deference to Chinese wishes⁷⁰.

FAO’s main responsibilities with respect to fisheries rest on Article I(2) of the FAO Constitution, which requires it ‘to promote and where appropriate

⁶⁹ Koers, *The International Regulation of Marine Fisheries*, 307–24 (2006).

⁷⁰ Edeson, 22 *IJMCL* 485 (2007).

to recommend national and international action with respect to the conservation of natural resources and the adoption of improved methods of agricultural production', and Article IV, which empowers FAO, by a two-thirds majority, to submit conventions on these subjects to its members. Under Article XVI 'agriculture' includes fisheries and marine products. FAO issues reports on fisheries problems and on national legislation and provides technical assistance and advice, including legal advice, to the developing countries which make up the majority of its membership. Faced with the disparate national interests of its members which include developed and developing states, coastal, artisanal, and distant water-fishing states. It has eschewed any attempt at a global or regional managerial role, confining itself instead to promoting effective management of world fishery resources. Where no fisheries commissions exist, it has established regional advisory bodies with responsibility for data collection, scientific research, training, and development (including aquaculture). A Committee on Fisheries (COFI) and various committees of independent fisheries experts advise the Director General. Their reports have helped underline the frailty of estimates of maximum sustainable yield (MSY), the closeness of most of the world's fishing resources to maximum catch limits, and the manifestation of signs of biological degradation and economic waste⁷¹. These considerations resulted in a reassessment of international fisheries policy and law during and after the 1992 Rio Conference. Placing international fisheries policy in a broader environmental context, Agenda 21 gave new vigour to the importance of sustainable use and conservation of marine living resources, and recognized once more the need for more effective regional cooperation. FAO has since played a leading role in the negotiation of new agreements on straddling and highly migratory fish stocks, sustainable fishing, and compliance with regional fisheries agreements. Intended to supplement the existing provisions of the 1982 UNCLOS, these agreements underline FAO's importance in the process of law-reform relating to international fisheries⁷². In

⁷¹Contribution of the Committee on Fisheries to Global Fisheries, Governance 1977–1997.

⁷²Boyle and Freestone (eds), *International Law and Sustainable Development*,(2009).

particular, the 1995 UN Fish Stocks Agreement has for the first time provided a framework for regional agreements, revising those already in existence and requiring the negotiation of new ones.

6.4.1 The FAO CCRF, 1995

The 1995 CCRF was adopted at the 28 session of the FAO Conference on 31 October 1995⁷³ by 170 members.⁷⁴ Committee on Fisheries (COFI) defined the concept of the responsible fisheries as:” This concept encompasses the sustainable utilization of fisheries resources in harmony with the environment; the use of capture and aquaculture practices which are not harmful to ecosystem resources or their quality; the incorporation of added value to such product through transformation meeting the required sanitary standards; the conduct of commercial practices so as to provide consumers access to good quality products”.⁷⁵

The CCRF sets out principles and international standards of behaviours for responsible practices with a view to ensuring the effective conservation, management and development of living aquatic resources, with due respect for the ecosystem and biodiversity. It recognizes the nutritional, economic, social, environmental and cultural importance of fisheries and the interests of all those concerned within the fishery sector. The CCRF takes into account the biological characteristics of the resources and their environment and the interests of consumers and other users.⁷⁶

The principle objects of the CCRF include fisheries management, fisheries operations, aquaculture development and integration of fisheries into coastal area management.⁷⁷ The CCRF lays on the post-harvest practices and trade that contain responsible fish utilization and international trade, law and regulation relating to fish trade.⁷⁸ The CCRF recognizes the importance of fisheries research and States that "responsible fisheries require the availability

⁷³FAO. Code of Conduct for Responsible Fisheries, Rome, 41 (1995).

⁷⁴FAO, What is the Code of Conduct for Responsible Fisheries? About CCRF. (2003).

⁷⁵FAO, CCRF, annex 1.

⁷⁶FAO, CCRF, Introduction. 1-1 pp.

⁷⁷*Ibid*, objectives.

⁷⁸FAO, Code of Conduct, art 11.

of a sound scientific basis to assist fisheries managers and other interest parties in making decisions."⁷⁹ The appropriate research is needed in all aspects of fisheries including biology, ecology, technology, environmental science, economics, social science, aquaculture and nutritional science. The CCRF emphasize the need for assistance to developing States to implement the CCRF, especially in the areas of financial and technical assistance, technology transfer, training and scientific cooperation that would allow developing States to develop their own fisheries and to participate in high seas fisheries.⁸⁰ India may implement the CCRF effectively by financial and technical assistance, technology transfer, training and scientific cooperation, which can be obtained from international and regional organizations. So that India can develop fisheries and build fishing fleets to participate in high seas fisheries.

6.4.2 The 1993 FAO IPOAs addressing specific key issues of the 1995 CCRF

There are four IPOAs which are voluntary instruments within the framework of the CCRF.⁸¹ Three IPOAs were adopted by COFI at its 23 Session in February 1999⁸² and include the IPOA on Seabirds which concerns the reduction of incidental catch of seabirds in long line fisheries, the IPOA on Shark which concerns conservation and management of sharks, and IPOA on capacity which concern the management of fishing capacity the subject of management of fishing capacity. The fourth IPOA, addressing IUU fishing was adopted at COFI's the 24 Session 2001.⁸³ The four IPOAs may be summarized as follows:

(a) IPOA-Seabirds

The objective of the IPOA-Seabirds is to reduce incidental catch of seabirds in longline fisheries.⁸⁴ The species of seabirds most frequently victims

⁷⁹*Ibid*, Art 12.1.

⁸⁰*Ibid*. art 5.

⁸¹FAO, International Plan of Action <http://www.fao.org/docrep/006/Y5260e01.htm#fn11>.(visited on July 26,2018).

⁸²FAO, Report of the 23rd Session of the Committee on Fisheries. Rome, 15-19 February 1999 (May 2001); http://www.fao.org/docrep/meeting/x0911_e.htm. (visited on July 26,2018).

⁸³FAO, Report of the 24 Session of the Committee on Fisheries. Rome, 26 February-2 March 2001

⁸⁴Available at <http://www.fao.org/docrep/meeting/003/y0220e/y0220e00.htm>.(visited on July 26,2018).

of such catches are albatrosses and petrels in the Southern Ocean, northern fulmars in the North Atlantic and albatrosses, gulls and fulmars in the North Pacific fisheries. The elaboration of this IPOA was due to an increased awareness about the incidental catch of seabirds in longline fisheries and its potential negative impacts on seabird populations.

(b) IPOA-Sharks

The objective of the IPOA-Sharks is to ensure the conservation and management of sharks and their long-term sustainable use. IPOA request States to implement a national program for the conservation and management of shark stocks if their vessels conduct directed or non-directed fisheries for sharks and call upon States to be responsible for developing, implementing and monitoring its Shark-plan. The national shark plan should contain regular assessments of the status of shark stocks, effective measures to ensure that shark fisheries are sustainable and should seek to minimize unutilized incidental catches, minimize waste and discards and encourage full use of dead sharks. And where transboundary, straddling, highly migratory and high seas stocks of sharks are exploited by two or more States, the States concerned should strive to ensure effective conservation and management of the stocks

(c) IPOA-Capacity

The IPOA stated that overcapacity and overfishing are really symptoms of the same underlying management problem as well as being biologically unsustainable, among others, contributes substantially to the degradation of marine fisheries resources, the decline of food production potential, and significant economic waste. The level of overcapacity observed in the mid-1990s was also economically unsustainable. Thus, IPOA seek to address the management of fisheries capacity in the framework of the CCRF,⁸⁵ States should take measures to prevent or eliminate excess fishing capacity and should ensure that levels of fishing effort are commensurate with sustainable

⁸⁵ FAO, International Plan of Action, IPOA-Capacity, legal foundation (2009) Available at http://www.fao.org/fi/website/FIRetrieveAction.do?dom=org&xml=ipoa_capacity.xml&xp_nav=2 (visited on July 26, 2018).

use of fishery resources.⁸⁶ IPOA-Capacity specifies a number of actions to be urgently taken with regards to the main section of the document including assessment and monitoring of fishing capacity, preparation and implementation of national plans, international consideration, and immediate actions for major international fisheries requiring urgent attention.⁸⁷ The immediate objective of the IPOA-Capacity is to urge States and RFMOs to achieve a worldwide, efficient, equitable and transparent⁸⁸ management of fishing capacity.

(d) IPOA-IUU fishing

IUU fishing undermines efforts to conserve and manage fish stocks in all capture fisheries. When confronted with IUU fishing, national and regional fisheries management organisations can fail to achieve management goals. This situation leads to the loss of both short and long-term social and economic opportunities and to negative effects on food security and environmental protection. IUU fishing can lead to the collapse of a fishery or seriously impair efforts to rebuild stocks that have already been depleted. Existing international instruments addressing IUU fishing have not been effective due to a lack of political will, priority, capacity and resources to ratify or accede and to implement them.⁸⁹ The objective of the IPOA-IUU is to prevent, deter and eliminate IUU fishing by providing all States with comprehensive, effective and transparent measures by which to act, including through appropriate regional fisheries management organizations established in accordance with international law.⁹⁰

The IPOAs focusing on the management of fishing capacity and IUU fishing have implications for most States in both small-scale and industrial fisheries. Assessments are needed to determine the extent and gravity of capacity and IUU fishing problems and the development of NPOAs. Each

⁸⁶FAO, International Plan of Action, IPOA-Capacity
http://www.fao.org/fi/website/FIRetrieveAction.do?dom=org&xml=ipoa_capacity.xml&xp_nav=1 (visited on July 26, 2018).

⁸⁷*Ibid.*

⁸⁸FAO, International Plan of Action, IPOA-Capacity, Mission 2009.

⁸⁹FAO, International Plan of Action, IPOA-IUU, 2009
http://www.fao.org/fi/website/FIRetrieveAction.do?dom=org&xml=ipoa_IUU.xml (visited on July 26, 2018).

⁹⁰*Ibid.*

IPOA sets a target date for States to implement their NPOAs. These dates, plus the severity of the problems associated with fishing capacity and IUU fishing, should facilitate priorities for action in implementing the NPOAs.⁹¹ In India, fish stock depletion is caused by overfishing, unregulated fishing, high fishing technology, fishing capacity, unselective gear, bycatch and ecosystem destruction by bottom trawling. In order to conserve fisheries resources, India may implement the IPOAs and NPOAs effectively by reducing the fishing capacity, using selective gear and reducing bycatch and bottom trawling. India may cooperate with other States, international and regional organizations to control IUU fishing. India may also encourage long lining to avoid the incidental catches of seabirds due to fishing nets.

