

**TOWARDS THE IMPLEMENTATION OF ECOSYSTEM-BASED
FISHERIES MANAGEMENT IN MARINE AREAS BEYOND
NATIONAL JURISDICTION**

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The author attests that this thesis has been composed by me, the work herein is my own, and this work has not been submitted for any other degree or professional qualification.

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ABSTRACT

Traditional fisheries management – based on single-species – has proved to be inadequate to sustainably manage living resources that are intrinsic components of highly complex marine ecosystems. Recent developments in marine scientific research have indicated that the ecosystem-based approach, which takes into consideration the interdependence among species and their habitats, is the most appropriate way to manage marine living resources. Shifting from single-species approach to ecosystem-based fisheries management (EBFM) in areas beyond national jurisdiction (ABNJ) has become imperative, as living resources occurring in these regions are often more vulnerable to collapse than coastal species due to their biological characteristics.

In light of this, this thesis aims to analyse the law-making of EBFM in ABNJ as a post-development of the United Nations Convention on the Law of the Sea (UNCLOS) in order to avoid stocks collapse, destruction of critical habitats, and to ensure the resilience of marine ecosystems. This study analyses UNCLOS, as the main legal instrument governing the uses of the ocean and its living resources, in the light of recent developments of international law and policy in regards to EBFM.

This study concludes that a systemic interpretation of UNCLOS in the light of recent treaties and other legal and policy instruments provides a legal basis for the implementation of EBFM in marine areas beyond national jurisdiction. However, the fragmented nature of the international fisheries regime can undermine the consistent implementation of EBFM at a global level. In view of this, this study then looks beyond the issue of interpretation, and proposes actual means for the operationalization of EBFM at a global level in accordance with international law. It proposes the adoption of an implementing agreement to UNCLOS regulating the establishment of marine protected areas as a tool to the implementation of EBFM in marine areas beyond national jurisdiction.

ABBREVIATIONS

ABNJ	areas beyond national jurisdiction
ACAP	Agreement on the Conservation of Albatrosses and Petrels
ACCOBAMS	Agreement on the Conservation of Cetaceans of the Black Sea, Mediterranean Sea and Contiguous Atlantic Area
AIDCP	Agreement on the International Dolphin Conservation Program
AJIL	American Journal of International Law
ASCOBANS	Agreement on the Conservation of Small Cetaceans of the Baltic and North Seas
BRD	bycatch reduction devices
BYIL	British Yearbook of International Law
CBD	United Nations Convention on Biological Diversity
CCAMLR	Commission for the Conservation of Antarctic Marine Living Resources
CCSBT	Commission for the Conservation of Southern Bluefin Tuna
CEMP	CCAMLR Ecosystem Monitoring Program
CITES	Convention on International Trade in Endangered Species of Wild Fauna and Flora
CMS	Convention on Migratory Species of Wild Animals
COFI	FAO Committee on Fisheries
COP	Conference of the Parties
DFO	Fisheries and Oceans Canada
DOALOS	UN Division for Ocean Affairs and the Law of the Sea
EAF	Ecosystem Approach to Fisheries
EBA	Ecosystem-Based Approach
EBFM	Ecosystem-Based Fisheries Management
EBM	Ecosystem-Based Management
EEZ	Exclusive Economic Zone
EIA	Environmental Impact Assessment
ENB	Earth Negotiations Bulletin
FAD	fish-aggregating device
FAO	Food and Agriculture Organization of the United Nations
GATT	General Agreement on Tariffs and Trade
GEF	Global Environment Facility
GOODS	Global Open Oceans and Deep Seabed Biogeographic Classification
HIMI	Heard Island and McDonald Island
HSMPAs	high seas marine protected areas
IATTC	Inter-American Tropical Tuna Commission
ICCAT	International Commission for the Conservation of Atlantic Tuna
ICES	International Council for the Exploration of the Sea
ICJ	International Court of Justice
ICLQ	International & Comparative Law Quarterly
ICP	UN Open-ended Informal Consultative Process on Oceans and the Law of the Sea
IDCP	International Dolphin Conservation Program
IISD	International Institute for Sustainable Development

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
IOFC	Indian Ocean Fishery Commission
IPOA	International Plan of Action
ISA	International Seabed Authority
ITLOS	International Tribunal for the Law of the Sea
IUCN	International Union for Conservation of Nature
IUU	Illegal, Unreported and Unregulated
IWC	International Whaling Commission
LMEs	Large Marine Ecosystems
MFCMA	Magnuson Fishery Conservation and Management Act
MoU	Memorandum of Understanding
MPAs	marine protected areas
MSY	maximum sustainable yield
NAFO	Northwest Atlantic Fisheries Organization
NASCO	North Atlantic Salmon conservation Organization
NEAFC	North East Atlantic Fisheries Commission
NGOs	Non-Governmental Organisations
NOAA	National Oceanic and Atmospheric Administration
NPOA	National Plan of Action
ODIL	Ocean Development & International Law
OECD	Organisation for Economic Cooperation and Development
OLDEPESCA	Latin American Organization for Fisheries Development
PA	precautionary approach
PCA	Permanent Court of Arbitration
PSSA	Particular Sensitive Sea Area
RFMOs	Regional fisheries Management Organisations
RMP	IWC Revised Management Procedure
SBSTTA	CBD Subsidiary Body on Scientific, Technical and Technological Advice
SCRS	ICCAT Standing Committee on Research and Statistics
SEAFO	South East Atlantic Fisheries Organization
SLA	IWC Strike Limit Algorithm
SPAMI	Specially Protected Areas and Biological Diversity in the Mediterranean
SPRFMO	South Pacific Regional Fisheries Management Organisation
TAC	total allowable catch
UBC	University of British Columbia
UN	United Nations
UNCED	UN Conference on Environment and Development
UNCLOS	United Nations Convention on the Law of the Sea
UNEP	UN Environment Programme
UNESCO	UN Educational Scientific and Cultural Organization
UNFSA	Agreement for the Implementation of the Provisions of the UNCLOS of 10 December 1982 relating to the Conservation and Management of Straddling Fish Stocks and Highly Migratory Fish Stocks
UNGA	United Nations General Assembly

UNTS	United Nations Treaty System
VCLT	Vienna Convention on the Law of Treaties
WCMC	World Conservation Monitoring Centre
WCPA	IUCN World Commission on Protected Areas
WCPFC	Western and Central Pacific Fisheries Commission
WECAFC	Western Central Atlantic Fishery Commission
WSSD	World Summit on Sustainable Development
WTO	World Trade Organization
WWF	World Wide Fund for Nature

The whole is more than the sum of its parts.

- Aristotle, *Metaphysica* 10f, 1045a

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INTRODUCTION

Unsustainable fisheries constitute one of the major threats to the marine environment. With the collapse of fish stocks in coastal waters, marine areas beyond national jurisdiction, including deep-sea areas, have also been intensely exploited.¹ Traditional fisheries management – based on a single-species approach – has not been able to avoid fish stocks depletion.² A growing number of scientists have noted that the ecosystem-based approach, which takes into consideration the interdependence amongst species, as well as amongst species and their habitats, is the most appropriate way to manage fisheries activities.³

A number of international legal and policy instruments, implicitly or explicitly, call for the implementation of the ecosystem-based fisheries management (EBFM) in areas beyond national jurisdiction.⁴ However, as in other fields of international law, the fragmentation of the international fisheries regime poses obstacles to the sound implementation of this new approach. Moreover, the lack of legally-binding agreements regulating discrete high seas stocks fisheries and providing for a comprehensive habitat protection in marine areas beyond national jurisdiction constitute major constraints to the implementation of EBFM and ultimately to the sustainability of high seas fisheries.

The world is facing an unprecedented fisheries crisis that might be irreversible if urgent comprehensive conservation measures, such as the creation of

¹ T. Morato, R. Watson, T. Pitcher, D. Pauly, "Fishing Down the Deep", (2006), 7 *Fish and Fisheries* 24-34.

² D. Pauly, V. Christensen, S. Guénette, T. Pitcher, U. Sumaila, C. Walters, R. Watson & D. Zeller, "Towards Sustainability in World's Oceans" (2002) 418 *Nature* 689-695.

³ *Ibid.*

⁴ E.g.: *United Nations Convention on the Law of the Sea*, 10 December 1982, 1883 U.N.T.S. 397, [UNCLOS], Art. 119 (b); *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*, 4 August 1995, 2167 U.N.T.S. 3, [UNFSA], Arts. 5 (b), (c), (d), (e), (f), (g); 6 (1) (d), (5); 7 (2) (f); *FAO Code of Conduct for Responsible Fisheries* (Rome: FAO, 1995) 41p, Arts.: 6.1, 6.2, 6.3, 6.4, 6.5, 6.6 and 6.8; *Plan of Implementation of the World Summit on Sustainable Development*, Resolution 2 of the United Nations Report of the World Summit on Sustainable Development (2002) Doc. A/CONF.199/20, Plan of Implementation, at 23, Para. 30 (6); *United Nations Convention on Biological Diversity*, 5 June 1992, 170 U.N.T.S. 79, [CBD] Art. 5; and CBD Jakarta Mandate, Decision II/10.

marine protected areas networks, are not adopted. With the decline of roughly 80% of the world's fish stocks,⁵ a new fisheries management approach is needed more than ever to overcome this pervasive trend. In light of this, this thesis analyses the law-making process of the ecosystem-based fisheries management. This approach to fisheries management aims to ensure that the integrity of the marine ecosystem – its structure and functions - is preserved. This way, living marine resources are more resilient to any further natural or anthropogenic disturbances in their environment.

It is beyond the scope of this thesis to analyse other factors that also contribute to the overexploitation of marine living resources, *inter alia*: overcapacity of fishing vessels, pervasive fisheries subsidies, illegal, unreported and unregulated fishing, insufficient enforcement and compliance, and so on.⁶ Instead, this thesis focuses on the problems associated with a traditional single-species fisheries management approach, and presents EBFM as a necessary approach that should underlie the international fisheries regime. Ecosystems are organized by network principles. Therefore, in order to sustainably manage any ecosystem element (such as fish stocks) managers must consider the networks within which such an element is embedded. As observed by Capra:

“I can tell you that it is very interesting to look at an ecosystem and ask, “how does it organize itself for long term survival?” Its patterns of organization were developed in evolution through trial and error and through natural selection. There is no design in an ecosystem. So, how do ecosystems organize themselves to maximize their sustainability? You can identify certain principles. One key principle is the network as the fundamental organizing principle of ecology. When you look into this in greater depth, you find that the network is not only an organizing principle of ecosystems, but of living systems in general. In the 1920s, when ecologists began to speak about food webs, other scientists used this network concept and transferred it to biology, looking at an organism as a network of cells, and at a cell as a network of molecules and so on. They discovered that the network is the basic pattern of organization of all life.”⁷

⁵ According to FAO, “(...) 80 percent of the world fish stocks for which assessment information is available are reported as fully exploited or overexploited.” See: FAO, *The State of World Fisheries and Aquaculture 2008* (Rome: FAO, 2009), at 07.

⁶ See D. Pauly, J. Maclean, *In a Perfect Ocean: The State of Fisheries and Ecosystems in the North Atlantic Ocean* (Washington: Island Press, 2003).

⁷ F. Pisani, “Networks as a Unifying Pattern of Life Involving Different Processes at Different Levels – An Interview with Fritjof Capra” (2007) 1 *International Journal of Communication* 5-25, at 18.

Through a better understanding of such networks and relationships, scientists are beginning to develop and apply computer models and softwares to operationalize multi-species fisheries management. As noted by Worm et al: “Multispecies models can be used to predict the effects of exploitation on species composition, size structure, biomass, and other ecosystem properties. They range from simpler community models to more-complex ecosystem models.”⁸ Species are interdependent and therefore should be managed as such. But species are not the only components of an ecosystem. Habitat protection should also be an important element of fisheries management, which can only be effectively implemented by understanding the interactions between species and their habitats.

Critical marine habitats⁹ are constantly neglected by single-species management,¹⁰ which normally does not consider the interactions between species and their habitats. With this in mind, a comprehensive implementation of EBFM in areas beyond national jurisdiction could avoid the depletion of stocks and destruction of critical habitats, such as seamounts and cold-water corals, and assure a healthy environment.

In light of these new discoveries and developments in science, this thesis discusses the law-making of ecosystem-based fisheries management in marine areas beyond national jurisdiction and its implementation. For this purpose, it analyses the legal framework of high seas fisheries within the context of the 1982 United Nations Convention on the Law of the Sea¹¹ (UNCLOS), which is the main treaty regulating the sustainable use of the oceans. The Convention provides for the obligation of States to adopt conservation and management measures in regards to stocks

⁸ B. Worm, R. Hilborn, J. Baum, T. Branch, J. Collie, C. Costello, M. Fogarty, E. Fulton, J. Hutchings, S. Jennings, O. Jensen, H. Lotze, P. Mace, T. McClanahan, C. Minto, S. Palumbi, A. Parma, D. Ricard, A. Rosenberg, R. Watson, D. Zeller, “Rebuilding Global Fisheries” (2009) 325 *Science* 578-585, at 578.

⁹ Such as seamounts, cold-water corals, hydrothermal vents, etc.

¹⁰ A. Rosenberg, R. Trumble, J. Harrington, O. Martens, and M. Mooney-Seus. *High Seas Reform: Actions to Reduce Bycatch and Implement Ecosystem-Based Management for the Northwest Atlantic Fisheries Organization* (2006) Prepared for WWF-Canada by MRAG Americas, Inc., Tampa, Florida, 60pp.

¹¹ *United Nations Convention on the Law of the Sea*, 10 December 1982, 1883 U.N.T.S. 397, [UNCLOS].

occurring in the high seas.¹² But UNCLOS does not provide expressly for EBFM, as this is a recently developed concept. Nevertheless, UNCLOS is not isolated from other treaties, international policies and soft-law instruments. A central aspect of the legal framework under analysis is the relationship amongst these diverse instruments and agreements related to ecosystem-based fisheries management or marine ecosystem-based management. In view of this, could UNCLOS be interpreted in the light of these new developments of international law and policy in order to encompass EBFM principles? In order to answer this question the relationship between these different instruments and treaties is analysed throughout the five Chapters focusing on particular aspects of the implementation of EBFM in marine areas beyond national jurisdiction.

Following an introductory explanation on marine ecosystems and fisheries management, Chapter 1 presents the main legal framework, including policy and soft-law instruments under which EBFM can be implemented in marine areas beyond national jurisdiction. Here, the evolutionary or systemic interpretation of UNCLOS provisions on conservation of marine living resources in the high seas is discussed in the light of Article 31 (3) (a) and (c) of the 1969 Vienna Convention on the Law of Treaties¹³. This discussion focuses on the relationship between UNCLOS and the recent developments in international law and policy.

Chapter 2 looks at the declining status of highly migratory, straddling and discrete fish stocks in marine areas beyond national jurisdiction and the fishing methods used in those areas. This Chapter also addresses the minimisation of collateral impacts from fishing methods as provided for by a number of legally binding and non-legally binding instruments, such as the high seas driftnet moratorium adopted by the United Nations General Assembly (UNGA) in 1991 and the FAO International Plan of Action for Reducing Incidental Catch of Seabirds in

¹² UNCLOS, Arts. 64 (in respect to highly migratory species), 63 (in respect to straddling stocks); 119 (for all stocks occurring in the high seas, including highly migratory species, straddling stocks and discrete stocks).

¹³ *Vienna Convention on the Law of Treaties*, 23 May 1969, UN Doc. A/Conf.39/27; 1155 U.N.T.S. 331, [VCLT].

Longline Fisheries. These instruments are also analysed under UNCLOS' framework.

It may seem contradictory to discuss EBFM in marine areas beyond national jurisdiction since political boundaries do not conform to natural boundaries. With this in mind, Chapter 3 analyses the importance of implementing compatible conservation measures within and beyond marine areas of national jurisdiction for straddling and highly migratory fish stocks in accordance with UNCLOS and the 1995 Fish Stocks Agreement¹⁴ (UNFSA). Furthermore, it is argued that marine management in areas beyond national jurisdiction should be based on natural boundaries such as biogeographical provinces. Therefore, this Chapter provides an overview of the Convention on Biological Diversity's (CBD)¹⁵ work on Global Open Oceans and Deep Sea-habitats Bioregional Classification¹⁶ and its relevance to EBFM.

Chapter 4 presents regional fisheries management organisations (RFMOs) as key actors in implementing EBFM in the high seas. Following an overview of the role of RFMOs under UNCLOS and UNFSA, this Chapter describes a number of EBFM-related conservation measures that have been adopted by nine RFMOs and which provides models that can be followed by States and other fisheries organisations. Furthermore, this Chapter also aims to provide evidence of the slow but gradual acceptance of EBFM among States and international organisations. Following the analysis of all these different aspects, Chapter 5 provides recommendations on how to best ensure a consistent implementation of EBFM in marine areas beyond national jurisdiction at a global level through the establishment of a network of marine protected areas. This Chapter then analyses whether there is a need for the adoption of another implementation Agreement to UNCLOS.

¹⁴ *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*, 4 August 1995, 2167 U.N.T.S. 3, [UNFSA].

¹⁵ *United Nations Convention on Biological Diversity*, 5 June 1992, 170 U.N.T.S. 79, [CBD].

¹⁶ UNEP/CBD, *Global Open Oceans and Deep Sea-habitats Bioregional Classification, Revised Report*, UNEP/CBD/COP/9/INF/44 (2008).

The importance of this EBFM assessment relies on the fact that there is a pressing need for a shift on fisheries management from single-species to ecosystem-based management. When UNCLOS was adopted in 1982, there was little scientific information on biodiversity in marine areas beyond national jurisdiction. Since then, advances in technology and science have provided evidence of the high levels of species richness, as well as critical and vulnerable habitats in those areas. Furthermore, with the decline of coastal fisheries, fishing activity has expanded into the high seas. Technological advances have enabled intense exploitation of deep-sea species which are more vulnerable to collapse due to their biological characteristics. Worm et al predict a global fishery collapse by the year of 2048 if ecosystem-based measures, such as the creation of marine protected areas, are not immediately adopted.¹⁷ Within this backdrop, this thesis aims to assess whether or not there exists a legal framework for the implementation of EBFM in marine areas beyond national jurisdiction, and most importantly, how to improve such a framework at a global level as a means to avoid a world-wide fisheries collapse within the years to come.

¹⁷ B. Worm, E. Barbier, N. Beaumont, J. Duffy, C. Folke, B. Halpern, J. Jackson, H. Lotze, F. Micheli, S. Palumbi, E. Sala, K. Selkoe, J. Stachowicz, R. Watson, "Impacts of Biodiversity Loss on Ocean Ecosystem Services", (2006) 314 *Science* 787-790.

CHAPTER 1 - Ecosystem-Based Fisheries Management

Conservation and management of living marine resources have been traditionally based on single-species rather than on the relationships amongst these species. Even though the concept of 'ecosystem' was developed in the 1930s, single-species management models still constitute the basis of fisheries management. A number of scientific studies confirm that the networks and relationships amongst species and species and their habitats need to be part of fisheries management. As noted by Bascompte: "Although we have only begun to understand how changes in the environment affect species interactions and ecosystem dynamics through analyses of simple pairwise interactions, network thinking can provide a means by which to assess key questions such as how overfishing can cause trophic cascades (...)." ¹⁸ In light of an imminent global fisheries crisis, a number of legal and policy instruments have been calling for the implementation of ecosystem-based approach to fisheries management.

In view of this, this Chapter aims to demonstrate the importance of applying the ecosystem-based approach (EBA) to fisheries management in marine areas beyond national jurisdiction (ABNJ). It is divided into four main sections: the first defines EBA, including some of its variations, namely ecosystem-based fisheries management (EBFM) and marine ecosystem-based management (EBM). This section also discusses the significance of implementing EBA/EBFM/EBM when managing natural resources such as its fisheries. The second section briefly analyses the compatibility of the United Nations Convention on the Law of the Sea with the EBA/EBFM/EBM. It also takes into consideration other significant international legal and policy instruments (including the Fish Stocks Agreement, the Convention on Biological Diversity, UNGA Resolutions, etc) as a means to verify if there is sufficient legal background for the implementation of EBFM. The third section addresses the role of United Nations bodies in conducting marine assessments and

¹⁸ J. Bascompte, "Disentangling the Web of Life" (2009) 325 Science 416-419, at 419.

raising awareness on the subject. And finally, the fourth section will present brief concluding remarks.

1.1 Definition and Role of EBFM

The term *ecosystem* was first suggested by Sir Arthur Tansley in 1935.¹⁹ Tansley explained in his article “The Use and Abuse of Vegetational Concepts and Terms” how he perceived the world as a “whole *system* (in the sense of physics), including not only the organism-complex, but also the whole complex of physical factors forming what we call the environment of the biome – the habitat factors in the widest sense.”²⁰ As described by Golley:

“Tansley ecosystem was composed of an interacting complex of the biotic community and the environment. Tansley claimed that ecosystems were the basic unit of nature on the earth. Ecosystems were a part of the hierarchy of systems from the universe to the atom and they involved the constant interchange between not only the biotic parts but also between the organic and inorganic parts of the system.”²¹

Thus, ecosystems are composed of biotic (living organisms) and abiotic (physico-chemical components, such as temperature, salinity, depth, etc) elements²² and the interactions between them.

Tansley clarified that ecosystems can be of different kinds and sizes.²³ Some of them are more autonomous than others; however, they are all interconnected and overlapping.²⁴ For purposes of study, Tansley admitted that systems could be isolated.²⁵ In fact, as stated by Odum “the boundary for the system can be arbitrary (whatever is convenient or of interest), delineating an area such as a block of forest

¹⁹ E. Odum, *Ecology and Our Endangered Life-Support Systems* (Sunderland: Sinauer Associates, Inc. Publishers, 1993).

²⁰ A. Tansley, “The Use and Abuse of Vegetation Concepts and Terms” (1935) 16 *Ecology* 284-307, at 299.

²¹ F. Golley, “The Ecosystem Concept: A Search for Order” (1991) 6 *Ecological Research* 129-138, at 131.

²² J. Caddy, G. Sharp, “An Ecological Framework for Marine Fishery Investigations”, *FAO Fisheries Technical Paper n. 283* (Rome: FAO, 1986).

²³ A. Tansley (1935), *supra* note 20.

²⁴ *Ibid.*

²⁵ *Ibid.*

or a section of beach; or it can be natural, such as the shore of a lake where the whole lake is to be the system.”²⁶

Ecosystems comprise a high level of organisation in order to achieve a dynamic equilibrium and stability.²⁷ However, they are vulnerable to perturbation, which in turn generates instability.²⁸ Instability challenges an ecosystem’s resilience. Tansley observed that in some cases, low levels of perturbation have resulted in the disintegration of an entire system.²⁹

Since the publication of Tansley’s work in 1935, researchers have started to apply the ecosystem theory in their work.³⁰ For example, Lindeman introduced the concept of energy transfer among trophic levels in his paper published in 1942 in the journal *Ecology*.³¹ In 1953, Eugene P. Odum popularised the term *ecosystem* by explaining it in a very comprehensive way in his book “Fundamentals of Ecology”.³² After this, projects focusing on ecosystem studies were conducted by scientists from around the world.³³ By the mid-seventies, ecosystem studies were well recognised and accepted among scientists.³⁴ Such studies focused mainly on the application of the laws of thermodynamics to ecosystem theory, as well as the production of populations and trophic levels.³⁵ Thermodynamics, when applied to ecosystem theory, explains energy transfer from one trophic level to another. For example, in the open-ocean, it is estimated that only ten percent of energy is transferred from one level to another.³⁶ Ninety percent of the energy is lost in metabolic processes as well as heat loss.³⁷ Trophic level studies are extremely important, since they consider the vital linkages among species. They demonstrate how certain species and/or an

²⁶ E. Odum (1993), *supra* note 19, at 39.

²⁷ A. Tansley (1935), *supra* note 20.

²⁸ *Ibid.*

²⁹ *Ibid.*

³⁰ F. Golley (1991), *supra* note 21.

³¹ *Ibid.*

³² *Ibid.*

³³ *Ibid.*

³⁴ *Ibid.*

³⁵ *Ibid.*

³⁶ K. Sverdrup, A. Duxbury, A. Duxbury, *An Introduction to the World’s Oceans* (New York: McGraw Hill, 2004).

³⁷ *Ibid.*

ecosystem's function might be affected by the depletion of other species,³⁸ as seen further in this Chapter.

Classification of terrestrial ecosystems is based on the characteristics of the predominant vegetation, but in marine areas the classification process is not as simple.³⁹ In 1993, Sherman identified forty-nine coastal Large Marine Ecosystems (LMEs), based on “characteristics of depth, oceanography, productivity and populations of organisms that are linked in trophic food chains and webs”.⁴⁰ Larkin defended the idea that the fiftieth LME would be the high seas.⁴¹ In his paper “Concepts and Issues in Marine Ecosystem Management” from 1996, Larkin considered the mid-ocean regions unproductive areas.⁴² However, it is well recognized today that certain areas of the high seas are rich in biodiversity, as further discussed in Chapter 2. At the time of writing, sixty-four LMEs have been defined as demonstrated in Annex I.⁴³ Nevertheless, there is a need to expand the studies to areas beyond national jurisdiction. Some scientific initiatives in line with the LME concept have been developed, such as the Sea Around Us Project.⁴⁴ This Project, conducted by the University of British Columbia, aims to assess the impacts of fisheries on all marine ecosystems.⁴⁵

Following Tansley's work, ecology science continued to develop research on ecosystems, but contrary to this tendency, fisheries management was still focusing on single-species based approach. Oceanography studies progressed with the help of new technologies, such as satellite images, further expanding the knowledge about physical, chemical and biological interactions in the world oceans.⁴⁶ After the collapse of fish stocks in several regions in the world, a number of scientists agree

³⁸ E. Odum (1993), *supra* note 19.

³⁹ P. Larkin, “Concepts and Issues in Marine Ecosystem Management” (1996) 6 *Reviews in Fish Biology and Fisheries* 139-164.

⁴⁰ *Ibid.*, at 141

⁴¹ *Ibid.*

⁴² *Ibid.*

⁴³ UN Oceans Atlas, <http://www.oceansatlas.org/html/lme/lme_.html> (accessed on 16 Sept. 09).

⁴⁴ The Sea Around Us Project, <<http://www.seaaroundus.org/>> (accessed on 16 Sept. 09).

⁴⁵ *Ibid.*

⁴⁶ P. Larkin (1996), *supra* note 39 .

that the single-species management approach is unable to avoid a fisheries crisis.⁴⁷ An ecosystem-based management, which takes into consideration the relationships amongst different species as well as the interactions amongst species and their environment, is imperative.

McLeod et al define ecosystem-based management as:

“(…) an integrated approach to management that considers the entire ecosystem, including humans. The goal of ecosystem-based management is to maintain an ecosystem in a healthy, productive and resilient condition so that it can provide the services humans want and need. Ecosystem-based management differs from current approaches that usually focus on a single species, sector, activity or concern; it considers the cumulative impacts of different sectors.”⁴⁸

EBM takes into account important elements and interconnections that traditional fisheries management practices – which are based on effort and catch controls of single fish stocks⁴⁹ - do not consider.⁵⁰ As stated by McLeod et al above, single species management does not take into consideration the cumulative impacts of multiple events occurring in the marine ecosystem. Cumulative impacts encompass the effects of different activities taking place in a particular region. Therefore, for example, if only fisheries activities are taken into consideration in a particular marine area, fisheries practices might not impose considerable threats to that specific ecosystem.⁵¹ However, if one takes into account all the activities that are put in place in that marine area – e.g. cabling, shipping, sonar activities, whaling, deep seabed mining – then, the sum of those activities may result in significant impacts to the ecosystem in question.⁵²

Rosenberg and McLeod prefer to use the term Ecosystem-Based Management than Ecosystem-Based Fisheries Management, as EBFM would not consider the

⁴⁷ D. Pauly, et al (2002), *supra* note 2.

⁴⁸ K. McLeod, J. Lubchenco, S. Palumbi, A. Rosenberg, (2005) “Scientific Consensus Statement on Marine Ecosystem-Based Management”. Signed by 219 academic scientists and policy experts with relevant expertise and published by the Communication Partnership for Science and the Sea at <<http://compassonline.org/?q=EBM>> at 01.

⁴⁹ A. Charles, *Sustainable Fishery Systems* (Oxford: Blackwell Science, 2001) pp.103

⁵⁰ D. Pauly, et al (2002), *supra* note 2 .

⁵¹ A. Rosenberg, K. McLeod, “Implementing Ecosystem-Based Approaches to Management for the Conservation of Ecosystem Services” (2005) 300 Mar. Ecol. Prog. Ser. 241-296.

⁵² *Ibid.*

cumulative impacts from other sectoral activities.⁵³ However, they admit the importance of EBFM as a step towards the implementation of EBM:

“(...) ecosystem-based fisheries management (...) is also a necessary, but not sufficient, tool for conserving ecosystem services because both the impact of the interactions among different human activities and interactions among management policies can be substantial.”⁵⁴

From this, it is possible to conclude that cumulative impacts may be of two kinds, as follows:

- (i) Cumulative impacts of all fisheries activities taking place in a particular marine area or ecosystem. These kinds of impacts are addressed by EBFM.
- (ii) Cumulative impacts of all activities taking place in a certain marine area or ecosystem, including fisheries, whaling, pollution, shipping, cabling, and mining. These kinds of impacts are addressed by EBM.

When referring to EBFM, Rosenberg provides an explanation of how cumulative impacts turn out to be more than the sum of each fishery activity *per se*:

“(...) even if each fishery in a large marine ecosystem is reasonably well managed, the cumulative ecosystem impacts of all of the fisheries will likely be greater than the summed effects of individual fisheries. Individual fishery management plans striving to obtain maximum sustainable yield often ignore fishery bycatch or predator-prey interactions. It is entirely possible that a fishery could be considered overfished within the ecosystem plan (i.e., ecosystem overfishing) when it is not overfished in a single-species context. This can occur when a forage species that serves as a prey resource for marine predators is also the target of a fishery, or when overfishing of large predators causes shifts in the food web.”⁵⁵

As demonstrated above, scientific research has demonstrated that single species management has not been leading to sustainable fisheries, which is resulting in the collapse of stocks around the world.⁵⁶ An example of unsustainable fisheries

⁵³ A. Rosenberg, K. McLeod (2005), *supra* note 51.

⁵⁴ *Ibid.*

⁵⁵ A. Rosenberg, et al (2006), *supra* note 10, at 7.

⁵⁶ D. Pauly, et al (2002), *supra* note 2.

that led to fish stock depletion was the Peruvian anchoveta collapse in 1971.⁵⁷ Even though the fish industry attributed the collapse to an El Niño event,⁵⁸ scientists believe that overfishing did contribute to the species decline.⁵⁹ Another example of inefficient fisheries management occurred in the late 1980s, early 1990s where overfishing led to the collapse of cod stocks on the East Coast of Canada and New England, resulting in the loss of many jobs.⁶⁰

By not taking into consideration interactions among species - i.e., complex trophic level interrelations in the marine environment - typical single species fisheries management contributes to fish stocks collapse.⁶¹ Since ecosystems can also be described by their food web interactions, fisheries management must consider the interrelations among trophic levels. A study conducted by Myers and Worm concluded that large predatory fish biomass has been declining world-wide; at the time of the study it was estimated that less than ten percent of the pre-industrial biomass remained in the worlds oceans.⁶² Figure 1 below illustrates the considerable reduction of fish catches from 1952 to 1980.⁶³ Myers and Worm analysed pelagic longline fishery activities in four continental shelves and nine high seas regions.⁶⁴ High productive areas (Fig. 1 (a) (b)) have become much less productive after a number of years of exploitation, as demonstrated by the low catch rates shown by Figure 1 (d).⁶⁵

⁵⁷ *Ibid.*

⁵⁸ *Ibid.*

⁵⁹ *Ibid.*

⁶⁰ *Ibid.*

⁶¹ *Ibid.*

⁶² R. Myers, B.Worm, "Rapid Worldwide Depletion of Predatory Fish Communities" (2003) 423 Nature 280-283.

⁶³ *Ibid.*

⁶⁴ *Ibid.*

⁶⁵ *Ibid.*

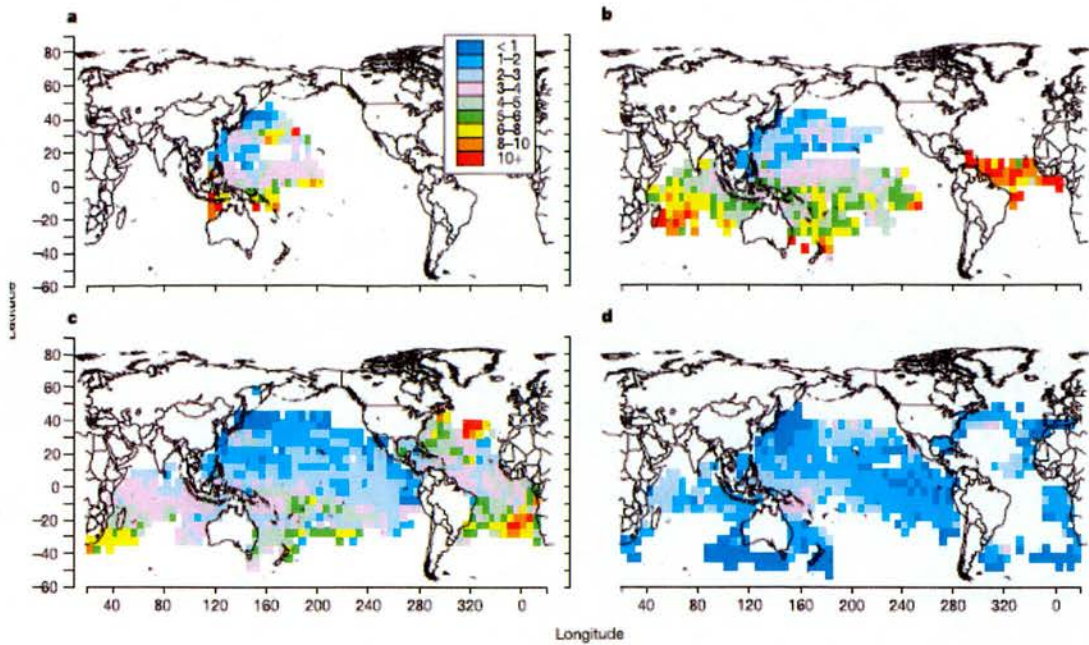


Figure 1: Large predatory fish biomass distribution in 1952 (a), 1958 (b), 1964 (c) and 1980 (d). Each colour represents the amount of fish caught per 100 samples. Extracted from Myers, et al (2003).

This assessment also concluded that after no more than ten years following the reduction of large predatory fish, “changes in targeting or bycatch”⁶⁶ resulted in a decline of lower trophic level fish species.⁶⁷ Such a conclusion is extremely important as it reveals how marine species are interconnected; and that surprisingly, lower food chain species can be reduced by the depletion of their predators. Changes of target species due to a reduction of catches of predatory species are described by Pauly as “fishing down marine food webs”.⁶⁸

Pauly et al notes that marine ecosystems function differently from terrestrial ecosystems.⁶⁹ When a predator is removed from the marine environment it does not mean that its prey will become more abundant.⁷⁰ This is due to the interconnectedness of food chains, which is characteristic of the marine

⁶⁶ *Ibid.*

⁶⁷ *Ibid.*

⁶⁸ D. Pauly, et al (2002), *supra* note 2, at 691.

⁶⁹ *Ibid.*

⁷⁰ *Ibid.*

environment.⁷¹ Invertebrates and shorter-lived fishes are the ones that turn out to be more numerous, resulting in a simplification of food webs and reduction of the previous resilience ability.⁷² In turn, resilience loss makes fish species more vulnerable to marine environmental changes caused by, *inter alia*, climate change, pollution, habitat alterations and overfishing.⁷³ Bascompte et al explain how species that present strong trophic interactions are more susceptible to trophic cascades; i.e., the effects of predator-prey interaction across more than one trophic level.⁷⁴ After conducting a study in the Caribbean region, Bascompte et al concluded that overfishing of sharks contributed to the degradation of coral reefs.⁷⁵ The depletion of sharks (top-predators) increases the incidence of their prey (consumers), which in turn feed on herbivores (base species), which become depleted due to the increasing numbers of consumers associated with fishing pressures.⁷⁶ With the depletion of herbivores, macro-algae started to grow indiscriminately dominating the Caribbean reefs, replacing the corals.⁷⁷ Thus, it is easy to understand why it is imperative to implement the ecosystem-based fisheries management when dealing with complex interactions among species such as marine species. Moreover, EBFM also takes into account habitat quality and biodiversity components. In this sense, Rosenberg states that “EBFM puts the conservation emphasis on preserving ecosystem structure and function, not just specific components of the ecosystem”⁷⁸ and continues by affirming that “healthy ecosystems are those in which environmental quality is high, habitat structure is intact, and a full range of biodiversity is maintained over the long term.”⁷⁹ In order to achieve these goals, instruments such as the creation of marine and high seas marine protected areas should be fully utilised, as further demonstrated in Chapter 5.

⁷¹ *Ibid.*

⁷² *Ibid.*

⁷³ B. Worm, et al (2006), *supra* note 17.

⁷⁴ J. Bascompte, C. Melián, E. Sala, “Interaction Strength Combinations and the Overfishing of a Marine Food Web” (2005) 102 Proceedings of the National Academy of Sciences 5443-5447.

⁷⁵ *Ibid.*

⁷⁶ *Ibid.*

⁷⁷ *Ibid.*

⁷⁸ A. Rosenberg, et al (2006), *supra* note 10, at 7.

⁷⁹ *Ibid.*, at 7.

With the decline of fish stocks in coastal waters, fishers have expanded fishing efforts to areas beyond national jurisdiction.⁸⁰ This has resulted in high seas overfishing of species including, but not limited to pollock, orange roughy, hake, jack mackerel, tuna, dolphin and shark.⁸¹ Moreover, destructive fishing practices have also been imposing threats to critical habitats such as seamounts and cold-water coral reefs located in areas beyond national jurisdiction.⁸² Roughly two-thirds of the world's oceans lie beyond the limits of national jurisdiction.⁸³ Recent scientific findings have demonstrated that geological features such as seamounts located in these areas "provide habitat for a large variety of marine animals and unique ecosystems, many of which are still to be discovered and prescribed."⁸⁴ The extensive use of destructive fishing practices that threaten vulnerable habitats such as cold-water coral reefs and seamounts as examined in Chapter 2.

Another serious problem associated with fisheries is the incidental catches of marine mammals, turtles and seabirds.⁸⁵ For example, longline fisheries kill thousands of seabirds per year.⁸⁶ Another important aspect of EBFM is that incidental catches are managed in a comprehensive way.⁸⁷ Rosenberg affirms that "single-species management has been successful at reducing incidental catch of protected species in some cases, but EBFM also manages indirect effects such as protecting forage species and essential habitat."⁸⁸

As demonstrated above, ecosystems, and more specifically, marine ecosystems comprise a number of complex interactions among species, as well as

⁸⁰ UNEP, "Ecosystems and Biodiversity in Deep Waters and High Seas", *UNEP Regional Seas Reports and Studies No. 178* (Switzerland: UNEP/ IUCN, 2006).

⁸¹ WWF/IUCN/WCPA, *The Status of Natural Resources on the High-Seas*, (Gland, Switzerland: WWF/IUCN, 2001)

⁸² J. Koslow, G. Boehlert, J. Gordon, R. Haedrich, P. Lorance, N. Parin, "Continental Slope and Deep-Sea Fisheries: Implications for a Fragile Ecosystem" (2000) 57 *ICES Journal of Marine Science* 548-557.

⁸³ M. Clark, D. Tittensor, A. Rogers, P. Brewin, T. Schlacher, A. Rowden, K. Stocks, M. Consalvey, *Seamounts, Deep-sea Corals and Fisheries: Vulnerability of Deep-sea Corals to Fishing on Seamounts beyond Areas of National Jurisdiction* (Cambridge, UK: UNEP/WCMC, 2006).

⁸⁴ *Ibid.* at 05.

⁸⁵ WWF/IUCN/WCPA (2001), *supra* note 81.

⁸⁶ *Ibid.*

⁸⁷ A. Rosenberg, et al (2006), *supra* note 10 .

⁸⁸ *Ibid.* at 9

among species and their habitat. Therefore, management of marine living resources must take into account trophic interactions, habitat protection and cumulative impacts of sectoral activities. Otherwise, the collapse of stocks will likely occur more often, contributing to the simplification of trophic food chains and the modification of an ecosystem's resilience; species that are not even known today may become extinct; and potential cures for diseases may be eliminated before scientists have the chance to acknowledge their existence. That is even more accurate when it comes to ecosystems found in marine areas beyond national jurisdiction, such as in deep-sea features like seamounts, cold-water coral reefs and hydrothermal vents.⁸⁹ As demonstrated in Chapter 2, these habitats are not well known yet, but, scientists are astonished by the high degree of endemism and biodiversity richness found on and around these features. In order to tackle the challenges imposed by managing complex marine ecosystems, the most appropriate approach should be EBM, which comprises an integrated management of fisheries and non-fisheries activities in order to manage their cumulative impacts. However, EBFM is an important step towards EBM, especially in areas beyond national jurisdiction, where cumulative impacts are not as present as they are in coastal areas. In light of this, the main focus of this study is on EBFM as a first step towards EBM. The following Section addresses whether the current international legal regime provides a basis for the adoption of the ecosystem-based approach to fisheries management in marine areas beyond national jurisdiction.

1.2 International Policy and Legal Framework

This section addresses the main policy and legal framework under which EBFM in marine areas beyond national jurisdiction can be implemented. This analysis focuses on the 1982 UNCLOS and further developments in law (including soft-law instruments) and policy. It is argued here that the provisions of UNCLOS on conservation and management of living resources in the high seas should be interpreted pursuant recent legal and policy developments, which reflect emerging

⁸⁹ WWF/IUCN/WCPA (2001), *supra* note 81.

issues on ocean affairs and marine management. The regional and global operationalization of EBFM in marine ABNJ is further addressed in Chapters 4 and 5 of this thesis.

(a) International Policies

The first international policy to provide for ecosystem integrity was the 1972 Stockholm Declaration of the UN Conference on the Human Environment (Stockholm Declaration)⁹⁰, which comprises twenty-six principles of environmental conservation. The Stockholm Declaration was successfully adopted without any negative vote, summing a hundred and three affirmative votes and twelve abstentions.⁹¹ Such a consensual agreement reinforces the impact of the Declaration, as further discussed in this section.

For the purposes of the current work, Principles 2, 3 and 6 are the most relevant. Principles 2 and 6 of the Declaration expressly refer to ecosystems and the need to protect and carefully manage them for the benefit of present and future generations. Principle 3 addresses the need to restore and even improve earth's ability to produce vital renewable resources. As was discussed in the previous section, scientists have been proposing that marine management must include ecosystem's considerations in order to avoid exhaustion of fisheries resources and degradation of marine biodiversity. Combining the recent scientific findings with principles 2, 3 and 6 of the Stockholm Declaration, the adoption of ecosystem-based approach to fisheries management is clearly sound.

The 1992 Rio Declaration on Environment and Development⁹², Agenda 21⁹³ and the 2002 World Summit on Sustainable Development (WSSD) Plan of

⁹⁰ *Declaration of the UN Conference on the Human Environment*, 5 June 1972, UN Document A/Conf. 48/14, 11 ILM 1416.

⁹¹ G. Palmer, "New Ways to Make International Law" (1992) 86 AJIL 259-283.

⁹² Rio Declaration on Environment and Development, *Report of the United Nations Conference on Environment and Development, Annex I*, Rio de Janeiro, 3-14 June 1992, UN Doc. A/CONF. 151/26 (Vol. I). Online: <http://www.un.org/documents/ga/conf151/aconf15126-1annex1.htm> (accessed on 16 Sept. 09).

Implementation⁹⁴ established principles and guidelines on the sustainable use of marine resources. For example, the WSSD Plan of Implementation recognises that:

“Human activities are having an increasing impact on the integrity of ecosystems that provide essential resources and services for human well-being and economic activities. Managing the natural resources base in a sustainable and integrated manner is essential for sustainable development. In this regard, to reverse the current trend in natural resource degradation as soon as possible, it is necessary to implement strategies which should include targets adopted at the national and, where appropriate, regional levels to protect ecosystems and to achieve integrated management of land, water and living resources, while strengthening regional, national and local capacities. This would include actions at all levels as set out below.”⁹⁵

It is extremely important that it was globally recognised that anthropogenic activities have been leading to ecosystems’ loss. This means that the old view of protection of species alone, without taking into consideration interactions among species and their habitats are being supplanted by a new ecosystemic paradigm. Moreover, Paragraph 30 expressly refers to the oceans as an “essential component of the Earth’s ecosystem”⁹⁶ and establishes a set of actions in order to achieve sustainable development of the oceans. Noteworthy among them are:

- The application of the ecosystem based approach to the marine environment by 2010⁹⁷;
- The maintenance or restoration of “stocks to levels that can produce the maximum sustainable yield”⁹⁸ (MSY) by 2015;
- Ratification of accession of UNCLOS, UNFSA and implementation of FAO Code of Conduct and respective International Plans of Action (IPOAs);⁹⁹
- And the development and use of “diverse approaches and tools, including the ecosystem approach, the elimination of destructive fishing practices, the

⁹³ Agenda 21 (1992), UN Doc. A/CONF. 151/26/Vol. III.

⁹⁴ *Plan of Implementation of the World Summit on Sustainable Development*, Resolution 2 of the United Nations Report of the World Summit on Sustainable Development (2002) Doc. A/CONF.199/20 [WSSD Plan of Implementation]

⁹⁵ *Ibid.*, Para. 24.

⁹⁶ *Ibid.*, Para. 30.

⁹⁷ *Ibid.*, Para. 30 (6).

⁹⁸ *Ibid.*, Para. 31(a).

⁹⁹ *Ibid.*, Para. 31 (b), (c), (d).

establishment of marine protected areas (...), including representative networks by 2012 and time/area closures for the protection of nursery grounds and periods (...)"¹⁰⁰.

Having single-species MSY as a goal is not desirable and compatible with the principles of the EBFM.¹⁰¹ However, the WSSD Plan of implementation repeatedly refers to ecosystem approach as a goal and urges States to implement a number of treaties and soft-law instruments, such as UNFSA, the CBD and the FAO Code of Conduct for Responsible Fisheries¹⁰² that go much beyond the simple concept of MSY.

The WSSD Plan of Implementation was adopted by consensus.¹⁰³ But as a policy instrument, it is non-binding upon States. A few reservations were made, such as the United States reservation on sharing of benefits from the utilisation of genetic resources, which was obviously made in order to validate itself as a persistent objector and avoid being bound by an eventual customary rule. However no reservations were made concerning the application of EBA/EBFM/EBM in areas beyond national jurisdiction.

Notwithstanding the position of the United States in regards to the non-binding nature of the Plan of Implementation, as seen below, it is interesting to note that the Plan's importance within the political scenario was recognised by them:

"The United States highlights the importance of the Plan of Implementation and the Johannesburg Declaration and notes that, like other such declarations and related documents, these documents adopted at this conference contain important political goals and coordinated plans of action, but do not create legally binding obligations on States under international law."¹⁰⁴

¹⁰⁰ *Ibid.*, Para. 32 (c).

¹⁰¹ See section 1.2 *infra*.

¹⁰² FAO, "Code of Conduct for Responsible Fisheries" (Rome: FAO, 1995) 41p. [FAO Code of Conduct]

¹⁰³ United Nations Report of the World Summit on Sustainable Development (2002) Doc. A/CONF.199/20, at 139.

¹⁰⁴ *Ibid.*, at 146.

International policies generate moral effects on the international community, and can even contribute to the development of binding agreements. As noted by Boyle and Chinkin:

“International law-making is generally not dictated by disasters, however. It is mainly policy-driven, and reflects ongoing concerns of the international community or of groups of states and NGOs. Thus the Stockholm, Rio and Johannesburg Conferences on the Human Environment and Sustainable Development show how international policy and law on these topics have emerged progressively from a process of periodic review in which new agendas are set, existing goals confirmed or modified, or old policies and institutions reformed in line with emerging priorities. Even when they do not themselves create new law, policy declarations adopted by the UN or by inter-state conferences may influence the development of international law insofar as policies endorsed by the international community create expectations and pressure for implementation and change.”¹⁰⁵

In fact, it was during the 1992 Rio Conference that States first committed themselves to convene the United Nations Conference on Straddling Fish Stocks and Highly Migratory Fish Stocks,¹⁰⁶ which resulted in the adoption of the Fish Stocks Agreement.¹⁰⁷ And as a matter of fact, the Fish Stocks Agreement incorporated principle 15¹⁰⁸ on the precautionary approach of the Rio Declaration on Environment and Development.¹⁰⁹ As noted by Boyle and Freestone:

“(…) ‘a system of international environmental law has emerged, rather than simply more international law rules about the environment.’ If this is correct, then the Rio Declaration should not be underestimated by lawyers, and its contribution to the codification and progressive development of international law relating to the environment and sustainable development is likely to be considerable and significant.”¹¹⁰

As for the Johannesburg Conference, the WSSD Plan of Implementation’s goal of achieving a network of marine protected areas (MPAs) by 2012 has been

¹⁰⁵ A. Boyle, C. Chinkin, *The Making of International Law* (Oxford: Oxford University Press, 2007), at 108.

¹⁰⁶ Agenda 21, Chapter 17, Para. 17.50.

¹⁰⁷ See section 1.2 (c), and Chapter 3.

¹⁰⁸ Principle 15 states: “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.”

¹⁰⁹ On UNFSA’s provisions on precautionary approach, see section 1.2 (c) *infra*.

¹¹⁰ A. Boyle, D. Freestone (eds.), *International Law and Sustainable Development: Past Achievements and Future Challenges* (Oxford: Oxford University Press, 2001), at 5.

taken seriously by a number of NGOs, Inter-governmental organisations and UN bodies, including Greenpeace, the World Wide Fund for Nature (WWF), the International Union for Conservation of Nature (IUCN) and the Convention on Biological Diversity Secretariat.¹¹¹ These organisations have produced important research on MPAs network, including methodologies to identify areas in need of protection.¹¹²

(b) The United Nations Convention on the Law of the Sea

The United Nations Convention on the Law of the Sea¹¹³ was adopted in 1982, becoming the main treaty to regulate activities at sea, including fisheries, as well as providing for the protection of the marine environment. UNCLOS' text does not expressly refer to the ecosystem-based approach to fisheries management. However, it does refer to basic principles of EBA when addressing conservation of living resources both within the Exclusive Economic Zone (EEZ) and beyond the limits of national jurisdiction. An important issue here is whether UNCLOS' political 'maritime zones' conform with the application of the scientific concepts of EBA/EBFM/EBM. As pointed out in the previous section, ecosystems can be delimited for purposes of study, but is this effective in terms of management? It may represent a constraint; however, there are avenues for solutions, as further addressed in Chapters 3 and 5. This section focuses on the strengths and constraints of UNCLOS' provisions on the conservation of living resources in the high seas, and on the evolutionary interpretation of these provisions in the light of new developments in international law and policy.

Before engaging in this analysis, it is important to recall the general rule of interpretation of treaties of the Vienna Convention on the Law of Treaties (VCLT):

¹¹¹ See Chapter 5.

¹¹² See Chapter 5; C. Roberts, L. Mason, J. Hawkins, *Roadmap to Recovery: A global network of marine reserves* (Amsterdam: Greenpeace, 2006); UNEP/CBD/COP/9/INF/44, *supra* note 16.

¹¹³ *United Nations Convention on the Law of the Sea*, *supra* note 11 [UNCLOS].

“1.A treaty shall be interpreted in good faith in accordance with the ordinary meaning to be given to the terms of the treaty in their context and in the light of its object and purpose.

(...)

3. There shall be taken into account, together with the context:

(a) any subsequent agreement between the parties regarding the interpretation of the treaty or the application of its provisions;

(b) any subsequent practice in the application of the treaty which establishes the agreement of the parties regarding its interpretation;

(c) any relevant rules of international law applicable in the relations between the parties.”¹¹⁴

Based on these provisions, we must agree with McLachlan that “(...) the application of a technique of interpretation that permits reference to other rules of international law offers the enticing prospect of averting conflict of norms, by enabling the harmonization of rules rather than the application of one norm to the exclusion of another.”¹¹⁵ In effect, the principle of systemic integration of Article 31 (3) of the VCLT was applied in the *Shrimp-Turtle case*¹¹⁶ by the World Trade Organization (WTO) Appellate Body, as discussed in section 1.2 (e) below. In order to interpret a term of the General Agreement on Tariffs and Trade (GATT)¹¹⁷, the WTO Appellate Body made use of recent developments of international environmental law, including binding and non-binding instruments.¹¹⁸

In the *Oil Platforms*¹¹⁹ case, the International Court of Justice (ICJ) evoked Article 31 (3) (c) to interpret the provisions of the 1955 Treaty of Amity, Economic Relations and Consular Rights between the United States and Iran,¹²⁰ in the light of the rules of customary law on the use of force:

“Moreover, under the general rules of treaty interpretation, as reflected in the 1969 Vienna convention on the Law of Treaties, interpretation must take into account “any relevant rules of international law applicable in the relations between the

¹¹⁴ VCLT, Art. 31 (1) and (3).

¹¹⁵ C. McLachlan, “The Principle of Systemic Integration and Article 31 (3) (c) of the Vienna Convention” (2005) 54 ICLQ 279-320, at 286.

¹¹⁶ WTO, *United States Import Prohibition of Certain Shrimp and Shrimp Products – Report of the Appellate Body* (12 October 1998) Doc. WT/DS58/AB/R., [*Shrimp-Turtle Case*], Para. 127.

¹¹⁷ *General Agreement on Tariffs and Trade 1994*, (15 April 1994), Marrakesh Agreement Establishing the World Trade Organization, Annex 1A, The Legal Texts: The Results Of The Uruguay Round Of Multilateral Trade Negotiations 17 (1999), 1867 U.N.T.S. 187. [GATT]

¹¹⁸ See section 1.2 (e) *infra*.

¹¹⁹ *Oil Platforms (Islamic Republic of Iran v. United States of America)*, Judgment, ICJ Reports 2003.

¹²⁰ Treaty of Amity, Economic Relations and Consular Rights between the United States and Iran, 15 August 1955, 284 U.N.T.S. 93.

parties” (Art. 31, para. 3 (c)). The Court cannot accept that Article XX, paragraph 1 (d), of the 1955 Treaty was intended to operate wholly independently of the relevant rules of international law on the use of force, so as to be capable of being successfully invoked, even in the limited context of a claim for breach of the Treaty, in relation to an unlawful use of force.”¹²¹

As Article 31 (3) (c) of the VCLT does not contain any temporal provisions, the ‘relevant rules of international law applicable in the relations between the parties’ that must be taken into account when interpreting a treaty could be understood either as those rules in force when the treaty was adopted, or the rules in force at the time of its application.¹²² Therefore, the language used in the treaty in question is essential in order to resolve the issue of inter-temporality.¹²³ As noted by the International Law Commission (ILC) in its study on Fragmentation of International Law, “the use of a term in a treaty which is “not static but evolutionary””¹²⁴ should be an indication that the rules to be taken into account are the present, rather than the past rules. Another indication that the *present* rules should be taken into account when interpreting a treaty is when the treaty provides for general obligations. As observed by the ILC:

“The description of obligations in very general terms, thus operating a kind of *renvoi* to the state of the law at the time of its application. Thus, the general exceptions in the GATT article XX, discussed in *Shrimp-Turtle*, in permitting measures “necessary to protect human, animal or plant life or health” or “relating to the conservation of exhaustible natural resources”, are intended to adjust to the situation as it develops over time. For example, the measures necessary to protect shrimp evolve depending upon the extent to which the survival of the shrimp population is threatened. Although the broad meaning of article XX may remain the same, its actual content will change over time. In that context, reference to “other rules of international law”, such as multilateral environment treaties, becomes a form of secondary evidence supporting the enquiry into science and community values and expectations, which the ordinary meaning of the words, and their object and purpose invites.”¹²⁵

In light of this, it can be said that UNCLOS provisions on the conservation and management of living resources on the high seas are sufficiently general and evolutionary to allow their interpretation in conjunction with further developments

¹²¹ *Oil Platforms*, ICJ Reports 2003, *supra* note 119, at Para. 41.

¹²² See C. McLachlan (2005), *supra* note 115; and International Law Commission, “Fragmentation of International Law: Difficulties arising from the Diversification and Expansion of International Law”, 13 April 2006, UN Doc.A/CN.4/L.682.

¹²³ See ILC (2006) *ibid.*, at Para. 478.

¹²⁴ *Ibid.*, at Para. 478 (a).

¹²⁵ *Ibid.*, at Para. 478 (b).

in law and policy.¹²⁶ Of course, the interpretation of such provisions in the light of other treaties only affects the same parties. The only exception would be for the provisions of the other treaties that have become part of customary law, which then should be applied to all UNCLOS' parties. As seen below, Article 119 of UNCLOS provides for the duty of States to adopt conservation measures for living resources in the high seas. The term 'conservation measures,' *per se*, is evolutionary. As seen in section 1.1, EBFM is recognized today to be the most adequate approach to fisheries management. Therefore, conservation measures should be based on EBFM.

In the *Gabcikovo-Nagymaros Case*,¹²⁷ the ICJ, in reference to evolutionary terms contained in the 1977 Treaty on the Construction and Operation of the Gabcikovo-Nagymaros Barrage System stated that:

"Throughout the ages, mankind has, for economic and other reasons, constantly interfered with nature. In the past, this was often done without the consideration of the effects upon the environment. Owing to new scientific insights and to a growing awareness of the risks for mankind – for present and future generations – of pursuit of such interventions at an unconsidered and unabated pace, new norms and standards have been developed, set forth in a great number of instruments during the last two decades. Such new norms have to be taken into consideration, and such new standards given proper weight, not only when States contemplate new activities but also when continuing with activities begun in the past. This need to reconcile economic development with protection of the environment is aptly expressed in the concept of sustainable development."¹²⁸

The same can be said about fisheries. Fisheries activities can only continue to exist if they are based on sustainable principles and ecosystem-approaches. The Court in the *Gabcikovo-Nagymaros Case* referred to the concept of 'sustainable development', which emerged from international policy instruments.¹²⁹ This shows that widely accepted policy and soft-law instruments can generate changes in the

¹²⁶ See section 1.2 (b) *infra*.

¹²⁷ *Gabcikovo-Nagymaros Project* (Hungary/Slovakia), Judgment, ICJ Reports 1997, p.7. [*Gabcikovo-Nagymaros Case*].

¹²⁸ *Ibid.*, at Para. 140.

¹²⁹ See G. Bruntland (ed.), "Our Common Future: The World Commission on Environment and Development", (Oxford: Oxford University Press, 1987); 1972 *Declaration of the UN Conference on the Human Environment*, *supra* note 90; United Nations Report of the WSSD (2002), *supra* note 103; A. Boyle, D. Freestone (eds.) (2001), *supra* note 110.

interpretation of treaties, as well as can promote the adoption of legally-binding agreements, as discussed below.

Conservation of Living Resources

In regards to conservation of living resources within the EEZ, Article 61 (2) states that the “coastal State, taking into account the best scientific evidence available to it, shall ensure through proper conservation and management measures the maintenance of the living resources in the exclusive economic zone is not endangered by over-exploitation.”¹³⁰ As demonstrated in section 1.1 of this Chapter, scientific evidence has shown that ecosystem-based management can tackle overfishing problems in a more efficient way than traditional management. In line with EBFM, reinforcing the need to take into account non-target species in fisheries management, Article 61 (4) states the following:

“(…), the coastal State shall 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.”¹³¹

In regards to the high seas region, Article 119 (1) (a) of UNCLOS states the following:

“In determining the allowable catch and establishing other conservation measures for the living resources in the high seas, States shall:

(a) take measures which are designed, on the best scientific evidence available to the States concerned, 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 special requirements of developing States, and taking into account fishing patterns, the interdependence of stocks and any generally recommended international minimum standards, whether subregional, regional or global;”

¹³⁰ UNCLOS, Article 61 (2).

¹³¹ UNCLOS, Article 61 (4).

According to this Article, States are also obliged to take into account dependent or associated species when instituting other conservation measures and stipulating total allowable catches (TAC).¹³² It is possible to infer that by using the expression ‘other conservation measures’ the Convention admits the possibility of incorporating EBA measures to high seas fisheries management. Moreover, as seen above, the term ‘conservation measures’ can be understood as an evolutionary term, which relies on scientific research and can be interpreted in the light of recent developments in international law. However, UNCLOS does not provide for specific guidelines on how dependent or associated species should be ‘taken into account’. The language used is vague and the only clear obligation derived from Article 119 in regards to dependent or associated species is found in its paragraph (1) (b). This Paragraph establishes the obligation of States to “take into consideration the effects on species associated with or dependent upon harvest 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.”¹³³ It is questionable that having ‘seriously threatened levels’ as a threshold would be compatible with ecosystem-based fisheries management.

As noted by Burke, UNCLOS was negotiated during the same period in which the Convention on the Conservation of Antarctic Marine Living Resources¹³⁴ (CCAMLR Convention) was under negotiation.¹³⁵ Notwithstanding this fact, CCAMLR, adopted in 1980, provided for stricter obligations in respect to associated or dependent species. For example, all activities conducted in the Convention area must conform to the following principles of conservation:

“(a) prevention of decrease in the size of any harvested population to levels below those which ensure its stable recruitment. For this purpose its size should not be allowed to fall below a level close to that which ensures the greatest net annual increment;

¹³² UNCLOS, Article 119 (1) (a).

¹³³ UNCLOS, Article 119 (1) (b).

¹³⁴ *Convention on the Conservation of Antarctic Marine Living Resources*, 20 May 1980, 1329 U.N.T.S. 48. [CCAMLR]

¹³⁵ W. Burke, *The New International Law of Fisheries – UNCLOS 1982 and Beyond* (Oxford: Clarendon Press, 1994), at 114.

(b) maintenance of the ecological relationships between harvested, dependent and related populations of Antarctic marine living resources and the restoration of depleted populations to the levels defined in sub-paragraph (a) above; and
(c) prevention of changes or minimisation of the risk of changes in the marine ecosystem which are not potentially reversible over two or three decades, taking into account the state of available knowledge of the direct and indirect impact of harvesting, the effect of the introduction of alien species, the effects of associated activities on the marine ecosystem and of the effects of environmental changes, with the aim of making possible the sustained conservation of Antarctic marine living resources.”¹³⁶

While UNCLOS establishes the threshold of ‘seriously threatened reproduction’ for associated or dependent species, CCAMLR provides for ‘prevention’ of decreases of population size; stable recruitment; continuity of ecological relationships, protection of marine ecosystems, etc. This shows that it is possible to draft a text which provides a certain degree of flexibility (which is necessary when dealing with the natural environment), while providing for general guidelines and thresholds that incorporate elements of ecosystem-based management. CCAMLR’s recent practices in implementing EBFM are addressed in Chapter 4.

Another weakness of UNCLOS in respect to conservation of living resources is the target of achieving ‘maximum sustainable yield’ within and beyond the EEZ.¹³⁷ MSY is the highest harvest rate that can be, *in theory*, continuously taken from a stock in order to maintain its biomass in equilibrium.¹³⁸ The establishment of MSY as a target has been challenged by recent scientific findings as demonstrated in the following subsection.

Maximum Sustainable Yield

The adoption of the maximum sustainable yield concept reflects the scientific thinking of the time when UNCLOS was being negotiated. For example, the ‘Schaefer Model’ designed by Milner Schaefer in the United States in 1954¹³⁹

¹³⁶ CCAMLR, Art. II, (3).

¹³⁷ UNCLOS, Arts. 61 (3), 119 (1) (a).

¹³⁸ A. Charles (2001), *supra* note 49.

¹³⁹ R. Zabel, C. Harvey, S. Katz, T. Good, P. Levin, “Ecologically Sustainable Yield - Marine Conservation Requires a New Ecosystem-based Concept for Fisheries Management that Looks beyond Sustainable Yield for Individual Fish Species” (2003) 91 *American Scientist* 150-157.

explains MSY by modelling the reaction of fish stock population dynamics to fishing effort.¹⁴⁰ Researchers from England (R. J. Beverton, S. J. Holt and J. A. Gulland) and Canada (W. E. Ricker) also proposed mathematical models on population dynamics, which became an important component of fisheries science.¹⁴¹ However, even though these models made significant contributions towards the understanding of fish population dynamics (i.e., growth, mortality and recruitment), they were basically single-species models that could not assure the desired sustainable or equilibrium yield.¹⁴²

In the seventies, a number of scientists (e.g. Peter Larkin in his famous article 'An epitaph for the concept of maximum sustainable yield'¹⁴³ and Michael Sissenwine in his article 'Is MSY an adequate foundation for optimum yield?'¹⁴⁴) contested the concept of MSY; however, it did not hinder the incorporation of the concept in the final text of UNCLOS. As Pitcher and Pauly very well note, "although the ecosystem concept was integral to the ideas of pioneers of fisheries science (Hardy, 1956; Skjoldal *et al.*, 1993) it was forgotten early in the era of domination of single-species population dynamics."¹⁴⁵ Pitcher considers the "goal of sustainable yield of single species in a fishery (...) a fundamental mistake"¹⁴⁶ He argues that the techniques applied in those models were not wrong; however, the management goal should be other than to achieve sustainable yield.¹⁴⁷ Following the same idea, Pauly provides a comprehensive analysis of the subject in his article entitled "Fisheries Management: Sustainability vs Reality".¹⁴⁸ He ponders that since

¹⁴⁰ A. Charles (2001), *supra* note 49.

¹⁴¹ D. Pauly, R. Froese, "Fish Stocks" *In*: Simon Levin (Ed.). *Encyclopedia of Biodiversity* Vol. 2 (San Diego: Academic Press, 2001) 801-814.

¹⁴² *Ibid.*

¹⁴³ P. Larkin, "An Epitaph for the Concept of Maximum Sustainable Yield" (1977) 106 *Transactions of the American Fisheries Society* 1-11.

¹⁴⁴ M. Sissenwine, "Is MSY an Adequate Foundation for Optimum Yield?" (1978) 3 (6) *Fisheries* 22-42.

¹⁴⁵ T. Pitcher, D. Pauly, "Rebuilding Ecosystems, Not Sustainability, as the Proper Goal of Fishery Management" 311-329, in T. Pitcher, D. Pauly, P. Hart (eds.) *Reinventing Fisheries Management*, 23 *Fish and Fisheries* (Dordrecht: Academic Publishers, 1998), at 313.

¹⁴⁶ T. Pitcher, "Fisheries Managed to Rebuild Ecosystems? Reconstructing the Past to Salvage the Future" (2001) 11 *Ecological Applications* 601-617 at 602.

¹⁴⁷ *Ibid.*

¹⁴⁸ D. Pauly, "Fisheries Management: Sustainability Vs. Reality" 05-11, in D. Pauly, M. Palomares (eds.) *Production Systems in Fisheries Management* (2002) 10 (8) *Fisheries Centre Research Reports*, University of British Columbia. 28p.

most fish populations are already exploited, sustainability would mean avoiding the additional decrease of such exploited population, as follows:

“If that population is brought further down by uncontrolled fishing the goal of only sustaining that population invariably implies setting our sights lower, to the new, lower level, and so on, until the baseline has shifted and the population is lost along with the memory that it ever existed.”¹⁴⁹

Pauly concludes that the management goal should shift from sustainability to ‘rebuilding’, which would include not only fish populations, but also the whole ecosystem.¹⁵⁰ The same view is shared by Zabel, et al, who state that despite the fact that the “goal of ‘sustainable fisheries’ is to preserve the long-term viability of target species, even harvest levels considered sustainable can impact marine ecosystems.”¹⁵¹

As seen above, Article 119 refers to the obligation of States to maintain or restore fish population to a level which can produce “maximum sustainable yield, *as qualified by relevant environmental and economic factors*”. In view of this, to what extent can environmental and economic factors modify the Article 119 MSY target? In order to answer this question, the negotiation of this text should be considered.

The U.S. was very active in the negotiation of Article 119, proposing the main elements of the text. The proposals presented from 1971 to 1975 during the sessions of the Sea-Bed Committee as well as in the second session of the Law of the Sea Conference used the term ‘taking into account’¹⁵² instead of ‘as qualified by’.¹⁵³ For example, in 1971, the proposed text was:

“(…) the allowable catch shall be determined, on the basis of the best evidence available, at a level which is designed to maintain the maximum

¹⁴⁹ *Ibid.*, at 10.

¹⁵⁰ *Ibid.*

¹⁵¹ R. Zabel et al (2003), *supra* note 139, at 150.

¹⁵² M. Nordquist, N. Grandy, S. Nandan, S. Rosenne (eds), *The United Nations Convention on the Law of the Sea 1982: A Commentary*, Vol. III (Biggleswade: Brill Academic Publishers, 1995) [Virginia Commentary], at 306-308.

¹⁵³ *Ibid.*, at 306-308.

sustainable yield or restore it as soon as practicable, *taking into account relevant environmental and economic factors*”¹⁵⁴ [emphasis added]

However, in 1975 after informal discussions the term ‘taking into account’ is replaced by ‘as qualified by’, reading:

“In determining the allowable catch and establishing other conservation measures for the living resources in the high seas, States shall:

(a) Adopt measures which are designed, on the best evidence available to the States concerned, 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, (...).”¹⁵⁵ (emphasis added)

The Virginia Commentary interprets this Article as follows:

“Determining the allowable catch also requires determination of the maximum sustainable yield, which should be based on scientific information about a given species or stock. This is qualified, however, by the requirement to consider “relevant environmental and economic factors” in taking measures for a given species or stock (...).”¹⁵⁶

The main goal of this Article is to maintain or restore populations to MSY. Environmental or economic factors constitute elements which should be considered if appropriate to the specific stock. The word ‘qualified’ is defined by the Oxford Dictionary as, *inter alia*:

“A. adj.