6.5 Regional Fishery Bodies in the Atlantic Ocean and Adjacent Seas

6.5.1 Fishery Committee for the Eastern Central Atlantic (CECAF)⁹²

The CECAF was established by Resolution 1/48 of the FAO Council at its Forty-eighth Session held in Rome in June 1967 under Article VI(2) of the FAO Constitution. Its statutes were promulgated by the Director-General on 19 September 1967 and were amended by the FAO Council in November 1992. The rules of procedure were adopted by the CECAF at its first session held in Accra, Ghana (24–28 March 1969). They were amended in November 1992 and in October 2003.

Membership

Membership of the CECAF is open to Member Nations and Associate Members of the FAO selected by the Director-General. Such Member Nations and Associate Members of FAO shall be selected from among Member Nations and Associate Members of FAO in Africa whose territory borders the Atlantic Ocean from Cape Spartel to the mouth of the Congo River, and such other Member Nations and Associate Members fishing in the area, carrying out

⁹¹ FAO Fisheries Report, Report of the Workshop on the Implementation of the 1995 FAO Code of Conduct for Responsible Fisheries in the Pacific Islands: a Call to Action. Nadi, Fiji, 27-31 (October 2003-04).

⁹² Refer to the FAO Web site at <www.fao.org/fishery/rfb/cecaf/en> (visited on July 26, 2018).

research or having fisheries interest thereof, whose contribution to the work of the CECAF the Director-General deems to be essential or desirable.

The current members of the CECAF are: Angola (joined in 2006), Benin, Cameroon, Cape Verde, Congo, Côte d'Ivoire, Cuba, Democratic Republic of the Congo, European Union, Equatorial Guinea, France, Gabon, Gambia, Ghana, Greece, Guinea, Guinea-Bissau, Italy, Japan, Liberia, Mauritania, Morocco, Netherlands, Nigeria, Norway, Poland, Republic of Korea, Romania, Sao Tome and Principe, Senegal, Sierra Leone, Spain, Togo and United States of America.

Objectives

The main objective of the CECAF is to promote the sustainable utilization of the living marine resources within its area of competence by the proper management and development of the fisheries and fishing operations. The Committee does not have regulatory powers but can adopt recommendations on management issues. At its sixteenth session in October 2002, the Committee felt that its status quo should be maintained and, in particular, that it should continue to operate as an advisory body set up under Article VI paragraph 2 of the FAO Constitution.

However, the Committee agreed that its work should be more focused. To this effect, the terms of reference of the CECAF were revised. At its seventeenth session in May 2004, the Committee noted that the main high-seas fishery resources currently under exploitation in the region were tuna and tuna-like species, and that the management of these resources was within the mandate of the ICCAT. There were few if any other high-seas resources currently under exploitation, although exploratory fisheries had been undertaken on alfonsino (*Beryx splendens*) on seamounts in the region. In view of this situation, the Committee considered that there was no reason to consider the immediate establishment of a separate commission for the management of high-seas resources other than tuna.

Implementation of post-UNCED fishery instruments

Since the 2003 survey, no direct activities have been planned or implemented regarding the Compliance Agreement, the Fish Stocks Agreement, or the four IPOAS (SEABIRDS, SHARKS, CAPACITY, IUU).

At Committee meetings, there is ongoing sensitization to the principles of the Code of Conduct for Responsible Fisheries (the Code). If a member country requests assistance on any aspect of implementing the Code, the CECAF will provide assistance to the extent that financial resources are available. Following the creation of the FAO Strategy for Improving Information on Status and Trends of Capture Fisheries, national activities were initiated in 13 countries and a subregional working group on catch statistics established.

6.5.2 Ministerial Conference on Fisheries Cooperation among African States bordering the Atlantic Ocean (COMHAFAT)⁹³

The Regional Convention on Fisheries Cooperation among African States bordering the Atlantic Ocean was signed in Dakar on 5 July 1991 and entered into force on 12 July 1995.

Membership

The current members of the COMHAFAT are: Angola, Benin, Cameroon, Cape Verde, Congo, Côte d'Ivoire, Democratic Republic of the Congo, Equatorial, Guinea, Gabon, Gambia, Ghana, Guinea, Guinea-Bissau, Morocco, Mauritania, Nigeria, Senegal, Sierra Leone and Togo.

Objectives

The objectives of the convention are to:

1. promote active and organized cooperation in the area of fisheries management and development in the region;

⁹³Refer to the COMHAFAT Web site at www.atlafco.org/def.asp?codelangue=23&id_info=1360&an=1 (visited on July 26, 2018).

2. take up the challenge of food self-sufficiency through the rational utilization of fishery resources, within the context of an integrated approach that would embrace all the components of the fishing sector;
3. stimulate the national economic sectors through the direct and secondary effects resulting from fishery resources exploitation, bearing in mind the importance of the fisheries sector in the economic, social and nutritional development process of the people of the region;
4. enhance, coordinate and harmonize efforts and capabilities for the purpose of conserving, exploiting, upgrading and marketing fishery resources, considering in particular fish stocks occurring within the waters under the sovereignty or jurisdiction of more than one party;
5. Reinforce solidarity with African landlocked States and geographically disadvantaged States of the region.

On the conservation and management of fishery resources, parties:

1. combine their efforts to ensure the conservation and rational management of their fishery resources and take concerted action for the assessment of fish stocks occurring within the waters under the sovereignty or jurisdiction of more than one party;
2. establish and maintain an up-to-date inventory of human and material resources of the region and conclude arrangements utilizing their complementary strengths in the area of fishery resources assessment;
3. exchange scientific information regarding fishery resources, statistics relating to catch and fishing effort and other data relevant to the conservation and management of fish stocks with the objective of achieving their optimal utilization;
4. endeavour to adopt harmonized policies concerning the conservation, management and exploitation of fishery resources, in particular with regard to the determination of catch quotas and, as appropriate, the adoption of joint regulation of fishing seasons.

Implementation of post-UNCED fishery instruments

The COMHAFAT is not currently directly planning or implementing either the Compliance Agreement or the Fish Stocks Agreement.

The subject of the Code of Conduct for Responsible Fisheries (the Code) has been presented in COMHAFAT thematic lectures on several occasions. In addition, a questionnaire was sent to member countries seeking information on their degree of implementation of the Code, and any needs preventing them from fully implementing it. In this same questionnaire, member countries were asked if they had yet prepared NPOAs (on seabirds, sharks, capacity and IUU fishing), in compliance with the IPOAs. If member States had not formulated NPOAs, they were asked to identify their needs preventing them from doing so. Moreover, on the subject of addressing IUU fishing, and also for implementing the FAO Model Scheme on Port State Measures to Combat IUU Fishing, the COMHAFAT is planning to initiate a pilot scheme for monitoring and surveillance of fishing vessels operating in the area.

Regarding the FAO Strategy for Improving Information on Status and Trends of Capture Fisheries, a questionnaire was prepared by the COMHAFAT and sent to the member countries in order to create a database on the fisheries sector and ancillary activities.

6.5.3 General Fisheries Commission for the Mediterranean (GFCM)

The GFCM was established by an agreement drawn up in Rome on 24 September 1949 under Article XIV of the FAO Constitution and approved by the FAO Conference at its Fifth Session in 1949. The agreement entered into force on 20 February 1952. It was amended in 1963, 1976 and 1997. The latter amendments were related to the change in name of the GFCM (previously General Fisheries Council for the Mediterranean) and to new obligations for the contracting parties including their contributions to an autonomous budget for the functioning of the Commission. These new obligations came into force on 29 April 2004.

Membership

Membership of the GFCM is open to Member Nations and Associate Members of FAO. Other States that are Members of the United Nations, any of its Specialized Agencies or the International Atomic Energy Agency may be admitted as members by a two-thirds majority of the Commission's membership. The current members of the GFCM are: Albania, Algeria, Bulgaria, Croatia, Cyprus, Egypt, European Union, France, Greece, Israel, Italy, Japan, Lebanon, Libyan Arab Jamahiriya, Malta, Monaco, Morocco, Romania, Slovenia, Spain, Syrian Arab Republic, Tunisia and Turkey.

Objectives

The objectives of the GFCM are to promote the development, conservation, rational management and best utilization of living marine resources, as well as the sustainable development of aquaculture in the Region. The main functions of the GFCM are:

1. to keep under review the state of the Mediterranean's living resources, including their abundance and the level of their exploitation, as well as the state of the fisheries based thereon;
2. To formulate and recommend appropriate measures: (i) for the conservation and rational management of living marine resources, and (ii) for the implementation of these recommendations.

Implementation of post-UNCED fishery instruments

The GFCM is not undertaking any direct ongoing or planned activities with regard to the FAO Compliance Agreement or the IPOA-SEABIRDS. The Fish Stocks Agreement, the Code of Conduct for Responsible Fisheries (the Code) and the UNCED's Agenda 21 are all recognized in the preamble of the GFCM's agreement⁹⁴ as foundation instruments to achieve the objectives of the Commission. In addition, there are currently four projects executed by FAO that aim to implement provisions from the Code at the sub regional level.

⁹⁴The relevant provision provides: "Noting also the objectives and purposes stated in Chapter 17 of Agenda 21 adopted by the United Nations Conference on Environment and Development, 1992 and the Code of Conduct for Responsible Fisheries adopted by the FAO Conference in (1995).

The principles of the IPOA-SHARKS have been addressed through the workings of the Subcommittee on the Marine Environment and Ecosystem of the Scientific Committee, which has run a working group on shark bycatch and incidental catches.

6.5.4 International Commission for the Conservation of Atlantic Tunas (ICCAT)

The ICCAT was established by the International Convention for the Conservation of Atlantic Tunas, signed in Rio de Janeiro, Brazil, on 14 May 1966 and entered into force on 21 March 1969. The convention was amended in 1984 and 1992.

Species covered

The species covered by the ICCAT are the tuna and tuna-like fishes (the Scombroformes with the exception of the families Trichiuridae and Gempylidae and the genus Scomber) and such other species of fishes exploited in tuna fishing in the convention area that are not under investigation by another international organization.

Membership

Membership of the ICCAT is open to any State that is a member of the United Nations or of any Specialized Agency of the United Nations. The Paris Protocol of 1984 amending Article XIV on membership also opened membership to intergovernmental economic integration organizations constituted by States that have transferred to the organization competence over the matters governed by the convention.

Objectives

The main objective of the convention is to maintain the populations of tuna and tuna-like species found in the Atlantic at levels that permit the maximum sustainable catch for food and other purposes. The ICCAT's functions, *inter alia*, are: (i) to study the populations of tuna and tuna-like fishes; (ii) to collect and analyse statistical information relating to the current conditions and trends of the tuna fishery resources of the convention area; and (iii) to recommend studies and investigations to the contracting parties.