I. That possesses a certain quality or qualities.

(...)

II. Modified in some respect.

5. a. Modified, limited, moderated; *esp.* (of a statement, opinion, etc.) incorporating a reservation or condition; mitigated.

b. Law. Limited or modified; having some qualification or restriction attached; conditional or partial;

(...)”¹⁵⁷

¹⁵⁴ *Ibid.*, at 306-308.

¹⁵⁵ *Ibid.*, at 308-09.

¹⁵⁶ *Ibid.*, at 310.

¹⁵⁷ Oxford English Dictionary. Oxford University Press (2008). Online: <http://dictionary.oed.com> (accessed on 12 Nov. 08).

With this in mind, MSY can be modified if necessary by environmental or economic factors. Even though the MSY target can be reduced according to this qualification, the text also allows targets surpassing MSY if economically required. As noted by Young:

“Given the acknowledged difficulties in operationalizing MSY, even in the simplest situations, and the obvious possibility of introducing virtually any additional consideration as a “relevant economic social, or ecological factor,” efforts to make decisions on the basis of such overarching objectives inevitably become political processes.”¹⁵⁸

It is noteworthy that the 1995 Fish Stocks Agreement (see section (C) below) amends this provision through the introduction of precautionary reference points. According to UNFSA’s precautionary reference points, MSY should be considered a limit reference point (maximum limit that is supposed to be avoided) rather than a target. Therefore, economic factors cannot push the target even further. This is addressed in section (C) below.

Another significant element of Article 119 is its reference to ‘generally recommended international minimum standards,’ which must be taken into account by States when formulating conservation measures. This is analysed in the following section.

Generally Recommended International Minimum Standards

As seen above, when establishing conservation measures, States must also *take into account* “any generally recommended international minimum standards, whether subregional, regional or global”.¹⁵⁹ In respect to fisheries, the role of the Food and Agriculture Organization of the United Nations (FAO) must be brought to light (for further discussion, see section 1.3 (a) below).

¹⁵⁸ O. Young, “Institutional Uncertainties in International Fisheries Management” (1998) 37 Fisheries Research 211-224, at 213-14.

¹⁵⁹ UNCLOS, Art. 119 (a).

FAO's role is to promote and recommend national and international actions in respect to, *inter alia*: (i) "conservation of natural resources and the adoption of improved methods of agricultural production", including fisheries;¹⁶⁰ as well as (ii) "scientific, technological, social and economic research relating to [fisheries]"¹⁶¹ As discussed in subsection 1.3 (a) below, FAO Committee on Fisheries (COFI) is the subsidiary body responsible for providing recommendations on fisheries to States and fisheries entities.¹⁶² It also provides a forum for discussion and negotiation of binding and non-binding instruments involving different stakeholders such as governments, RFMOs, NGOs and industry. For example, COFI supported the negotiations of the Fish Stocks Agreement (see section (c) below), and led the negotiations of the Agreement to Promote Compliance with International Conservation and Management Measures by Fishing Vessels on the High Seas,¹⁶³ the Code of Conduct for Responsible Fisheries (see section (d) below) adopted by consensus,¹⁶⁴ and the International Guidelines for the Management of Deep-sea Fisheries in the High Seas. All these instruments encompass a number of international standards such as the precautionary reference points introduced by UNFSA, and standards to avoid impact on vulnerable marine ecosystems introduced by the International Guidelines for the Management of Deep-sea Fisheries in the High Seas.¹⁶⁵ In fact, COFI has been "the only intergovernmental forum in which fishery problems are examined periodically on a worldwide basis, and could, in some respects, be considered a global organization to which article 61 refers."¹⁶⁶ In view of this, FAO is competent to establish such minimum standards as referred to in Article 119.

Moreover, FAO's role in developing international and regional minimum standards is confirmed by the United Nations General Assembly Resolution 61/105

¹⁶⁰ *FAO Constitution*, 24 Sept. 1949, 126 U.N.T.S. 257, Art. I (2) (c).

¹⁶¹ *Ibid.*, Art. I (1) and (2) (a).

¹⁶² FAO, COFI, Online: <<http://www.fao.org/fishery/about/cofi/en>> (accessed on 26 Nov. 08).

¹⁶³ *Agreement to Promote Compliance with International Conservation and Management Measures by Fishing Vessels on the High Seas*, (24 November 1993), 33 ILM 968.

¹⁶⁴ FAO, Code of Conduct for Responsible Fisheries, Annex I – Background to the Origin and Elaboration of the Code. Online: <<http://www.fao.org/DOCREP/005/v9878e/v9878e00.htm#BAC>> (accessed on 26 Nov. 08).

¹⁶⁵ FAO, *Report of the Technical Consultation on International Guidelines for the Management of Deep-sea Fisheries in the High Seas*, (2008) *FAO Fisheries and Aquaculture Report*. No. 881.

¹⁶⁶ Virginia Commentary, *supra* note 152, Vol. II (1993), Para. 61.12 (e).

on sustainable fisheries, where it was invited to develop further “standards and criteria for use by States and regional fisheries management organizations or arrangements in identifying vulnerable marine ecosystems and the impacts of fishing on such ecosystems, and establishing standards for the management of deep sea fisheries, such as through the development of an international plan of action.”¹⁶⁷ It is noteworthy that COFI followed the GA’s recommendation in developing the recently adopted International Guidelines for the Management of Deep-sea Fisheries in the High Seas¹⁶⁸ after two years of negotiations and consultations.

Besides FAO, regional fisheries management organisations play an important role in developing such standards. Chapter 4 analyses a number of such standards developed by RFMOs towards the implementation of EBFM.

Article 119 of UNCLOS does not refer to legally-binding minimum standards; rather it uses the term ‘any generally recommended minimum standards’. Therefore, any FAO guidelines, such as the voluntary International Guidelines for the Management of Deep-Sea Fisheries in the High Seas aforementioned, should be taken into account by States when establishing conservation measures for living resources in the high seas.

However, it is noteworthy that the obligation of States to adopt such international, regional or subregional international minimum standards is constrained by the language used in Article 119. States are only required to ‘take into account’ such standards as well as “fishing patterns” and the “interdependence of stocks”. An example of stronger language used by UNCLOS is found in Article 208 with respect to ‘pollution from seabed activities subject to national jurisdiction’, as follows:

“1. Coastal States shall adopt laws and regulations to prevent, reduce and control pollution of the marine environment arising from or in connection with seabed activities subject to their jurisdiction (...).
(...)”

¹⁶⁷ UNGA Resolution A/RES/61/105 (2007), Para. 89.

¹⁶⁸ FAO, *International Guidelines for the Management of Deep-sea Fisheries in the High Seas* (Rome: FAO, 2009).

3. Such laws, regulations and measures shall be no less effective than international rules, standards and recommended practices and procedures.”¹⁶⁹

Articles 210 and 211 of UNCLOS follow the same line of Article 208, but in regards to pollution from dumping and from vessels respectively. Interpretation of these articles suggests that they incorporate binding and non-binding International Maritime Organization (IMO) regulations and other generally accepted standards. As observed by Birnie et al:

“(…) into the primary obligation to prevent pollution the evolving standards set by the London Dumping Convention, the MARPOL Convention annexes, relevant IAEA guidelines, IMO codes, and other soft law instruments agreed and adopted by a preponderance of maritime states. If this view is correct, then states parties to the 1982 UNCLOS will thus be compelled as a matter of UNCLOS treaty law to adopt the basic standards set *inter alia* by the annexes to the Dumping and MARPOL Conventions, even if they are not parties to them.”¹⁷⁰

From this, it is clear that the language used in Article 119 is less strong than the provisions on the marine environment of Part XII, Section 5. Nonetheless, Article 119 still provides a framework for the conservation of living resources in the high seas, which enables the implementation of EBFM. As discussed in Chapter 4, a number of RFMOs have been adopting conservation measures which incorporate EBFM elements. Further regulation, such as, *inter alia*, the Fish Stocks Agreement and the Convention on Biological Diversity encourage the implementation of the ecosystem-based approach as seen further in this Chapter.

To conclude, even though UNCLOS does not expressly impose the implementation of ecosystem-based approach to fisheries management, it still enables further application of EBFM. In light of the weaknesses and strengths addressed above, UNCLOS introduces a broad framework for the conservation of living resources in the high seas. However, detailed guidelines are still required. After the adoption of UNCLOS several other legal instruments have been addressing fisheries issues in an attempt to find the best management tools to tackle overfishing

¹⁶⁹ UNCLOS, Art. 208 (1), (3).

¹⁷⁰ P. Birnie, A. Boyle, C. Redgwell, *International Law & the Environment*, Third Ed. (Oxford: Oxford University Press, 2009), at 389.

and marine environmental degradation. That is why it is of fundamental importance to also consider these other rules, as demonstrated below.

(c) Fish Stocks Agreement

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 Stocks¹⁷¹ (UNFSA or ‘Fish Stocks Agreement’) does not use terms such as ecosystem-based approach or ecosystem-based fisheries management or ecosystem-based management. However it provides for States to adopt conservation measures that take into consideration the interdependence of stocks, as well as, habitat and biodiversity protection in order to maintain ecosystems integrity¹⁷², which constitute the basic elements of EBFM. Moreover, the Agreement restricts the use of MSY as provided for by UNCLOS as demonstrated below.

UNFSA’s Maximum Sustainable Yield

Although UNFSA represents a significant evolution towards the conservation of straddling and highly migratory fish stocks, it still presents MSY as a rebuilding target.¹⁷³ UNFSA, however, adopts the concept in a significantly different way than UNCLOS. By having the precautionary approach as part of its principles, UNFSA introduces the use of the precautionary reference point, which “is an estimated value derived through an agreed scientific procedure, which corresponds to the state of the resource and of the fishery, and which can be used as a guide for fisheries management.”¹⁷⁴ The Agreement distinguishes two kinds of precautionary reference points: (i) conservation or limit reference points, which set restrictions to harvest¹⁷⁵

¹⁷¹ UNFSA, *supra* note 14.

¹⁷² UNFSA, Preamble and Articles: 5 (b), (c), (d), (e), (f), (g); 6 (1) (d), (5); 7 (2) (f).

¹⁷³ UNFSA, Annex II, Paragraphs 2 and 7.

¹⁷⁴ UNFSA, Annex II, Paragraph 1.

¹⁷⁵ UNFSA, Annex II, Paragraph 2.

and; (ii) management or target reference points, which fisheries managers should strive for.¹⁷⁶

The innovation from UNCLOS' MSY target is found in paragraph 7 of Annex II of the Fish Stocks Agreement, which considers the fishing mortality rate that produces MSY, the minimum standard for limit reference points.¹⁷⁷ As for "overfished stocks, the biomass which would produce maximum sustainable yield can serve as a rebuilding target".¹⁷⁸ In effect, under UNFSA, MSY is a limit to be avoided.

This is a different approach from UNCLOS, which sets MSY as a target "as qualified by environmental and economic factors".¹⁷⁹ It is interesting to note that the US, which has been an active negotiator of UNCLOS Article 119 (as seen in section (b) above) amended its 1976 Magnuson Fishery Conservation and Management Act¹⁸⁰ (MFCMA) fourteen months after the adoption of UNFSA. The MFCMA original definition of 'optimum yield' was: "(...) the maximum sustainable yield from the fishery, as *modified* by any relevant economic, social or ecological factor"¹⁸¹ [emphasis added]. While the 1996 amended text defines 'optimum yield' as: "(...) maximum sustainable yield from the fishery, as *reduced* by any relevant economic, social or ecological factor"¹⁸² [emphasis added]. The 1976 text was very similar to UNCLOS', while the 1996 amendment conforms to UNFSA's text on limit reference point.

UNFSA introduces an enhanced approach from UNCLOS, and from a scientific standpoint it is certainly possible to rebuild fish stocks by applying

¹⁷⁶ S. Garcia, "The Precautionary Approach to Fisheries and its Implications for Fishery Research, Technology and Management: An Updated Review", in: *Precautionary Approach to Fisheries, Part 2*, 350 *FAO Fisheries Technical Paper*, Part 2 (Rome: FAO, 1996) 210p.

¹⁷⁷ UNFSA, Annex II, Paragraph 7.

¹⁷⁸ UNFSA, Annex II, Paragraph 7.

¹⁷⁹ UNCLOS, Art. 119 (1) (a).

¹⁸⁰ *Magnuson Fishery Conservation and Management Act* (1976), Public Law 94-265, approved 13 April 1976; 16 U.S.C. 1801-1882; 90 Stat. 331.

¹⁸¹ *Ibid.*, Para. 33 (b)

¹⁸² *Ibid.*, Para. 33 (b). See also P. Mace, "A New Role for MSY in Single-Species and Ecosystem Approaches to Fisheries Stock Assessment and Management" (2001) 2 *Fish and Fisheries* 2-32.

UNFSA's precautionary reference points.¹⁸³ It is important to consider, though, whether it solves the problem of rebuilding ecosystems. UNFSA establishes that when applying the precautionary approach, States shall "take into account, inter alia, (...) the impact of fishing activities on non-target and associated or depended species (...)"¹⁸⁴ as well as "adopt plans which are necessary to ensure the conservation of such species and to protect habitats of special concern." It is noteworthy that these provisions on the application of the precautionary approach are applied to both areas within and beyond the limits of national jurisdiction, providing a sound integration and trying to achieve compatibility of management measures within these politically and legally defined zones. From this, it can be seen that the full implementation of UNFSA would assure the application of the EBFM. However, the full implementation of UNFSA can only take place if regional fisheries management organisations or Arrangements between States cover all the high seas areas and establish effective conservation measures that are complied to, without objection, by all State Parties.¹⁸⁵

UNFSA's Constraints

One of the constraints of UNFSA is that only 75 States are Parties to the Agreement¹⁸⁶, while UNCLOS accounts for 159 Parties.¹⁸⁷ During the 'Sixth round of Informal Consultations of States Parties to UNFSA' in 2007 States emphasized that "the participation of coastal States and high seas fishing States was critical to the effective implementation of the Agreement".¹⁸⁸ Since then, parties to the Agreement have been encouraging non-state Parties to accede to UNFSA by addressing

¹⁸³ Andrew Rosenberg, Professor of Natural Resources of the Institute for the Study of Earth, Oceans and Space, University of New Hampshire and co-author of UNFSA, Annex II, (pers. comm. dated 09 Feb. 07).

¹⁸⁴ UNFSA, Article 6 (3) (c), (d).

¹⁸⁵ See Chapter 4.

¹⁸⁶ DOALOS, online:

<http://www.un.org/Depts/los/convention_agreements/convention_overview_fish_stocks.htm > (accessed on 19 Aug. 09)

¹⁸⁷ DOALOS, online:

<http://www.un.org/Depts/los/convention_agreements/convention_overview_convention.htm > (accessed on 19 Aug. 09).

¹⁸⁸ *Sixth round of Informal Consultations of States Parties to UNFSA* (NY, 23-24 April 2007), ICSP6/UNFSA/REP/INF.1, at 14.

particular concerns of non-parties.¹⁸⁹ Such concerns include UNFSA provisions on, *inter alia*: compatibility measures (Art. 7)¹⁹⁰ and boarding and inspection (Art. 21).¹⁹¹

Another constraint of the Agreement is the text used in its Annex II on the ‘Guidelines for the Application of Precautionary Reference Points in Conservation and Management of Straddling Fish Stocks and Highly Migratory Stocks’. Paragraph 7 of Annex II states: “[t]he fishing mortality rate which generates maximum sustainable yield *should* be regarded as a minimum standard for limit reference points (...)” [emphasis added].

The utilisation of the word ‘should’ weakens the purposes of the Agreement, meaning that this provision is not mandatory upon States Parties and serves only as a guideline.¹⁹² Moreover, in dealing only with straddling and highly migratory fish stocks, UNFSA leaves behind the high seas discrete stocks (see Chapter 2), which implies that there is a need to implement UNFSA in conjunction with other international norms in order to fill this *lacunae*. Notwithstanding the fact that UNFSA is not sufficiently comprehensive, it constitutes an important development of UNCLOS provisions on management and conservation of straddling and highly migratory fish stocks and it must be interpreted as such.

The ILC explains that in some cases, the relationship between *lex generalis* and *lex specialis* or *lex posterior* will not be excluding, but “(...) instead, that earlier and general instrument remains “in the background”, controlling the way the later and more specific rules are being interpreted and applied”.¹⁹³ In this case, ILC provides the example of Article 4 of UNFSA that establishes that “(...) [t]his agreement shall be interpreted and applied in the context of and in a manner

¹⁸⁹ See *Eighth round of Informal Consultations of States Parties to UNFSA* (NY, 16-19 March 2009), ICSP8/UNFSA/REP/INF.6.

¹⁹⁰ See Chapter 3.

¹⁹¹ ICSP6/UNFSA/REP/INF.1, *supra* note 188.

¹⁹² A. Boyle, “Reflections on the Relationship of Treaties and Soft Law” (1999) 48 (4) ICLQ 901-913.

¹⁹³ ILC (2006), *supra* note 122, Para. 31.

consistent with the Convention.”¹⁹⁴ UNFSA does not contradict UNCLOS; they have the same objectives in regards to the conservation of living resources. UNFSA simply develops some issues that were generally, but not sufficiently addressed by UNCLOS. In doing so, it regulates and provides guidelines for the implementation of important marine conservation and management measures. It is noteworthy that in the *Southern Bluefin Tuna case*¹⁹⁵ between Australia and New Zealand v. Japan, Japan argued that it was not an UNCLOS dispute. The three States had adopted the Convention for the Conservation of Southern Bluefin Tuna in 1993, which it argued would be a *lex posterior* and *lex specialis* in relation to UNCLOS.¹⁹⁶ “(...) the provisions of a *lex specialis* not only specify and implement the principles of an anterior framework agreement; they exhaust and supplant those principles as long as the implementing agreement remains in force.”¹⁹⁷ However, the Arbitral Tribunal rejected this argument, referring to the parallelism of treaties and clarifying that “[t]he current range of international legal obligations benefits from a process of accretion and accumulation; in the practice of states, the conclusion of an implementing convention does not necessarily vacate the obligation imposed by the framework convention upon the parties to the implementing convention.”¹⁹⁸ In view of this, it is possible to affirm that in relation to conservation and management of straddling and highly migratory fish stocks, UNFSA and UNCLOS should be interpreted in a systemic way; i.e., *inter alia*, taking into consideration the precautionary approach,¹⁹⁹ the ecosystem,²⁰⁰ the protection of marine biodiversity²⁰¹ and the holistic approach.²⁰²

The problem here again is that only 75 States have ratified UNFSA to date.²⁰³ It is not possible to impose UNFSA’s provisions on third States. Moreover, as discussed above, UNFSA and UNCLOS *per se* are not sufficient to tackle all

¹⁹⁴ UNFSA, Article 4; ILC, *Ibid.* at pp. 22, Para. 31, note 28.

¹⁹⁵ *Southern Bluefin Tuna Case (Australia & New Zealand v. Japan)*, 4 August 2000, 39 ILM 1359.

¹⁹⁶ *Ibid.*

¹⁹⁷ *Ibid.*, at 1377, Para. 38 (c).

¹⁹⁸ *Ibid.*, at 1388, Para. 52.

¹⁹⁹ UNFSA, Article 5 (c).

²⁰⁰ UNFSA, Article 5 (e).

²⁰¹ UNFSA, Article 5 (g).

²⁰² UNCLOS, Preamble (“(...) the problems of the ocean space are closely interrelated and need to be considered as a whole”)

²⁰³ As for 16 September 2009.

overfishing and marine habitat destruction associated problems. That is why it is imperative to interpret UNCLOS and UNFSA in the light of other instruments. The incorporation of EBA/EBFM and even EBM is possible through a systemic interpretation of rules. Moreover, as mentioned above, RFMOs constitute an extremely important component of this equation, as further addressed, in detail, in Chapter 4. Other legal instruments complement UNFSA and UNCLOS provisions on issues related to marine conservation in areas beyond national jurisdiction, especially in regards to the application of EBA. As further addressed, some FAO initiatives, the Convention on Biological Diversity, the decisions of the CBD Conference of the Parties (COP), and even UNGA Resolutions have been making significant contributions towards the conservation of living resources in marine areas beyond national jurisdiction. The question here is how to interpret UNCLOS in the light of new developments in science and with regards to these recent legal instruments.

Notwithstanding the drawbacks of Article 119 of UNCLOS addressed above, it is important to stress that they can be overcome. This is demonstrated by the adoption of UNFSA, which used UNCLOS as a framework for the elaboration of further guidelines on the conservation and management of straddling and highly migratory fish stocks. It was seen that even though UNFSA was supposed to be an implementing agreement, it amended UNCLOS in some aspects. However, UNCLOS can still be considered a framework Convention for fisheries in the high seas. There is no need to amend UNCLOS in a formal way, which could risk the successful package deal negotiation.²⁰⁴ Nonetheless, there is a need for the development of further guidelines incorporating ecosystem-based management in marine areas beyond national jurisdiction as discussed throughout this thesis. The analysis of whether or not there is a need for a binding agreement or non-binding guidelines is the object of Chapter 5.

²⁰⁴ See Chapter 5 *infra*.

(d) FAO Code of Conduct for Responsible Fisheries and Other 'Soft-Law' Instruments

As referred to above, since UNCLOS, several other hard and soft law instruments have been recognising the importance of ecosystems' integrity. As an example of the latter, the FAO Code of Conduct for Responsible Fisheries²⁰⁵ (FAO Code of Conduct) lists among its general principles the 'conservation of aquatic ecosystems'.²⁰⁶ It also, appropriately, states that "the right to fish carries with it the obligation to do so in a responsible manner so as to ensure effective conservation and management of the living aquatic resources".²⁰⁷ The Code of Conduct's General Principles stress the need for habitat and biodiversity protection, ecosystems integrity and multi-species management.²⁰⁸ It also provides for the utilisation of trade measures as a means to protect fish stocks from overfishing.²⁰⁹

In terms of its relationship with UNCLOS, the Code of Conduct states that even though it is a voluntary instrument, "(...) certain parts of it are based on relevant rules of international law, including those reflected in the United Nations Convention on the Law of the Sea of 10 December 1982"²¹⁰. Furthermore, it makes clear that it "is to be interpreted and applied in conformity with the relevant rules of international law, as reflected in [UNCLOS]",²¹¹ and that nothing in the Code undermines the "rights, jurisdiction and duties of States under international law as reflected in [UNCLOS]".²¹²

The Code also refers to other international instruments, including hard and soft-law, as well as policy instruments, making clear that its interpretation and application need to be consistent with those. It expressly refers to UNFSA²¹³ as well as to:

²⁰⁵ FAO, Code of Conduct, *supra* note 102.

²⁰⁶ *Ibid.*, Art. 6.1.

²⁰⁷ *Ibid.*, Art. 6.1.

²⁰⁸ *Ibid.*, Arts. 6.1, 6.2, 6.3, 6.4, 6.5, 6.6 and 6.8.

²⁰⁹ *Ibid.*, Art. 11.2.2.

²¹⁰ *Ibid.*, Art. 1.1.

²¹¹ *Ibid.*, Art. 3.1.

²¹² *Ibid.*, Art. 3.1.

²¹³ *Ibid.*, Art. 3.1 (a).

“(…) other applicable rules of international law, including the respective obligations of States pursuant to international agreements to which they are party; and in the light of the 1992 Declaration of Cancun, the 1992 Rio Declaration on Environment and Development, and Agenda 21 (…) in particular Chapter 17 of Agenda 21, and other relevant declarations and international instruments.”²¹⁴

The language used was carefully drafted, ensuring that this relationship with other international instruments followed a hierarchical order starting from: UNCLOS, followed by UNFSA, other rules and agreements of international law, and then “in the light of” the above mentioned Declarations and Agenda 21. As noted by Edeson: “This carefully elaborated hierarchy was in fact the subject of much negotiation at the time, though it was the final category, namely those instruments in the light of which the Code was to be interpreted and applied, that caused the biggest problem in the discussions.”²¹⁵

The Code of Conduct is a very comprehensive framework document and also comprises four International Plans of Action: IPOA for Reducing Incidental Catch of Seabirds in Longline Fisheries (IPOA-Seabirds),²¹⁶ IPOA for the Conservation and Management of Sharks (IPOA-Sharks),²¹⁷ IPOA for the Management of Fishing Capacity²¹⁸ and IPOA to Prevent, Deter and Eliminate Illegal, Unreported and Unregulated Fishing.²¹⁹ As noted by Boyle and Chinkin:

“The choice of soft law instruments can partly be explained by the opposition of some states to binding agreements. Another reason, however, is that they are aimed at regional fisheries organisations and the fishing industry as well as states, and contain some elements which are unlikely to find their way into treaty form. They are also easier to amend or replace than treaties, requiring simply the adoption of another instrument.”²²⁰

²¹⁴ *Ibid.*, Art. 3.2 (b) (c).

²¹⁵ W. Edeson, “Towards Long-term Sustainable Use: Some Recent Developments in the Legal Regime of Fisheries” 165-203 in A. Boyle and D. Freestone (eds.) (2001), *supra* note 110.

²¹⁶ See Chapter 2.

²¹⁷ See Chapter 2.

²¹⁸ FAO, International Plan of Action for Reducing Incidental Catch of Seabirds in Longline Fisheries. International Plan of Action for the conservation and Management of Sharks. International Plan of Action for the Management of Fishing Capacity. (Rome: FAO, 1999) 26p.

²¹⁹ FAO, International Plan of Action to Prevent, Deter and Eliminate Illegal, Unreported and Unregulated Fishing (Rome: FAO, 2001) 24p.

²²⁰ A. Boyle, C. Chinkin (2007), *supra* note 105, at 219.

The fact that these instruments were negotiated in the same way as treaties and were adopted by consensus in FAO²²¹ enhances their legal impacts. The recommendations of the FAO Code of Conduct and its IPOAs could be interpreted as 'generally recommended international minimum standards' that States must 'take into account' when establishing conservation measures for living resources in the high seas under UNCLOS.²²²

Even though, the implementation of the FAO Code of Conduct and its IPOAs is still far from wide-spread, it is noteworthy mentioning some of their impacts. For example, IPOA-Seabirds have propelled the adoption of seven National Plans of Action for Reducing Incidental Catch of Seabirds in Longline Fisheries (NPOA-Seabirds).²²³ As for IPOA-Sharks, 12 States and Taiwan have concluded their respective NPOA-Sharks.²²⁴

Recent negotiations of a non-legally binding Memorandum of Understanding (MoU) to protect sharks species under the Convention on Migratory Species of Wild Animals²²⁵ (CMS) also illustrate how soft-law instruments are cautiously discussed.²²⁶ Even though delegations opted for a non-binding instrument, the text has been carefully revised. Moreover, disagreement over the species to be included in the MoU has yet to be resolved despite the fact that CMS COPs had previously agreed to include seven species of sharks in its Appendices. This demonstrates that soft-law instruments also pass through a lengthy and scrutinized process, where

²²¹ *Ibid.*

²²² See section 1.2 (b); Chapter 2; and UNCLOS, Art. 119 (1) (a).

²²³ The countries that adopted NPOA-Seabirds to date are: Japan, Canada, Uruguay, South Africa, Brazil, New Zealand, and the US. See: FAO, IPOA-Seabirds, online:

<<http://www.fao.org/fishery/ipoa-seabirds/npoa/en>> (accessed on 25 Aug. 09).

²²⁴ The countries and entities that adopted NPOA-Sharks are: Japan, Argentina, Uruguay, Canada, Seychelles, Canada, Malaysia, Ecuador, Australia, Mexico, Taiwan, the UK and the US. In addition, UNEP has developed the Action Plan for the Conservation of Cartilaginous Fishes (Chondriachthyans) in the Mediterranean Sea. See: UNEP MAP-RAC/SPA, *Action Plan for the Conservation of Cartilaginous Fishes (Chondriachthyans) in the Mediterranean Sea* (Tunis: RAC/SPA, 2003).

²²⁵ *Convention on the Conservation of Migratory Species of Wild Animals*, 23 June 1979, 570 U.N.T.S. 1995. [CMS]

²²⁶ For further details see Earth Negotiations Bulletin (IISD) Vol. 18 No. 39, 10 December 2008, online: <<http://www.iisd.ca/download/pdf/enb1839e.pdf>> (accessed on 19 Dec. 08).

States cautiously consider the repercussions of their commitments – even when they are non-legally binding.

From this, it can be seen that UNCLOS should be interpreted in the light of soft-law instruments and policies, such as the FAO Code of Conduct and its IPOAs, the Rio Declaration, Chapter 17 of Agenda 21 and WSSD Plan of Implementation, not to mention UN General Assembly Resolutions addressed further below. As discussed above, even though soft-law instruments are not binding, they do have merit.²²⁷ They are powerful and evolutionary legal tools to be used in interpreting binding instruments as, in this case, they reflect necessary paradigm shifts in fisheries management.

(e) The Convention on Biological Diversity

For the purposes of this work, CBD is a significant treaty that expands on important issues addressed by UNCLOS, providing for, *inter alia*, the conservation of marine biodiversity and taking into consideration the *ecosystems* therein. The legal definition of *ecosystem* provided by CBD is “(...) a dynamic complex of plant, animal and micro-organism communities and their non-living environment interacting as a functional unit.”²²⁸ CBD also considers ecosystems as part of the ‘biological diversity’, clarifying that “[b]iological diversity means the variability among living organisms from all sources including, *inter alia*, terrestrial, marine and other aquatic ecosystems and the ecological complexes of which they are part: this includes diversity within species, between species and of ecosystems.”²²⁹ Bowman explains that the diversity of ecosystems is one of the components of biological diversity; the other ones are “the diversity of species” and the “genetic diversity within species.”²³⁰ He also affirms that:

²²⁷ See also section 1.2 (e) *infra*.

²²⁸ CBD, Article 2.

²²⁹ CBD, Article 2.

²³⁰ M. Bowman, “The Nature, Development and Philosophical Foundations of the Biodiversity Concept in International Law”, in M. Bowman, C. Redgwell (eds.), *International Law and the Conservation of Biological Diversity*. (London: Kluwer Law International, 1996), at 3.

“Of these three elements, the diversity of ecosystems might be regarded as the concept commanding the *highest* level of importance, since all living organisms exist and function not in isolation but as part of a wider environment, occupying a particular niche within their appropriate ecosystem, and it is through the preservation of entire ecosystems that diversity can most effectively be secured.”²³¹

Moreover, CBD and its COP decisions encompass the protection of marine biodiversity as well. It is important to acknowledge the fact that the CBD COP meetings have been discussing fundamental topics intrinsically related to marine EBM/EBFM, based on scientific data and studies conducted by its scientific body and groups of experts. COP Decisions - regardless of being binding or non-binding, achieved by consensus or by majority vote – ought to have a powerful role in this matter. Their negotiations help to elucidate controversial issues, solidifying the idea that there is an urgent need to take conservation measures to protect vulnerable habitats and to avoid depletion of marine species. In consonance with this view, Brunnée states that “[w]ithin COPs and their subsidiary bodies, interactive processes can take shape gradually, procedural and substantive expectations can develop and factual as well as normative understandings can grow.”²³² It is even more accurate in the case of CBD, since all its substantial COP Decisions have been adopted by consensus²³³, given that, so far, State Parties have never agreed on the voting procedure for substantive decisions of Rule 40, Paragraph 1, of the COP Rules of Procedures.²³⁴ As observed by Brunnée, COP processes are more important than their adopted voting procedures, in a sense that majority voting can have a significant legal effect; however, “(...) consensus decision-making, in many cases, may be more conducive to interactional law-making. (...) [C]onsensus-based processes can generate “common feeling”, may be the “key to the building of community consciousness”, and can promote States’ awareness of their “real interests”.²³⁵ In order to demonstrate how CBD has been advancing on issues related to the protection of the marine biodiversity in areas beyond national jurisdiction and also

²³¹ *Ibid.*, at 3.

²³² J. Brunnée, “COPing with Consent: Law-Making under Multilateral Environmental Agreements” (2002) 15 *Leiden Journal of International Law* 1-52, at 39.

²³³ Olivier Jalbert, Secretariat of the Convention on Biological Diversity – Social, Economic and Legal Affairs Principal Officer, pers. comm. on 09 Feb. 07.

²³⁴ UNEP/CBD, “Report of the Eighth Meeting of the Parties to the Convention on Biological Diversity” (2006) Doc. UNEP/CBD/COP/8/31, Item 6.

²³⁵ J. Brunnée (2002), *supra* note 232, at 40.

incorporating the ‘ecosystem approach’ into its COP decisions, a brief history of the respective actions is presented below.

The second Conference of Parties held in Jakarta in November 1995, has an especially important role in the matter. COP 2 adopted a program of action to address the protection of marine and coastal biodiversity, which is entitled the ‘Jakarta Mandate on Marine and Coastal Biological Diversity’.²³⁶ The Programme of Work of the Jakarta Mandate is based on two fundamental principles: the ecosystem approach and the precautionary approach.²³⁷ Its mission is to significantly reduce the rate of “marine and coastal biodiversity loss by the year 2010”.²³⁸ The Programme has essentially six thematic ‘elements’, including, *inter alia*, ‘marine and coastal living resources’ and ‘marine protected areas’, as amended by the Seventh Conference of the Parties in 2004.²³⁹ One of the objectives of the ‘marine and coastal living resources element’ of the Jakarta Mandate includes the promotion of:

“ecosystem approaches to the conservation and sustainable use of marine and coastal living resources, including the identification of key variables or interactions, for the purpose of assessing and monitoring, first, components of biological diversity; second, to sustainable use of such components; and third, ecosystem effects”.²⁴⁰

Other objectives comprise, *inter alia*, the development of policies and strategies to deal with the destruction of crucial habitats including the ones located in marine areas beyond the limits of national jurisdiction, such as cold-water corals and seamount ecosystems, as well as the improvement of conservation and sustainable utilization of biodiversity of marine living resources in such areas.²⁴¹

The Jakarta Mandate set off the development of several activities, including the organization of workshops and the preparation of assessments and reports involving the Subsidiary Body on Scientific, Technical and Technological Advice

²³⁶ CBD, “Jakarta Mandate”, Decision II/10.

²³⁷ UNEP/CBD, “Decisions Adopted by the Conference of the Parties to the Convention on Biological Diversity at its Seventh Meeting” (2004) Doc. UNEP/CBD/COP/7/21, Annex I.

²³⁸ *Ibid.*, at 141.

²³⁹ *Ibid.*

²⁴⁰ *Ibid.*, at 144.

²⁴¹ *Ibid.*

(SBSTTA), *ad hoc* groups of experts and the Executive Secretariat of the Convention. Those activities have been focusing on issues such as the identification of criteria for the selection of location of marine protected areas, the creation of guidelines for the application of the ecosystem-based approach, assessments on management of risks to the biodiversity of seamounts and cold-water coral communities beyond national jurisdiction, among others, as further addressed in Chapters 3 and 5.²⁴²

In 2000, COP 5 agreed on a definition of *ecosystem approach* as “(...) a strategy for the integrated management of land, water and living resources that promotes conservation and sustainable use in an equitable way”.²⁴³ Decision V/6 extensively discourses on the approach and establishes twelve principles of the ecosystem approach.²⁴⁴ In consonance with what was discussed in Section 1, principle 5 states that “conservation of ecosystem structure and functioning, in order to maintain ecosystem services, should be a priority target of the ecosystem approach.”²⁴⁵ Principle 10 considers the importance of balancing conservation and utilisation of biodiversity.²⁴⁶

It is important to mention that on the Sixth meeting of the Conference of the Parties, in 2002, a strategic plan for the Convention on Biological Diversity was adopted in order to significantly reduce biodiversity loss by 2010 (2010 biodiversity target).²⁴⁷ This target should be applied to all programmes of work of the Convention, including the Jakarta Mandate, as discussed above.²⁴⁸ The 2004 COP 7 adopted a framework to assess the achievements towards the 2010 targets.²⁴⁹ In the meantime the SBSTTA and the ‘Ad Hoc Technical Group on the Implementation of

²⁴² CBD, “Jakarta Mandate – Marine and Coastal Biodiversity Other Relevant Documents”. Online: <http://www.biodiv.org/programmes/areas/marine/documents.aspx>

²⁴³ UNEP/CBD, “Decisions Adopted by the Conference of the Parties to the Convention on Biological Diversity at its Fifth Meeting” (2000) Doc. UNEP/CBD/COP/5/23, Decision V/6, Annex A, Para. 1.

²⁴⁴ *Ibid.*, Annex A, B (6).

²⁴⁵ *Ibid.*, Annex A, B (6) Principle 5, at 106.

²⁴⁶ *Ibid.*, Annex A, B (6) Principle 10, at 107.

²⁴⁷ UNEP/CBD, “Decisions Adopted by the Conference of the Parties to the Convention on Biological Diversity at its Sixth Meeting” (2002) Doc. UNEP/CBD/COP/6/20.

²⁴⁸ UNEP/CBD, “Goals and Targets Relevant to Management of Marine and Coastal Resources Adopted by International Processes” (2005) Doc. UNEP/CBD/IMCAM/1/ INF/2.

²⁴⁹ UNEP/CBD/COP/7/21 (2004), *supra* note 237, Decision VII/30.

Integrated Marine and Coastal Area Management' have been conducting studies and providing recommendations on how to achieve the 2010 biodiversity target in regards to the marine and coastal programmes of work.²⁵⁰ One of the recommendations is the conservation of at least ten percent of each of the world's 'ecological regions'.²⁵¹ This target should be applied to different ecosystems, including areas beyond national jurisdiction, which have been under-represented, in accordance with the "technical rationale" provided by the *Ad Hoc* Technical Expert Group on the Implementation of Integrated Marine and Coastal Area Management.²⁵² The delimitation of 'ecological regions' is based on the WWF definition, as follows: "a large unit of land or water containing a geographically distinct assemblage of species, natural communities, and environmental conditions. The boundaries of an ecoregion encompass an area within which important ecological and evolutionary processes most strongly interact."²⁵³ However, a large portion of marine areas beyond national jurisdiction is not included into the ecoregions established by WWF. Thus, the *Ad Hoc* Technical Expert Group on the Implementation of Integrated Marine and Coastal Area Management suggested that such areas should be addressed separately under the target 1.1.²⁵⁴ The Expert Group emphasized that:

"These areas contain a large amount of biodiversity that is highly threatened, and should therefore be afforded urgent and increased protection through international cooperative efforts and in the context of international law if the 10% target to be reached. For areas outside of national jurisdiction, the World Parks Congress in recommendation 5.23 put forward a target figure of five high-seas marine protected areas by the year 2008. Such marine protected areas should be scientifically significant and globally representative, and, in accordance with decisions VII/5 and VII/28, be established consistent with international law and based on scientific information."²⁵⁵

Target 1.2 refers to the protection of areas of particular importance to biodiversity.²⁵⁶ The idea here is to protect vulnerable ecosystems, which are currently under threat by destructive activities, including fishing practices, such as bottom

²⁵⁰ UNEP/CBD/IMCAM/1/INF/2 (2005), *supra* note 248.

²⁵¹ *Ibid.*, at Annex I, Goal 1, Target 1.1.

²⁵² *Ibid.*

²⁵³ WWF, *Ecoregion Action Programmes – A Guide for Practitioners*, (Washington: WWF, 2004) at 2.

²⁵⁴ UNEP/CBD/IMCAM/1/INF/2 (2005), *supra* note 248, Annex II, Paragraph 13.

²⁵⁵ *Ibid.*, Annex II, Paragraph 13.

²⁵⁶ *Ibid.*, Annex I, target 1.2.

trawling.²⁵⁷ Following this line, the *Ad Hoc* Technical Expert Group on the Implementation of Integrated Marine and Coastal Area Management, in regards to the proposed target 1.2, recognized the urgent need to protect seamounts, which are described by the Group as “unique islands of deep-sea biodiversity”²⁵⁸ and suggested the following:

“Effective protection in regards to seamounts and cold water coral reefs can be achieved through the prohibition of certain activities detrimental for their biodiversity, such as bottom trawling, and through application of tools, such as marine protected areas.”²⁵⁹

Vulnerable ecosystems had been previously addressed by Decision VII/5 of the Seventh Conference of the Parties held in Malaysia in February 2004.²⁶⁰ The Decision VII/5 addressed issues such as the need to establish marine protected areas in areas beyond national jurisdiction and conservation and sustainable use of biological diversity in marine areas beyond the limits of national jurisdiction. The COP 7 agreed that immediate action must be taken in protecting marine biodiversity in areas beyond national jurisdiction due to the increasing risks to ecosystems and species in these areas.²⁶¹ Parties to the Convention also agreed, under paragraph 30 of Decision VII/5, that there is an urgent need of establishing marine protected areas for vulnerable ecosystems beyond the limits of national jurisdiction, including seamounts and cold-water coral reefs.²⁶² In order to achieve this goal, the Executive Secretariat of CBD was required to work in close cooperation with the Secretary General of the United Nations and related international bodies.²⁶³ Paragraph 25 of Decision VII/28 established the *Ad Hoc* Open-Ended Working Group on Protected Areas in order to, *inter alia*, assess options for cooperation in creating marine protected areas beyond national jurisdiction.²⁶⁴ COP 7 also called upon the United Nations General Assembly and other international and regional organizations to take

²⁵⁷ *Ibid.*, Paragraphs 16 and 17.

²⁵⁸ *Ibid.*, Annex II, Paragraph 19.

²⁵⁹ *Ibid.*, Annex II, Paragraph 20.

²⁶⁰ UNEP/CBD/COP/7/21 (2004), *supra* note 237.

²⁶¹ UNEP/CBD/IMCAM/1/INF/2 (2005), *supra* note 248.

²⁶² *Ibid.*

²⁶³ UNEP/CBD/COP/7/21 (2004), *supra* note 237, Decision VII/5, Paragraph 31.

²⁶⁴ *Ibid.*, Decision VII/28, Paragraph 29 (a).

actions to eliminate and/or avoid destructive practices, especially in seamounts and cold-water coral reefs in areas beyond national jurisdiction.²⁶⁵

COP 7 also made progress in addressing the ecosystem approach.²⁶⁶ The Decision VII/11 comprehensively explains the concept and notes the importance of integrating approaches such as “responsible fisheries” and “integrated marine and coastal area management” in order to be “consistent with the application of the Convention’s ecosystem approach”.²⁶⁷ It also establishes guidelines for its implementation.²⁶⁸

In June 2005, the *Ad Hoc* Open-Ended Working Group on Protected Areas held its first meeting in Italy. Some of the recommendations adopted by the Working Group to the eighth Conference of the Parties were:

- i) The establishment of marine protected areas in areas beyond national jurisdiction;
- ii) The cooperation among Parties to the Convention to protect seamounts and cold-water corals;
- iii) The adoption by States of actions to halt and avoid illegal, unreported and unregulated (IUU) fishing activities;
- iv) The adoption of more efficient conservation measures by RFMOs through the Parties of CBD who are also members to such organizations;
- v) The adoption of measures to consider on a case-by-case basis the interim prohibition of destructive fishing activities, such as bottom trawling.²⁶⁹

Furthermore, it was suggested that Parties to CBD should propose the adoption of an implementing agreement to UNCLOS for the conservation and

²⁶⁵ *Ibid.*, Decision VII/5, Paragraph 61

²⁶⁶ *Ibid.*, Decision VII/11.

²⁶⁷ *Ibid.*, Decision VII/11, Para. 8.

²⁶⁸ *Ibid.*, Decision VII/11, Annex I.

²⁶⁹ UNEP/CBD, “Report of the First Meeting of the Ad Hoc Open-Ended Working Group on Protected Areas” (2005) Doc. UNEP/CBD/WG-PA/1/6.

sustainable use of marine biological diversity in areas beyond the limits of national jurisdiction and/or for the establishment and management of marine protected areas in such areas.²⁷⁰

The 2006 COP 8 Decision VIII/9 noted the urgent necessity to address overfishing as one of the most impacting activities to biodiversity.²⁷¹ Parties were urged to cooperate “among international organisations and to promote the integration of biodiversity concerns into all relevant sectors by coordinating their national positions among the various conventions and other international forums in which they are involved (...)”.²⁷² In regards to the protection of ecosystems in marine areas beyond national jurisdiction, COP 8 urged States to collaborate and implement conservational measures, including, the creation of marine protected areas.²⁷³ Decision VIII/24 dedicates a whole section to “Options for cooperation for the establishment of marine protected areas in marine areas beyond the limits of national jurisdiction”, which is addressed in Chapter 5. In 2008, COP 9 adopted a scientific criterion for identifying ecologically or biologically significant marine areas in need of protection as discussed in Chapters 3 and 5.

In view of this, interpreting UNCLOS without taking into consideration the CBD would not be completely correct. As discussed above, CBD also provides for the conservation of the marine environment and its COPs have been addressing evolving issues regarding the protection of vulnerable marine ecosystems located in areas beyond the limits of national jurisdiction. These provisions do not contradict UNCLOS; they expand on issues that UNCLOS did not consider in 1982 when it was adopted. It is true that, in principle, there could be cases where, for example, the UNCLOS ‘freedom of fisheries’ would conflict with CBD provisions on establishment of marine protected areas in order to conserve biological diversity.

²⁷⁰ *Ibid.*

²⁷¹ UNEP/CBD, “Decisions adopted by the Conference of the Parties to the Convention on Biological Diversity at its Eighth Meeting” (2006), Doc.UNEP/CBD/COP/8/31, Decision VIII/9, Para. 13 (a).

²⁷² *Ibid.*, Decision VIII/16, Para. 1.

²⁷³ *Ibid.*, Decision VIII/24, Para. 11.

Fitzmaurice and Elias consider that the objectives of UNCLOS and CBD are different.²⁷⁴ In their opinion:

“The main purpose of UNCLOS, in relation to environmental protection, is to protect specific marine living resources in order to safeguard human food resources. The CBD is broader and seeks to protect all components of biological diversity – species, genetic diversity and ecosystems, in order to safeguard long-term preservation and sustainable development.”²⁷⁵

Even though the objectives of UNCLOS and CBD, in principle, appear to be different it should be noted that the CBD goals reinforce the UNCLOS purposes. As discussed in section 1.1, if ecosystem-based approach (which includes protection of marine habitats and respective biodiversity) is not implemented, fisheries can not be sustained. Worm et al predict a global fishery collapse by the year of 2048 if ecosystem-based measures, such as the creation of marine protected areas, are not adopted.²⁷⁶ In view of this, there is no contradiction between UNCLOS and CBD. As discussed already, even though UNCLOS acknowledges the MSY concept, it also refers to the need to manage fisheries, taking into consideration the inter-relation of dependent species - a principle of EBFM/EBM. Another noteworthy aspect of UNCLOS is that it provides for the obligation of States to protect and preserve the marine environment.²⁷⁷ A State’s right to exploit natural resources does not preclude its “duty to protect and preserve the marine environment”.²⁷⁸ The protection of the marine environment includes the protection of marine habitats, which, again, is part of EBFM/EBM principles. In effect, the measures prescribed by UNCLOS to prevent, reduce and control pollution of the marine environment “shall include those necessary to protect and preserve rare or fragile ecosystems as well as the habitat of depleted, threatened or endangered species and other forms of marine life.”²⁷⁹ Thus, UNCLOS provisions serve as a sound basis for the EBFM/EBM principles on the protection of marine habitats, while CBD provides a

²⁷⁴ M. Fitzmaurice, O. Elias, *Contemporary Issues in the Law of Treaties*, (Utrecht: Eleven International Publishing, 2005).

²⁷⁵ *Ibid.*, at 333

²⁷⁶ B. Worm, et al (2006), *supra* note 17.

²⁷⁷ UNCLOS, Art. 192.

²⁷⁸ UNCLOS, Art. 193.

²⁷⁹ UNCLOS, Art. 194 (5).

more comprehensive approach to the protection of marine habitats, expanding on UNCLOS provisions. The International Law Commission notes that:

“(...) [l]awyers may disagree about what the objective of a rule or a behaviour is. But it does not follow that no such objective at all can be envisaged. Much legal interpretation is geared to linking an unclear rule to a purpose and thus, by showing its position within some system, to providing a justification for applying it in one way rather than in another. (...)
(...) Legal interpretation, and thus legal reasoning, builds systemic relationships between rules and principles by envisaging them as parts of some human effort or purpose”²⁸⁰

Legal interpretation is a controversial issue; however, it is imperative to recognise the importance of evolving issues in international law. Due to the difficulty imposed by a treaty-making process, including treaty amendments (i.e., *inter alia*, negotiation and ratification processes that take a long period of time), there must be a way of interpreting treaties in light of other norms of international law that reflect the social and the scientific views of the present time. As seen above, the Vienna Convention fulfils this need, by adopting the ‘principle of systematic integration’ in Article 31 (3) (c).²⁸¹ Article 31 (3) (c) states that: “any relevant rules of international law applicable in the relations between the parties” must be taken into consideration when interpreting a treaty. The ILC makes a clear interpretation of this Article:

“The point is only – but it is a key point – that the normative environment cannot be ignored and that when interpreting the treaties, the principle of integration should be borne in mind. This points to the need to carry out the interpretation so as to see the rules in view of some comprehensible and coherent objective, to prioritize concerns that are more important at the cost of less important objectives. This is all that article 31 (3) (c) requires; the integration into the process of legal reasoning – including reasoning by courts and tribunals – of a sense of coherence and meaningfulness.”²⁸²

Under Article 311 (3) of UNCLOS it would be possible to integrate CBD and UNCLOS, since they do not oppose each other.²⁸³ As referred to above, they complement each other in respect of the protection of the marine environment. Furthermore, Article 22 (1) of CBD establishes that:

²⁸⁰ ILC, *supra* note 122, Paras. 34 and 35.

²⁸¹ *Ibid.*

²⁸² *Ibid.*, Para. 419

²⁸³ *Ibid.*

“The provisions of the present Convention shall not affect the rights and obligations of any Contracting Party deriving from any existing international agreement, except where the exercise of those rights and obligations would cause serious damage or threat to biological diversity.”²⁸⁴

In light of this, Boyle states that it is possible that CBD modified UNCLOS provisions concerning fisheries in the EEZ and in the high seas.²⁸⁵

The ILC considers that when interpreting a treaty, “[t]he starting-point is the treaty itself, with interpretation proceeding from the more concrete and obvious (dictionary, context), to the less tangible and less obvious (*object and purpose, analogous treaties* etc.) in order to give the text a justifiable meaning”²⁸⁶ [Emphasis added]. This is in perfect consonance with the idea of interpreting UNCLOS in the light of CBD provisions and COP decisions on the application of EBA. As an example of evolutionary interpretation of treaties, it is worthy mentioning the decision of the Appellate Body of the WTO on the *Shrimp-Turtle* case, where the United States banned imports of shrimp and shrimp related products harvested without turtle-excluder devices.²⁸⁷ India, Pakistan and Thailand alleged that the US ban on shrimp’s imports did not qualify for the free trade exemption of Article XX (g) of the GATT²⁸⁸ because turtles are not ‘exhaustible resources’.²⁸⁹ The Appellate Body rejected this argument, providing a comprehensive interpretation of the term in the light of scientific findings²⁹⁰ and recent legal instruments (including both soft²⁹¹ and hard law²⁹²) as follows:

“128. (...). One lesson that modern biological sciences teach us is that living species, though in principle, capable of reproduction and, in that sense, “renewable”, are in certain circumstances indeed susceptible of depletion,

²⁸⁴ CBD, Article 22 (1).

²⁸⁵ A. Boyle, “Relationship between International Environmental Law and Other Branches of International Law” pp.125-145, in D. Bodansky, J. Brunnée, E. Hey (eds.), *The Oxford Handbook of International Environmental Law* (Oxford: Oxford University Press, 2007).

²⁸⁶ ILC (2006), *supra* note 122, Para. 264.

²⁸⁷ WTO, *Shrimp-Turtle Case – Report of the Appellate Body* (1998), *supra* note 116.

²⁸⁸ GATT, *supra* note 117.

²⁸⁹ WTO, *Shrimp-Turtle Case – Report of the Appellate Body* (1998), *supra* note 116, Para. 127.

²⁹⁰ *Ibid.*, Para. 128.

²⁹¹ The Appellate Body refers even to the Agenda 21 in order to interpret the expression ‘exhaustible resources’. (*Ibid.*, Para. 130.)

²⁹² The Appellate Body also considers treaties such as the CBD and UNCLOS. (*Ibid.*, Para. 130.)

exhaustion and extinction, frequently because of human activities. Living resources are just as "finite" as petroleum, iron ore and other non-living resources.

129. The words of Article XX(g), "exhaustible natural resources", were actually crafted more than 50 years ago. They must be read by a treaty interpreter in the light of contemporary concerns of the community of nations about the protection and conservation of the environment. (...)

130. From the perspective embodied in the preamble of the *WTO Agreement*, we note that the generic term "natural resources" in Article XX(g) is not "static" in its content or reference but is rather "by definition, evolutionary". It is, therefore, pertinent to note that modern international conventions and declarations make frequent references to natural resources as embracing both living and non-living resources. For instance, the 1982 United Nations Convention on the Law of the Sea ("UNCLOS"), in defining the jurisdictional rights of coastal states in their exclusive economic zones, provides: (...)

(...) The Convention on Biological Diversity uses the concept of "biological resources". Agenda 21 speaks most broadly of "natural resources" and goes into detailed statements about "marine living resources". In addition, the Resolution on Assistance to Developing Countries, adopted in conjunction with the Convention on the Conservation of Migratory Species of Wild Animals, recites: (...)²⁹³

From this, it can be said that there is a legal basis for the implementation of EBA/EBFM/EBM in marine areas beyond national jurisdiction. Even though the CBD COP decisions on ecosystem approach and conservation of biodiversity in marine areas beyond national jurisdiction only provide recommendations, they are part of a bigger legal system and reflect a consensual agreement of the Parties. They may not be binding, but it is undeniable that they generate legal effects. When discussing the idea of COP as legislatures, Brunnée recognises that COP powers comprise a 'grey zone' of law-making within international law.²⁹⁴ However, she notes that:

"States (and other international actors), through their interaction, influence the scope and content of international norms and institutions. In turn, these norms and institutions furnish the context within which interaction takes place and shape the identities of the actors themselves. (...) Since all norms can shape the identities of States, both legal and non-legal norms can be influential."²⁹⁵

As discussed in the following section, the interactions that have been created among institutions such as the United Nations Division for Ocean Affairs and the Law of the Sea (DOALOS), the CBD Secretariat, FAO, the International Seabed

²⁹³ *Ibid.* at 47-49.

²⁹⁴ J. Brunnée (2002), *supra* note 232, at 32.

²⁹⁵ *Ibid.*, at 34.

Authority (ISA) corroborate with Brunnée’s vision of COP legislative power. Under her opinion:

“(…) COPs can be engaged in legislative activity whether or not their decisions are binding in a formal sense. (…) ‘Legislation’, then, is not law because it was produced by a ‘legislature’ in the conventional sense but because it was generated through a successful interactive process, is congruent with the expectations of society and meets internal requirements. Therefore, when we think of COPs as legislatures, we should think of them as collectives that are engaged in law-making in this richer sense, rather than in the purely formal sense.”²⁹⁶

Therefore, COPs are important mechanisms towards achieving a common view and changing standards that are not effective any longer. CBD and its COPs have been providing evidence of this phenomenon. Moreover, these COPs have been recognising the importance of integration among treaties and agreements that have subject interactions with CBD, such as UNCLOS and UNFSA. This is additional evidence of the consent of the CBD Parties to interpret UNCLOS and UNFSA in conjunction with CBD. As seen above, the *Bluefin Tuna*²⁹⁷ and the *Shrimp-Turtle*²⁹⁸ cases also show the importance of interpreting treaties and specific terms within a treaty in a systemic and evolutionary way.²⁹⁹ From those cases, it is possible to assume that CBD COP decisions on the application of EBA to marine fisheries in marine areas beyond national jurisdiction – despite their non-binding characteristic - contribute to the creation of a new legal order, filling UNCLOS gap. It is noteworthy to mention that UNCLOS did not provide for a comprehensive legal regime in the high seas, incorporating EBFM and EBM measures to their full potential. However, it is also true that scientific findings have been advancing since 1982 and today we know that the high seas are not a desert as was believed at that time. Moreover, the 1995 UNFSA endeavours to supplement this gap. The CBD scientific body, as well as many other organisations, such as WWF, Greenpeace, IUCN, FAO, etc, have been conducting relevant studies about high seas marine ecosystems and making significant contributions to the CBD COP meetings as well as to the United Nations Open-ended Informal Consultative Process on Oceans and

²⁹⁶ *Ibid.*, at 38.

²⁹⁷ *Southern Bluefin Tuna Case* (2000), *supra* note 195, Para. 52.

²⁹⁸ WTO, *Shrimp-Turtle Case – Report of the Appellate Body* (1998), *supra* note 116, Paras. 128-130.

²⁹⁹ See sections 1.2 (c), and 1.2 (e) above.

the Law of the Sea (ICP). All these discussions lead to the evolution of the Law of the Sea. Once incorporated into CBD COP Decisions and in UNGA Resolutions, consensus among States will be enhanced on the need to have a new paradigm for fisheries management in areas beyond the limits of national jurisdiction. This new paradigm should be the ecosystem-based management.

(f) United Nations General Assembly Resolutions

UNGA Resolutions are another example of soft-law instruments. UNGA Resolutions on Oceans and the Law of the Sea provide for the development of UNCLOS and are based on previous discussions held at the ICP³⁰⁰ and the Secretary-General's Reports on the subject. It is possible to say that the role of ICPs is comparable to the CBD COPs, in the sense that delegates have the opportunity to thoroughly discuss developments of their respective Conventions, tackling their trends and constraints, through the adoption of a legal document. In the case of COPs, this legal document is the COP Decisions; while in the case of ICP, the final recommendations are taken into consideration by the General Assembly, when adopting its Resolution on oceans and the law of the sea.³⁰¹ However, there is a fundamental difference between them: COP Decisions are adopted only by Parties to the Convention, while in the case of UNGA Resolutions, obviously, they are voted by UN members. ICP meetings are also supposed to be attended by all UN members, whether parties or non-parties to UNCLOS, as well as States Parties of specialised agencies, and invited institutions to participate as observers, as well as ocean-related intergovernmental organisations.³⁰²

General Assembly Resolutions on 'Oceans and the Law of the Sea' and on 'Sustainable Fisheries' constitute evolving instruments of UNCLOS and UNFSA. These resolutions have been constantly addressing issues relating to conservation and management of fisheries resources in areas beyond national jurisdiction, and more

³⁰⁰ UNGA Resolution A/RES/54/33 (2000).

³⁰¹ *Ibid.*

³⁰² *Ibid.*

recently have been addressing the need to implement ecosystem approaches to ocean management.³⁰³

It is noteworthy that the 2006 GA Resolution A/RES/61/105 urges all States to implement the precautionary and the ecosystem approaches, in accordance with international law and particularly to the FAO Code of Conduct, with respect to the “conservation, management and exploitation of fish stocks, including straddling fish stocks, highly migratory fish stocks a *discrete high seas fish stocks* (...)”³⁰⁴ [emphasis added]. It demonstrates the need to include the discrete fish stocks - that were left behind by UNFSA - into the new management regime, which encompasses the precautionary approach as described by UNFSA and the ecosystem based approach. From what was seen in section 1.1, it is possible to affirm that this UNGA Resolution paragraph generally describes the need to implement the EBFM. The Resolution’s provisions call upon States to implement the ecosystem and precautionary approaches, and paragraph 7 includes the need to adopt conservation measures that address, “*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.”³⁰⁵ Also, in accordance with what was demonstrated in section 1.1, this paragraph clearly refers to EBM, since it addresses the impacts of other sectoral activities, such as pollution. This Resolution also stresses the importance of RFMOs in establishing conservation measures in consonance with the precautionary approach and EBA, as further addressed in Chapter 4. It also highlights the need of States to assess the impacts of bottom trawling and to refrain from conducting such activity in vulnerable ecosystems, such as seamounts, hydrothermal vents and cold water corals.³⁰⁶ However, as demonstrated in Chapter 2, the Resolution failed to adopt a bottom

³⁰³ E.g.: UNGA Res. A/RES/59/24 (2004), GA Res. A/RES/60/30 (2005), GA Res. A/RES/61/105 (2006), etc.

³⁰⁴ UNGA Res. A/RES/61/105 (2006), Para. 5.

³⁰⁵ *Ibid.*, Para. 7.

³⁰⁶ *Ibid.*

trawling ban on the high seas, as several environmental NGOs had advocated for, since an agreement could not be reached by States during the negotiations.³⁰⁷

Finally, the Resolution endorses the CBD target to apply the EBA to fisheries management by 2010,³⁰⁸ which indicates States' support for a systemic interpretation of UNCLOS and CBD. It is worth mentioning that this Resolution was adopted by consensus,³⁰⁹ reflecting the *opinio juris* of the States and therefore its legal impact is enhanced. An example of the recognition of certain UNGA Resolutions as *opinio juris* by the ICJ is found at the *Nicaragua case*,³¹⁰ as follows:

“(...) The Court has however to be satisfied that there exists in customary international law an *opinio juris* as to the binding character of such abstention [in reference to Article 2, paragraph 4 of the UN Charter³¹¹, which states: “[a]ll Members shall refrain in their international relations from the threat or use of force against the territorial integrity or political independence of any state, or in any other manner inconsistent with the purposes of the United Nations.”]. This *opinio juris* may, though with all due caution, be deduced from, *inter alia*, the attitude of States towards certain General Assembly Resolutions, (...). The effect of consent to the text of such resolutions cannot be understood as merely that of a “reiteration or elucidation” of the treaty commitment undertaken in the Charter. On the contrary, it may be understood as an acceptance of the validity of the rule or set of rules declared by the resolution by themselves. (...)”³¹²

This is a controversial issue though. In accordance with the UN Charter, the General Assembly can only provide recommendations, apart from a few specific issues upon which it can set rules.³¹³ Danilenko affirms that this argument is reinforced by the fact that States usually do not recognise UNGA Resolutions as binding rules. Accordingly, States usually deny that such Resolutions might be

³⁰⁷ CBC, “UN rejects bottom trawling ban”, online:

<<http://www.cbc.ca/world/story/2006/11/23/trawling-ban-denied.html>> (accessed 24 Nov. 2006).

³⁰⁸ UNGA Res. A/RES/61/105 (2006).

³⁰⁹ Division for Ocean Affairs and the Law of the Sea, Oceans, Oceans and the Law of the Sea in the General Assembly of the United Nations General Assembly resolutions and decisions, online: <http://www.un.org/Depts/los/general_assembly/general_assembly_resolutions.htm> (accessed in 13 Feb. 07)

³¹⁰ *Case Concerning Military and Paramilitary Activities in and Against Nicaragua (Nicaragua v. United States of America)*, Merits, (1986) ICJ Rep. 14. [*Nicaragua Case*]

³¹¹ *Charter of the United Nations*, 26 June 1945, Can. T.S. 1945 No. 7.

³¹² *Nicaragua Case* (1986), *supra* note 310, Para. 188.

³¹³ G. Danilenko, *Law-Making in the International Community*, (London: Martinus Nijhoff Publishers, 1993).

considered customary or a source of international law.³¹⁴ As demonstrated above in the *Nicaragua Case*, ICJ did not state that GA Resolutions were customary law. However, it was affirmed that they could be seen in certain cases as *opinio juris* of States. Boyle notes that the *Nicaragua case*, the *Nuclear Weapons Advisory Opinion* and the *Gabcikovo-Nagymaros Dam case* are good examples of UNGA Resolutions and intergovernmental declarations expressing States *opinio juris*.³¹⁵ Moreover, as an expression of *opinio juris*, Fitzpatrick states that “[r]esolutions of the General Assembly can have an effect on international law either by serving as the basis for the development of customary law (state practice accepted as law), or through the subsequent incorporation of the principles contained in the resolution into a legally binding instrument.”³¹⁶ In the case of the GA Resolutions on the Law of the Sea, it is important to emphasise that they have the role of reviewing the developments of ocean affairs since the adoption of UNCLOS. Having said that, in accordance to the VCLT Art. 31 (3) (a), the *opinio juris* of States reflected in such instruments should be viewed as an interpretation of UNCLOS in the light of new developments of oceans affairs. It is not a matter of modifying UNCLOS. However, reaching consensus on a Resolution that calls for the adoption of the ecosystem-based approach to fisheries management in marine areas beyond national jurisdiction, which is not contrary to UNCLOS provisions and principles, should be considered an expression of *opinio juris* that ultimately leads to a systemic and evolutionary interpretation of UNCLOS. From this, it is clear that the implementation of EBFM in the high seas is consistent with the rules of international law.

As referred to before in this Chapter, scientists have been predicting the collapse of fish stocks around the world due to the unsustainable fishing practices in addition to the destruction of vulnerable ecosystems that serve as a habitat to endemic species. The application of ecosystem-based management - in conjunction with measures such as the combat of illegal, unreported and unregulated fishing, among others - has been seen as an important instrument to rebuild depleted stocks

³¹⁴ *Ibid.*

³¹⁵ A. Boyle (1999), *supra* note 192.

³¹⁶ D. Fitzpatrick, “The United Nations General Assembly and the Security Council”, 3-20, in J. Werksman (ed.) *Greening International Institutions* (London: Earthscan Publications Limited, 1996), at 06.

and prevent the collapse of stocks, as well as to protect critical ecosystems, as discussed in Chapter 2. Moreover, the problem associated with the principle of freedom of the high-seas, leaves such areas even more susceptible to depletion. In view of this, all the discussions that have been held at the CBD COPs and ICP meetings followed by the adoption of COP Decisions and UNGA Resolutions support the creation of a new fisheries management paradigm, including the application of EBM to marine areas beyond national jurisdiction. *Ad Hoc* working groups have been established both by CBD Secretariat and by the General Assembly to address issues such as the implementation of high seas marine protected areas,³¹⁷ (as discussed in Chapter 5) and the conservation of marine biodiversity in areas beyond national jurisdiction, respectively.³¹⁸ All of this is part of the evolution of the Law of Sea that cannot be static in a non-static world.

An example of the important role of UNGA discussions, and therefore of approved Resolutions, in generating new paradigms was the adoption - without opposition and with 16 abstentions³¹⁹ - of Resolution 2749 in 1970, which established the 'Declaration of Principles Governing the Sea-Bed and the Ocean Floor, and the Subsoil Thereof, beyond the Limits of National Jurisdiction'.³²⁰ The Declaration applied the principle of common heritage of mankind to the "sea-bed and ocean floor, and the subsoil thereof, beyond the limits of national jurisdiction [the Area], as well as the resources of the area",³²¹ as latterly incorporated into UNCLOS text. The idea of applying the principle of the common heritage of mankind to the seabed areas beyond the limits of national jurisdiction was first envisaged by Malta's Ambassador to the United Nations, Arvid Pardo.³²² During his speech at the UN in 1967, Pardo considered the dangerous results of having national appropriations of the Area, defending the establishment of an international regime based on the principle

³¹⁷ UNEP/CBD/COP/7/21 (2004), *supra* note 237, Decision VII, Para. 25.

³¹⁸ UNGA Res. A/RES/59/24 (2005), Para. 73.

³¹⁹ D. Fitzpatrick (1996) *supra* note 316.

³²⁰ UNGA Res. 2749 (1970).

³²¹ *Ibid.*, Para. 1.

³²² DOALOS, "The United Nations Convention on the Law of the Sea – a Historical Perspective", Online:

<http://www.un.org/Depts/los/convention_agreements/convention_historical_perspective.htm> (accessed on 14 Feb. 07.)

of common heritage of mankind.³²³ In this regard, Elisabeth Mann Borgese makes the following comment:

“(…) Arvid Pardo stressed the enormous importance of the world ocean to the wealth and welfare of the human race, throughout history and for the future. How the development of science and technology had intensified and diversified ocean uses and led to conflicts between uses as well as between users. The traditional law of the sea, based on the freedom of the high seas with national jurisdiction restricted to a narrow belt of coastal water, called the territorial sea, had become obsolete and dysfunctional. Neither sovereignty nor freedom could resolve these problems and cope with the mounting perils of pollution, the extinction of living resources and armed conflict. A new principle was needed as a basis for a new Law of the Sea. This principle was to be that of the Common Heritage of Mankind which transcended both sovereignty and freedom.”³²⁴

From this, it is possible to make an analogy with what happened in the sixties and seventies during the UN discussions and negotiations, which resulted in the adoption of the principle of common heritage of mankind (thereafter incorporated by UNCLOS) to the discussions that have been currently occurring in regards to fisheries management in the high seas. As Borgese observed, there was a need to change the old regime that was no longer functional. Following years of discussions, meetings and negotiations, the old regime was transformed. We are experiencing the same need for transformation concerning fisheries management in marine areas beyond national jurisdiction. This time, it is even easier, since UNCLOS, UNFSA and CBD provide the legal basis for the adoption of EBFM. However, from what was said, the United Nations has an important role in the achievement of this goal. The following section will address the role of some UN bodies in the matter.

³²³ *Examination of the question of the reservation exclusively for peaceful purposes of the seabed and the ocean floor, and the subsoil thereof, underlying the high seas beyond the limits of present national jurisdiction, and the use of their resources in the interests of mankind*, 22nd Sess., GA Docs. A/C.1/PV. 1515 and A/C.1/PV. 1516 (1967).

³²⁴ E. Mann Borgese, “The Years of my Life”, 1-21, in Aldo Chirchop and Moira McConnell (eds), 18 *Ocean Yearbook* (Chicago and London: The University of Chicago Press, 2004), at 11-12.

1.3 Role of UN Bodies

The purpose of this section is to briefly highlight the fundamental roles of three UN Bodies in dealing, directly or indirectly, with fisheries management in regards to EBFM. They are FAO, the Division for Ocean Affairs and the Law of the Sea and the International Seabed Authority.