The ICCAT has no regulatory powers, but makes regulatory binding recommendations to be implemented by contracting parties. The Commission has recommended a number of measures on catch quotas, minimum weight of fish and limitation of incidental catches, as well as IUU fishing. The regulatory recommendations adopted by the ICCAT are subject to an objection procedure.

Implementation of post-UNCED fishery instruments

The ICCAT is not conducting specific ongoing or planned activities to implement either the Compliance Agreement or the Code of Conduct for Responsible Fisheries (the Code). However, within the framework of the Code are the four IPOAs on seabirds, sharks, fishing capacity and IUU fishing, and the Commission is taking proactive steps to address all the IPOAs. Its Recommendation 07-07 deals with reducing the incidental bycatch of seabirds in longline fisheries. Recommendation 07-06 concerns the conservation and management of sharks. An ICCAT working group has been established to deal with the issue of fishing capacity. The issue of IUU fishing is addressed through publication of a list of IUU fishing vessels.

Furthermore, the ICCAT participates regularly in meetings associated with the Fish Stocks Agreement. On the FAO Strategy for Improving Information on Status and Trends of Capture Fisheries, the ICCAT is a partner to the FIRMS. The ICCAT has also participated in the technical consultation for the FAO Model Scheme on Port State Measures to Combat IUU Fishing.

6.5.5 Northwest Atlantic Fisheries Organization (NAFO)⁹⁵

The NAFO was established by the Convention on Future Multilateral Cooperation in the Northwest Atlantic Fisheries signed on 24 October 1978 in Ottawa, Canada, and entered into force on 1 January 1979. In 2007, the NAFO adopted significant amendments to its convention including a new name “Convention on Cooperation in the Northwest Atlantic” (the name of the Organization did not change). The amendments have not yet been ratified by

⁹⁵Refer to the NAFO Web site at <www.nafo.int/about/frames/about.html> (visited on July 26,2018).

all contracting parties and they will become binding once three-quarters of the contracting parties formally approve the changes.

Membership

The convention is open for accession by any State subject to notification in writing to the depositary. However, members should consist of (i) contracting parties that participate in the fisheries of the regulatory area, and (ii) contracting parties that provide satisfactory evidence to the General Council of their expected participation in the fisheries of the regulatory area during the year of the annual meeting or during the following calendar year. The membership of the Fisheries Commission is reviewed annually by the General Council. The current members of the NAFO are: Canada, Cuba, Denmark (in respect of the Faroe Islands and Greenland), European Union, France (in respect of Saint Pierre and Miquelon), Iceland, Japan, Norway, Republic of Korea, Russian Federation, Ukraine and United States of America.

Objectives

The main objective of the Organization as stipulated in the amended NAFO convention (Article II) is “to ensure the long term conservation and sustainable use of the fishery resources in the Convention Area and, in so doing, to safeguard the marine ecosystems in which these resources are found.” The preamble of the amended NAFO convention also highlights the necessity for a precautionary approach and includes a commitment to apply an EAF in the Northwest Atlantic that includes safeguarding the marine environment, conserving its marine biodiversity, minimizing the risk of long term or irreversible adverse effects of fishing activities, and taking account of the relationship between all components of the ecosystem.

Implementation of post-UNCED fishery instruments

The NAFO has implemented the Compliance Agreement, the Fish Stocks Agreement and the Code of Conduct for Responsible Fisheries. The NAFO has banned shark finning and put in place specific measures for the shark fishery. The contracting parties of the NAFO are of the view that

regulations regarding fishing capacity should be addressed by the flag States through national measures.

The NAFO has specific measures in place for non-contracting party fishing vessels. The Organization maintains a public list of IUU fishing vessels in cooperation with the NEAFC (i.e. IUU fishing vessels identified by the NEAFC are included in the NAFO list and vice versa). Currently, encounters with non-contracting party fishing vessels are rare and IUU fishing is not perceived as being a real issue in the NAFO area. A rigid NAFO MSC scheme has contributed to the NAFO's success in addressing IUU fishing. The NAFO is in the process of introducing additional port State measures.

The NAFO's measures on port State control were adopted by the Fisheries Commission at its thirtieth annual meeting in Vigo, Spain, in September 2008. The port State control measures apply to landings or transshipments in ports of contracting parties by fishing vessels flying the flag of another contracting party. The provisions apply to landing or transshipment of fish caught in the regulatory area, or fish products originating from such fish that have not been previously landed or offloaded at a port.

The four basic principles of these measures are:

- 1. Prior notification.** The master of the vessel has to present a prior notification to the competent authorities.
- 2. Confirmation** from the flag State. Released by the prior notification form that is sent by the port State to the flag State. The flag State confirms the legal status of the catch by answering yes or no to four questions. The form is then returned to the port State.
- 3. Authorization** to land or transship. Such authorization is given by the port State if the flag State has confirmed the legal status of the catch by answering yes to all four questions. No authorizations shall be given if this is not the case. By derogation, an exception can be made, but the catch cannot be released from storage before the required confirmation is given.
- 4. Transparency** The forms containing the prior notification, the confirmation and the authorization are posted on the secure part of the Web site.

Addressing specific issues

The NAFO has implemented the precautionary approach. However, biological reference points have not yet been identified for all NAFO stocks owing to the lack of sufficient information. The preamble of the amended NAFO convention highlights the necessity for a precautionary approach. The NAFO has formally committed that it will implement the EAF and has already closed, on a precautionary and temporary basis, five seamounts and a large coral area to bottom fisheries. In June 2008, its scientific committee adopted the first (tentative) map of VMEs in the NAFO regulatory area. Ecosystem assessments will form a regular task of its scientific committee in the future, and the amended NAFO convention stipulates that the NAFO is responsible for and will consider vulnerable species and habitats in the division of management measures.

1. The NAFO has a strong MCS scheme that includes frequent at-sea inspections, 100 percent observer coverage, obligatory port inspections and VMS, and recently amended port State measures.
2. The NAFO maintains a register of vessels for control purposes.
3. The NAFO collects and disseminates catch and effort data through the annual STATLANT data submissions, VMS, observers and port inspectors. With the exception of the observer reports, this information is submitted using NAFO forms and information is standardized.
4. The NAFO is an active member of the Aquatic Sciences and Fisheries Abstracts, CWP, FIRMS and RSN, and the Organization maintains strong working links with other organizations, particularly the CCAMLR, FAO and ICES.
5. The NAFO has adopted important amendments to the convention (to be ratified) to include the EAF, streamline the Organization, modernize the decision-making process and introduce dispute settlement procedures. Moreover, in the last five years, the NAFO secretariat has been completely restructured and modernized, allowing it to expand its areas of service to address the new requirements of the Organization, to

incorporate state-of-the-art technology into the NAFO's work, and to apply new human resources strategies and concepts that enhance its efficiency and allow operations at reduced costs.

6.5.6 North East Atlantic Fisheries Commission (NEAFC)

The NEAFC was established by the Convention on Future Multilateral Cooperation in North-East Atlantic Fisheries, which was opened for signature in London on 18 November 1980 and entered into force on 17 March 1982.

Membership

Membership of the NEAFC is open to the founding members (Article 20). Accession to the convention by other States is subject to the approval of three-quarters of the contracting parties. The current members of the NEAFC are: Denmark (in respect of the Faroe Islands and Greenland), European Union, Iceland, Norway, Poland and Russian Federation.

Objectives

The main objectives of the NEAFC are to provide a forum for consultation and exchange of information on the state of fisheries resources in the Northeast Atlantic and on related management policies to ensure the conservation and optimal utilization of such resources, and to recommend conservation measures in waters outside national jurisdiction. The Commission is empowered to recommend measures applicable to the high seas concerning: (i) the conduct of fisheries, (ii) the control of fisheries, and (iii) the collection of statistical information. In recent years, the NEAFC has agreed on measures such as setting TACs for certain species and establishing minimum fish sizes and mesh sizes. The recommendations formulated by the NEAFC are subject to an objection procedure.

Implementation of post-UNCED fishery instruments

The NEAFC was the first RFMO in the world to undergo an independent performance review. The organization of the review has set the standard for similar reviews in other RFMOs worldwide. The report of the NEAFC performance panel was presented to the NEAFC on 13 November 2006.

Volume II of that report deals specifically with the NEAFC's performance with respect to various international instruments. The performance review panel indicated that recent convention amendments are consistent with modern developments in international instruments and commitments. From p. 55 of the review: "The Panel considers that the NEAFC Convention, including its recent amendments, generally implement the global instruments dealing with fisheries issues, in particular the UN Fish Stocks Agreement, the FAO Compliance Agreement and the FAO Code of Conduct. In this regard the Panel noted that NEAFC is a regional framework Convention and as such its provisions do not fully reflect the details and broad range of issues covered by global regimes, because of the regional specificities of the NEAFC Convention Area and also because by referring to these instruments in its preamble, it can be assumed that the context within which the general provisions of the NEAFC Convention are implemented are set out in such global instruments."

6.5.7 South East Atlantic Fisheries Organization (SEAFO)

The Convention on the Conservation and Management of Fishery Resources in the South East Atlantic Ocean was signed on 20 April 2001 and entered into force on 13 April 2003. The convention has nine signatories, but only five have ratified it.

Membership

The nine signatory members are: Angola, European Union, Iceland, Namibia, Norway, Republic of Korea, South Africa, United Kingdom (on behalf of Saint Helena) and United States of America. The ratified parties to the SEAFO are: Angola, European Union, Namibia, Norway and South Africa.

Objectives

From Article II of the convention, the objective is to ensure the long-term conservation and sustainable use of the fishery resources in the convention area through the effective implementation of the convention. The Organization collects and exchanges information on the fishery resources;

monitors and assesses the resources; and adopts measures for long-term conservation and sustainable use of the fishery resources in the area.

Implementation of post-UNCED fishery instruments

The SEAFO is not taking any direct ongoing or planned activity on the Compliance Agreement. The SEAFO convention is modelled on the laws of the UN Fish Stocks Agreement and the principles of the FAO Code of Conduct for Responsible Fisheries. Consequently, the activities under implementation by the SEAFO include implementing an EAF and a precautionary approach, enforcing flag State responsibilities and port States measures, managing its resources based on best scientific evidence, applying rigorous data collection and reporting requirements, having transparency in decision-making, and cooperating with other organizations.

6.5.8 Regional Fishery Bodies in the Indian, Indo-Pacific Ocean

6.5.8.1 Asia-Pacific Fishery Commission (APFIC)⁹⁶

The APFIC was established as the Indo-Pacific Fisheries Council by an agreement adopted at Baguio, the Philippines, on 26 February 1948 under Article XIV of the FAO Constitution. The agreement entered into force on 9 November 1948 and was amended in 1952, 1955, 1958, 1961, 1977 and 1993. The 1976 amendment changed the title to the Indo-Pacific Fisheries Commission. The 1993 amendments changed the title to the Asia-Pacific Fishery Commission.