As was emphasised in the first section, the implementation of ecosystem-based management in the marine environment would require coordination and integration of all sectoral institutions, including, for example, the IMO, in regards to marine pollution. On the other hand, when talking about ecosystem-based fisheries management as a step towards EBM, the primary need is for coordination and integration of fisheries related bodies, including institutions that deal with habitat protection. As stated by Boyle:

“Reliance on institutional machinery in the form of intergovernmental commissions and meetings of treaty parties as a means of co-ordinating policy, developing the law, supervising its implementation, resolving conflicts of interest and putting community pressure on individual States, meets these needs [to recognise that dispute settlement between States over environmental problems may be inadequate to deal with issues that are of common interest of human and non-humankind] much more flexibly and effectively than traditional bilateral forms of dispute settlement.”³²⁵

Porter, et al identify four ways in which international organisations can affect global environmental issues. They are as follows:

- “It may set the agenda for global action, determining which issues the international community will deal with.
- I[t] may convene and influence negotiations on global environmental regimes.
- It may develop normative codes of conduct (soft law) on various environmental issues.
- It may influence state policies on issues that are not under international negotiation.”³²⁶

³²⁵ A. Boyle, “Saving the World? Implementation and Enforcement of International Environmental Law through International Institutions”, (1991) 3 *Journal of Environmental Law* 229-246, at 230.

³²⁶ G. Porter, J. Brown, P. Chasek, *Global Environmental Politics*, Third Ed. (Boulder: Westview Press, 2000), at 45.

With this in mind, this section addresses some significant initiatives on EBFM/EBM adopted by FAO and DOALOS, and finally, takes a brief look at the role of the ISA within this context. It is noteworthy that notwithstanding the fact that pollution is an important component to be considered in EBM, it is not within the scope of this work to address IMO initiatives. Also, the CBD Secretariat has been playing a very important role in this scenario, but CBD COPs Decisions on marine EBA were extensively discussed in the previous section, not requiring further analysis in the current section. Chapter 5 then addresses studies and recommendations of CBD in regards to criteria for location of high seas marine protected areas.

(a) Food and Agriculture Organization of the United Nations

The FAO has been developing important studies, as well as organising conferences and workshops on EBFM.³²⁷ As noted by Porter:

“The FAO Secretariat has helped mobilize international support for more sustainable fisheries management by collecting and analyzing data on global fish catch, issuing annual reviews on the state of the world’s fisheries, and organizing technical workshops. These efforts have focused government and NGO attention on such issues as excess fishing capacity and fisheries subsidies.”³²⁸

In regards to EBFM, FAO’s assessments and studies have been recognising that fisheries management must incorporate the ecosystem-based approach. As noted by the FAO COFI, “[t]he Ecosystem Approach to Fisheries (EAF) is becoming the main reference framework for managing fisheries and implementing the principles of sustainable development.”³²⁹ It is an absolute significant statement made by FAO, which indicates that the EBFM principles will have to be incorporated into all its policy and recommendations henceforth. FAO initiatives on EBFM are not a recent thing. As mentioned above, the 1995 UNFSA as well as the Code of Conduct for Responsible Fisheries are good examples of the FAO’s attempt to introduce EBFM

³²⁷ FAO, *Implementing the Ecosystem Approach to Fisheries, including Deep-Sea Fisheries, Biodiversity Conservation, Marine Debris and Lost or Abandoned Fishing Gear*, Doc. COFI/2007/8 (2006).

³²⁸ G. Porter, et al (2000), *supra* note 326, at 51.

³²⁹ Doc. COFI/2007/8 (2006), *supra* note 327, Para. 1.

into international law. As already discussed, the fact that UNFSA had not been signed by significant fishing countries such as Chile and Peru, and had not been ratified by larger fishing States such as China for example, is still a big concern.³³⁰ However, it is noteworthy that the recent accessions of Japan and the Republic of Korea indicate a gradual acceptance of the Agreement by the international community. In regards to the Code of Conduct, being a soft-law instrument makes its implementation voluntary by States. However, the resistance of Governments to changing their traditional management approaches can slowly be broken by comprehensive studies and broad discussions in international forums on the benefits of implementing EBFM.³³¹ COFI observes that meetings such as the 2006 ICP and the 2006 Bergen Conference produced a positive reaction of States in regards to the implementation of EBFM; and notes that “[d]espite concerns about the challenges it implies, EAF is becoming more understood and therefore, ‘demystified’ and is broadly accepted as the reference framework for managing fisheries.”³³² An important achievement in 2006 was Japan’s ratification of UNFSA, as seen above.³³³

One of the conferences organised by FAO was the 2001 Reykjavik Conference, which adopted the Reykjavik Declaration on Responsible Fisheries in the Marine Ecosystem.³³⁴ The Declaration states that “(...) in an effort to reinforce responsible and sustainable fisheries in the marine ecosystem, we will individually and collectively work on incorporating ecosystem considerations into that management to that aim.”³³⁵ The Conference brought together 59 FAO members and two observers from non-FAO members, intergovernmental organisations, non-governmental organisations, as well as scientific and academic institutions.³³⁶ It is

³³⁰ UN Treaty Collection, online:

<<http://treaties.un.org/Pages/ViewDetails.aspx?src=TREATY&id=460&chapter=21&lang=en>> (accessed on 21 Dec. 08).

³³¹ Doc. COFI/2007/8 (2006), *supra* note 327.

³³² *Ibid.*, Para. 54.

³³³ UN Treaty Section, online:

<<http://untreaty.un.org/ENGLISH/bible/englishinternetbible/partI/chapterXXI/treaty9.asp>> (accessed on 18 Feb. 2007).

³³⁴ FAO. *Report of the Reykjavik Conference on Responsible Fisheries in the Marine Ecosystem*, Reykjavik, Iceland, (1–4 October 2001), FAO Fisheries Report No. 658.

³³⁵ *The Reykjavik Declaration on Responsible Fisheries in the Marine Ecosystem*, in FAO Fisheries Report No. 658 *ibid.*, Appendix I, pp.106.

³³⁶ FAO Fisheries Report No. 658, *supra* note 334.

noteworthy that Japan and Saint Lucia, as a means to avoid generating *opinio juris* in regards to the Declaration, “made statements, indicating, although not blocking the consensus, their intention of abstaining from joining the consensus.”³³⁷

In 2006, FAO held an expert consultation on the ‘Economic, Social and Institutional Considerations of Applying the Ecosystem Approach to Fisheries Management’ as well as co-sponsoring an international conference on ‘Implementing an Ecosystem Approach to Fisheries’ in Bergen.³³⁸ FAO has also been participating in Large Marine Ecosystems projects funded by the Global Environment Facility (GEF) in several areas around the world, mostly in developing countries.³³⁹ And in regards to marine areas beyond national jurisdiction, COFI acknowledged the deep-sea fisheries located in the high seas as one of the “(...) most important EAF issues at global level (...)”³⁴⁰ Therefore, COFI was requested to consider this issue in depth in its assessments and future workshops.³⁴¹ Some of the issues raised by COFI, such as by-catch and habitat destruction by bottom-trawling, and marine protected areas are addressed in Chapters 2 and 5 respectively.

To conclude, FAO reports and assessments on EBFM have been elucidating a number of issues related to fisheries management and contributing to a more uniform view that fisheries management cannot succeed if ecosystems interactions are not taken into account. The organisation of conferences and workshops on EBFM, as well as FAO’s participation at ICP and CBD COPs also reinforce the importance of having more States ratifying and implementing UNFSA, as well as implementing the FAO Code of Conduct. Moreover, the participation of FAO in identifying sources of funding towards successful EBFM projects helps to disseminate the concept and create a common sense that this is the right direction to move forward.

³³⁷ *Ibid.*, Para. 18.

³³⁸ Doc. COFI/2007/8 (2006), *supra* note 327.

³³⁹ *Ibid.*

³⁴⁰ *Ibid.*, Para. 15.

³⁴¹ *Ibid.*, Para. 15.

(b) The Division for Ocean Affairs and the Law of the Sea

It was already discussed in the previous session how the UN General Assembly has been deliberating on EBFM/EBM in marine areas beyond national jurisdiction. Also it was said that the UNCLOS ICP has been a valuable forum for discussions of controversial issues. The report of the consultative process serves as a basis for the General Assembly's annual review of the law of the sea. DOALOS is the United Nations division responsible for, *inter alia*, organising the ICP, as well as the meetings of the State parties, preparing studies, informing the General Assembly about the developments of the Law of the Sea, and serving as a Secretariat for the Convention.³⁴²

This subsection calls attention to the 2006 ICP, due to the fact that its scope was to discuss the topic 'ecosystems approaches and oceans'.³⁴³ It was consensually agreed in the meeting that:

"Ecosystem approaches to oceans management should be focused on managing human activities in order to maintain and, where needed, restore ecosystem health to sustain goods and environmental services, provide social and economic benefits for food security, sustain livelihoods in support of international development goals, including those contained in the United Nations Millennium Declaration, and conserve marine biodiversity."³⁴⁴

Therefore, it is understood that the primary objective of applying EBA is to benefit humankind. However, from the above definition, it is noteworthy that such benefit can only be achieved if the ecosystems are restored or maintained at healthy levels, which also comprises the conservation of biodiversity.

The ICP report notes that the EBA should be implemented in accordance with UNCLOS, UNFSA, CBD and the WSSD Plan of Implementation.³⁴⁵ This means that States have been consenting in those informal meetings to interpret UNCLOS in an

³⁴² DOALOS, online: <http://www.un.org/Depts/los/doalos_activities/about_doalos.htm>

³⁴³ *Report on the work of the United Nations Open-ended Informal Consultative Process on Oceans and the Law of the Sea at its Seventh Meeting*, GA Doc. A/61/156, (2006).

³⁴⁴ *Ibid.*, Part A, Para. 1 (4).

³⁴⁵ *Ibid.*

evolutionary way, considering the related soft and hard law instruments. ICP proposals are not binding; and again, they serve to inform UNGA on issues previously discussed on the law of the sea and help the Assembly's deliberations. However, ICPs are important forums for discussion where scientists, intergovernmental organizations and non-governmental organizations attend as observers and provide explanation on a series of emerging issues. Thus, the ICP constitutes an important awareness building process. Moreover, it is a space where environmental NGOs can exercise their convincing powers, which includes moral and political pressures. As noted by a State's delegation:

“(...) the Consultative Process had thrived over the years and had become a forum that had increased substantially the understanding of the international community of cross-cutting issues and assisted in promoting greater interagency coordination and cooperation. The outcomes of the Consultative Process had also contributed to the General Assembly negotiations of its resolutions on “Oceans and the law of the sea” and “Sustainable fisheries”.”³⁴⁶

Another important issue covered by the 2006 ICP was the conflict between the concept of MSY and the application of EBA.³⁴⁷ Some delegations “considered that MSY was consistent with an ecosystem approach but with a changed role and level as a management “target”.”³⁴⁸ While another delegation totally opposed to the application of the MSY concept, stating that “it was not robust in dealing with uncertainties”.³⁴⁹

It was also pointed out that there is a need for better coordination and cooperation among UN bodies and non-UN bodies, in order to avoid duplication of efforts.³⁵⁰ In regards to this, the UN put in place a mechanism of coordination and integration among its ocean-related bodies entitled ‘UN-OCEANS’, which holds meetings on a regular basis.³⁵¹ One of the four fields of work of the UN-Oceans is on “biodiversity in marine areas beyond national jurisdiction,”³⁵² which is

³⁴⁶ *Ibid.*, Para. 17.

³⁴⁷ *Ibid.*

³⁴⁸ *Ibid.*, Para. 49.

³⁴⁹ *Ibid.*, Para. 49.

³⁵⁰ *Ibid.*

³⁵¹ *Ibid.*

³⁵² *Ibid.*, Para 107.

coordinated by DOALOS and the CBD Secretariat.³⁵³ DOALOS is responsible for coordinating the work on international legal instruments available to conserve and sustainably use marine biodiversity in areas beyond national jurisdiction; while the CBD Secretariat coordinates the work on “global distribution of biodiversity (...) as well as the status of that biodiversity and the threats that its facing.”³⁵⁴

The important role of RFMOs was also pointed out, as further addressed in Chapter 4. It was also agreed that marine protected areas should be used as a tool of EBFM, especially in the high seas.³⁵⁵ Implementing EBFM in marine areas beyond national jurisdiction was seen as a challenge.³⁵⁶ Therefore, several delegations suggested an implementing agreement to UNCLOS to cover such issues.³⁵⁷ While other delegations’ opinions were that the existing instruments were sufficient to tackle EBFM implementation in areas beyond national jurisdiction.³⁵⁸

It is worth noting the richness of the discussions held at the ICP. The growing acceptance by States that EBFM is a necessary new management approach, taking the place of the single-species model, is a very relevant step towards its implementation. It also shows that there are still obstacles to overcome in order to implement EBFM/EBM in areas beyond national jurisdiction. The adoption of an UNCLOS Implementing Agreement would solve this matter; however, if not broadly ratified, the same problems faced by UNFSA would occur. It is also right, as demonstrated in the previous section, that even though not comprehensive, international law provides a sound basis for the implementation of EBFM. It is up to the States and RFMOs to implement it, as discussed in Chapter 4. Thus, the role of DOALOS in convening the consultative process and also in coordinating the UN-Oceans task force on conservation of biodiversity in marine areas beyond national jurisdiction in conjunction with CBD Secretariat is extremely relevant. Slowly, States are being convinced that the *status quo* of overfishing and marine habitat

³⁵³ *Ibid.*

³⁵⁴ *Ibid.*, Para. 110.

³⁵⁵ *Ibid.* See also Chapter 5.

³⁵⁶ *Ibid.*

³⁵⁷ *Ibid.*

³⁵⁸ *Ibid.*

destruction has to change. In one way or another, either by the adoption of an implementing Agreement to UNCLOS (see Chapter 5) or by implementing the instruments already in force, States have to cooperate towards the achievement of this goal. Therefore, the role of ICP in creating awareness will ultimately be reflected in States voting patterns at the General Assembly. As seen in the previous section, UNGA Resolutions may not be binding, but they can generate *opinio juris*; and this, combined with all the States political and economic priorities, can be molded in forums like ICPs and COPs.

(c) The International Seabed Authority

The International Seabed Authority established by UNCLOS,³⁵⁹ is responsible for organising and controlling mineral exploitation activities in the Area,³⁶⁰ in such a way that they do not inflict harm on the marine environment.³⁶¹ ISA is a significant player in regards to the application of EBM, since all sectoral marine activities must be taken into account in order to achieve and maintain a healthy marine ecosystem. More specifically, and as further discussed in Chapter 2, certain habitats, such as seamounts, which present a high potential for mineral exploitation, are also rich in biodiversity, containing high rates of endemism.³⁶² Moreover, there is a lack of regulation in regards to bioprospecting which could occur in the Area. Some studies suggest affording an extended jurisdiction to ISA in order to control such activity in the Area.³⁶³ The legal basis for this idea derives from the nature of the Area as the ‘common heritage of mankind’. Scovazzi explains that:

“(…) the space itself (that is, the Area) is and remains the common heritage of mankind (Art. 136). This explains why the legal condition of the space, its being

³⁵⁹ UNCLOS, Art. 156.

³⁶⁰ UNCLOS, Art. 157.

³⁶¹ UNCLOS, Art. 145.

³⁶² UNEP/CBD, *Scientific Information on Biodiversity in Marine Areas beyond the Limits of National Jurisdiction*, (2005) Doc. UNEP/CBD/WG-PA/1/INF/1.

³⁶³ See *Study of the relationship between the Convention on Biological Diversity and the United Nations Convention on the Law of the Sea with regard to the conservation and sustainable use of genetic resources on the deep seabed*, (2003), Doc. UNEP/CBD/SBSTTA/8/INF/3/REV1, Paras. 122, 123, 128, (b).

the common heritage of mankind, may also have an effect on matters and activities that (though different from minerals and mining activities) are located in that space.”³⁶⁴

The reason for addressing this topic in the current work derives from the fact that some fisheries activities, such as bottom trawling will directly conflict with bioprospecting and therefore, some control measures will have to be put in place. If bioprospecting would be regulated by ISA, there would probably be a need to close some seamounts and hydrothermal vents specifically for those purposes, and therefore, fisheries would not be allowed in those areas. Since the scope of this work is not bioprospecting or deep-seabed mining, this subsection will not analyse such issues. It will, however present a glimpse into the role of the Authority within the inter-dependent and evolving context of EBM.

The Authority has been holding workshops where scientists, researchers, contractors for exploration, industries and member States participate and contribute in order to create possible guidelines for minimizing the impacts of mining activities in the Area.³⁶⁵ In regards to seamounts, ISA has recognized the important role of such habitats within the marine ecosystem.³⁶⁶ It is known that cobalt-rich crusts are found on seamounts.³⁶⁷ The real challenge though is exploiting the minerals without generating major impacts to such fragile ecosystems such as seamounts, which constitute habitat for many fish species. It is even more challenging due to the fact that deep-sea ecosystems are not yet well known, which implies a lack of certainty about their reaction to disturbance.³⁶⁸ Furthermore, due to the high level of endemism of these geological features, it is difficult to have a general regulation for

³⁶⁴ T. Scovazzi, “Mining, Protection of the Environment, Scientific Research and Biosprospecting: Some Considerations on the Role of the International Sea-Bed Authority” (2004) 19 (4) IJMCL 383-409, at 391.

³⁶⁵ ISA, “Statement of Satya N. Nandan Secretary-General of ISA Agenda, Item 49: Oceans and the Law of the Sea” (2004) at UNGA, 59th Sess.

³⁶⁶ *Ibid.*

³⁶⁷ *Ibid.*

³⁶⁸ A. Hoffmann, “Aspects of the Draft Regulations on Prospecting and Exploration for Polymetallic Sulphides and Cobalt-Rich Ferromanganese Crusts relating to the Protection of the International Seabed Environment”, ISA Doc. ISBA/10/C/WP.1 (2006).

all cobalt-crust exploitations.³⁶⁹ That is where environmental impact assessments (EIA) will constitute a fundamental instrument of this process.³⁷⁰

As part of its activities, the Authority held a workshop on “Cobalt-crusts and the diversity and distribution patterns of seamount fauna” in March 2006³⁷¹ in order to:

- Assess the endemic patterns of a fauna found on seamounts;
- Identify the areas where there is a lack of knowledge about these patterns in order to promote research and;
- Provide the legal commission with necessary information to be codified in “environmental guidelines for future contractors”.³⁷²

Draft Regulations on prospecting and exploration of polymetallic sulphides and cobalt-rich ferromanganese crusts in the Area have been prepared and have been analysed by the Authority.³⁷³

From this, it is clear that there are several activities that have the potential or have already been impacting the seabed and its ecosystems. After considering some of the impacts of deep-seabed mining in vulnerable ecosystems such as hydrothermal vents and seamounts, Scovazzi suggests:

“Due to its competences, the ISBA would be in the best position to participate in the establishment of a system of marine protected areas in the sea-bed beyond the limits of national jurisdiction. Under Article 162, paragraph 2(x) of the LOSC the Council of the ISBA may disapprove areas for mining exploration in cases where substantial evidence indicates the risk of serious harm to the marine environment.”³⁷⁴

³⁶⁹ *Ibid.*

³⁷⁰ *Ibid.*

³⁷¹ ISA, *Workshop on Cobalt-Rich Crusts and the Diversity and Distribution Patterns of Seamount Fauna (27-31 March 2006)*, online: < <http://www.isa.org.jm/en/scientific/workshops/2006/>> (accessed on 17 Sep. 09).

³⁷² ISA, “Statement of Satya N. Nandan Secretary-General of ISA, Agenda, Item 71: Oceans and the Law of the Sea” (2006) at 61st Sess. of UNGA.

³⁷³ *Ibid.*

³⁷⁴ T. Scovazzi (2004), *supra* note 364, at 396.

This is one of the influences that the ISA could exert, as further developed in Chapter 5 on marine protected areas.

In regards to impacts on seamounts, the Secretary General of ISA, in his statement at the fifty-ninth session of the UN General Assembly in 2004, expressed concern regarding the exploration of minerals on seamounts, but also pointed out that destructive fishing practices must be regulated:

“For the Authority it is very important to understand the ecology of seamounts and the nature of the fauna and flora that exists there and to determine what measures need to be taken in order to minimize any harmful effects from mining-related activities. It is a matter of grave concern that while the Authority is in the process of developing guidelines for the application of precautionary measures for the protection of the ecosystem on the seamounts on a scientific basis, there are fishing activities which through the use of certain types of gear are indiscriminately destroying the very same ecosystem.”³⁷⁵

There are a number of uncertainties regarding the impacts of the activities to be taken place in the Area. The impacts of deep-seabed mining can be significant, especially if combined with fishing impacts. In view of this, it is imperative that the studies conducted by the ISA and the eventual EIAs take into consideration the cumulative impacts of all the activities held in that particular ecosystem. Dialogues and integration between the ISA and RFMOs are extremely necessary. That is why UNCLOS ICPs and CBD COPs are so important. If EBM is not taken into consideration, the mounting impacts of deep-seabed mining summed with the fishing impacts will likely result in significant ecosystem and biodiversity loss.

1.4 Conclusions

It was stressed in the first section the importance of adopting an ecosystem-based approach to marine fisheries, more specifically to marine areas beyond

³⁷⁵ ISA (2004), *supra* note 365.

national jurisdiction. The second Chapter continues the discussion by addressing some of the vulnerabilities of such environments to fishing practices.

It was pointed out that the traditional fisheries management, based on single-species approach, has not proven to be the best management practice. Scientists have been suggesting that the ecosystem-based fisheries management (as the first step) and ultimately the marine ecosystem-based management would be the best approach to prevent the collapse of stocks, restore depleted stocks and habitats in order to have a healthy marine environment.

UNCLOS provides for the MSY as a goal to fisheries management, which is not sufficient to restore depleted stocks or restore marine ecosystems. However, UNCLOS states that dependent species must be taken into account in fisheries management. Moreover, one of the objectives of UNCLOS is to assure a healthy marine environment. Therefore, the implementation of EBFM is in consonance with UNCLOS. A more solid legal background for the application of EBFM is found in other legal instruments, such as UNFSA, the CBD the FAO Code of Conduct, Chapter 17 of Agenda 21, the WSSD Plan of Implementation and UN Resolutions.

It was argued that UNCLOS should be interpreted in light of those instruments. Evolutionary legal interpretation has been evoked by the Appellate Body of the WTO in the *Shrimp-Turtle case*,³⁷⁶ as well as by the ICJ in the *Oil Platforms case*³⁷⁷. The ILC also states that such interpretation is appropriate to deal with fragmentation of international law.

Problems associated with the non-binding form of soft-law instruments, including UN Resolutions have been raised by some States. It was noted in this Chapter that even though such instruments are not literally binding, they reflect the *opinio juris* of States in a particular subject. This *opinio juris* cannot be perceived as meaningless. In light of the provisions of VCLT, Art. 31 (3) on systemic interpretation, expressed consent to a UN Resolution or widely accepted policy

³⁷⁶ WTO, *Shrimp-Turtle Case – Report of the Appellate Body* (1998), *supra* note 116, Para. 127.

³⁷⁷ *Oil Platforms*, ICJ Reports 2003, *supra* note 119, Para. 41.

instruments must be taken into account when interpreting a treaty. However, the adoption of an implementing agreement to UNCLOS encompassing the adoption of ecosystem-based approach in marine areas beyond national jurisdiction would certainly contribute to the achievement a more coherent and systemic regime (see Chapter 5).

The third part of this Chapter dealt with the role of three UN Bodies – FAO, DOALOS and ISA. It was pointed out that in regards to FAO and DOALOS; which are directly linked to fisheries, they have a very important role to play. FAO has been developing assessments and studies on EBFM and has been organising conferences and workshops about the theme in order to inform States and respective RFMOs on the importance of applying this approach. The favourable opinion of FAO in regards to EBFM constitutes a stepping stone towards the implementation of EBFM, since it is a reliable and neutral institution. The perceptions of FAO on the matter are that there has been some progress in creating awareness of States in implementing EBFM. FAO has also participated in EBFM projects funded by GEF in some regions around the world. Implementing EBFM in the high seas is still a concern, due to the problem associated with the freedom of the high seas principle. In light of this, RFMOs have a significant role to play, as seen in Chapter 4.

Implementing EBFM/EBM in marine areas beyond national jurisdiction has also been a concern within DOALOS, which acts as the UNCLOS Secretariat. The Informal Consultative Process - organised by DOALOS every year in order to revise UNCLOS and help the General Assembly in its annual review of the Convention - serves as a forum of discussions for States, intergovernmental organisations and NGOs. The 2006 ICP exclusively focused on the implementation of EBFM/EBM. FAO observed that States were very receptive to the approach. The discussions resulted in a GA Resolution that called for States to adopt the EBA to straddling, highly migratory and high seas discrete stocks. The resolution was adopted by consensus, reflecting the *opinio juris* of States.

Finally, the ISA has an indirect role to play in regards to fisheries; however, the exploitation and exploration of deep-seabed minerals in the Area will affect the marine ecosystems and therefore must be taken into account when adopting an EBM. The cumulative impacts of fishing and deep-seabed mining may be devastating to certain fragile habitats such as seamounts. In light of this, certain areas may have to be closed and high seas marine protected areas may need to be created. ISA has the authority to close some parts of the Area to deep-seabed mining. However, its authority does not extend to the water column above (i.e. the high seas). This issue is addressed in Chapter 5.

It is clear that EBFM has been recognized by a number of legally and non-legally binding instruments, including a number of RFMOs' conservation measures (see Chapter 4). However, the fragmentation of international law might pose a threat to the sound application of EBFM. Although not expressly acknowledged by the UNCLOS text, the Convention can be interpreted as a framework for the implementation of EBFM and ultimately EBM. Therefore, ideally, EBFM/EBM encompassing all fisheries (not only straddling and highly migratory stocks) should be part of a new UNCLOS implementing agreement (as discussed in Chapter 5).

CHAPTER 2 - Fisheries Practices In Areas Beyond National Jurisdiction

It has been documented that post-industry fisheries practices have been causing the depletion of stocks and the destruction of crucial marine habitats.³⁷⁸ In the eighteenth century beam trawls started to be intensively utilised,³⁷⁹ followed by the large steam otter trawlers of the nineteenth century.³⁸⁰ Diesel engines started to be introduced after World War I.³⁸¹ Moreover, freezer trawlers began to be used after the World War II,³⁸² making it possible for fishing fleets to spend more time at sea and consequently, to cover longer distances. Furthermore, new technology such as radar and acoustic fish finders were put in place after the Second World War, enabling fish to be found anywhere.³⁸³ As a consequence of this highly increased fishing effort, fish stocks started to collapse in the coastal zones, which in turn, led fishers to begin over-exploiting the high seas.³⁸⁴ The graph presented in Annex II indicates the increasing high seas fishing effort during the last decades.³⁸⁵

Since the seventies, with the advent of new technology, deep-water fisheries also have started to occur more intensively.³⁸⁶ Hence, it is observed that a number of deep-sea species have started to decline.³⁸⁷ The serious consequences of such exploitation derive from the fact that “[d]eepwater fish resources are generally

³⁷⁸ D. Pauly, (2002), *supra* note 2 .

³⁷⁹ J. Jackson, M. Kirby, W. Berger, K. Bjorndal, L. Botsford, B. Bourque, R. Bradbury, R. Cooke, J. Erlanson, J. Estes, T. Hughes, S. Kidwell, C. Lange, H. Lenihan, J. Pandolfi, C. Peterson, R. Steneck, M. Tegner, R. Warner, “Historical Overfishing and the Recent Collapse of Coastal Ecosystems”, (2001), 293 *Science* 629-638.

³⁸⁰ *Ibid.*

³⁸¹ D. Pauly, et al (2002), *supra* note 2.

³⁸² *Ibid.*

³⁸³ *Ibid.*

³⁸⁴ *Ibid.*

³⁸⁴ T. Morato, et al (2006) *supra* note 1.

³⁸⁵ Sea Around Us Project, Global Marine Landings in the High Seas, online:

<http://seaaroundus.org/TrophicLevel/MeanCatch.aspx?EEZ=000&FAO=0&TypeOut=1&TX=1&country=High%20Seas> (accessed on 17 Sep. 09).

³⁸⁶ FAO, *The State of World Fisheries and Aquaculture 2006*, (Rome: FAO, 2007).

³⁸⁷ T. Morato, et al (2006), *supra* note 1.

considered to have high longevity, slow growth, late maturity and low fecundity”.³⁸⁸ Therefore, overfishing may easily lead to species extinction. In fact, FAO has expressed extreme concern over the situation of fisheries management in marine areas beyond national jurisdiction, due to the current high rates of exploitation of straddling, highly migratory and discrete stocks.³⁸⁹

The scope of this Chapter is to present a brief picture of the status of fisheries in marine areas beyond national jurisdiction. Fisheries in the high seas can be divided into three main categories, as classified by Maguire et al³⁹⁰:

- (i) Highly migratory stocks fisheries;
- (ii) Straddling stocks fisheries;
- (iii) High seas stocks fisheries.

Based on the classification above, this Chapter presents a brief analysis of the current status of the three fisheries categories. Subsequently, section 2.4 provides a description of the fishing gears most utilised in the high seas. It is demonstrated that a number of types of fishing gear are not in consonance with EBFM principles, either by inducing bycatch or habitat destruction.

In view of this, this Chapter addresses: (i) Fisheries for highly migratory stocks in the high seas; (ii) Fisheries for straddling stocks in the high seas; (iii) Fisheries for high seas stocks; and (iv) Fishing gears, where the legal effects of the driftnet moratorium adopted by the United Nations General Assembly Resolution is analysed.

³⁸⁸ *Ibid.*, at 25.

³⁸⁹ FAO (2009), *supra* note 5, at 8-9.

³⁹⁰ J. –J. Maguire, M. Sissenwine, J. Csirke, R. Grainger, S. Garcia, *The State of World Highly Migratory, Straddling and Other High Seas Fishery Resources and Associated Species*, FAO Fisheries Technical Paper No. 495 (Rome: FAO, 2006). 84p. It is beyond the scope of this thesis to analyse fishery for anadromous stocks in the high seas, as such practice is only allowed under very specific circumstances (UNCLOS, Arts. 66). It is also beyond the scope of this study to discuss fishery for catadromous species, as this activity is contrary to UNCLOS, Art. 67.

2.1 Fisheries for Highly Migratory Stocks

Fisheries for highly migratory stocks are mostly composed by tuna and tuna-like species.³⁹¹ Out of 5.1 million tonnes of highly migratory species caught in 2004, 4.8 million were tuna and tuna-like species.³⁹² Tuna species are highly exploited due to their utilisation for canning and sashimi.³⁹³

According to FAO statistics, twenty one percent of tuna and tuna-like species are moderately exploited,³⁹⁴ fifty percent fully exploited,³⁹⁵ twenty one percent overexploited³⁹⁶ and eight percent depleted.³⁹⁷ It is noteworthy to mention that the FAO classification scheme is based on MSY reference points,³⁹⁸ which, as discussed in the previous Chapter, is not the most appropriate approach when dealing with complex marine ecosystems. Therefore, if ecosystem-based indicators were used instead, the probability of having even more critical rates of exploitation would be higher.

A number of shark species are considered highly migratory.³⁹⁹ From the species listed in annex I of UNCLOS, requiem sharks (Carcharhinidae) are the most fished (ninety percent of shark species' catch).⁴⁰⁰ According to FAO records, ten percent of the highly migratory oceanic sharks are moderately exploited, thirty-five percent are fully exploited, forty percent are overexploited and fifteen percent are depleted.⁴⁰¹

³⁹¹ *Ibid.*

³⁹² *Ibid.*

³⁹³ *Ibid.*

³⁹⁴ "(...) exploited with a low fishing effort. Believed to have some limited potential for expansion in total production" (J.-J. Maguire et al 2006).

³⁹⁵ "(...) the fishery is operating at or close to optimal yield/effort, with no expected room for further expansion" (J.-J. Maguire et al 2006).

³⁹⁶ "the fishery is being exploited above the optimal yield/effort which is believed to be sustainable in the long term, with no potential room for further expansion and a higher risk of stock depletion/collapse" (J.-J. Maguire et al 2006).

³⁹⁷ "(...) catches are well below historical optimal yields, irrespective of the amount of fishing effort exerted" (J.-J. Maguire et al 2006).

³⁹⁸ FAO, *Review of the State of World Marine Fishery Resources*, FAO Fisheries Technical Paper 457 (Rome: FAO, 2005) 235p.

³⁹⁹ J. -J. Maguire, et al (2006), *supra* note 390.

⁴⁰⁰ *Ibid.*

⁴⁰¹ *Ibid.*

In regards to fishing methods, longline and purse-seine are the most commonly used gears in tuna and tuna-like species fisheries.⁴⁰² Shark species are usually caught by gillnets, longlines and pelagic and bottom trawls.⁴⁰³ These fishing gears are analysed in more detail in subsection 2.4.

2.2 Fisheries for Straddling Stocks

Straddling species that have been under exploration constitute an extensive list, which includes species of sharks, rays, skates, Atlantic herring, sardines, European anchovy, some stocks of cod, American plaice, redfish, witch flounder, Atlantic halibut, yellowtail flounder, shrimp, mackerel, alfonosinos, grenadier, some stocks of orange roughy, armourhead, Antarctic krill, deep-sea red crab, squids, etc.⁴⁰⁴

In accordance with FAO statistics, four percent of the straddling stocks are underexploited,⁴⁰⁵ twelve percent are moderately exploited, nineteen percent are fully exploited, fifty-eight percent are overexploited, six percent are depleted and one percent is recovering.⁴⁰⁶ In summary, roughly two-thirds of straddling fish stocks are over-exploited or depleted.⁴⁰⁷

Fishing gears utilised to exploit these living resources are diverse, including longlines, otter trawls and gillnets,⁴⁰⁸ as further discussed in section 2.4.

⁴⁰² *Ibid.*

⁴⁰³ *Ibid.*

⁴⁰⁴ *Ibid.*

⁴⁰⁵ “(...) undeveloped or new fishery. Believed to have a significant potential for expansion in total production” (J.-Maguire et al 2006, at 7).

⁴⁰⁶ “(...) catches are again increasing after having been depleted or a collapse from a previous high” (J.-J. Maguire et al 2006, at 7).

⁴⁰⁷ FAO (2009), *supra* note 5, at 35.

⁴⁰⁸ Fisheries and Oceans Canada [DFO], online: < http://www.dfo-mpo.gc.ca/zone/under-sous_e.htm#1 > (accessed on 29 May 2007).