Membership

Membership of the APFIC is open to Member Nations and Associate Members of FAO that accept the agreement. Other States that are Members of the UN, any of its Specialized Agencies or the International Atomic Energy Agency may be admitted as members by a two-thirds majority of the Commission's membership. The current members of the APFIC are: Australia, Bangladesh, Cambodia, China, France, India, Indonesia, Japan, Malaysia, Myanmar, Nepal,

⁹⁶Refer to the APFIC Web site at <www.apfic.org/>. (visited on July 26,2018).

New Zealand, Pakistan, Philippines, Republic of Korea, Sri Lanka, Thailand, United Kingdom, United States of America and Viet Nam.

Objectives

The main objective of the APFIC is to promote the full and proper utilization of living aquatic resources of the Asia-Pacific area by the development and management of fishing and culture operations and by the development of related processing and marketing activities in conformity with the objectives of its members. The Commission has a broad mandate (Article IV) to formulate and recommend measures in respect of conservation and management of the resources in the Asia-Pacific area. It does not have regulatory powers.

Implementation of post-UNCED fishery instruments

To implement the Fish Stocks Agreement, the APFIC carried out a review on small pelagic resources in the Asia-Pacific region, and transboundary stocks were identified by the APFIC Working Party on Marine Fisheries in May 1997. The APFIC's activities to implement the IPOA-SHARKS include promoting the development of national shark plans and reviewing the progress of implementation in cooperation with the International Union for Conservation of Nature (IUCN). The APFIC supports reviews on the existing legal framework for management in support of the IPOA-IUU. Such reviews have been carried out in Cambodia, Micronesia (Federated States of), Thailand and, more recently, the Lao People's Democratic Republic.

Regarding the facilitation and emergence of regional agreements and arrangements, the APFIC is an FAO Article XIV body with a clear role to support and encourage the emergence of bilateral, trilateral and other arrangements for the effective management of fisheries among its member countries, and particularly within its geographical area of competence. Although the APFIC is competent to act on matters of common interest within the national waters of all its member countries, it does have some specific waters that are considered its main area of competence: the South China Sea and the Bay of Bengal. The APFIC has a strategic interest to facilitate the development of regional arrangements for these two geographic areas.

At present, the APFIC supports three major initiatives: (i) the RPOA for responsible fishing, which includes combating IUU fishing; (ii) the development of the Bay of Bengal Large Marine Ecosystem Project (BOBLME); and (iii) the SEAFDEC initiative for the establishment of an ASEAN– SEAFDEC regional management mechanism and the establishment of an ASEAN roadmap for integration of the fisheries sector.

6.5.8.2 Indian Ocean Tuna Commission (IOTC)

The IOTC was established by an agreement drawn up in Rome under Article XIV of the FAO Constitution and was adopted by the FAO Council in 1993. The agreement entered into force upon the receipt of the tenth instrument of acceptance by the Director-General of FAO from Republic of Korea on 27 March 1996.

Membership

The current members of the IOTC are: Australia, Belize, China, Comoros, Eritrea, European Union, France, Guinea, India, Indonesia, Iran (Islamic Republic of), Japan, Kenya, Madagascar, Malaysia, Mauritius, Oman, Pakistan, Philippines, Republic of Korea, Seychelles, Sierra Leone, Sri Lanka, Sudan, Thailand, United Kingdom, United Republic of Tanzania and Vanuatu. (Cooperating parties: Senegal, South Africa and Uruguay.)

Objectives

The objective of the IOTC is to promote cooperation among its members with a view to ensuring, through appropriate management, the conservation and optimal utilization of stocks covered by the agreement and encouraging sustainable development of fisheries based on such stocks.

The main functions of the IOTC are:

- 1.** to keep under review the conditions and trends of the stocks and to gather, analyse and disseminate scientific information, catch and effort statistics and other data relevant to the conservation and management of the stocks and to fisheries based on the stocks covered by the agreement;

2. to encourage, recommend and coordinate research and development activities in respect of the stocks and fisheries covered by the agreement, and such other activities as the Commission may decide appropriate, including activities connected with transfer of technology, training and enhancement, having due regard to the need to ensure the equitable participation of members of the Commission in the fisheries and the special interests and needs of members in the region that are developing countries;
3. to adopt, on the basis of scientific evidence, conservation and management measures to ensure the conservation of the stocks covered by the agreement and to promote the objective of their optimal utilization throughout the area;
4. to keep under review the economic and social aspects of the fisheries based on the stocks covered by the agreement bearing in mind, in particular, the interests of developing coastal States.

Implementation of post-UNCED fishery instruments

The IOTC has planned and ongoing activities: to cooperate with non-contracting parties; to take action against fishing activities by large-scale flag of convenience longline vessels; to establish a list of vessels presumed to have carried out IUU fishing in the IOTC area; to establish a list of vessels that are authorized to fish in the IOTC area; to record of catches in the IOTC area; and to exchange information on the recording of catches by vessels fishing for tunas and swordfish in the IOTC area.

Article III of the Compliance Agreement introduces new obligations on flag States. The IOTC has called for action against flags of convenience, and each flag State must maintain a record of fishing vessels that are entitled to fly its flag on the high seas.

The Fish Stocks Agreement attributes a central role to RFBs, and the IOTC has adopted resolutions in keeping with the principles of Articles II and V thereof. These principles are addressed through those resolutions of the IOTC dealing with: cooperation with non-contracting parties; limitation of

fishing effort by non-members; conservation of bigeye and yellow fin tuna in the Indian Ocean; limitation of fishing capacity by contracting parties and cooperating non-contracting parties; criteria to obtain the status of a cooperating non-contracting party; management options for tuna and tuna-like species; conservation of sharks caught in association with fisheries managed by the IOTC; recommendations on sea turtles and seabirds; establishing an IUU fishing vessel list; establishing an authorized vessel list; establishing a VMS programme; limiting fishing capacity; establishing a programme for transshipment by large-scale fishing vessels; establishing a regional observer programme; and prohibiting the use of large-scale driftnets.

The Code of Conduct for Responsible Fisheries (the Code) calls for collaboration between Members of FAO and RFBs. In addition, within the framework of regional organizations, States should establish effective mechanisms to monitor and control the activities of fishing vessels and ensure the long-term conservation and sustainable use of fishery resources. Article VIII of the Code calls for flag States to maintain records of fishing vessels entitled to fly their flag. These measures have been addressed by IOTC resolutions. Resolution 08/03 deals with reducing the incidental bycatch of seabirds in longline fisheries. Resolutions 06/04 and 08/03 also seek to achieve reductions in levels of seabird bycatch by the deployment of bird scaring lines. Resolution 05/05 concerns the conservation of sharks that are caught in association with fisheries managed by the IOTC, and parties are required to declare their shark catch. The IPOA-CAPACITY is dealt with by a series of IOTC resolutions dealing with number of vessels, catch reduction, and control and inspection schemes among contracting and non-contracting parties. The IPOA-IUU is addressed by resolutions calling for actions against fishing activities by large-scale longline vessels flying flags of convenience; a control and inspection scheme; national observer programmes for tuna fishing; a scheme to promote compliance by non-contracting party vessels with resolutions established by the IOTC; a statistical document programme; measures to prevent the laundering of catches; trade measures; port

inspections; management standards for tuna vessels; the authorized vessel list and IUU fishing vessel list; and a VMS programme.

6.5.8.3 Regional Commission for Fisheries (RECOFI)

The RECOFI was established by the FAO Council in 1999 as an international agreement under the aegis of FAO (Article XIV of the FAO Constitution).

Species covered

All fisheries resources in the area of competence of the RECOFI, with the exception of internal waters. In addition to capture fisheries, the RECOFI pursues the sustainable development of aquaculture, and a regional aquaculture information system has been developed.

Membership

The current members of the RECOFI are: Bahrain, Iran (Islamic Republic of), Iraq, Kuwait, Oman, Qatar, Saudi Arabia and United Arab Emirates.

Objectives

The objectives of the RECOFI are to promote the development, conservation, rational management and best utilization of living marine resources as well as the sustainable development of aquaculture in its area of competence.

On capture fisheries, a working group on fisheries management is developing a regional strategy for the use of fisheries statistics at the regional level. Actions are being taken to address the issues of regional stock status reporting and port State measures to combat IUU fishing. On aquaculture, a proposal for a regional programme for aquatic animal health has been elaborated. In addition, guidelines for the sustainable development of marine cage culture in the RECOFI region will be formulated.

Implementation of post-UNCED fishery instruments

The RECOFI does not currently have specific ongoing or planned activities to implement the Compliance Agreement, the Fish Stocks Agreement or the four IPOAs. The establishment of a working group on fisheries

management and the regional aquaculture information system are actions seen as complying with the Code of Conduct for Responsible Fisheries. Actions are being taken to improve stock status reporting in conformity with the FAO Strategy for Improving Information on Status and Trends of Capture Fisheries. A planned workshop will deal with port State measures to combat IUU fishing.

Addressing specific issues

The RECOFI has no ongoing or planned activities to implement the precautionary approach, an EAF or area-based management tools. The issue of IUU fishing will be addressed by the planned regional workshops on port State measures. The management of fleet capacity is being contemplated through regional strategies. Information tools are currently being conceived and developed for fishery landing statistics. The RECOFI is strengthening its cooperation with the GFCM. To strengthen its institutional capacity, steps are being taken to increase awareness of the RECOFI's mandate and powers. New entrants into the RECOFI are accommodated where a non-member country exploits a shared fishery resource (e.g. Yemen), and they are invited to attend plenary sessions as observers.

6.5.8.4 South West Indian Ocean Fisheries Commission (SWIOFC)

The SWIOFC was established in 2004 by Resolution 1/127 of the FAO Council under Article VI 1 of the FAO Constitution. Its rules of procedures were adopted by the Commission at its first session in 2005.

Species covered

All living marine resources without prejudice to the management and responsibilities and authority of other competent fisheries and other living marine resources management organizations or arrangements in the area of competence.

Membership

The SWIOFC is composed of such Members and Associate Members of FAO that are coastal States whose territories are situated wholly or partly within the area of the Commission and that notify in writing to the Director-General their interest in becoming a member of the Commission. The current

members of the SWIOFC are: Comoros, France, Kenya, Madagascar, Maldives, Mauritius, Mozambique, Seychelles, Somalia, South Africa, United Republic of Tanzania and Yemen.