2.3 Fisheries for High Seas Stocks

High seas fish stocks (discrete stocks) are composed mostly of deep-sea species.⁴⁰⁹ Examples of such species include some stocks of orange roughy, oreo dories, alfonsino, toothfishes and armourheads.⁴¹⁰ Deep-sea species often occur deeper than five hundred metres, most commonly at depths of a thousand metres or more.⁴¹¹ Due to the common characteristics of deep-sea species (long lived, late maturity, low reproduction), they are more vulnerable to exploration than coastal species.⁴¹²

The Expert Consultation on 'Deep-Seas Fisheries in the High Seas' convened by FAO emphasized that deep-sea species need to be managed differently from coastal species.⁴¹³ According to the expert consultation, deep-sea species require lower exploitation rates than those established for continental shelf areas in order to be sustainable.⁴¹⁴ The Expert Consultation concluded that the precautionary approach should be applied to deep-sea species management and ecosystems considerations should be taken into account.⁴¹⁵ It is noteworthy that the Expert Consultation called attention to the fact that the precautionary reference points introduced by UNFSA (see Chapter 1) need to be applied carefully for deep-sea species, since target reference points for these species have to be set "well below maximum sustainable yield (MSY)-based reference points."⁴¹⁶ Moreover, it is important to remember that UNFA applies only to straddling and highly migratory fish stocks. The precautionary reference points of UNFSA's Annex II, as discussed in Chapter 1, could be adapted for deep-sea species if stricter rates of exploitation were to be considered. Furthermore, FAO has recognised that the application of MSY reference points do

⁴⁰⁹ J. -J. Maguire, et al (2006), *supra* note 390.

⁴¹⁰ *Ibid.*

⁴¹¹ *Ibid.*

⁴¹² FAO, *Conclusions and Recommendations from the Expert Consultation on Deep-Sea Fisheries in the High Seas*, Bangkok, Thailand, November 21-23, 2006, Advance Copy, *Fisheries Report No. 829* (Rome: FAO, 2007).

⁴¹³ *Ibid.*

⁴¹⁴ *Ibid.*

⁴¹⁵ *Ibid.*

⁴¹⁶ *Ibid.*, Para. 36.

not guarantee sustainable fisheries for deep-water species.⁴¹⁷ Therefore, FAO acknowledged the need for an ecosystem-based approach to fisheries management, particularly, for deep-sea species due to their usual characteristics - high longevity, slow growth, late maturity and low fecundity.⁴¹⁸

In regards to fishing gears, even though bottom trawls are most frequently used, mid-water trawls, deep-water gillnets and longlines are also utilised in deep-water fisheries,⁴¹⁹ as addressed below.

2.4 Fishing Gears

The scope of this subsection is to provide a brief description of a number of types of fishing gear that have been extensively used in the high seas areas, based on the classification above (i.e., fisheries for highly migratory stocks; fisheries for straddling stocks; and fisheries for high seas stocks). It is beyond the scope of the current work to address all types of fishing gear. Therefore, with this in mind, the analysis will cover the following:

- (a) Purse-seine;
- (b) Gillnet;
- (c) Longline;
- (d) Mid-water and bottom trawl.

(a) Purse-Seine

In accordance with FAO data from 2002,⁴²⁰ the majority (fifty-eight percent) of the worldwide tuna-species catch is taken by purse-seine. Purse-seining comprises

⁴¹⁷ FAO *Fisheries Technical Paper 457*, *supra* note 398.

⁴¹⁸ *Ibid.*

⁴¹⁹ FAO *Fisheries Report No. 829*, *supra* note 412.

⁴²⁰ W. Bayliff, J. Leiva Moreno, J. Majkowski, (eds.) Second Meeting of the Technical Advisory Committee of the FAO Project "Management of Tuna Fishing Capacity: Conservation and Socio-economics". Madrid, Spain, 15–18 March 2004. *FAO Fisheries Proceedings*. No. 2 (Rome: FAO, 2005) 336p.

one or two boats that encircle the aimed school of fish with a net that is then closed underneath the fish aggregation, with a similar shape to a purse.⁴²¹ In some cases, helicopters are also used to assist in the search for fish.⁴²² Purse-seines can be used up to a depth of three hundred meters⁴²³ and they are capable of catching the whole school of fish.⁴²⁴ Most of the tuna-species caught by purse-seines are used for canning.⁴²⁵

Purse seining can be conducted in three ways:

- i. *Based on free-swimming schools of tuna species.* Fishers search for tuna by identifying different patterns on the ocean surface, or by detecting seabirds through the vessel radar.⁴²⁶
- ii. *Based on floating objects.* Tuna-species tend to aggregate around floating objects (i.e., logs), such as tree branches and trunks, at night. Artificial 'fish-aggregating devices' (FADs) have also been used by fishers to attract schools of tuna.⁴²⁷
- iii. *Based on dolphins.* Tuna-species also tend to follow groups of dolphins, which are used by fishers to catch the schools of tuna.⁴²⁸

Collateral impacts of purse-seining comprise bycatch and high grading.⁴²⁹ Bycatch for tuna purse-seining comprises, but are not limited to, species such as bonito, sharks, billfish, mantas,⁴³⁰ rays and marine turtles.⁴³¹ However, it is

⁴²¹ FAO, Gear Type Fact Sheet, online:

<http://www.fao.org/fi/website/FIRetrieveAction.do?dom=gear_type&fid=249> (accessed 17 Sept 09).

⁴²² M. Hall, "An Ecological View of the Tuna-Dolphin Problem: Impacts and Trade-Offs" (1998) 8 *Reviews in Fish Biology and Fisheries* 1-34.

⁴²³ FAO, Gear Type Fact Sheet, online:

<http://www.fao.org/fi/website/FIRetrieveAction.do?dom=gear_type&fid=249> (accessed 17 Sept. 09).

⁴²⁴ M. Hall (1998), *supra* note 422.

⁴²⁵ *Ibid.*

⁴²⁶ *Ibid.*

⁴²⁷ *Ibid.*

⁴²⁸ *Ibid.*

⁴²⁹ FAO, Gear Type Fact Sheet, online:

http://www.fao.org/fi/website/FIRetrieveAction.do?dom=gear_type&fid=249 (accessed 17 Sept. 09).

⁴³⁰ J. -J. Maguire, et al (2006), *supra* note 390.

⁴³¹ M. Hall (1998), *supra* note 422.

noteworthy to point out that bycatch rates associated with tuna purse-seines are relatively low (five percent)⁴³² in comparison with other gear types.

A significant problem associated with this type of fishing method relates to the high rates of dolphins' mortality which it induces.⁴³³ As mentioned above, dolphins represent a natural indicator of tuna species aggregation (commonly associated with yellowfin tuna species); therefore, some fishers intentionally encircle them with the net in order to catch the school of tuna underneath.⁴³⁴ By doing this they not only catch tuna but also the dolphins.⁴³⁵ In each of these operations, roughly five hundred dolphins are caught - and in some cases a thousand individuals are caught in the Eastern Pacific; however, lower rates are observed in other oceanic areas.⁴³⁶ Notwithstanding the fishers' attempts to release the dolphins, mortality rates are significant.⁴³⁷

Hall argues that bycatch of other fish species derived from tuna purse seining based on dolphins is lower than the operations based on logs or FADs.⁴³⁸ This is due to the fact that other fish species are not fast and large⁴³⁹ enough to swim with the dolphins like the tunas.⁴⁴⁰ Purse seine based on dolphins comprises high rates of bycatch of dolphins, sailfish and manta ray; while purse seine based on logs or FADs comprises high levels of bycatch of the following species: small tunas, mahi-mahi, wahoo, sharks, rays, marlin, billfishes, sea turtles, etc.⁴⁴¹ With this in mind, Hall describes three alternatives that have been used by fishers in order to avoid dolphin mortality:

“(1) the ‘backdown’ procedure, which consists of putting the vessel in reverse, after encircling the dolphins, which forces the corkline to sink and opens an escape route

⁴³² J. –J. Maguire, et al (2006), *supra* note 390.

⁴³³ *Ibid.*

⁴³⁴ *Ibid.*

⁴³⁵ M. Hall (1998), *supra* note 422.

⁴³⁶ *Ibid.*

⁴³⁷ *Ibid.*

⁴³⁸ *Ibid.*

⁴³⁹ Size indicates maturity. Yellowfin tunas caught in dolphins set are usually mature stocks, which had already reproduced. (Hall, 1998, *ibid.*)

⁴⁴⁰ *Ibid.*

⁴⁴¹ *Ibid.*

for the dolphins; (2) the Medina Panel, a section of smaller-meshed webbing in the part of the net with which dolphins most often come in contact, to keep them from entanglement; and (3) the use of rescue rafts and other means of hand rescue of dolphins from the net."⁴⁴²

However, evidence has shown that fishers do not take these measures very often; if they do, other factors interfere with the results of the operation.⁴⁴³ These factors relate to the movement of currents that hinder the success of rescue operations and also injuries suffered by the dolphins that may lead to death.⁴⁴⁴

It has been reported that in 1986 roughly 132,000 dolphins were killed in purse seine operations.⁴⁴⁵ In order to reduce the mortality and severe injuries of dolphins in the Eastern Pacific, the Agreement on the International Dolphin Conservation Program⁴⁴⁶ (IDCP) was negotiated and entered into force in 1999 under the auspices of the Inter-American Tropical Tuna Commission (IATTC).⁴⁴⁷ To date, Costa Rica, Ecuador, El Salvador, European Union, Guatemala, Honduras, Mexico, Nicaragua, Panama, Peru, United States, Vanuatu and Venezuela have become Parties to IDCP.⁴⁴⁸ After the adoption of this Agreement, dolphins' mortality dropped to 1,500 in 2004.⁴⁴⁹ It is noteworthy that dolphins' populations have been demonstrating a slow recovery.⁴⁵⁰

(b) Gillnet

Gillnets are comprised by single (standard gillnet), double or triple (entangling nets) net walls that are vertically positioned in the ocean with floating

⁴⁴² *Ibid.*, at 12.

⁴⁴³ *Ibid.*

⁴⁴⁴ *Ibid.*

⁴⁴⁵ J. -J. Maguire, et al (2006), *supra* note 390.

⁴⁴⁶ *Agreement on the International Dolphin Conservation Program*, 15 May 1998, 37 I.L.M. 1246 (1998).

⁴⁴⁷ Inter-American Tropical Tuna Commission [IATTC], Dolphin Safe, online: <<http://www.iatc.org/DolphinSafeENG.htm>> (accessed on 17 Sep. 09).

⁴⁴⁸ *Ibid.*

⁴⁴⁹ *Ibid.*

⁴⁵⁰ J. -J. Maguire, et al (2006), *supra* note 390.

devices on the top and weights on the bottom.⁴⁵¹ Gillnets and entangling nets are divided into six types of gear:

- i. *Set gillnets*, which are gillnets set on the bottom of the ocean either anchored or with the utilisation of weights.⁴⁵²
- ii. *Drifting gillnets* (driftnets), which are, as the name indicates, gillnets that drift with the currents and are usually positioned in mid-water or near the surface.⁴⁵³
- iii. *Encircling gillnets* which encircle and entangle fish, are used in shallow waters,⁴⁵⁴ and are not the object of the current study.
- iv. *Fixed gillnets*, are stretched between stakes in coastal waters,⁴⁵⁵ which is beyond the scope of this study.
- v. *Trammel nets*, which are composed by two or three layers of netting where fish are entangled.⁴⁵⁶
- vi. *Combined gillnets-trammel nets*, which is divided in two parts: the upper part of the net is composed by a gillnet to catch semi-demersal and pelagic fish; and the lower part is composed by trammel net to entangle demersal fish.⁴⁵⁷

Collateral impacts of gillnets include bycatch of species such as marine turtles, sharks, marine mammals and seabirds by entanglement.⁴⁵⁸ Another problem

⁴⁵¹ H. Hovgård, H. Lassen, *Manual on Estimation of Selectivity for Gillnet and Longline Gears in Abundance Surveys*. FAO Fisheries Technical Paper. No. 397. (Rome: FAO, 2000) 84p.

⁴⁵² FAO, Gear Type Fact Sheet, online:

<<http://www.fao.org/fi/website/FIRetrieveAction.do?dom=geartype&fid=219>> (accessed 17 Sep. 09).

⁴⁵³ FAO, Gear Type Fact Sheet, online:

<<http://www.fao.org/fi/website/FIRetrieveAction.do?dom=geartype&fid=220>> (accessed 17 Sep. 09).

⁴⁵⁴ FAO, Gear Type Fact Sheet, online:

<<http://www.fao.org/fi/website/FIRetrieveAction.do?dom=geartype&fid=221>> (accessed 17 Sep. 09).

⁴⁵⁵ FAO, Gear Type Fact Sheet, online:

<<http://www.fao.org/fi/website/FIRetrieveAction.do?dom=geartype&fid=247>> (accessed 17 Sep. 09)

⁴⁵⁶ FAO, Gear Type Fact Sheet, online:

<<http://www.fao.org/fi/website/FIRetrieveAction.do?dom=geartype&fid=223>> (accessed 17 Sep. 09)

⁴⁵⁷ FAO, Gear Type Fact Sheet, online:

<<http://www.fao.org/fi/website/FIRetrieveAction.do?dom=geartype&fid=252>> (accessed 17 Sep. 09)

⁴⁵⁸ FAO, Gear Type Fact Sheet, online:

<<http://www.fao.org/fi/website/FIRetrieveAction.do?dom=geartype&fid=107>> (accessed 17 Sep. 09)

associated with gillnets is 'ghost fishing' (i.e., the lost or discarded nets or pieces of nets) that in many cases entangle marine mammals, turtles, among other species.⁴⁵⁹

Among these various types of gillnets, driftnets are the most controversial of them. Driftnets, which can exceed 48 kilometres in length,⁴⁶⁰ (used to fish tuna and tuna-like species, salmon, billfish and squid)⁴⁶¹ have proved to induce extremely high collateral impacts,⁴⁶² such as:

- (i) "a destructive effect on the biomass of targeted species;
- (ii) substantial bycatch of seabirds and marine mammals;
- (iii) a high "dropout" rate of fish that are caught and die but slip free before being harvested; and
- (iv) the risk of "ghost" fishing from unrecovered nets that fill with fish and mammals, sink from the weight, then resurface to repeat the process."⁴⁶³

Based on the collateral impacts of driftnet fisheries, a series of international policy, soft-law and hard law instruments have been developed in an attempt to either ban or temporarily halt this activity, as demonstrated below.

Legal Aspects of Driftnet Fishing in the High Seas

In July 1989 the South Pacific Forum adopted the Tarawa Declaration,⁴⁶⁴ which aimed to ban driftnet fishing in the region,⁴⁶⁵ through the negotiation of an international convention.⁴⁶⁶ In November 1989 the respective Convention for the Prohibition of Fishing with Long Driftnets in the South Pacific (Wellington

⁴⁵⁹ *Ibid.*

⁴⁶⁰ UNGA Res A/RES/44/225 (1989).

⁴⁶¹ S. Northridge, *Driftnet Fisheries and their Impacts on Non-Target Species: a Worldwide Review*, FAO Fisheries Technical Paper No. 320 (Rome: FAO, 1991). 115p.

⁴⁶² R. Churchill, A. Lowe, *The Law of the Sea*, Third Ed. (Manchester: Manchester University Press, 1999).

⁴⁶³ DFO, *High Seas Driftnet Fishing – Illegal, Unreported and Unregulated Fishing*, September 2006, online: < <http://www.dfo-mpo.gc.ca/> > (accessed on 17 Sep. 09).

⁴⁶⁴ Tarawa Declaration on Driftnet Fishing, 11 July 1989, Online:

<<http://www.intfish.net/treaties/tarawa.htm>> (accessed on 15 November 2007).

⁴⁶⁵ R. Churchill, A. Lowe (1999), *supra* note 462.

⁴⁶⁶ Tarawa Declaration on Driftnet Fishing, *supra* note 464.

Convention) was concluded, coming into force in May 1991.⁴⁶⁷ States Parties⁴⁶⁸ agreed to cease large scale driftnet fishing (driftnets bigger than 2.5 km in length) by prohibiting their nationals and vessels engaging in such activity within the Convention Area,⁴⁶⁹ which includes high seas areas⁴⁷⁰ (as defined by Article 1 (a) (i)). The Convention also prohibits States Parties importing or landing fish caught by long driftnets. Concurrently, in November 1989, the Organisation of Eastern Caribbean States adopted a declaration similar to the Tarawa Declaration⁴⁷¹ (see Chapter 1 on soft-law instruments).

Based on the same concern that driftnets were “considered to threaten the effective conservation of living marine resources, such as highly migratory and anadromous species of fish, birds and marine mammals”⁴⁷², the UN General Assembly adopted by consensus the Resolution A/RES/44/225 in 22 December 1989.⁴⁷³ The resolution called for the progressive reduction of driftnets in the high seas, aiming for a moratorium by June 1992.⁴⁷⁴ In 1990, the GA adopted, once again by consensus,⁴⁷⁵ Resolution A/RES/45/197⁴⁷⁶, noting the International Whaling Commission’s concern about the “use of large-scale pelagic driftnets in many areas of the high seas, including important habitats for cetaceans encompassing feeding and breeding grounds and migratory pathways (...)”.⁴⁷⁷ This was followed by the 1991 UNGA Resolution A/RES/46/215,⁴⁷⁸ which adopted by consensus⁴⁷⁹ a global

⁴⁶⁷ *Convention for the Prohibition of Fishing with Long Driftnets in the South Pacific*, 24 November 1989, 1899 U.N.T.S. 3. [Wellington Convention].

⁴⁶⁸ Australia, Cook Islands, FS Micronesia, Fiji, Kiribati, Nauru, New Zealand, Niue, Palau, Samoa, Solomon Islands, Tokelau and the United States. The US is also a party of the Protocol I; and Canada and Chile are Parties of the Protocol II. Wellington Convention, *Current Status*, online: <http://www.intfish.net/000/members/treaties/3121.htm> (accessed on 15 Nov. 07).

⁴⁶⁹ Wellington Convention, Arts. 1 (b) and 2.

⁴⁷⁰ R. Churchill, A. Lowe (1999), *supra* note 462.

⁴⁷¹ *Ibid.*

⁴⁷² UNGA Res. A/RES/44/225 (1989).

⁴⁷³ UN, Dag Hammarskjöld Library, *Resolutions adopted by the General Assembly at its 44th session*, online: <<http://www.un.org/Depts/dhl/res/resa44.htm>> (accessed on 17 Sep. 09).

⁴⁷⁴ UNGA Resolution A/RES/44/225 (1989).

⁴⁷⁵ UN, Dag Hammarskjöld Library, *Resolutions adopted by the General Assembly at its 45th session*, online: <<http://www.un.org/Depts/dhl/res/resa45.htm>> (accessed on 17 Sep. 09).

⁴⁷⁶ UNGA Resolution A/RES/45/197 (1990).

⁴⁷⁷ UNGA Resolution A/RES/45/197 (1990).

⁴⁷⁸ UNGA Resolution. A/RES/46/215 (1991).

⁴⁷⁹ DOALOS, General Assembly resolutions and decisions, online:

<http://www.un.org/Depts/los/general_assembly/general_assembly_resolutions.htm#1991> (accessed on 17 Sep. 09).

moratorium on large-scale pelagic driftnet fishing on the world's oceans, including the high seas by 31 December 1992.⁴⁸⁰ Since then, the UN General Assembly has been reaffirming the Resolution A/RES/46/215, urging States to comply with the moratorium.⁴⁸¹ The Resolution reflects the development of the precautionary approach under international legal instruments. As observed by Freestone and Hey:

“The precautionary concept was also included in the 1989 General Assembly Resolution on Driftnet Fishing. Particularly noteworthy is the fact that the Resolution provides that after June 30, 1992 any state wishing to engage in driftnet fishing may do so provided that “management measures be taken based upon statistically sound analysis” in order to “prevent the unacceptable impact of such fishing practices... and ensure the conservation of the living resources...” This provision shifts the burden of proof to those states choosing not to abide by the moratorium contained in the Resolution. If challenged, it would be for states whose vessels engage in driftnet fishing to show that these practices are indeed based on statistically sound analysis and do not cause an unacceptable impact or present a threat to the conservation of the resources.”⁴⁸²

As discussed in Chapter 1 the UN General Assembly Resolutions are soft-law instruments (and therefore not binding) that in some cases may provide evidence of States' *opinio juris*. However, Hewison argues that the UN driftnet moratorium has become customary law.⁴⁸³ It is well established that custom derives from State practice and *opinio juris*.⁴⁸⁴ In view of this, it is worthy to analyse some aspects of the driftnet resolution in order to clarify whether or not it had become customary law⁴⁸⁵ and verify some of the legal effects it has produced.

Judge Higgins suggests an interesting 'formula' in order to assess the role of international organizations resolutions in the process of law-making: “(...) we need to look at the subject-matter of the resolutions in question, at the whether they are binding or recommendatory, at the majorities supporting their adoption, at repeated

⁴⁸⁰ UNGA Res. A/RES/46/215 (1991).

⁴⁸¹ UN Report of the Secretary-General A/60/189 (2005).

⁴⁸² D. Freestone, E. Hey, “Origins and Development of the Precautionary Principle” 3-15 in D. Freestone, E. Hey (eds), *The Precautionary Principle and International Law – The Challenge of Implementation* (London: Kluwer Law International, 1996) at 10-11.

⁴⁸³ R. Churchill, A. Lowe (1999), *supra* note 462.

⁴⁸⁴ R. Higgins, *Problems and Process: International Law and How We Use It* (Oxford: Oxford University Press, 1995) at 19.

⁴⁸⁵ See M. Shaw, *International Law*, Fifth Ed. (Cambridge: Cambridge University Press, 2006), pp.68-88.

practice in relation to them, at evidence of *opinio juris*.”⁴⁸⁶ With this in mind, the following aspects are taken into consideration in order to further analyse the legal effects of UNGA Resolution A/RES/46/215: (i) *terms and intent*, which will take into account whether the resolution in question is binding or recommendatory, as well as the subject-matter, as suggested by Higgins; (ii) *voting patterns or support*, which will consider the ‘majorities supporting’ the adoption of the resolution and whether there is evidence of *opinio juris*; and (iii) *repeated state practice*.⁴⁸⁷

(i) *Terms and intent* – First, it is important to consider the nature of UNGA resolutions. As discussed in the previous Chapter,⁴⁸⁸ apart from specific issues such as budgetary and other internal matters, the General Assembly is competent in providing recommendations to the “(...) Members of the United Nations or to the Security Council or to both (...)”⁴⁸⁹ Therefore, States, generally, do not accept UNGA Resolutions as binding rules nor capable of constituting customary law.⁴⁹⁰ However, it is noteworthy that as pointed out in Chapter 1, UNGA resolutions may provide evidence of States *opinio juris* and therefore contribute to the evolution of international law (i.e. helping the interpretation of treaties and pointing out for future tendencies in international law). As pointed out by Higgins, “(...) the passing of binding decisions is not the only way in which law development occurs. Legal consequences can also flow from acts which are not, in the formal sense, ‘binding’. And, further, law is developed by a variety of non-legislative acts which do not seek to secure, in any direct sense, ‘compliance’ from Assembly members (...)”⁴⁹¹

Second, one aspect of subject-matter that is important to stress is that UNGA Resolutions on the Law of the Sea have the role of providing for the development of UNCLOS, as discussed in Chapter 1. Therefore, UNGA resolutions on the Law of

⁴⁸⁶ R. Higgins (1995), *supra* note 484, at 28.

⁴⁸⁷ B. Sloan, “General Assembly Resolutions Revisited (Forty Years Later)” (1987) 58 BYIL 39-150. Sloan considered ‘terms and intent’, ‘voting patterns or support’ and ‘state practice’ the main factors for determining the effects of UNGA resolutions.

⁴⁸⁸ See Chapter 1, section 1.2 (f).

⁴⁸⁹ UN Charter, *supra* note 311, Art. 10.

⁴⁹⁰ G. Danilenko (1993), *supra* note 313. But see A. Cassese, *International Law in a Divided World* (Oxford: Oxford University Press, 1994) at 174-5 for a discussion on how developing States (in the 1960s) tried to make UNGA resolutions a binding instrument (as they held and still hold the majority of the seats in the Assembly).

⁴⁹¹ R. Higgins (1995), *supra* note 484, at 24.

the Sea can be compared to COPs decisions, as also discussed in Chapter 1. Notwithstanding the fact that these resolutions are not binding, they cannot be ignored. Moreover, UNGA Resolution A/RES/46/215 expressly relies on existing principles⁴⁹² of UNCLOS; *inter alia*, the international community members' duty to cooperate in the conservation and management of living resources on the high seas.⁴⁹³ This may be seen as an attempt to interpret UNCLOS under new circumstances (threats imposed by destructive fishing practices, such as driftnet fisheries) not foreseen at the time of the Convention negotiations. Such an interpretation is possible under Article 31 (3) (a) of the VCLT as discussed in Chapter 1. Moreover, examples of evolutionary interpretation⁴⁹⁴ of treaties by soft-law instruments can be found in the *Shrimp-Turtle case*⁴⁹⁵ and the *Iron Rhine Arbitration*.⁴⁹⁶

Third, the meaning of the word 'moratorium' must be taken into account. The Oxford English Dictionary defines 'moratorium' as "a deliberate temporary suspension of some activity".⁴⁹⁷ Merriam-Webster's Dictionary of Law describes 'moratorium' as "a waiting period set by an authority" or "a suspension of activity".⁴⁹⁸ The etymology of the word comes from the Late Latin *moratorius* ("tending to delay") and from the new Latin word *morari* ("to delay") and *mora* (delay).⁴⁹⁹ It is interesting that the UNGA Resolution A/RES/46/215 used the word 'moratorium' (temporary suspension of an activity), but it did not provide for an ending date of such a suspension or for any circumstance under which the moratorium could come to an end. Instead, the GA has been recalling this resolution every year ever since. The question here is whether it would be possible to establish a customary rule based on a 'temporary suspension of fishing practice'. The term

⁴⁹² B. Sloan (1987), *supra* note 487.

⁴⁹³ UNGA Res. A/RES/46/215 (1991), third preambular Paragraph; UNGA Res. A/RES/44/225, seventh to tenth preambular Paragraphs.

⁴⁹⁴ See also A. Boyle and C. Chinkin, (2007), *supra* note 105, at 244-47; and ILC (2006), *supra* note 122.

⁴⁹⁵ WTO, *Shrimp-Turtle Case*, Report of the Appellate Body (1998), *supra* note 116.

⁴⁹⁶ Belgium v. Netherlands (2005), *In the Arbitration regarding the Iron Rhine Railway between the Kingdom of Belgium and the Kingdom of the Netherlands Award of the Arbitral Tribunal*. PCA.

⁴⁹⁷ Oxford English Dictionary, *supra* note 157.

⁴⁹⁸ Merriam-Webster's Dictionary of Law (1996), online: <http://dictionary.lp.findlaw.com> (accessed on 16 Nov. 07).

⁴⁹⁹ *Ibid.*

'moratorium' does not seem to be adequate to propel the creation of a custom. However, as discussed in items (ii) and (iii) below, some degree of *opinio juris* and State practice has been developed ever since, not only in order to suspend, but to cease large-scale driftnet fisheries in the high seas.

(ii) *Voting patterns or support* - As seen above, the Resolution A/RES/46/215 was adopted by consensus during the 79th plenary meeting of the General Assembly in 20 December 1991. Cassesse defines *consensus* as a "negotiating and decision-making technique, consisting of a collective effort to agree upon a text by reconciling different views and smoothing out difficulties. This process culminates in the adoption without vote of a text basically acceptable to everybody."⁵⁰⁰ Boyle and Chinkin state that:

"(...) a consensus process becomes not merely a more effective way of negotiating universally acceptable treaties, decisions or soft law instruments but, in effect, a specific form of law-making process" because "once there is international consensus on the basic rule, it is highly unlikely that any State will object if it is then implemented, however rarely, in State practice."⁵⁰¹

Therefore, consensus usually generates more democratic and legitimate decisions, as it requires extensive discussions and compromise that gradually build international community's awareness⁵⁰² (see Chapter 1). However, the downside of consensus is that the result of these negotiations and compromises may not be strict enough, especially when it refers to environmental standards.⁵⁰³ Nevertheless, in the case of the UNGA resolution A/RES/46/215, a high environmental standard was maintained.

It is also noteworthy that UNGA Resolution A/RES/46/215 was adopted as a result of previous discussions held at the Second Committee of the General Assembly in 1989 when the US supported by seventeen other States proposed a draft

⁵⁰⁰ A. Cassesse (1994), *supra* note 490, at 174-5.

⁵⁰¹ A. Boyle, C. Chinkin, "UNCLOS III and the Process of International Law-Making" pp. 371-88 in M. Ndiaye, R. Wolfrum (eds.) *Law of the Sea, Environmental Law and Settlement of Disputes - Liber Amicorum Judge T. Mensah* (Leiden: Brill, 2007), at 387.

⁵⁰² J. Brunnée (2002), *supra* note 232.

⁵⁰³ A. Boyle, C. Chinkin (2007), *supra* note 501.

resolution on driftnet fishing and its impacts on the marine environment, which was adopted by consensus as Resolution A/RES/44/225,⁵⁰⁴ as seen above. Moreover, after the adoption of Resolution A/RES/44/225, a number of UN bodies, including FAO, considered carefully the impacts of driftnets on fish stocks management.⁵⁰⁵ As a result of an increasing concern among UN agencies, several States and other members of the international community, UNGA Resolution A/RES/46/215 was then adopted by consensus, and as seen above, the driftnet moratoria has been endorsed by all posterior UNGA Resolutions on sustainable fisheries.

UNGA resolutions on the Law of the Sea and on sustainable fisheries are the product of GA negotiations and processes, including the UNCLOS Informal Consultative Process and UNFSA Informal Meeting/Consultations. As seen in Chapter 1, the ICP was adopted in 1999 and has been held annually since 2000⁵⁰⁶ and the UNFSA Informal Meeting/Consultations has been held annually since 2002.⁵⁰⁷ Extensive discussions take place in these forums with the participation of States Parties and non-Parties to UNCLOS and UNFSA, non-governmental organisations, inter-governmental organisations, experts, and interest groups (see Chapter 1). This helps to build a common awareness of the issue to be dealt with in the GA, enhances the transparency, and ultimately, legitimizes⁵⁰⁸ the decisions taken by the Assembly. It is not suggested here that UNGA decisions adopted by consensus are binding; but that these decisions are likely to have a more widespread implementation than the decisions adopted by majority vote, as they are the result of compromise among the Parties and reflect an acceptable text.

⁵⁰⁴ D. Rothwell, "The General Assembly Ban on Driftnet Fishing" pp. 121-146, in D. Shelton (ed.) *Commitment and Compliance: The Role of Non-Binding Norms in the International Legal System* (Oxford: Oxford University Press, 2003).

⁵⁰⁵ *Ibid.*

⁵⁰⁶ See Chapter 1; see also DOALOS, *ICP*, Online:

<http://www.un.org/depts/los/consultative_process/consultative_process.htm> (accessed on 25 July 09).

⁵⁰⁷ DOALOS, *UNFSA Informal Consultations*, Online:

<http://www.un.org/depts/los/convention_agreements/review_conf_fish_stocks.htm#Meetings> (accessed on 25 July 09).

⁵⁰⁸ A. Boyle, C. Chinkin (2007), *supra* note 501. See also, J. Brunnée (2002), *supra* note 232; D. Bodansky, "The Legitimacy of International Governance: A Coming Challenge for International Environmental Law?" (1999) 93 AJIL 596-624; A. Boyle, C. Chinkin (2007), *supra* note 105, at 24-35.

Moreover, soft-law instruments, such as UNGA resolutions, adopted by consensus are more likely to create States' *opinio juris* (see Chapter 1). As described in Chapter 1, examples of UNGA resolutions and intergovernmental declarations constituting evidence of States' *opinio juris* are found in the *Nicaragua Case*, the *Nuclear Weapons Advisory Opinion* and the *Gabcikovo-Nagymaros Dan Case*.⁵⁰⁹ In the case of UNGA Resolution A/RES/46/215, the fact that it has been reaffirmed every year; as well as the initiative of several States and RFMOs in banning driftnet fisheries (as addressed in item (iii) below) indicates that there is evidence of a number of States' *opinio juris* on driftnet fishing not being in conformity with the principles set up by UNCLOS and UNFSA (i.e., sustainable utilisation of marine resources and the conservation of living resources and preservation of the marine environment⁵¹⁰), as discussed below.

(iii) *Repeated State Practice* – Even though the increasing practice of banning large-scale high seas driftnetting has been documented, there is evidence that such activity is still taking place in high seas areas of the North Pacific and the Mediterranean.⁵¹¹ In view of this, the following question is important: What is the degree of State practice required to create a rule of customary law? As Higgins explains:

“New norms require both practice [from the vast majority of states] and *opinio juris* before they can be said to represent customary international law. And so it is with the gradual death of existing norms and their replacement by others. (...) A new norm cannot emerge without both practice and *opinio juris*; and an existing norm does not die without the great majority of states engaging in both a contrary practice and withdrawing their *opinio juris*.”⁵¹²

One way of assessing State practice is by considering the legislation of States as well as the measures adopted by intergovernmental organisations, including Regional Fisheries Management Organizations.⁵¹³ States, including, but not limited

⁵⁰⁹ A. Boyle (1999), *supra* note 192.

⁵¹⁰ UNCLOS, Forth Preambular Paragraph, Arts. 117, 118, 119 and UNFSA, Art. 5.

⁵¹¹ Report of the Secretary-General A/60/189 (2005).

⁵¹² R. Higgins (1995), *supra* note 484, at 22.

⁵¹³ G. Hewison, “The Legally Binding Nature of the Moratorium on Large-Scale High Seas Driftnet Fishing” (1994) 25 *Journal of Maritime Law and Commerce* 4.

to, Australia, Canada,⁵¹⁴ Congo, the European Community, Fiji, Japan, Kuwait, Latvia, Mexico, Morocco, Namibia, New Zealand, Nicaragua, Norway, Taiwan, Russia, Spain, Thailand, United States, Uruguay and Venezuela prohibited the use of large-scale pelagic driftnets in the high seas by ships registered under their flags.⁵¹⁵

It is interesting to note that the validity of the prohibition of large-scale driftnet fishing (nets longer than 2.5 km) in the high seas by the European Community Regulation (EEC) 345/92 of 27 January 1992⁵¹⁶ was questioned in the Case C-405/92, by the Tribunal de Commerce de La Roche-sur-Yon (France) in the European Court of Justice⁵¹⁷ (ECJ). The EEC Regulation 345/92 provision in prohibiting large-scale driftnet in the high seas was based, *inter alia*, on the UNGA resolution A/RES/44/225 (discussed above), on the discussions about the use of these nets in other resolutions “in various international fora”⁵¹⁸, as well as on the fact that the EC had signed UNCLOS (although not in force at the time) “which requires all the members of the international community to cooperate in the conservation and management of the living resources of the high seas.”⁵¹⁹

The *Tribunal de Commerce de La Roche-sur-Yon* raised several questions⁵²⁰ in regards to the validity of the Regulation 345/92, including:

- a) The regulation’s legitimacy in restricting the right of EEC nationals of fishing in the high seas; and

⁵¹⁴ DFO, *High Seas Drifnet Fishing – Illegal, Unreported and Unregulated Fishing* (2006), online: <<http://www.dfo-mpo.gc.ca/media/back-fiche/2006/hq-ac35b-eng.htm>> (accessed 18 Sep. 09).