Objectives

The main objective of the SWIOFC is to promote the sustainable utilization of the living marine resources of the South West Indian Ocean region by the proper management and development of the living marine resources, without prejudice to the sovereign rights of coastal States, and to address common problems of fisheries management and development faced by the members of the Commission. The Commission has due regard for, and promotes, the application of the provisions of the Code of Conduct on Responsible Fisheries, including the precautionary approach and the ecosystem approach to fisheries management.

6.5.9 Regional Fishery Bodies in the Pacific Ocean

6.5.9.1 Pacific Islands Forum Fisheries Agency (FFA)⁹⁷

The FFA was established by the South Pacific Forum Fisheries Agency Convention, which was signed in Honiara, Solomon Islands, on 10 July 1979.

Members

There are 17 member countries of the FFA: Australia, Cook Islands, Fiji, Kiribati, Marshall Islands, Micronesia (Federated States of), Nauru, New Zealand, Niue, Palau, Papua New Guinea, Samoa, Solomon Islands, Tokelau, Tonga, Tuvalu and Vanuatu.

Objectives

The FFA was established to help countries sustainably manage their fishery resources that fall within their 200 mile EEZs. The FFA is an advisory body providing expertise, technical assistance and other support to its members who make sovereign decisions about their tuna resources and participate in regional decision-making on tuna management through agencies such as the WCPFC. Since 1979, the FFA has facilitated regional cooperation so that all

⁹⁷Refer to the FFA Web site at <www.ffa.int/>. (visited on July 26, 2018).

Pacific countries benefit from the sustainable use of tuna – worth more than US\$3 billion a year and important for many people’s livelihoods in the Pacific. The mission statement of the FFA is: “To enable Member Countries to manage, conserve and use the tuna resources in their Exclusive Economic Zones and beyond, through enhancing national capacity and strengthening regional solidarity.”

Implementation of post-UNCED fishery instruments

The FFA has integrated the Compliance Agreement into the FFA minimum terms and conditions for implementation within each EEZ of the member countries. The provisions of the Fish Stocks Agreement are reflected in the FFA legislative framework for its member countries. The Code of Conduct for Responsible Fisheries is also integrated into the FFA minimum terms and conditions for implementation within EEZs of FFA member countries. On the IPOAs for seabirds and sharks, the FFA is conducting ongoing activity for member States to develop their own NPOAs. The IPOA-IUU is covered under the FFA regional MCS strategy. The FAO Strategy for Improving Information on Status and Trends of Capture Fisheries and the FAO Model Scheme on Port State Measures are both integrated into the FFA minimum terms and conditions for implementation within EEZs of FFA member countries.

Addressing specific issues

The precautionary approach is implemented in the conservation and management measures for tuna resources within the EEZs of FFA member countries. An EAF is a prerequisite for a review of national tuna management plans. Regarding the establishment of area-based management tools, the FFA members have placed a proposal before the WCPFC for the closure of high-seas fishing operations. Monitoring, control and surveillance is addressed by the FFA minimum terms and conditions for implementation within the EEZs of member States. The FFA regional vessel register for foreign fishing vessels operating within the EEZs of its member States requires foreign fishing vessels to have on board an FFA-approved VMS. Initiatives to strengthen cooperation

and coordination with other RFBs are demonstrated in the linkages with the WCPFC and the memorandum of understanding with the SPC. The FFA has acted to strengthen its institutional capacity by a series of initiatives including the FFA 20/20 Strategic Plan, a three-year business plan, and the FFA rules of procedures, financial regulations and appraisal procedures. A final issue that is a priority for the FFA is the development aspirations of its member countries.

6.5.9.2 North Pacific Anadromous Fish Commission (NPAFC)

The NPAFC was established by the Convention of Anadromous Stocks in the North Pacific Ocean, which was signed in Moscow on 11 February 1992 and entered into force on 16 February 1993. It replaced the International Convention for the High Seas Fisheries of the North Pacific, which had been in force since 1952.

Membership

The current members of the NPAFC are: Canada, Japan, Republic of Korea, Russian Federation and United States of America. The convention is not open to other States, but other States may accede to it at the invitation of the original parties by unanimous agreement.

Objectives

The main objectives of the convention are to prohibit directed high-seas fishing for North Pacific salmon and to limit strictly the incidental taking of Pacific salmon. The parties may take action individually or collectively to prevent unauthorized fishing activities by others and prevent trafficking in illegally harvested Pacific salmon. Decisions of the NPAFC on all important matters are taken by consensus among all parties that are States of origin of anadromous stocks that migrate into the convention area.

Implementation of post-UNCED fishery instruments

As the convention prohibits direct fishing of the target species in the convention area, the “fisheries management” and “fishing operations” portions of the Code of Conduct for Responsible Fisheries are not among the NPAFC’s mandates, although the same prohibition is evidence of an application of the precautionary approach by prohibiting the commercial fishing operations of its

target species in the convention area. Regarding “fisheries research”, coordination of scientific research among the parties is one of the NPAFC’s mandates.

The Commission has expressed problems with IUU fishing, and each party of the Commission must take all necessary measures to ensure that its nationals and fishing vessels comply with the provisions of the convention. In 1993–2007, the cooperative enforcement efforts of the NPAFC parties resulted in the detection of 41 vessels conducting directed driftnet fishing operations for salmon in the convention area. Of those vessels, 16 were apprehended. Many other post-UNCED fishery instruments (the Fish Stocks Agreement, the Compliance Agreement, and the IPOAs on seabirds, sharks and fishing capacity), are not applicable.

Addressing specific issues

On MCS and VMS to address IUU fishing, in 2004–07, a new integrated information system was developed. This system allows the parties to keep all electronic information about illegal or suspected vessels in the convention area on a closed Web site. Since 2006, an annual joint enforcement plan of the parties has been in force. It is a comprehensive plan resulting from the cooperative efforts of all the parties that includes patrol vessel and aircraft surveillance of the convention area throughout the high-threat season. An enforcement symposium, “Patrol tactics, planning and execution of enforcement in the NPAFC Convention Area”, was held in 2006. The purpose of the symposium was to bring together enforcement professionals from each of the parties to share lessons learned and best practices from the respective agencies. In 2007, the NPAFC initiated a programme of cooperation with the WCPFC and the North Pacific Coast Guard Forum, which resulted in the first North Pacific IUU Tripartite Meeting in February 2008 in Vancouver, Canada.

6.5.9.3 South Pacific Regional Fisheries Management Organisation (SPRFMO)

The international consultations on the proposed SPRFMO concluded with the adoption of the Convention on the Conservation and Management of

the High Seas Fishery Resources of the South Pacific Ocean in Auckland, New Zealand, on 14 November 2009. The convention opened for signature on 1 February 2010 and will remain open for 12 months. It will enter into force 30 days after the deposit of the eighth instrument of ratification, accession, acceptance or approval (of which three must be coastal States and three non-coastal States). If after three years of its adoption the convention has not entered into force, six months after the deposit of the tenth instrument of ratification, accession, acceptance or approval shall bring it into force.

When the convention enters into force, the gap that exists in the international conservation and management of non-highly migratory fisheries and protection of biodiversity in the marine environment extending from the most eastern part of the South Indian Ocean through the Pacific towards the EEZs of South America will be closed.

Membership

The convention was only concluded at the time of writing this publication. There are no members as yet. However, the question of membership did arise in preparatory meetings to establish the SPRFMO and the following principles were endorsed:

1. To ensure that the RFMO operates effectively in achieving its objective, including the promotion of responsible fisheries practices, it is important that its membership includes all coastal States and States and entities fishing species covered by the RFMO in its area of application. It is also important that mechanisms are established to accommodate the interests of new entrants, taking into account the requirement of a real interest and the requirements of developing States. If membership is not sufficiently broad, there is a risk that conservation and management measures could be undermined and the incentives for all who fish in the South Pacific Ocean to comply with the measures could be reduced.
2. It may be appropriate to establish specific provisions for cooperating non-parties to the Commission so that non-parties can assist in the

effective implementation of measures, e.g. port State or market State measures.

3. Consideration should be given to the development of provisions in relation to recognition of the special requirements of developing States consistent with the UNCLOS and the Fish Stocks Agreement.
4. To promote transparency and to broaden the advice on which decisions are based, consideration should also be given to promoting participation, in an observer capacity, of fishing industry, relevant NGOs and intergovernmental organizations in meetings.

Objectives

From Article 2 of the convention, the objective of the convention is that through the application of the precautionary approach and an EAF, the SPRFMO will ensure the long-term conservation and sustainable use of fishery resources and, in so doing, will safeguard the marine ecosystems in which these resources occur.

Addressing specific issues

As noted above, both the precautionary approach and an EAF are incorporated into Article 2 of the convention. Although the convention has not yet come into force, there are interim measures in place to deal with bottom fishing. These interim measures are based on an EAF and they will further involve both spatial closures and restrictions on fleet capacity. Data standards are in place and data are already being collected and disseminated.

6.5.10 Commission for the Conservation of Antarctic Marine Living Resources (CCAMLR)

The depletion of resources of the Antarctic region has been a subject of concern since the mid-1970s, when it was realized that certain species in the region were overexploited. The Convention for the Conservation of Antarctic Marine Resources was adopted in 1980 and entered into force in 1982⁹⁸. The convention covers all the living resources of Antarctic including seabirds

⁹⁸Convention on the Conservation of Antarctic Marine Living Resources, May 20, 1980, available online at <http://www.ccamlr.org> [hereinafter CCAMLR.]. (visited on July 26,2018).

except for seals (partially, south of 60° S) that are regulated by the Convention on the Conservation of Antarctic Seals (CCAS), and whales regulated by the International Whaling Commission.

The conservation of species is not the only goal of the convention. Another important goal is to attend to the concerns of nations that do not have harvesting interests in the region but are concerned with keeping the Antarctic Treaty System intact⁹⁹. Several articles of the convention are devoted to this second goal.

The convention includes articulations of a preventive/precautionary approach. The convention attempts to apply an ecosystem approach. Article II of the convention provides that any harvesting in the convention area must be conducted in accordance with the principles of conservation that include, inter alia prevention of changes or minimization of the risk of changes in the marine ecosystem which are not potentially reversible over two or three decades taking into account, the effects of associated activities on the marine ecosystem¹⁰⁰.

This adoption of the ecosystem approach was considered to be ahead of its time. Not much was known, however, when the convention was adopted, about the functioning of ecosystems that could be implemented in practice. The convention includes simultaneously provisions on the rational use of resources. Terminology, such as “the greatest net annual increment” or “stable recruitment” of harvested population is found in the convention as well¹⁰¹.