⁵¹⁵ G. Hewison (1994), *supra* note 513; and UN Report of the Secretary-General A/62/260 (2007), Para. 151.

⁵¹⁶ Council Regulation (EEC) No 345/92, 27 January 1992, amending for the eleventh time Regulation (EEC) No 3094/86 laying down certain technical measures for the conservation of fishery resources, Official Journal of the European Communities L 42, 18.2.1992, p. 15–23.

⁵¹⁷ Judgment of the Court (Sixth Chamber) of 24 November 1993. *Etablissements Armand Mondiet SA v Armement Islais SARL*, Case C-405/92, *European Court reports 1993, Page I-06133*. Online: <<http://eur-lex.europa.eu/Notice.do?val=198161:cs&lang=en&list=198161:cs,&pos=1&page=1&nbl=1&pgs=10&hwords=&checktexte=checkbox&visu=#texte>> (accessed 18 Sep. 09).

⁵¹⁸ EEC Reg. 345/92, *supra* note 516, 18th and 19th Preambular Paragraphs.

⁵¹⁹ EEC Reg. 345/92, *supra* note 516, 21th Preambular Paragraph.

⁵²⁰ Case C-405/92, *European Court reports 1993 Page I-06133, supra* note 517.

- b) Whether there is an inconsistency between the preambular paragraph that refers to the UNGA resolution, “which, moreover, is not binding, and the prohibition?”⁵²¹

The Court decided that the EEC Regulation 345/92 was legally valid, after observing that the EC:

“(…) has the same rule-making authority in matters within its jurisdiction as that conferred under international law on the State whose flag the vessel is flying or in which it is registered (Joined Cases 3/76, 4/76 and 6/76 Kramer [1976] ECR 1279, Case 61/77 Commission v Ireland [1978] ECR 417, Case C-258/89 Commission v Spain [1991] ECR I-3977 and Case C-286/90 Poulsen and Diva Navigation [1992] ECR I-6019).”⁵²²

The Court also underscored that the authority to regulate fishing was provided by the Geneva Convention on Fishing and the Conservation of the Living Resources of the High Seas⁵²³ and by UNCLOS, which in the words of the Court, “has not yet come into force but many of its provisions are regarded as embodying the present state of customary international maritime law.”⁵²⁴ The Court also referred to the duty “to cooperate in the conservation and management of the living resources of the high seas” as established by Articles 117 and 118 of UNCLOS.⁵²⁵

The Court did not provide an extensive explanation on whether the UNGA resolution could have been the basis for the EC Regulation. However, this argument was rejected on the grounds that the EC regulation was based on the duty of the international community to “cooperate in the conservation and management of the living resources of the high seas”; and that “[i]n adopting the measure at issue, the Council was therefore merely complying with a widely held international opinion.”⁵²⁶

⁵²¹ *Ibid.*, Para. 7.1.

⁵²² *Ibid.*, Para. 12.

⁵²³ *Geneva Convention on Fishing and the Conservation of the Living Resources of the High Seas*, 29 April 1958, 559 U.N.T.S. 286. The Court referred to Article 6 of the Convention, which “recognizes the interests of coastal States in the living resources in any area of the high seas adjacent to their territorial sea.” (*Ibid.*, Para. 14).

⁵²⁴ Case C-405/92, *ibid.*, Para. 13.

⁵²⁵ *Ibid.*, Para. 13, Para 14.

⁵²⁶ *Ibid.*, Para. 13, Paras. 22 and 36.

This Case is a good example of how the discussions held by the international community at the General Assembly and respective adoption of UNGA resolutions on driftnet fisheries has been influencing regional and ultimately national legislations. Furthermore, the most important aspect of the case is probably the fact that the ECJ recognized that the EC large-scale driftnet ban was ultimately based on UNCLOS duty to cooperate in the conservation of marine living resources in the high seas. This shows how UNGA Resolution A/RES/46/215 can be understood as an interpretation of UNCLOS.

Since the adoption of UNGA Resolution A/46/215 the EC has been adopting regulations prohibiting the use of driftnets longer than 2.5 km, as well as prohibiting the use of any driftnet for catching particular species, and recognising the need to adopt measures to ensure rational, sustainable and responsible exploitation of marine living resources, taking into consideration the impacts of fisheries in the marine ecosystem.⁵²⁷

In 2002, the United States and Taiwan signed a memorandum of understanding through which Taiwan agreed to adopt sustainable fisheries practices in the North Pacific, including cooperation with the US to implement UNGA Resolution A/RES/46/215.⁵²⁸ Moreover in the North Pacific, the United States, Canada, the Russian Federation, the Republic of Korea, Japan (as members of the North Pacific Anadromous Fish Commission) and China (as a cooperating State) introduced the so called 'operation driftnet' as an enforcement measure to control and prevent large-scale driftnet fishing in the regulatory area of the Commission.⁵²⁹

⁵²⁷ See: (EC) No 3760/92; (EC) No 894/97; (EC) No 1239/98; (EC) No 812/2004; (EC) No 2187/2005; (EC) No 809/2007; (EC) No 40/2008.

⁵²⁸ *Memorandum of Understanding (MOU) Between the American Institute in Taiwan (AIT) and the Taipei Economic and Cultural Representative Office (TECRO) in the United States Concerning Cooperation in Fisheries and Aquaculture*, (30 July 2002). Online: <http://www.state.gov/s/l/38721.htm> (accessed 18 Sep. 09). See also *National Plan of Action of the United States of America to Prevent, Deter and Eliminate Illegal, Unregulated, and Unreported Fishing*, online: <http://www.state.gov/documents/organization/43101.pdf> (accessed on 18 Sep. 09).

⁵²⁹ DFO, *International Operation Nets Illegal Fishing in the North Pacific*, online: <http://www.dfo-mpo.gc.ca/overfishing-surpeche/media/bk_net-eng.htm> (accessed 18 Sep. 09).

Other inter-governmental organisations, including RFMOs, have endorsed the UNGA Resolution A/RES/46/215, including: the North Atlantic Salmon Conservation Organization (NASCO), the International Whaling Commission (IWC), the Fisheries Committee of the Organisation for Economic Cooperation and Development (OECD), the Northwest Atlantic Fisheries Organization (NAFO), the International Commission for the Conservation of Atlantic Tuna (ICCAT), the Commission for the Conservation of Antarctic Marine Living Resources (CCAMLR), the Committee for the Management of Indian Ocean Tuna of the Indian Ocean Fishery Commission (IOFC), the Western Central Atlantic Fishery Commission (WECAFC) and the Latin American Organization for Fisheries Development (OLDEPESCA).⁵³⁰ The adoption of conservation measures in accordance with the UNGA Resolution by States through RFMOs reflects wide State practice against the use of large-scale driftnets in the high seas.

From all of this, it is clear that there exists a widespread *opinio juris* and State practice against the use of large-scale driftnets in the high seas. Therefore, the conduction of such an activity in the high seas is to be interpreted as against the rules of customary law. Examples of non-compliance with this customary rule can still be found in the North Pacific and in the Mediterranean. For example, in 2007 the US coast guard identified three driftnet equipped vessels registered in China in North Pacific waters.⁵³¹ Seven other driftnet vessels were also seen in this area in 2007.⁵³² However, Canada reports that the number of driftnet vessels in the North Pacific has been decreasing.⁵³³ As for the Mediterranean, a number of Italian vessels have been observed in the region in breach of the EC driftnet regulations.⁵³⁴

Notwithstanding the lack of compliance to the driftnet ban by a few fishing operations, this does not undermine the evidence of State practice and *opinio juris* based on the adoption of regional and national laws and regulations, as well as

⁵³⁰ G. Hewison (1994), *supra* note 513.

⁵³¹ United States Coast Guard, *Boutwell captures three high-seas drift net fishing vessels*, online: <http://cgvi.uscg.mil/media/main.php?g2_itemId=170236> See also: <http://www.uscgalaska.com/go/doc/780/171373/> (accessed 18 Sep. 09)

⁵³² DFO, *International Operation Nets Illegal Fishing in the North Pacific*, *supra* note 529.

⁵³³ *Ibid.*

⁵³⁴ UN Report of the Secretary-General A/62/260 (2007), Para. 152.

RFMOs' conservation measures imposing such a ban. Furthermore, as observed by the ICJ in the 1986 *Nicaragua* case, customary law does not require a "complete consistency" with the rule, as follows:

"It is not to be expected that in the practice of States the application of the rules in question should have been perfect, in the sense that States should have refrained, with complete consistency, from the use of force or from intervention in each other's internal affairs. The Court does not consider that, for a rule to be established as customary, the corresponding practice must be in absolutely rigorous conformity with the rule. In order to deduce the existence of customary rules, the Court deems it sufficient that the conduct of States should, in general, be consistent with such rules, and that instances of State conduct inconsistent with a given rule should generally have been treated as breaches of that rule, not as indications of the recognition of a new rule."⁵³⁵

In view of this, there is enough evidence to suggest that the UNGA Resolution A/RES/46/215 has become a rule of customary law. As demonstrated above, as well as addressed in Chapter 1, UNGA resolutions can promote States *opinio juris*, as well as the evolution of international law and more specifically the Law of the Sea. Moreover, as for State practice, it was observed above that several States endorsed the Resolution by adopting respective legislation banning the use of large-scale driftnet by its vessels and nationals in the high seas, as well as RFMOs have been enforcing the compliance with conservation measures, which include driftnet banning.

The consensual reaffirmation of the UNGA Resolution A/RES/46/215 every year reflects the States' understanding on the risks imposed by the use of large-scale driftnet to the marine ecosystems. As discussed above, the Resolution was adopted due the high degree of impacts caused by driftnet fishing, including extremely high levels of bycatch. Under UNCLOS provisions, States have the duty to cooperate in the conservation and management of living resources in the high seas,⁵³⁶ and they must take into account associated species when establishing conservation measures in the high seas.⁵³⁷ As discussed in Chapter 1, interaction among species is a crucial element of the ecosystem-based approach. The driftnet moratorium and its

⁵³⁵ *Nicaragua Case* (1986), *supra* note 310, Para. 186.

⁵³⁶ UNCLOS, Art. 118. See also Chapter 1.

⁵³⁷ UNCLOS, Art. 119 (1) (b). See Chapter 1.

development (as analysed above) can be interpreted as an evidence of States *opinio juris* on the need to take into account interaction among species when managing fisheries in the high seas. As this is an important component of EBFM, it reinforces the idea that the EBFM should permeate the interpretation of UNCLOS (see Chapter 1 for the evolution of the EBFM in international law).

(c) Longline

Longlines are groundlines or mainlines attached to gangions or snoods that carry baited hooks.⁵³⁸ Demersal (bottom) longline fisheries in the high seas occur in shallower waters over geological features such as seamounts, while pelagic (surface) longline fisheries occur in deep waters.⁵³⁹

Longline fisheries are also associated with bycatch of non-target species, including seabirds, sharks and marine turtles.⁵⁴⁰ Longline fishing for highly migratory species presents the highest discard rates after shrimp trawling.⁵⁴¹ Rates average twenty eight percent with a range of zero to forty percent, while purse seine discard rates are roughly five percent and 0.4 percent for tuna pole and line fishing.⁵⁴² Impacts on non-target species can be significantly reduced if preventive measures are taken. With this in mind, and concerned about the high rates of bycatch induced by longline fisheries, the UNGA Resolution A/RES/61/105 adopted by consensus, without abstentions, *requested*:

“(…) States and regional fisheries management organizations and arrangements to urgently implement, as appropriate, the measures recommended in the Guidelines to Reduce Sea Turtle Mortality in Fishing Operations and the International Plan of Action for Reducing Incidental Catch of Seabirds in Longline Fisheries of the Food and Agriculture Organization of the United Nations in order to prevent the decline of sea turtles and seabird populations by reducing bycatch and increasing post-release survival in their fisheries, including through research and development of gear and bait alternatives, promoting the use of available bycatch mitigation

⁵³⁸ H. Hovgård, H. Lassen (2000), *supra* note 451.

⁵³⁹ N. Brothers, J. Cooper, S. Løkkeborg, *The incidental catch of seabirds by longline fisheries: worldwide review and technical guidelines for mitigation*, FAO Fisheries Circular No. 937 (Rome: FAO, 1999). 100p.

⁵⁴⁰ *Ibid.*

⁵⁴¹ J. –J. Maguire, et al (2006), *supra* note 390.

⁵⁴² *Ibid.*

technology, and promotion and strengthening of data-collection programmes to obtain standardized information to develop reliable estimates of the bycatch of these species”⁵⁴³

As pointed out in Chapter 1, fishing activities do not affect only target species, but also other species caught as bycatch, including seabirds, turtles and marine mammals.⁵⁴⁴ There are roughly a hundred and fifteen species of seabirds⁵⁴⁵ and a hundred species of marine mammals⁵⁴⁶ that occur in the high seas.⁵⁴⁷ In regards to reptiles⁵⁴⁸, there are seven species of turtles and one sea snake that occur in the high seas.⁵⁴⁹

Interactions between seabirds and longline fisheries have been well documented. Seabirds are mostly hooked or entangled when the lines are being set and then pushed underwater, resulting in their death.⁵⁵⁰ Albatrosses, petrels, fulmars, including Arctic fulmars and gulls are the species of seabirds which are frequently caught⁵⁵¹ in longline fisheries for, particularly, tuna, swordfish, billfish, Patagonian toothfish halibut, black cod, Pacific cod, Greenland halibut, cod, haddock, tusk and ling.⁵⁵²

Due to the high rates of bycatch by longline fisheries, nineteen out of twenty-one species of albatrosses are under risk of extinction.⁵⁵³ In 1997 all Southern hemisphere albatross species were listed in the appendices of the CMS.⁵⁵⁴ Being listed in the appendices of CMS indicates that these species are under the risk of extinction (CMS, appendix I), and that an international agreement is needed in order to establish better conservation and management measures or that would benefit from

⁵⁴³ UNGA Resolution A/RES/61/105 (2006), Para. 62.

⁵⁴⁴ WWF/IUCN/WCPA (2001), *supra* note 81.

⁵⁴⁵ See Annex III, for map of seabirds distribution in the high seas.

⁵⁴⁶ See Annex III, for map of marine mammals distribution in the high seas.

⁵⁴⁷ W. Cheung, J. Alder, V. Karpouzi, R. Watson, V. Lam, C. Day, K. Kaschner, D. Pauly, *Patterns of Species Richness in the High Seas, Technical Series No. 20*. (Montreal: CBD Secretariat, 2005), 31pp.

⁵⁴⁸ See Annex III for map of reptiles distribution in the high seas.

⁵⁴⁹ W. Cheung, et al (2005), *supra* note 547.

⁵⁵⁰ E. Gilman, N. Brothers, D. Kobayashi, “Principles and Approaches to Abate Seabird bycatch in Longline Fisheries” (2005) 6 Fish and Fisheries 35-49.

⁵⁵¹ *Ibid.*

⁵⁵² IPOA-Seabirds, *supra* note 218.

⁵⁵³ E. Gilman, et al (2005), *supra* note 550.

⁵⁵⁴ N. Brothers, et al (1999), *supra* note 539.

international cooperation (CMS, appendix II).⁵⁵⁵ In 1999 a number of petrel species were also listed on Appendix II of the Convention.⁵⁵⁶ As a result of this critical situation, the Agreement on the Conservation of Albatrosses and Petrels (ACAP) was negotiated and open for signature in 2001 under the auspices of the CMS.⁵⁵⁷ ACAP entered into force in February 2004.⁵⁵⁸

The interface with other related Conventions, such as UNCLOS, CBD and the FAO International Plan of Action for Reducing Incidental Catch of Seabirds in Longline Fisheries (addressed further in this section) is expressly stated in the ACAP text.⁵⁵⁹ In regards to fisheries, ACAP establishes that “[t]he Parties shall take appropriate operational, management and other measures to reduce or eliminate the mortality of albatrosses and petrels resulting incidentally from fishing activities. (...)”⁵⁶⁰ It is noteworthy that ACAP’s fundamental principle is the ‘precautionary approach’.⁵⁶¹ The Agreement also acknowledges the ecosystem-based approach, by “[r]ecognising that albatrosses and petrels are an integral part of marine ecosystems which must be conserved for the benefit of present and future generations, and that their conservation is a matter of common concern, particularly in the Southern Hemisphere”.⁵⁶² However, ACAP has only 13 Parties to date.⁵⁶³ Unfortunately, none of the major high seas longline fishers (Japan, Korea and Taiwan) are Parties to the Agreement to date.⁵⁶⁴

Other agreements aiming, *inter alia*, to prevent bycatch (including longline, but mostly by gillnet fisheries) were negotiated under the umbrella Convention on Migratory Species, such as the Agreement on the Conservation of Cetaceans of the

⁵⁵⁵ CMS, Articles III (1) and IV (1).

⁵⁵⁶ *Agreement on the Conservation of Albatrosses and Petrels*, 19 June 2001, 2258 U.N.T.S. 257.

[ACAP]

⁵⁵⁷ CMS, ACAP, Online: <http://www.cms.int/species/acap/acap_bkrd.htm> (accessed 18 Sep. 09).

⁵⁵⁸ *Ibid.*

⁵⁵⁹ ACAP, 17th preambular Paragraph and Arts. XI (1), XIII (1) (a).

⁵⁶⁰ ACAP, Annex II, Art. 3.2.1.

⁵⁶¹ ACAP, Art. II (3).

⁵⁶² ACAP, 5th preambular Paragraph.

⁵⁶³ Argentina, Australia, Brazil, Chile, France, Ecuador, New Zealand, Norway, Peru, the Republic of South Africa, Spain, United Kingdom and Uruguay. CMS, Agreement Summary Sheets (2009), online: <http://www.cms.int/pdf/en/summary_sheets/AgmtSumSheet_engl.pdf> (accessed 18 Sep. 09).

⁵⁶⁴ E. Gilman, et al (2005), *supra* note 550.

Black Sea, Mediterranean Sea and Contiguous Atlantic Area⁵⁶⁵ (ACCOBAMS), which entered into force on 01 June 2001; as well as the Agreement on the Conservation of Small Cetaceans of the Baltic and North Seas⁵⁶⁶ (ASCOBANS) which entered into force on 29 March 1994.

Despite the initiatives taken by the CMS Secretariat, bycatch (including but not limited to longline fisheries) remains a threat to associated species as demonstrated by the CMS Conference of Parties report:

“Concerned that despite the progress made so far by the Parties, bycatch remains a key factor that is threatening many species listed on Appendix I and Appendix II of the Convention (including seabirds, sharks, turtles, marine mammals and sturgeons) and that significant additional efforts are required to ensure that bycatch is reduced or controlled to levels which are not threatening the conservation status of these species;”⁵⁶⁷

Bycatch reduction has also been on FAO’s agenda (see Chapter 1, section 1.3 for the role of FAO in developing international legal instruments on fisheries). As discussed in Chapter 1, in 1999, the FAO Committee on Fisheries adopted the IPOA-Seabirds,⁵⁶⁸ which was endorsed by the FAO council⁵⁶⁹ as part of the Code of Conduct for Responsible Fisheries. The IPOA-Seabirds established voluntary measures to be adopted by States within their ‘National Plans of Action for reducing the incidental catch of seabirds in longline fisheries’ (NPOA-Seabirds).⁵⁷⁰ NPOA-Seabirds should comprise measures to be adopted by the ship flying the respective State flag; and preventive measures to be followed by any fishing boat within jurisdictional waters of the respective State.⁵⁷¹ Technical mitigation measures to reduce incidental catch of seabirds as established by IPOA-Seabirds include the use of bird-scaring lines, the inclusion of weights in hooks to make them sink faster,

⁵⁶⁵ *Agreement on the Conservation of Cetaceans of the Black Sea, Mediterranean Sea and Contiguous Atlantic Area*, 24 November 1996, 2183 U.N.T.S. 303. [ACCOBAMS]

⁵⁶⁶ *Agreement on the Conservation of Small Cetaceans of the Baltic and North Seas*, 13 September 1991, 1772 U.N.T.S. 217. [ASCOBANS]

⁵⁶⁷ CMS, COP 8 (2005), *UNEP/CMS/Resolution 8.14*.

⁵⁶⁸ IPOA-Seabirds, *supra* note 218.

⁵⁶⁹ FAO Council is composed of 49 state-members.

⁵⁷⁰ *Ibid.*

⁵⁷¹ *Ibid.*

confining line setting to night-time, as well as underwater line settings⁵⁷² and area or seasonal closures.⁵⁷³

Although the Plan is voluntary, it is noteworthy that it was developed during two intergovernmental meetings open to all FAO members;⁵⁷⁴ and was adopted by the COFI, which is composed by FAO members and non-members eligible as observers.⁵⁷⁵ Furthermore, the urgent request from the UN General Assembly (transcribed above) indicates the common concern of States as well as the development of *opinio juris* on the need to implement mitigation measures to avoid bycatch of seabirds and other associated species. To date, the following States have adopted a NPOA-Seabird: the United States, Japan, New Zealand, Falkland Islands, Brazil (still in a draft form), South Africa (still in a draft form) Uruguay and Canada.⁵⁷⁶ It is interesting to note that Japan (the primary high seas longline fisher has adopted a national plan. As addressed in the previous section, Article 119 (1) (b) of UNCLOS obliges States to adopt conservation measures to living resources of the high seas that take into account associated species. IPOA-Birds, even though voluntary, helps interpret UNCLOS, providing guidelines on how to implement this Article. Therefore, the IPOA-Birds (as well as the FAO Code of Conduct for Responsible Fisheries and respective plans of actions) could be understood as a way of interpreting UNCLOS (see Chapter 1 on the evolutionary interpretation of UNCLOS). As Boyle notes:

“Soft law instruments have also been used to promote implementation of treaties, including UNCLOS. The best examples are the 1995 FAO Code of Conduct on Responsible Fishing and the 2001 FAO Plan of Action on Illegal, Unreported and Unregulated Fishing. In essence, these non-binding ‘voluntary instruments’ represent codes to be implemented in national law. Adopted by consensus in FAO, in part they reiterate, interpret and amplify relevant provisions of UNCLOS and the

⁵⁷² N. Brothers, et al (1999), *supra* note 539.

⁵⁷³ IPOA- Seabirds.

⁵⁷⁴ FAO, *Implementation of the 1995 FAO Code of Conduct for Responsible Fisheries*, online: < <http://www.fao.org/fishery/ccrf/2.3/en>> (accessed 18 Sep. 09).

⁵⁷⁵ FAO COFI, online: < <http://www.fao.org/fishery/about/cofi/en>> (accessed 18 Sep. 09).

⁵⁷⁶ FAO, NPOA-Seabirds, online: <http://www.fao.org/fishery/ipoa-seabirds/npoa/en> (accessed 18 Sep. 09).

1995 Fish Stocks Agreement, although the scope of the Code is much broader than either of these treaties.”⁵⁷⁷

Following the same line as the IPOA-Seabirds, the ‘International Plan of Action for the Conservation and Management of Sharks’ (IPOA-Sharks’) was also adopted in 1999 by COFI and endorsed by the FAO Council in 2000 within the scope of the FAO Code of Conduct for Responsible Fisheries.⁵⁷⁸ IPOA-Sharks’ objective is to ensure conservation and management of all species of sharks, including skates, rays and chimaeras, and their “long-term sustainable use”.⁵⁷⁹ Elasmobranch species are vulnerable to fisheries due to their slow growth, late maturity and low fecundity characteristics.⁵⁸⁰ The IPOA-Sharks applies to States in the waters of which sharks are caught by their own or foreign vessels, as well as to flag States of vessels catching sharks (as target or non-target species) on the high seas.⁵⁸¹ Similarly to the IPOA-Seabirds, the IPOA-Sharks is to be implemented by States through the adoption of respective national ‘shark-plans’.⁵⁸² Canada, Malaysia, Ecuador, Mexico, Taiwan, Australia, Japan, the United Kingdom and the United States have adopted NPOA-Sharks to date.⁵⁸³

In December 2005, FAO held an expert consultation in order to assess the effectiveness of the IPOA-Sharks, which concluded that better guidance and instructions on conservation of sharks are needed.⁵⁸⁴ Moreover, the consultation acknowledged that the plan has been well accepted by States under their policy levels. However, implementation is still needed.⁵⁸⁵ Despite the fact that one of the major concerns raised during the experts’ consultation was the voluntary nature of

⁵⁷⁷ A. Boyle, “Further Development of the Law of the Sea Convention: Mechanisms for Change” (2005) 54 ICLQ 563-584, at 572.

⁵⁷⁸ FAO, *Implementation of the 1995 FAO Code of Conduct for Responsible Fisheries*, *supra* note 574.

⁵⁷⁹ FAO, IPOA-Sharks, *supra* note 218, Art. 16.

⁵⁸⁰ FAO, *Report of the FAO Expert Consultation on the Implementation of the FAO International Plan of Action for the Conservation and Management of Sharks*. Rome, 6–8 December 2005, *FAO Fisheries Report*. No. 795. (Rome: FAO, 2006) 24p.

⁵⁸¹ IPOA-Sharks.

⁵⁸² IPOA-Sharks.

⁵⁸³ FAO, NPOA-Sharks, online: <<http://www.fao.org/fishery/ipoa-sharks/npoa/en>> (accessed 18 Sep. 09).

⁵⁸⁴ *FAO Fisheries Report* No. 795. (2006), *supra* note 580.

⁵⁸⁵ *Ibid.*

the IPOA-Sharks,⁵⁸⁶ there was no major support on preparing a binding agreement.⁵⁸⁷ From this, it is clear that there is no consistent State practice in adopting the IPOA-Sharks. However, the need to minimise sharks bycatch (and bycatch in general) has been under discussion in numerous meetings attended by UNCLOS and UNFSA State Parties. The discussions held in meetings such as FAO Committee on Fisheries, UNCLOS ICPs, Review Conferences of UNFSA, among several others, constitute a crucial element in the interpretation and development of UNCLOS and UNFSA. These meetings promote participation, cooperation and collaboration of experts, IGOs, NGOs and interest groups in the debate; and help to build awareness and common grounds of understanding among the international community (see Chapter 1) in order to create State practice consistent with those instruments.

Besides seabirds and sharks, sea turtles have also been constantly caught by longline fisheries as bycatch. Driftnet and longline fisheries are the most common activities that result in sea turtle bycatch.⁵⁸⁸ Unfortunately, the adoption of mitigation measures to avoid bycatch of seabirds by longline fisheries, with the exception of area closures, does not guarantee the avoidance of sea turtles' bycatch.⁵⁸⁹ In order to assure the implementation of the EBFM, as was described in the first Chapter, it is important to consider all related species and habitats.

As stated by the UNGA Resolution A/RES/61/105 (transcription above), States, RFMOs and Arrangements were requested to immediately implement the 'Guidelines to Reduce Sea Turtle Mortality in Fishing Operations'⁵⁹⁰ (Sea Turtle Guidelines). The Sea Turtle Guidelines⁵⁹¹ were developed throughout a FAO technical consultation in 2004⁵⁹² and endorsed by COFI in its 26th session in 2005.⁵⁹³

⁵⁸⁶ *Ibid.*

⁵⁸⁷ *Ibid.*

⁵⁸⁸ W. Cheung, et al (2005), *supra* note 547.

⁵⁸⁹ N. P. Brothers, et al (1999), *supra* note 539.

⁵⁹⁰ UNGA Resolution A/RES/61/105 (2006).

⁵⁹¹ The sea turtles guidelines were based on two proposals presented by the US and Japan at the FAO technical consultation in 2004. See FAO, *Report of the Technical Consultation on Sea Turtles Conservation and Fisheries*, Bangkok, Thailand, 29 November-2 December 2004, *FAO Fisheries Report n. 765* (Rome: FAO, 2005) 31p.

⁵⁹² *Ibid.*

⁵⁹³ FAO, *Report of the twenty-sixth session of the Committee on Fisheries*, Rome, 7-11 March 2005, *FAO Fisheries Report*. No. 780. (Rome: FAO, 2005), 88p., Paragraph 98.

In this session, COFI also called for the immediate implementation of the Guidelines by States and RFMOs.⁵⁹⁴ However, it was made clear in the text of the report that the guidelines were voluntary and that “they were not intended to affect trade,”⁵⁹⁵ reflecting the continuing impacts generated by the WTO Panel decision on the *Shrimp-Turtle case*. Mitigation measures derived from technological advances were pointed out during the consultation, which included the replacement of J-hooks by circle hooks and bait technologies that avoid sea turtles capture in longline fisheries.⁵⁹⁶ This was reflected in the text of the guidelines Article 1 (D) (i), as follows: “Development and implementation of appropriate combinations of hook design, type of bait, depth, gear specifications and fishing practices in order to minimize bycatch or incidental catch and mortality of sea turtles.”⁵⁹⁷ Moreover, an important provision of the Sea Turtles Guidelines includes the need to further understand interactions among mitigation measures on other bycaught species, such as seabirds and sharks in order to establish a comprehensive and non-conflicting set of measures.⁵⁹⁸

Guidelines such as the Sea Turtle Guidelines, the IPOA-Seabirds and the IPOA-Sharks constitute an important step towards the implementation of the EBFM, as they take into consideration the impacts of fishing on non-target species and therefore recognise the need to protect the marine ecosystem as a whole. As already discussed, notwithstanding the fact that these instruments are non-legally binding, they reflect the current trends of international environmental law. Furthermore, they contribute to the evolution of the Law of the Sea by filling gaps and tackling problems that were not foreseen when UNCLOS was being negotiated (see Chapter 1).

⁵⁹⁴ *Ibid.*, Paragraph 98.

⁵⁹⁵ *Ibid.* Paragraph 98.

⁵⁹⁶ *FAO Fisheries Report n. 765* (2005), *supra* note 591 .

⁵⁹⁷ *Ibid.*, Appendix E on *Guidelines to Reduce Sea Turtle Mortality in Fishing Operations*, Article 1 (D)(i).

⁵⁹⁸ *Ibid.*, Appendix E, Article 1 (D) (ii).

As mentioned above, the protection of associated species in general is part of UNCLOS text,⁵⁹⁹ as well as part of the Fish Stocks Agreement, which expressly refers to the duty to cooperate in order to minimize 'catch of non-target species'.⁶⁰⁰ Taking into consideration the obligations derived from UNCLOS, CMS and UNFSA, it is arguable that the further developments of soft-law instruments on bycatch by the FAO IPOAs and the Sea Turtles Guidelines (discussed and approved by FAO member States and observers) do have a legal effect. A systemic interpretation of UNCLOS and UNFSA would take into account the guidelines provided by these instruments. Boyle and Chinkin comment on the FAO Code of Conduct and its IPOAs, by stating:

"Negotiated in the same manner as treaties, and adopted by consensus in FAO, these non-binding 'voluntary instruments' also complement the 1995 UN Fish Stocks Agreement and seek to promote implementation of elements of that agreement by non-parties. Reviewing the effect of all these inter-related measures, a former FAO Legal Adviser concludes that 'There can be little doubt that the sum total of the changes introduced has substantially strengthened the regime of the 1982 UN Convention, leaving aside the question whether there has been a *de facto* amendment of it in some respect.'"⁶⁰¹

Ultimately, these instruments also contribute to the gradual understanding of the international community on the need to implement an ecosystem approach to fisheries management. Therefore, taking into account UNGA Resolution A/RES/61/105 (2006) that called for States and RFMOs to implement such instruments on bycatch shows the tendency to accept EBFM as a principle within which UNCLOS must be interpreted (see Chapter 1). RFMOs have a crucial role in adopting the IPOAs and guidelines as discussed in Chapter 4.

Another impact of longline fisheries (demersal or bottom longline fisheries) besides bycatch is the destruction of vulnerable marine habitats such as cold water corals.⁶⁰² In areas where corals are present, measures such as bottom fisheries

⁵⁹⁹ UNCLOS Art. 61 (4) and 119 (1) (b).

⁶⁰⁰ UNFSA, Art. 5 (e) (f).

⁶⁰¹ A. Boyle, C. Chinkin (2007), *supra* note 105, at 219; W. Edeson (2001), *supra* note 215, at 165.

⁶⁰² Canadian Press, *Scientists find trio of coral 'hot spots' off Canada's East Coast*, 10 September 2007, online:

<http://www.redorbit.com/news/science/1061679/scientists_find_trio_of_coral_hot_spots_off_canada_s_east/index.html> (accessed on 11 September 2007).

(including demersal longline) closures should be adopted,⁶⁰³ as discussed in Chapter 5.

(d) Mid-Water and Bottom Trawl

Mid-water trawl encompasses a cone shape net dragged by the trawler in mid-waters and surface waters.⁶⁰⁴ Collateral impacts of mid-water trawling include mostly bycatch of marine mammals.⁶⁰⁵

Bottom trawls are mobile gears towed by the fishing vessel on the ocean floor.⁶⁰⁶ It is worthy to transcribe Freiwald et al's vivid description of bottom trawl:

“A cone-shaped, bag-like net is held open by a solid beam or by vanes (known as doors) made of wood or steel. Large trawl doors can weight as much as 6 tonnes. During the towing, the doors are in contact with the seabed and keep the net open by the force of water pressure. To secure contact between the seabed and the net, the groundline can be weighted by chains or cables with heavy discs or rollers, and this enables the trawl to fish over rough seabed with rocks and boulders or coral-rich grounds”⁶⁰⁷

Bottom trawling in areas beyond national jurisdiction mainly targets twenty species, which includes: alfonsino, black cardinalfish, orange roughy, armourhead and southern boarfish, redfishes, macrourid rattails (mainly groundnose grenadier) oreos, Patagonian toothfish, Antartict toothfish.⁶⁰⁸ Trawling activities also catch a significant amount of non-target species as bycatch.⁶⁰⁹ Shrimp trawling presents the highest average discard rate of 62.3 percent (it can reach ninety-six percent in some fisheries).⁶¹⁰ Even though most of the shrimp trawling is conducted within areas of national jurisdiction, there are some straddling and high seas cold/deep-water shrimp

⁶⁰³ *Ibid.*

⁶⁰⁴ FAO, *Gear type fact sheet*, online: < <http://www.fao.org/fishery/geartype/207/en> > (accessed on 18 Sep. 09).

⁶⁰⁵ FAO, *Gear type fact sheet*, online: < <http://www.fao.org/fishery/geartype/207/en> > (accessed on 18 Sep. 09).

⁶⁰⁶ A. Freiwald, J. Fosså, A. Grehan, T. Koslow, J. Roberts. *Cold-water Coral Reefs* (Cambridge: UNEP/WCMC, 2004).

⁶⁰⁷ *Ibid.*

⁶⁰⁸ M. Clark, et al (2006), *supra* note 83.

⁶⁰⁹ L. Morgan, R. Chuenpagdee. *Shifting Gears: Addressing the Collateral Impacts of Fishing Methods in U.S. Waters* (Washington: Island Press, 2003).