The convention is run by a Commission for the Conservation of Antarctic Marine Living Resources (CCAMLR), a scientific committee, and an Executive Secretary. State parties are to provide the commission with information (including statistical and biological information) so that the commission can exercise its functions. The functions of the commission involve analysis of the data collected and the enactment of conservation

⁹⁹For instance, article IV provides that all contracting parties to the CCAMLR would be bound by articles IV and VI of the Antarctic Treaty and that nothing taking place in the context of the CCAMLR shall constitute a basis for asserting, supporting, or denying a claim to territorial sovereignty in the Antarctic Treaty.

¹⁰⁰Art. II(3)(c).

¹⁰¹Art. II(3)(a).

measures. An objection procedure is provided for and conservation measures do not have binding effects on states parties that object to them.

State parties are responsible for the enforcement of the convention and have to establish a system of observation and inspection. The system is to include boarding on vessels and inspections, procedures for flag state prosecution, and sanctions based on evidence emanating from boarding and inspections. The parties established a system of inspection in 1988, which became effective in 1989¹⁰². The parties have adopted a scheme of international scientific observation that became effective in the 1992/93 fishing season. According to the scheme, each state party is to designate observers, and state parties are expected to conclude bilateral arrangements that would place scientific observers on board of vessels of other state parties.

Monitoring measures have not been very effective, however, and issues remain with regard to illegal catches, especially those of Patagonian toothfish. During the 1,995/96 season¹⁰³ more than one hundred vessels were observed engaging in unregulated fishing of toothfish in the region, with an estimated catch of more than ten times the harvest reported by CCAMLR members. Many of the parties to the convention are allegedly engaging in illegal harvesting operations by registering their vessels with flag of convenience states.

The CCAMLR regime has been more successful when dealing with issues that are not related to the profitability of catches. Measures that have been enacted for the protection of seabirds, for instance, have been considered more successful than measures to protect the Patagonian toothfish¹⁰⁴.

The shortcomings of the regime have been attributed to the resistance of laggard states (particularly of the Soviet Union) and to the lack of interest of non harvesting nations in confronting the laggards. It has been argued that if

¹⁰²The CCAMLR. System of Inspection, available online at <http://www.ccamlr.org>. (visited on July 26,2018).

¹⁰³Available online at <http://www.camlr.org>. (visited on July 26,2018).

¹⁰⁴ CCAMLR's Management of the Antarctic, available online at <http://www.ccamlr.org>(visited on July 26,2018).

non harvesting nations had been more interested in conservation than keeping the Antarctic Treaty System (ATS) in place, the chances of the CCAMLR becoming a more successful regime would have been greater. The relative lack of interest of state parties in environmental issues has much to do with reluctance of the CCAMLR Commission to adopt conservation measures. The CCAMLR has used the lack of scientific evidence as subterfuge for indecision. The ecosystem approach has been considered also an obstacle to implementation. Some commentators have characterized the ecosystem approach as an impractical approach and have proposed that a “traffic lights” approach would have been a more desirable management technique. The CCAMLR recently adopted a Catch Documentation Scheme (CDS) that applies especially to the Patagonian toothfish. The purpose of the scheme is to monitor international toothfish trade; identify the origins of toothfish imports and exports; determine whether toothfish catches have been executed in accordance with conservation measures; and gather data for the scientific evaluation of toothfish stocks. The CDS consists of a document that must accompany all landings, imports, exports, and transshipments of toothfish. In order to promote compliance with the CDS and because many fishers consider their fishing areas, catches, and techniques to be confidential information rules for access to CDS data have been adopted. These rules provide, inter alia, that all data concerning landings and trading of individual companies would be aggregated or encrypted as appropriate to protect the confidentiality of information. After the data is encrypted, it can become available to working groups of the commission or to the scientific committee. Non contracting parties are to be given only limited access to the data¹⁰⁵.

It remains to be seen whether the CDS would be successful or whether state parties to the convention would continue to flout the rules despite monitoring and enforcement provisions. An obvious problem with the CDS is that it can be subjected to falsification. For this reason, the documents for

¹⁰⁵Rules of Access to Catch Documentation Scheme Data, available online at <http://www.ccamlr.org>. (visited on July 26,2018).

Patagonian toothfish are to be checked in order to verify that the information contained in the catch document is consistent with the data derived from an automated satellite-linked Vessel Monitoring System (VMS)¹⁰⁶. The use of technology, as it becomes cheaper and more affordable, is likely to play an important role in ensuring implementation with regional fisheries agreements.

6.6 Conclusion

The institutionalization of international law-making has meant that, whilst states remain the principal actors in international relations, other non-state actors are able to participate and influence the process. Research in international relations theory can be used to complement the legal assessment of international institutions by highlighting some of the informal ways in which these actors can influence the development of the international legal framework. In particular, such actors are able to influence the content of the discussions through the provision of advice and information. The ability to play this role is particularly prominent in relation to the protection of the marine environment, given that this is an area where scientific and technical know-how are vital to successful regulation.

The enclosure of fisheries resources, as with most enclosures, is primarily exclusionary. Many recent agreements, such as the 1995 Fisheries Agreement, legitimize fishery enclosures as the future method of fisheries management. Exclusionary enclosures, however, pose fundamental questions of fairness. The enclosure of fisheries resources has as an effect that a limited number of states – those belonging to regional organizations take advantage of and profit from those resources. Other states that have no historical rights to the resource and no clout in international negotiations are to stay out. Compensation is rarely offered to these outsider states that may, in return, engage in clandestine activities. States left out of regional arrangements tend to revolt when, what they have perceived as an open-access resource, is

¹⁰⁶Resolution 17/XX, Use of VMS and other Measures for Verification of CDS Catch Data for Areas Outside the Convention Area, in particular, in FAO Statistical Area 51, available online at <http://www.ccamlr.org>. (visited on July 26,2018).

increasingly appropriated by coastal states or by the first-movers in a region. Some outsiders attempt to find compromises, especially, in areas of high seas that have been severely restricted due to EEZ extensions.

For the insiders, the establishment of RFOs has been far from easy. Flow fisheries resources would be allocated among the insiders in different regimes is bound to remain controversial. The overuse of the objection procedure has the possibility of transforming regime insiders into de facto outsiders and to undermine the general legitimacy of regulatory controls on fisheries. The regional fisheries agreements, nevertheless, are a bold attempt to regulate the “freedom of fishing in the high seas” an attempt that has been legitimized for the purposes of conservation. States generally have been eager to participate in regional agreements, even distant water fishing states, in order to render legitimate their fishing in a particular region. Participation in regional arrangements also guarantees the possibility of placing objections on TACs established and quotas assigned.

The participation in regional fisheries agreements, as a way to legitimize fishing in the high seas, provides evidence of the erosion of the sacrosanct principle in international law, which is the freedom of the high seas. And this is not theoretical erosion based on a number of agreements. Technological devices such as VMS, as they are increasingly installed in new ships, would gradually render unobserved navigation and fishing quite difficult. Not all vessels are equipped today with VMS and there is resistance to institutionalize the installment of such devices. As things evolve, however, VMS increasingly would become the device that enhances the legitimacy of vessels to engage in high seas fishing activities. Shipowners, then, would have to decide whether they want their vessels to obtain a carte blanche for navigation, fishing, transit, and landing by the incorporation of state-of-the-art equipment, or if they would prefer to retain an ambiguous status that would increase the transaction costs of fishing.



CHAPTER-VII
CONCLUSION AND
SUGGESTIONS



CHAPTER VII**CONCLUSION AND SUGGESTIONS****7.1 Conclusion**

The law of the sea has undergone a considerable journey since the early interactions between the European colonial powers during *mare liberum* and *mare clausum* debate. Most obviously, it has increased immeasurably in complexity and detail. It has also secured a degree of autonomy from rather crude manifestations of power, although certain powerful States, like the US, can significantly influence the development of the law. Despite the adoption of important instruments like the 1982 Convention and the Fish Stocks Agreement, which seek to accommodate the various and often conflicting interests of States, there remains a strong tension between a more inclusive (or *laissez faire*) approach to regulation in the *mare liberum* tradition and an exclusive approach in the *mare clausum* tradition. This divide is not simply between maritime powers and coastal States any longer. The tension works in a much more sophisticated way both within States and between States and other international actors. For example, the strong advocacy of rights-based fishing, and as implemented in States like Iceland, marks a powerful extension of the enclosure movement by vesting entitlements akin to property rights in marine resources in private persons. Such rights may be rigorously defended against the State itself and so place limits in its regulatory authority. Environmental protection is often now the domain of non-governmental organizations acting as checks on the States.

The role of courts and tribunals in upholding the status quo of the LOS Convention whilst satisfying countervailing pressures for progressive development of the legal framework. The inclusion of compulsory dispute settlement provisions in the LOS Convention implies an increased willingness to place the development of international law in the hands of independent adjudicators. In doing so courts and tribunals must be aware of the inherent limitations on the judicial function which restrict how far they can develop the

law. The concept of applicable law would appear to offer few opportunities for an adjudicator to develop the law. The mandate to apply other sources of international law arguably does not allow a court to consider claims under other sources of law that are not necessary to decide the dispute under the treaty. Interpretation, on the other hand, would appear to allow courts and tribunals to look beyond the text and to progressively develop the content of the law of the sea in light of changes in policy and law. The aim of interpretation is to identify the intention of the parties although it would appear that there is no single method of doing so. Rather, it is a process of weighing and balancing all of the available evidence in such a way as to deduce the meaning of the words in their context and in light of the object and purpose of the Convention.

Given the status of the LOS Convention as universal law, it would appear to be the practice of the international community as a whole rather than the States Parties per se that should guide a court or tribunal in its task. Looking at the activities of the States Parties alone would cause fragmentation between the LOS Convention as a treaty and as customary international law.

In deciding which instruments demonstrate the intention of states, a pragmatic approach seems to be preferred. Indeed, the pragmatism of the courts is perhaps necessitated by the ad hoc approach taken by states in developing the law. Throughout this thesis, the variety of mechanisms and instruments that states use to maintain the consensus on the law of the sea has been illustrated. Courts and tribunals play an important role in deciphering, clarifying and confirming these various law-making activities. Subsequent state practice may provide a source of interpretation or it may also act to modify the Convention. Courts and tribunals offer a forum in which informal instruments and state practice can be confirmed as legally binding, providing certainty to the legal framework.

However, it is important to maintain the distinction between jurisdiction and applicable law. States have only consented to the settlement of disputes under the LOS Convention, not under associated treaties. Courts cannot incorporate entire obligations into the LOS Convention simply because states

have accepted them through other treaties. It therefore remains important that other treaties contain their own dispute settlement mechanisms. It is for this reason that the Fish Stocks Agreement is so important in providing wide-ranging dispute settlement system for disputes arising under its provisions, as well as other fisheries agreements. It also means that a court or tribunal acting under the LOS Convention may be able to do no more than order the states to co-operate. Nevertheless, independent oversight of negotiations often proves to make it simpler to arrive at mutually agreed solutions. The contribution of courts and tribunals in developing the law of the sea must be seen as part of a wider system of law-making, involving many types of political, technical and judicial institutions. It is only by considering the variety and complexity of international law-making mechanisms that it can be seen how states strive to maintain the unity and universality of the legal orders of the oceans.

The international community has witnessed over the last half century not only codification and consolidation of the law but also clarification of some broad principles and even reform of the law of the high seas. In making these changes, the international community has tried to keep pace with increased knowledge and use of the oceans, new technologies, increased exploitation of marine resources and increased concern for the preservation of the marine environment. In the result, we now have a maturing legal regime for the high seas, based upon the rights and duties of States. In this and other regards, the Convention on the, Law of the Sea and its Implementing Agreements provide a modern, balanced legal framework that, having taken so long to achieve, should be supported by all members of the international community as we enter the 21st Century.

In today's world, freedoms of the high seas are freedoms under the law. They should be viewed increasingly as no different from other fundamental rights of States under international law. They are to be exercised subject to qualifications stemming from general principles such as due regard, good faith and reasonable use, as well as from the terms of the Convention, including to the duty to respect generally accepted international standards, and the

provisions of other global, regional and bilateral treaties. The particular term “freedom” is perhaps most relevant in the context of the non-exhaustive nature of the list of freedoms of the high seas. The due regard test has been applied by courts in the past and could be applied by courts and tribunals under Part XV in the future. In this and other respects, courts and tribunals have an enhanced role to play in the interpretation and application of the law of the sea.

At the technical level, a period of active standard-setting is perhaps now gradually giving way to a time for auditing the performance of States parties to the standard-setting conventions. The world has become accustomed to “white lists” in the IMO, following the adoption of the amendments to the STCW Convention. The system could be made general through the intensive audit of the administrative and legislative steps needed to implement conventional standards.

There is still a need to improve “oceans governance” and, in particular, the governance of the high seas. This can be achieved by a combination of means, most notably by pursuing the goal of universal participation in the Convention on the Law of the Sea and its two Implementation Agreements.

Improved governance can also be achieved by more effective enforcement of the law at both the national and international levels. This may entail widening the jurisdictional possibilities. The introduction of port State jurisdiction is improving the situation and there is still scope to expand it.

In the contiguous zone, the coastal State may exercise jurisdiction to prevent and punish infringement of its customs, fiscal, immigration or sanitary laws and regulations within its territory, internal waters and the territorial sea. Literally the coastal State has only enforcement jurisdiction, not prescriptive jurisdiction, in the contiguous zone. In the light of the increasing importance of the prevention of illegal traffic in drugs, in particular, there appears to be scope to reconsider the question whether the coastal State cannot extend legislative jurisdiction to the contiguous zone in practice.

The coastal State exercises sovereign rights over the EEZ and the continental shelf for the purpose of exploring and exploiting the natural

resources there. The sovereign rights are limited to the matters defined by international law. Thus, the sovereign rights must be distinct from territorial sovereignty in the sense that such rights lack the comprehensiveness of material scope.

Concerning matters provided by international law, in the EEZ and the continental shelf, the coastal State may exercise legislative and enforcement jurisdiction over all peoples regardless of their nationalities in an exclusive manner. Furthermore, like territorial sovereignty, sovereign rights over the EEZ and the continental shelf are essentially spatial because they can be exercised only within the specific space concerned. Hence, it is argued that the sovereign rights of the coastal State can be considered as a sort of spatial jurisdiction, namely, limited spatial jurisdiction.

In the EEZ, all States enjoy freedoms of navigation, overflight and the laying of submarine cables and pipelines. In exercising these freedoms, States must have due regard to the rights and duties of the coastal State under Article 58(3) of the LOSC. To this extent, freedoms of the seas in the EEZ may be qualified by coastal State jurisdiction. If an international dispute arises with regard to a matter where the LOSC does not specify which States are to have jurisdiction, such a dispute should be resolved on the basis of equity and in the light of all the relevant circumstances in accordance with Article 59 of the LOSC. This provision contains no presumption in favor of either the coastal State or other States.

The outer limit of the continental shelf beyond 200 nautical miles is to be determined by the criteria enshrined in Article 76 of the LOSC, namely, the sedimentary thickness test (the Irish formula or Gardiner formula) and the fixed distance (50 nautical miles) test (the Hedberg formula). The coastal State is required to submit information with regard to the outer limits of the continental shelf beyond 200 nautical miles to the CLCS.

On the basis of the recommendations of the CLCS, that State has to establish the outer limits of its continental shelf. Whilst the extension of the continental shelf beyond 200 nautical miles attracts growing attention between

States, such a claim may create a difficult issue with regard to the delimitation of overlapping shelves between two or more coastal States.

The institution of the EEZ and the continental shelf rests on a balance between the rights of the coastal State on the basis of the principle of sovereignty and the right of other States according to the principle of freedom. Nonetheless, it is likely that the coastal State will attempt to extend its jurisdiction over matters which do not clearly fall within the rights of that State. The increasing influence of the coastal State may entail the risk of promoting 'territorialisation' of the EEZ.

Protection and preservation of marine environment has become one of the most important ecological issues of modern time. The sources of human induced source of marine pollution are numerous. Among the sources, one is ship source pollution. There is a need for the protection of man from activities that may cause damage to his property, his physical existence or his legitimate activities. In this regard, marine pollution has to be controlled because it causes damage. From ecological perspective, ocean is an essential component to sustain life on earth. The protection of ocean was largely neglected although there is a general emergence of environmental consciousness in the past few decades. Prevention of oil pollution of the marine environment by ocean vessels pollution as one of the major threats to the ocean is adequately regulated by a legal framework created by international law. While the international community has made significant strides in developing agreements, rules, and regulations to improve ocean and coastal management, compliance and enforcement of these instruments often lags. This is true at the international, national, and sub-national levels. This is variously due to insufficient institutional mechanisms and mandates, capacity, and political will. Improving compliance and enforcement of ocean and coastal management will require a range of initiatives, including a suite of regulatory and non-regulatory mechanisms (such as incentives, planning, and information-based approaches) to develop and enhance compliance mechanisms and approaches at the international level, as well as to enhance national and sub-national capacity to

implement and enforce. At the international level, the costly operational and structural requirements prescribed in the regulatory conventions still pose a great burden on developing countries with large tonnages and those major ship registries as well as second-hand ships receivers. Therefore, more effort is needed by the international maritime community to promote international co-operation between well developed and less developed countries, especially in technical and financial support for the less developed states, so as to achieve international success in the prevention and control of vessel source pollution. In addition to the lack of proper laws for the prevention of pollution by vessels, currently there are multiple authorities dealing with one or more aspects of pollution prevention in the country, which makes the system more complex. Therefore, there is a need to establish a centralized authority whose responsibilities are clearly defined. In this vein, there is also a need to strengthen the institutional framework for preventive monitoring and enforcement. Moreover, collaboration with other States is important to overcome the international problem of marine pollution.

The LOSC represents a paradigm shift from the principle of freedom to pollute to an obligation to prevent pollution. In fact, the LOSC established a general and comprehensive legal framework for the regulation of marine pollution. It is argued that the controlling principle was changed from the discretion of States to the duty of States to protect the marine environment. In broad terms, it can be observed that the international law of the sea is increasingly strengthening its environmental dimension by limiting the margin of discretion of States in the regulation of marine pollution.

Land-based pollution is the most serious source of marine pollution. Nevertheless, the global legal framework for the regulation of land-based marine pollution remains a weak one. The reasons for this include:

- reluctance to restrict economic and industrial activities,
- complexity of sources, substances and actors involved in land-based marine pollution,
- geographical and ecological divergences in the oceans,

- limited capability of developing countries.

As a consequence, land-based marine pollution is regulated primarily by regional treaties. It is notable that new approaches and techniques are increasingly enshrined in these treaties with a view to tightening the regulation of land-based pollution. Such approaches and techniques include:

- the replacement of the black/grey list approach by the uniform approach,
- the precautionary approach,
- environmental impact assessment, and
- International control for ensuring compliance with relevant rules.

However, it must be noted that the development of regional treaties is not uniform, and the normative strength of the regulation also varies according to these treaties. The flag State has primary responsibility for regulating vessel-source pollution. Nonetheless, compliance with relevant Rules of international law on this matter cannot be effectively ensured by the flag State alone. Thus, under the LOSC, the coastal State and port State may also exercise jurisdiction to regulate vessel-source pollution. In particular, the port State jurisdiction set out in Article 218 of the LOSC is innovative in the sense that the port State is entitled to take enforcement action against the vessel even where a violation was committed on the high seas or marine spaces under other States jurisdiction, regardless of direct damage to the port State. Port State control also provides a useful means to ensure compliance with relevant rules regulating vessel source pollution. It can be said that the port State assumes the role of an advocate for the international community in marine environmental protection.

Ensuring compliance with treaties concerning marine environmental protection necessitates more institutionalized procedures, without relying on the principle of reciprocity. In this regard, three mechanisms merit highlighting. The first is international supervision. It is noteworthy here that treaties in this field tend to set out mechanisms for international supervision, such as a reporting system and

supervision by a treaty commission. The second is port State jurisdiction and port State control. The third mechanism involves. Marine environmental protection through an international organization. In this regard, it is of particular interest to note that the Authority is empowered to exercise prescriptive and enforcement jurisdiction over the environmental protection of the area. Examination of the practice of the Authority provides a useful insight into the protection of community interests with regard to marine environmental protection through an international organization.

We commenced by focusing on the causes, consequences and projections of climate change, particularly on sea level rise and its effects on low-lying island nations. We learned that they are the greatest victims of industrialization, with practically no contribution to the enhancement of the greenhouse effect, yet affected in their entirety. As the seas rise, the water lenses of these territories are flooded with salt water, the land becomes unusable for agriculture, and natural disasters claim ever more lives and property. Additionally, sea level rise could severely affect the maritime boundaries and zones of many nations and with it, the scope, purpose and value of the Law of the Sea Convention. Some countries might even disappear as the oceans engulf all in their path. In fact, the effects of the current and increasing greenhouse gas concentrations are so grave, they could actually render the prevention of pollution from other sources pointless, at least for these island nations.

Certain Coastal States will also suffer greatly. Bangladesh is one example, where a meter rise will affect a densely populated coastline, with an estimate of 15 million inhabitants becoming environmental refugees and abandoning a region that accounts for approximately 15% of the nation's agricultural produce. Miami while situated on the territory of one of the world's biggest contributors to enhancing the greenhouse effect is believed to be the most endangered metropolis; yet permits are still being granted to construct massive beach resorts on the waterfront. Venice, a city known for its relationship with its surrounding canals, is also under threat from the rising sea.

Estimates indicate that in the last 15 years the population of Venice has dropped by 50% proving that many are already fleeing the all-encroaching waters.

The facts on global warming, acidification and sea level rise were followed by an analysis of the rules relevant to applying and interpreting the Law of the Sea Convention in the context of climate change. This analysis demonstrated that neither the principles of *lexspecialis* nor *lex posterior* precluded applying the provisions of UNCLOS to climate change, insofar as the climate change regime enshrined in the UNFCCC and Kyoto Protocol did not meet the test to be considered “self-contained” and was not in contradiction with the Constitution of the Oceans.

The fisheries regime is a classic case of an enclosure of previously global commons. The enclosure is accomplished by leaving many states outside profitable fisheries areas. The enclosure is based on a tragedy of commons rationale. That is, if coastal states develop property rights over the full range of a resource, they would have more chances to succeed in the conservation and rational management of the resource. The perpetuation of an open-access regime, on the contrary, would eventually lead to the degradation and depletion of the resource. That coastal states may be better managers of fisheries resources may be true depending on the level of development of such states and the willingness to undertake a custodian attitude with regard to fishery resources.

The legal framework governing conservation of marine fisheries resources in the LOSC relies essentially on the zonal management approach and the species-specific approach. However, the traditional approaches to conservation of marine living resources comprise limitations particularly in three respects:

- The lack of ecological consideration,
- Difficulties with regard to the conservation of migratory species,
- Weakness of obligations to conserve living resources in the EEZ and high seas.

In response to the limits of the traditional approaches, more conservation-oriented approaches, namely, the ecosystem and precautionary approaches, are increasingly enshrined in various international instruments. With the emergence of those approaches, it appears that international law governing conservation of marine living resources is strengthening its ecological dimension.

On the other hand, there are considerable uncertainties with regard to the normative content of the ecosystem and precautionary approaches. As a consequence, it may be open to question to what extent these approaches can legally constrain the behavior of States. For the same reason, it appears difficult, if not impossible, for international courts and tribunals to judge conformity of the conduct of a State with treaty obligations respecting the implementation of the ecosystem and precautionary approaches. Without authoritative third-party decision-making, it would be difficult to clarify the exact meaning and scope of these approaches. This situation would further weaken the normativity of the ecosystem and precautionary approaches as a norm purporting to constrain behavior of States.

It is also important to note that adequate and reliable scientific data is a prerequisite to apply the ecosystem approach. Similarly, there must be some scientific basis for predicting the possibility of harmful effects before applying the precautionary approach. Thus, marine scientific research is highly important in the application of ecosystem and precautionary approaches to conservation of marine living resources.

The establishment of mechanisms for securing compliance with relevant rules is crucial with a view to enhancing the effectiveness of international law concerning conservation of marine living resources. In this regard, it is noteworthy that non-flag State measures, such as at-sea inspection and inspection in port, are increasingly introduced in international instruments. On the other hand, at-sea and port inspections of non-contracting party vessels may need careful consideration because those inspections may run the risk of de facto extension of coastal States measures toward the high seas. The enclosure

of fisheries resources, as with most enclosures, is primarily exclusionary. Many recent agreements, such as the 1995 Fisheries Agreement, legitimize fishery enclosures as the future method of fisheries management. Exclusionary enclosures, however, pose fundamental questions of fairness. The enclosure of fisheries resources has an effect that a limited number of states those belonging to regional organizations take advantage of and profit from those resources. Other states that have no historical rights to the resource and no clout in international negotiations are to stay out. Compensation is rarely offered to these outsider states that may, in return, engage in clandestine activities. States left out of regional arrangements tend to revolt when, what they have perceived as an open-access resource, is increasingly appropriated by coastal states or by the first-movers in a region. Some outsiders attempt to find compromises, especially, in areas of high seas that have been severely restricted due to EEZ extensions.

For the insiders, the establishment of RFOs has been far from easy. Flow fisheries resources would be allocated among the insiders in different regimes is bound to remain controversial. The overuse of the objection procedure has the possibility of transforming regime insiders into de facto outsiders and to undermine the general legitimacy of regulatory controls on fisheries. The regional fisheries agreements, nevertheless, are a bold attempt to regulate the “freedom of fishing in the high seas” as an attempt that has been legitimized for the purposes of conservation. States generally have been eager to participate in regional agreements, even distant water fishing states, in order to render legitimate their fishing in a particular region. Participation in regional arrangements also guarantees the possibility of placing objections on TACs established and quotas assigned.

The participation in regional fisheries agreements, as a way to legitimize fishing in the high seas, provides evidence of the erosion of the sacrosanct principle in international law, which is the freedom of the high seas. And this is not theoretical erosion based on a number of agreements. Technological devices such as VMS, as they are increasingly installed in new ships, would

gradually render unobserved navigation and fishing quite difficult. Not all vessels are equipped today with VMS and there is resistance to institutionalize the installment of such devices. As things evolve, however, VMS increasingly would become the device that enhances the legitimacy of vessels to engage in high seas fishing activities. Ship owners, then, would have to decide whether they want their vessels to obtain a *carte blanche* for navigation, fishing, transit, and landing by the incorporation of state-of-the-art equipment, or if they would prefer to retain an ambiguous status that would increase the transaction costs of fishing.

The governance of areas beyond national jurisdiction is probably the most pressing marine issue facing the world community. It is paradoxical that on the one hand science is helping us to appreciate more fully the rich biodiversity of marine areas beyond national zones and the important role this plays in the global system, including helping to regulate its climate, while on the other hand, these high seas areas face increasing adverse impacts both from the intensification of existing human activities and from major new risks. Illegal, unregulated and unreported (IUU) fishing for deep ocean species, uncontrolled bottom trawling over seamounts, exploration of hydrothermal vents as well as proposals for geo-engineering activities such as iron fertilization, are just some of the activities which reveal the lack of a holistic system of governance for these areas, based on established and agreed basic principles.

High seas areas face, the plethora of bodies with regional and sectoral jurisdiction but also the *lacunae* the regulatory and governance gaps that exist. The attention of the international community has been focused on this issue for some time. The UN General Assembly has mandated a number of important actions and the meetings of the ponderously named 'Ad Hoc Open-ended Informal Working Group to study issues relating to the conservation and sustainable use of marine biological diversity beyond areas of national jurisdiction' have helped to widen understanding of the issues and to focus informed opinion on the major issues facing the high seas. Unfortunately, the

lively debates on improved governance have been overshadowed by controversy over the future regime for exploitation of marine genetic resources beyond national jurisdiction. A number of important initiatives are in train but progress has been very slow. The case for a new instrument, perhaps based on agreed principles, to pull together all the various themes and sectoral responsibilities discussed above and to provide some overarching system of governance of the high seas is becoming very difficult to resist.

Historically, the promotion of economic and commercial interests of States has been the catalyst of the development of the law of the sea. Reflecting this situation, it is arguable that rules of the law concerning conservation of marine fisheries resources are essentially characterized by economic interests of States. This may be the fundamental reason why the normativity and effectiveness of the law remain modest. In order to prevent the degradation of marine fisheries resources and to ensure sustainable use of those resources, however, there will be an urgent need to reconsider the validity of the exploitation-oriented nature of international law on this subject. This is a matter of wisdom of the mankind as a whole. The institutionalization of international law-making has meant that, whilst states remain the principal actors in international relations, other non-state actors are able to participate and influence the process. Research in international relations theory can be used to complement the legal assessment of international institutions by highlighting some of the informal ways in which these actors can influence the development of the international legal framework. In particular, such actors are able to influence the content of the discussions through the provision of advice and information. The ability to play this role is particularly prominent in relation to the protection of the marine environment, given that this is an area where scientific and technical know-how are vital to successful regulation.

Another feature of the institutional landscape in this field is the fragmentation of law-making activities between a myriad of institutions. However, it is not clear that the answer to this problem is the creation of a single ocean governance organization responsible for all fields of regulation.

The number of issues relating to the marine environment would make this an almost impossible task, not to mention the fact that it would require the significant modification of established institutional structures. Thus, the focus of future research may be better directed towards improving existing mechanisms or developing new mechanisms with a view to ensuring effective cooperation and coordination. Indeed, this task must be undertaken with a sense of urgency if we are serious about protecting the marine environment for future generations.

7.2 Suggestions

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

1. There is need of immediate development and implementation of collaborative agreements for managing the world's oceans, which include all stakeholders on equal terms and which aim to arrive at management decisions that will be implemented, either through global legal agreements or through self-regulatory commitments,
2. There should be urgent priority given to more effective national, regional and global monitoring of the oceans, especially now when change is happening faster than we can even begin to understand and grasp the existing baseline situation;
3. The ecosystems approach should be mandatory applied in the legal regime of conservation of marine fisheries. The ecosystem approach seeks to protect marine ecosystem and the ecological conditions surrounding them within ecologically meaningful boundaries as a whole. In so doing, this approach can be considered as a useful means to enhance the effectiveness of conservation of marine species,
4. There should be more importance given to understanding ocean-atmosphere interactions and raising the level of awareness that how these interactive areas of our planet drive the entire biogeochemical planetary system;

5. Stronger emphasis and financial support at the regional level to develop and implement ocean and coastal management at the level of Large Marine Ecosystems,
6. The concept of sustainable development seeks in essence to reconcile the need for development with environmental protection. The principle of sustainable development must be applied in conservation of marine fisheries,
7. A holistic approach should be applied to address climate change impacts on marine fisheries taking into account other sectors and socio-economic factors,
8. The application of the precautionary approach should be applied in the rule making process at the global, regional and national level for the conservation of marine fisheries resources. The application of this approach strengthens the environmental dimension of international law governing conservation of marine fisheries resources,
9. The flag State has the primary responsibility to ensure compliance with rules with regard to the conservation of marine living resources on the high seas by vessels flying its flag. In reality, however, the effectiveness of the flag State responsibility is seriously undermined by the practice of flags of convenience, re-flagging and IUU fishing. In response, non-flag State measures are adopted by some regional fisheries organs. Such measures comprise at-sea inspection and port inspection of contracting and non- contracting party vessels. There will be a need to enhance the legitimacy of conservation measures. Regional fisheries organs invite all non-contracting parties which have interests in the regulatory areas to participate at meetings to adopt conservation measures as a cooperating party,
10. There will be need of scientific research in the field conservation of marine fisheries. Fisheries research should focus on determining to what extent changes in the physiologies and ecosystems of

commercially important fish species are caused by climate change and how the species have responded to climate change,

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



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