⁶¹⁰ J. -J. Maguire, et al (2006), *supra* note 390.

fisheries taking place.⁶¹¹ The discard rate for cold/deep-water shrimp has been estimated at thirty-nine percent, which can be reduced to five percent if bycatch reduction devices (BRDs) are used.⁶¹²

Deep-sea species tend to aggregate in areas of high biological richness, such as seamounts and steep slopes due to the concentration of nutrients constantly brought by currents and upwellings in these regions.⁶¹³ Seamounts are defined as undersea mountains derived from volcanic activities or from tectonic movements of converging plates.⁶¹⁴ It has been estimated (although not confirmed to date) by satellite imagery that there could be a hundred thousand seamounts in the world's oceans.⁶¹⁵ It has been suggested that roughly fifty-two percent of large seamounts (higher than a thousand meters elevation) are located beyond areas of national jurisdiction.⁶¹⁶ The high concentration of marine species on and around seamounts makes these geological features an easy target for fisheries activities, including bottom trawling.⁶¹⁷

Roughly 798 fish species are found on and around seamounts.⁶¹⁸ A study conducted by Watson and Morato identified 151 predominantly seamount fish species that are currently of commercial interest.⁶¹⁹ Among these, the four most significant (in terms of either abundance or commercial value) fish species associated with seamounts are: orange roughy, alfonsino, roundnose grenadier and the Patagonian toothfish.⁶²⁰ As discussed in section 2.3, deep sea species are generally more vulnerable to fisheries than other species due to their slow growth rate, high longevity, and late maturity and low fecundity characteristics,⁶²¹ which requires a

⁶¹¹ *Ibid.*

⁶¹² *Ibid.*

⁶¹³ C. Roberts, "Deep Impact: The Rising Toll of Fishing in the Deep Sea, (2002) 17 (5) Trends in Ecology & Evolution 242-245.

⁶¹⁴ WWF/IUCN/WCPA (2001), *supra* note 81.

⁶¹⁵ M. Clark, et al (2006), *supra* note 83.

⁶¹⁶ *Ibid.*

⁶¹⁷ R. Watson, T. Morato, "Exploitation Patterns in Seamount Fisheries: A Preliminary Analysis" 61-65, in T. Morato, D. Pauly (eds.) *Seamounts: Biodiversity and Fisheries* (2004) 12 (5) *Fisheries Centre Research Reports (UBC)*.

⁶¹⁸ M. Clark, et al (2006), *supra* note 83.

⁶¹⁹ R. Watson, T. Morato (2004), *supra* note 617, Appendix 1.

⁶²⁰ M. Clark, et al (2006), *supra* note 83.

⁶²¹ *Ibid.*

more restrictive management approach. Seamounts also attract other species such as swordfish, tuna, sharks, turtles, seabirds and marine mammals.⁶²²

Studies have demonstrated that cold-water coral reefs usually occur in a range of 50-100km from large seamounts.⁶²³ Cold-water coral reefs serve as a shelter to numerous species, including commercial fish species.⁶²⁴ In this respect, the *Ad Hoc* Open-Ended Working Group on Protected Areas of the CBD noted the following:

“Cold-water coral reefs support rich and diverse assemblages of marine life, and are home to thousands of other species, in particular animals like sponges, polychaetes (bristle worms), crustaceans (crabs, lobsters), echnoderms (starfish, sea urchins, brittle stars, feather stars), bryozoans (sea moss) and fish (...) *Lophelia pertusa* coral reefs in cold waters of the North-East Atlantic provide habitat for over 1,300 species of invertebrates.”⁶²⁵

Moreover, there is evidence that cold-water corals may contain antivirus, antibacterial and possibly anti-carcinogenic substances for pharmaceutical purposes, which has been attracting bioprospecting interests in these areas.⁶²⁶

According to Morgan and Chuenpagdee bottom trawling is responsible for major impacts on the ocean floor and to marine ecosystems (e.g. corals, and sessile organisms).⁶²⁷ Sediments are re-suspended by bottom trawling, reducing its nutritional qualities and hence decreasing the primary and microbial production; not to mention the destruction of shelters and habitats for endemic species.⁶²⁸ The destructive impacts of bottom trawling are described by Pauly as follows:

“It seems unbelievable in retrospect, but there was a time when it was believed that bottom trawling had little detrimental impact, or even a beneficial impact, on the sea bottom that it ‘ploughed’. Recent research shows that the ploughing analogy is inappropriate and that if an analogy is required, it should be that of clear cutting forests in the course of hunting deer. Indeed, the productivity of the benthic organisms at the base of food webs leading to food fishes is seriously impacted by

⁶²² UNEP/CBD/WG-PA/1/INF/1 (2005), *supra* note 362.

⁶²³ *Ibid.*

⁶²⁴ A. Freiwald, et al (2004), *supra* note 606.

⁶²⁵ UNEP/CBD/WG-PA/1/INF/1 (2005), *supra* note 362, at 4-5.

⁶²⁶ WWF/IUCN/WCPA (2001), *supra* note 81.

⁶²⁷ L. Morgan, R. Chuenpagdee (2003), *supra* note 609.

⁶²⁸ *Ibid.*

bottom trawling, as is the survival of their juveniles when deprived of the biogenic bottom structure destroyed by that form of fishing. Hence, given the extensive coverage of the world's shelf ecosystems by bottom trawling, it is not surprising that generally longer-lived, demersal (bottom) fishes have tended to decline faster than shorter-lived, pelagic (open water) fishes, a trend also indicated by changes in the ratio of piscivorous (mainly demersal) to zooplanktivorous (mainly pelagic) fishes."⁶²⁹

Due to the destructive characteristics of bottom trawling on vulnerable ecosystems, several NGOs and scientists have been calling upon the United Nations General Assembly to declare a moratorium on bottom trawling in marine areas beyond the limits of national jurisdiction,⁶³⁰ following the model adopted by the driftnet ban. However, UNGA has not adopted a moratorium on bottom trawling to date. Instead, the Resolution A/RES/61/105 (2006) transferred the responsibility to RFMOs and Arrangements. "[I]n accordance with the precautionary approach, ecosystem approaches and international law",⁶³¹ the General Assembly called upon RFMOs and Arrangements to adopt and implement conservation measures, as a matter of priority, before 31 December 2008.⁶³² These measures include the conduct of assessments on impacts of bottom trawling on vulnerable ecosystems, as well as on appropriate management in order to prevent the respective impacts.⁶³³ In addition, RFMOs and Arrangements must identify vulnerable marine ecosystems in their respective regulatory areas and assess whether bottom trawling may cause impacts on these ecosystems, as well as assess the sustainability of deep sea fish stocks.⁶³⁴ In regards to seamounts, cold water corals and hydrothermal vents, among other vulnerable ecosystems, the GA requested RFMOs and Arrangements to close bottom trawling fisheries in areas where such vulnerable ecosystems are present by no later than 31 December 2008.⁶³⁵ The only exception to this request would be the adoption of preventive measures to assure that such ecosystems will not be impacted by

⁶²⁹ D. Pauly, et al (2002), *supra* note 2.

⁶³⁰ BBC News, *Call to ban destructive fishing*, 4 October 2005, Online: <<http://news.bbc.co.uk/1/hi/sci/tech/4308156.stm>> and BBC News, *Deep-sea corals protection call*, 16 February 2004, Online: <<http://news.bbc.co.uk/1/hi/sci/tech/3491501.stm>> (accessed 18 Sep. 09).

⁶³¹ UNGA Resolution A/RES/61/105 (2006), Paragraph 83.

⁶³² *Ibid*, Paragraph 83.

⁶³³ *Ibid*, Paragraph 83 (a).

⁶³⁴ *Ibid.*, Paragraph 83 (b).

⁶³⁵ *Ibid.*, Paragraph 83 (c).

fishing activities.⁶³⁶ The Resolution also called upon RFMOs to require their members to request vessels flying their flag to stop conducting bottom fishing activities in areas where vulnerable ecosystems are found and to report the findings so that appropriate measures can be adopted.⁶³⁷

In regards to marine areas beyond national jurisdiction where RFMOs or Arrangements are non-existent, the General Assembly called upon flag States to adopt the conservation measures referred to above or to stop authorizing bottom fishing activities by vessels flying their flag until such measures are implemented.⁶³⁸

UNGA Resolution A/RES/61/105 also called upon States involved in the establishment of new RFMOs or Arrangements to adopt and implement interim measures consistent with the measures described above by 31 December 2007.⁶³⁹ Also worthy of mention are the interim measures adopted by participants in negotiations to establish the South Pacific Regional Fisheries Management Organisation (SPRFMO) as an example of observance of this provision.⁶⁴⁰ Australia, Canada, Chile, China, Colombia, Cook Islands, Ecuador, the European Commission, Federated States of Micronesia, France, Japan, New Zealand, Niue, Palau, Papua New Guinea, Peru, Russia, South Korea, Ukraine, the United States and Vanuatu have been negotiating the creation of the South Pacific RFMO responsible to manage high seas discrete stocks.⁶⁴¹ During their third meeting, the participants in the negotiations decided to adopt voluntary interim measures to come into force from 30 September 2007 until the entry into force of the Agreement that establishes the RFMO.⁶⁴² It is noteworthy that the interim measures adopt the ecosystem approach to fisheries management and the precautionary approach.⁶⁴³

⁶³⁶ *Ibid.*, Paragraph 83 (c).

⁶³⁷ *Ibid.*, Paragraph 83 (d).

⁶³⁸ *Ibid.*, Paragraph 86.

⁶³⁹ *Ibid.*, Paragraph 85.

⁶⁴⁰ South Pacific Regional Fisheries Management Organisation [SPRFMO], *Interim Management Measures Adopted by Participants in Negotiations to Establish South Pacific Regional Fisheries Management Organisation*, (2007), Online: <<http://www.southpacificrfmo.org/interim-measures/>> (accessed 18 Sep. 09).

⁶⁴¹ SPRFMO, Online: <<http://www.southpacificrfmo.org/Home/>>

⁶⁴² SPRFMO, *Interim Management Measures* (2007), *supra* note 640.

⁶⁴³ *Ibid.*, Preambular Paragraph.

In regards to bottom fisheries, the participants decided to limit the fishing effort or catch within the regulatory area (South Pacific high seas)⁶⁴⁴ to the average annual levels between the periods of 1 January 2002 to 31 December 2006, as well as not to develop bottom fisheries into new areas.⁶⁴⁵ It was also agreed that before starting bottom fisheries in unexploited areas, conservation measures are to be established in order to prevent impacts on vulnerable marine ecosystems.⁶⁴⁶ It is noteworthy that according to the interim measures, seamounts, hydrothermal vents, cold water corals and sponge fields were expressly included among the features considered ‘vulnerable marine ecosystems’⁶⁴⁷ In this regard, the participants decided to close bottom fisheries in areas where vulnerable marine ecosystems occur until conservation measures to prevent impacts on such areas are adopted, as well as until a long-term sustainability plan for deep sea fish stocks is adopted.⁶⁴⁸ Most important is paragraph 7 on bottom fisheries, which requires the following:

“vessels flying their flag cease bottom fishing activities within five (5) nautical miles of any site in the Area [SPRFMO regulatory area] where, in the course of fishing operations, evidence of vulnerable marine ecosystems is encountered, and report the encounter, including the location, and the type of ecosystem in question, to the interim Secretariat so that appropriate measures can be adopted in respect of the relevant site. (...)⁶⁴⁹

Other measures include the conduct of scientific research on deep sea stocks; the appointment of observers to each bottom trawler flying its flag in the regulatory area; as well as stricter control over bottom fishing vessels flying its flag, which must be equipped with monitoring systems (i.e., vessel monitoring system as described by UNFSA) no later than 31 December 2007.⁶⁵⁰

In regards to the North Western Pacific Ocean, four States (Japan, the Republic of Korea, the Russian Federation and the United States) also adopted interim measures for the management of high seas bottom fisheries in February

⁶⁴⁴ See Annex IV for map of the proposed SPRFMO regulatory area.

⁶⁴⁵ SPRFMO, *Interim Management Measures* (2007), *supra* note 640, Paragraphs 1 and 2.

⁶⁴⁶ *Ibid.*, Paragraph 3.

⁶⁴⁷ *Ibid.*, Paragraph 3.

⁶⁴⁸ *Ibid.*, *Bottom Fisheries*, Paragraph 6.

⁶⁴⁹ *Ibid.*, *Bottom Fisheries*, Paragraph 7.

⁶⁵⁰ *Ibid.*, *Bottom fisheries*, Paragraphs 8, 9 and 10.

2007.⁶⁵¹ It is interesting to note that the interim measures recall UNGA Resolutions on Sustainable Fisheries,⁶⁵² indicating the recognition on the legal effects of these resolutions. Furthermore, the respective States expressed their strong support to the “protection of vulnerable marine ecosystems and sustainable management of fish stocks based on the best scientific information available.”⁶⁵³ In terms of substance, the interim measures, which are based on the precautionary and ecosystem-based approaches, established, *inter alia*, that vessels flying their flags will be required to cease bottom fisheries in areas where in the course of fishing activities, vulnerable marine ecosystems are found.⁶⁵⁴ As a contingent action, the participants agreed that:

“(...) bottom fisheries in the areas where vulnerable marine ecosystems are known to occur or are likely to occur, based on the best available scientific information, shall cease by 31 December 2008, unless conservation and management measures have been established to prevent significant adverse impacts on vulnerable marine ecosystems, consistent with the relevant provisions of the 2006 United Nations General Assembly Resolution on Sustainable Fisheries (A/61/L.38) and such international standards as may be developed pursuant thereto.”⁶⁵⁵

The downside of both South Pacific and North Western Pacific interim measures is that they are voluntary. However, the voluntary attribute is justified by the nature of what interim measures encompass. In this case they aim to prevent imminent damage to the marine environment, more specifically, to vulnerable marine ecosystems and deep sea fish stocks while a legally binding agreement is being negotiated. Moreover, they indicate the recognition of the States involved in the negotiations that bottom trawling and bottom fishing activities may inflict harm on vulnerable marine ecosystems and deep sea species if not well managed. Therefore, it shows the intention of these States to act in conformity with the ecosystem-based approach to fisheries management as well as with the precautionary principle. Ultimately, it also

⁶⁵¹ NOAA, National Marine Fisheries Service, Online:

<http://www.fpir.noaa.gov/IFD/ifd_nwpbottomtrawl.html> (accessed on 16 September 2007).

⁶⁵² NOAA, *Establishment of new mechanisms for protection of vulnerable marine ecosystems and sustainable management of high seas bottom fisheries in the North Western Pacific Ocean*, (2007) Second, Third and Fourth Preambular Paragraphs Online:

<http://www.fpir.noaa.gov/Library/IFD/NWPBT_InterimMeasure-1-1.pdf> (accessed on 16 September 2007).

⁶⁵³ *Ibid.*, First Preambular Paragraph.

⁶⁵⁴ *Ibid.*, Paragraph 4 (G).

⁶⁵⁵ *Ibid.*, Paragraph 5.

shows how effective UNGA resolutions can be in forming *opinio juris* and developing international law (see Chapter 1).

Gradually and despite all of the pressures from the fishing industry, the international community has been recognizing the destructive impacts of bottom trawling. From what has been demonstrated in General Assembly sessions, the tendency has been not to ban bottom trawling in the whole high seas areas in a manner similar to the moratorium on driftnets. Instead, the tendency is to protect particularly vulnerable marine ecosystems of important ecological value, including seamounts, cold water corals, sponges and hydrothermal vents from destructive impacts of bottom fishing. The idea of protecting specific marine areas in the high seas is not new; a good example is the adoption of Particular Sensitive Sea Areas (PSSA). Moreover, the CBD Secretariat has started studies in order to assess potential high seas marine protected areas based on vulnerable marine ecosystems locations,⁶⁵⁶ as discussed in Chapter 5.

2.5 Conclusions

Fisheries practices in marine areas beyond national jurisdiction have been carried out in an unsustainable way. As was seen in this Chapter, the main fishing gears used in the high seas to catch highly migratory, straddling and discrete stocks are purse seine, gillnet, longline, and mid-water and bottom trawls.

All of these cause collateral impacts either by inducing bycatch or by damaging vulnerable marine habitats. However, mitigation measures can be adopted in order to prevent a number of such impacts. For instance, the avoidance of purse-seining based on dolphins, the use of underwater line settings to prevent seabird mortality by longlines, among several others. Mitigation measures must be adopted in conjunction, as part of a comprehensive approach. Otherwise, isolated measures might reduce bycatch of a particular species and induce higher bycatch of others.

⁶⁵⁶ UNEP/CBD/WG-PA/1/INF/1 (2005), *supra* note 362.

From this, it is possible to notice the importance of adopting an ecosystem-based fisheries management.

The pervasive impacts of driftnets could not be reduced through the adoption of mitigation measures. Therefore, in 1991, the UNGA adopted a moratorium on the use of driftnets on the high seas. After analysing the terms of the resolution, the voting patterns and the State practice, it was argued that the moratorium on the use of large scale driftnets in the high seas can be interpreted as customary law. Moreover, it should be interpreted as an evidence of States *opinio juris* on the need to implement multi-species management measures to fisheries in the high seas in order to minimise bycatch and other adverse impacts. As this is an important component of EBFM, it reinforces the idea that the ecosystem-approach should permeate the interpretation of UNCLOS.

In regards to longline fishing, it should be operated in a way which avoids bycatch. In this sense, FAO developed the International Plans of Action on minimising seabirds and sharks bycatch, as well as the Sea Turtle Guidelines. Even though these instruments are voluntary, they provide guidance on how to implement UNCLOS, Articles 61 (4) and 119 (1) (b), as well as UNFSA, Article 5 (e) (f). Therefore, they should be understood as an interpretation of UNCLOS and UNFSA.

As for bottom-trawling, notwithstanding its insidious impacts on vulnerable marine ecosystems, such as seamounts and cold-water corals, the tendency of States (demonstrated by the analysis of UNGA sessions and informal meetings) has not been to ban the use of bottom trawling in the high seas. It was noted that the current trend is to protect vulnerable marine ecosystems from the destructive impacts of bottom trawling, by the establishment of area closures or the creation of marine protected areas, as analysed in Chapter 5.

CHAPTER 3 - Partition of the Oceans and the Compatibility between EEZs and High Seas Fisheries Management

This Chapter aims to initiate a discussion on how ecosystem-based fisheries management can overcome problems imposed by the establishment of political/legal boundaries in the world's oceans. The discussion continues in Chapters 4 on RFMOs and is then concluded in Chapter 5 on MPAs.

With this in mind, section 3.1 (a) shows how natural boundaries can be identified through a biogeographical partition of the oceans. This section then compares natural boundaries with the maritime delimitation established by UNCLOS.

Section 3.1 (b) develops on the 1995 UNFSA as a further attempt to integrate natural and political boundaries in regards to fisheries resources. Section 3.1 (c) focuses on case law on maritime boundaries disputes.

It is important to note that it is not the scope of this Chapter to provide a comprehensive analysis of maritime delimitation; rather, the aim is to demonstrate how political boundaries do not conform to ecosystem boundaries. Therefore, it is demonstrated that new approaches, such as the biogeographic criterion, are needed in order to manage marine ecosystems in a sustainable way. In light of this, section 3.2 focuses on how EBFM/EBM through the adoption of biogeographical partition of the oceans can overcome political boundaries constraints.

3.1 Constraints of Political Boundaries

The maritime zones established by UNCLOS⁶⁵⁷ do not conform to ecosystem characteristics; therefore this political delimitation imposes particular constraints to the application of EBFM/EBM. This section will focus on the constraints imposed by political boundaries, followed by a brief analysis of whether ecosystem considerations are taken into account by international courts and tribunals when deciding maritime boundary disputes.

a) Natural Environment v. Political Boundaries

As discussed in Chapter 1, ecosystem-based management comprises the interrelations and interactions among species and their habitats. In order to understand how a particular ecosystem works, biological, physical chemical and geological components ought to be considered. Ultimately, these components should also be taken into account when managing natural resources. It is argued in this Chapter that the identification of marine regions which present similar geological, biological, physical and chemical characteristics (biogeographical provinces)⁶⁵⁸ enables the consistent implementation of EBFM/EBM.

Longhurst proposes a biogeographic partition of the ocean based on its physical circulation.⁶⁵⁹ In order to better understand the importance of establishing ecosystem's boundaries, it is worth considering Longhurst's definition of marine biogeography:

“Ideally, marine biogeography should have three components. First, it should describe how, and suggest why, individual species from bacterioplankton to whales are distributed in all oceans and seas. Second, it should tell us how those species form characteristic ecosystems, sustaining optimum biomass under characteristic regional conditions of turbulence, temperature, irradiance, and nutrients. Third,

⁶⁵⁷ Such as the internal waters (Art. 8), territorial sea (Art. 3), contiguous zone (Art. 33), exclusive economic zone (Art. 55), continental shelf (Art. 76) and the high seas (Art. 86).

⁶⁵⁸ A. Longhurst, *Ecological Geography of the Sea*, Second ed., (London: Elsevier 2007).

⁶⁵⁹ *Ibid.*

and most important for some purposes, it should document the areas within which each characteristic ecosystem may be expected to occur (...).”⁶⁶⁰

Partition of the oceans based on biogeographic criteria conforms to EBFM/EBM because it follows the natural boundaries of the marine ecosystems as opposed to political boundaries. As pointed out by Freestone when referring to the political maritime delimitation:

“Apart from the obvious variations in the oceans at different latitudes or depths, the existence of closed and semi-enclosed seas and of major currents, confluences and gyres in the open ocean means that there is a wide variety of different ecosystems within the marine environment. It is equally clear however that these bear little relation to the various legal jurisdictional zones established by customary international law and now to be found codified in the 1982 Law of the Sea Convention (LOSC).”⁶⁶¹

In this sense, biogeographic criteria can help to identify fragile ecosystems or species and habitats within an ecosystem in need of special protection. Therefore, it can be a stepping stone to the selection of the most appropriate sites for the establishment of marine protected areas (this is addressed in section 3.2 and Chapter 5).

The utilisation of biogeographical criteria for the classification of open and deep oceans (as further analysed in section 3.2) was presented by IOC/UNESCO, IUCN, the Governments of Australia, Canada, Mexico and the J. M. Kaplan Fund in the 2007 Open-ended Informal Consultative Process on Oceans and the Law of the Sea as:

“(...) essential tools for integrated oceans management. They assist in understanding how and where taxa are distributed and in marking the boundaries between oceanographic regimes. To the extent that they reflect biological units with a degree of common history and coherent response to perturbations and management actions, they provide a basis by which the spectrum of life on Earth can be studied, conserved, and sustainably and equitably managed.”⁶⁶²

⁶⁶⁰ *Ibid.*, at 01.

⁶⁶¹ D. Freestone, *The Conservation of Marine Ecosystems under International Law*, pp. 91-107 in M. Bowman, C. Redgwell (eds.), (1996), *supra* note 230, at 92.

⁶⁶² UNESCO, IUCN, Australia, Canada, Mexico, J.M. Kaplan Fund, “An Update on Work Related to Biogeographic Criteria for the Classification of Open and Deep Ocean Areas”, Side Event Background Paper, UNICPOLOS 8, United Nations, New York, 25 June 2007, at 03.

It was also emphasized in this study that the marine boundaries established by international conventions are set “rather arbitrarily compared to the structure of biogeographic community structure (...)”.⁶⁶³ As seen in Chapter 1, States have sovereignty rights over natural resources in their EEZs⁶⁶⁴. However, States have also the obligation to adopt conservation measures to ensure the sustainability of living resources within their EEZs.⁶⁶⁵ Such measures must take into account associated and depended species.⁶⁶⁶ In the high seas, States are equally obliged to adopt conservation measures;⁶⁶⁷ however, these measures should be consistent in both areas in order to be effective. That is why Article 63 (2) of UNCLOS provides for the need of agreement on conservation measures between States fishing for straddling stocks,⁶⁶⁸ as follows:

“Where the same stock or stocks of associated species occur both within the exclusive economic zone and in an area beyond and adjacent to the zone, the coastal State and the States fishing for such stocks in the adjacent area shall seek, either directly or through appropriate subregional or regional organizations, to agree upon the measures necessary for the conservation of these stocks in the adjacent area.”⁶⁶⁹

During the negotiations of UNCLOS, a number of variations were proposed for this text.⁶⁷⁰ Some States defended the idea of migratory stocks being managed by the respective coastal States, while others stood up for the international fisheries organisations or an international authority to manage such stocks.⁶⁷¹ Only in 1982 was the above text approved.

The weakness of Article 63 (2) is the use of the term ‘seek’. As transcribed above coastal States and States fishing in adjacent waters for straddling stocks shall *seek* agreement on conservation measures. It is noteworthy that many attempts were

⁶⁶³ *Ibid.*, at 5

⁶⁶⁴ UNCLOS, Art. 56 (1) (a).

⁶⁶⁵ UNCLOS, Art. 61(3).

⁶⁶⁶ UNCLOS, Art. 61 (4).

⁶⁶⁷ UNCLOS, Art. 119.

⁶⁶⁸ See Virginia Commentary, *supra* note 152, Vol. II (1993), at 647, paras.63.12 (e) and (f).

⁶⁶⁹ UNCLOS, Art. 63 (2).

⁶⁷⁰ See Virginia Commentary, *supra* note 152, Vol. II (1993), at 641.

⁶⁷¹ *Ibid.*

made to make the cooperation on conservation measures obligatory over several sessions of the United Nations Conference on the Law of the Sea without success. At the eighth session, in 1979, Argentina submitted an informal proposal replacing the term 'seek to agree' by 'be obliged to agree'.⁶⁷² The proposal was not accepted.⁶⁷³ At the ninth session in 1980, Argentina and Canada submitted another proposal intending to make conservation measures obligatory in case of disagreement between the coastal State and States fishing in adjacent waters for straddling stocks.⁶⁷⁴ Fifteen States supported this proposal, but, no consensus was reached and therefore the suggestion was not incorporated into the UNCLOS text.⁶⁷⁵ At the eleventh session of the United Nations Conference on the Law of the Sea, in 1982, a last attempt to amend Article 63 was made without success⁶⁷⁶ and the word 'seek' remained. Notwithstanding this drawback, States still hold an obligation to negotiate, in good faith, compatible conservation and management measures.⁶⁷⁷

In fact, it is worth noting that in the *Barbados/Trinidad and Tobago* case,⁶⁷⁸ Barbados claimed a special regime of fishing access to the Barbadian fisherfolk within Trinidad and Tobago's EEZ, in case the Tribunal did not modify the maritime boundaries based on relevant circumstances (discussed below) related to fishing rights in the area. As a result of the statements provided by Trinidad and Tobago's Attorney General before the Tribunal affirming the State's willingness to negotiate a fisheries access agreement with Barbados, the Tribunal cited Article 63 (1)⁶⁷⁹ of UNCLOS, and declared that:

⁶⁷² *Ibid.*, at 644.

⁶⁷³ *Ibid.*, at 644.

⁶⁷⁴ *Ibid.*, at 644.

⁶⁷⁵ *Ibid.*, at 644.

⁶⁷⁶ *Ibid.*, at 645.

⁶⁷⁷ A. Elferink, "The Impact of Article 7(2) of the Fish Stocks Agreement on the Formulation of Conservation and Management Measures for Straddling and Highly Migratory Fish Stock" (August 1999) *FAO Legal Papers online* # 4.

⁶⁷⁸ *Award of the Arbitral Tribunal on the Arbitration between Barbados and the Republic of Trinidad and Tobago* (2006), PCA, at Para. 285.

⁶⁷⁹ UNCLOS, Art. 63 (1) states that: "Where the same stock or stocks of associated species occur within the exclusive economic zones of two or more coastal States, these States shall seek, either directly or through appropriate subregional or regional organizations, to agree upon the measures necessary to coordinate and ensure the conservation and development of such stocks without prejudice to the other provisions of this Part."

“It is well established that commitments made by Agents of States before international tribunals bind the State, which is thenceforth under a legal obligation to act in conformity with the commitment so made. This follows from the role of the Agent as the intermediary between the State and the tribunal.

Accordingly, Trinidad and Tobago has assumed an obligation in the terms stated above. It is obliged to negotiate in good faith an agreement with Barbados that would give Barbados access to fisheries within the EEZ of Trinidad and Tobago, subject to the limitations and conditions spelled out in that agreement and to the right and duty of Trinidad and Tobago to conserve and manage the living resources within its jurisdiction. In these circumstances, the observations of the Tribunal in the *Lac Lanoux* case as to the reality and nature of an obligation to negotiate an agreement are applicable.”⁶⁸⁰

Even though it would not have been possible for the Tribunal to impose conservation measures or allocation rights within Trinidad and Tobago’s EEZ due to the restrictions of Article 297 (3) (a) (discussed below), the outcome was very positive as the obligation to negotiate an agreement was imposed on the Parties. Furthermore, even though Barbados was only requesting fishing rights, the Tribunal imposed the duty to include conservation measures in the agreement to be reached between the Parties. This decision reaffirms the role of compatibility measures in consonance with the ecosystem approach.

In regards to highly migratory fish stocks occurring both within the EEZ and beyond, Article 64 (1) of UNCLOS provides for the need to coordinate conservation measures between the coastal State and other States fishing for highly migratory species listed in Annex I (e.g. a number of tuna species, marlin, swordfish, a number of oceanic sharks and cetaceans, etc), as follows:

“The coastal State and other States whose nationals fish in the region for the highly migratory species listed in Annex I shall cooperate directly or through appropriate international organizations with a view to ensuring conservation and promoting the objective of optimum utilization of such species throughout the region, both within and beyond the exclusive economic zone. In regions for which no appropriate international organization exists, the coastal State and other States whose nationals harvest these species in the region shall cooperate to establish such an organization and participate in its work.”⁶⁸¹

⁶⁸⁰ *Barbados /Trinidad and Tobago* case (2006), *supra* note 678, Paras. 291 and 292. See also *France v. Spain Lake Lanoux* case (1956), 24 International Law Reports 101 (1957).

⁶⁸¹ UNCLOS, Art. 64 (1).

It is noteworthy that in this case the term “*seek to agree on conservation measures*” was not used. Instead, coastal States and other fishing States are required to *cooperate* in order to ensure that conservation measures are being implemented in both areas (EEZ and high seas). The obligation to cooperate does not encompass the duty to agree on such compatible measures.⁶⁸² However, this Article is complemented by Article 117, which (as discussed in Chapter 1) establishes that “[a]ll States have the duty to take, or to cooperate with other States in taking such measures [conservation measures] for their respective nationals as may be necessary for the conservation of the living resources of the high seas”.⁶⁸³

With regard to marine mammals, States must also cooperate in order to adopt conservation measures, which might include prohibition, limitation or regulation of their exploitation by the coastal State in its EEZ or by the respective RFMO in the high seas⁶⁸⁴ (this is addressed in Chapter 4). The specific powers given to coastal States and organisations to prohibit the hunting of marine mammals indicate a higher level of protection provided by UNCLOS to such species.⁶⁸⁵ In the specific case of cetaceans, seven families were included in UNCLOS Annex I (as referred to above) of highly migratory species regulated by Article 64. Nevertheless, Article 65 goes beyond the general provisions of Article 64 on cooperation for the establishment of conservation measures (*lex generalis*); Article 65 refers to all families of cetaceans and specifically establishes that cooperation must be reached “through the appropriate international organisations for their conservation, management and study”⁶⁸⁶ (*lex specialis*).⁶⁸⁷ UNCLOS therefore recognizes that this level of protection can only be reached through cooperation between coastal States and distant water fishing States. Political/legal boundaries do not separate ecosystems. Therefore, cooperation is imperative in order to achieve comprehensive conservation measures. Such recognition expressed in UNCLOS text is key to the development of

⁶⁸² A. Elferink (1999), *supra* note 677.

⁶⁸³ UNCLOS, Art. 117.

⁶⁸⁴ UNCLOS, Art. 65 and 120.

⁶⁸⁵ Virginia Commentary, *supra* note 152, Vol. II (1993), at 664, Para. 65.11 (d).

⁶⁸⁶ UNCLOS, Art. 65.

⁶⁸⁷ Virginia Commentary, *supra* note 152, Vol. II (1993), at 658, Para. 64.9 (f), and 663, Para. 65.11

(c).

further actions towards the implementation of ecosystem-based approach as demonstrated in section 3.2 below.

Cooperation is also imperative in the case of fishing for anadromous species. Notwithstanding the fact that fisheries for anadromous species are prohibited in the high seas, the only exception is “economic dislocation for a State other than the State of origin [States in whose rivers the species originates]”.⁶⁸⁸ In this case, the State of origin and the fishing State shall reach an agreement for the fishing conditions, considering conservation measures to be adopted on the high seas.⁶⁸⁹ Further analysis of cooperation through RFMOs is presented in Chapter 4.

Notwithstanding the fact that UNCLOS acknowledges the importance of cooperation in dealing with fish stocks and marine mammals that transboundary the different political zones, it does not provide any further guidelines on this. As affirmed by Birnie and Boyle:

“The paradox with which lawyers have to grapple in this context is that biologically the oceans are an ecosystem, or a series of interlocking ecosystems, but legally we have divided them into arbitrary jurisdictional zones whose only merit is that they are easier to plot on maps. As a result fisheries conservation is probably the least successful part of the 1982 UN Convention on the Law of the Sea: a triumph, at best, of hope over experience.”⁶⁹⁰

Therefore, in 1995 the Fish Stocks Agreement (see Chapter 1, section 1.2 (c)) was adopted in an attempt to fill the gap left by UNCLOS, as demonstrated in the next section.

⁶⁸⁸ UNCLOS, Art. 66 (3) (a), see also Art. 66 (1).

⁶⁸⁹ UNCLOS, Art. 66 (3).

⁶⁹⁰ P. Birnie, et al (2009), *supra* note 170, at 704.

b) Further Attempts to Integrate Natural and Political Boundaries – the UNFSA

As demonstrated above, UNCLOS provisions did not provide sufficient guidelines on management of straddling and highly migratory fish stocks within and beyond States' EEZs. Due to the coastal States' concerns about overfishing of straddling and highly migratory species by distant water fishing nations on the high seas areas adjacent to their EEZs⁶⁹¹, this issue was included in the agenda of the United Nations Conference on Environment and Development (UNCED).⁶⁹² During the negotiations of Chapter 17⁶⁹³ of the UNCED Agenda 21 (over the four sessions of the Preparatory Commission - PrepCom) consensus on consistent management (within coastal States EEZs and adjacent high seas areas) of straddling and highly migratory fish stocks could not be reached.⁶⁹⁴ Therefore, the compromise text which was agreed during the Conference determined that States should convene "an intergovernmental conference under United Nations auspices" in order to implement UNCLOS' provisions on straddling and highly migratory fish stocks based on scientific and technical studies conducted by FAO.⁶⁹⁵

The United Nations Conference on Straddling Fish Stocks and Highly Migratory Fish Stocks convened six sessions and a number of inter-session meetings before adopting the final Agreement (UNFSA) by consensus on 4 August 1995.⁶⁹⁶ It is noteworthy to recall that UNFSA is only binding among its Parties⁶⁹⁷ (see Chapter 1) - a number which is considerably lower than UNCLOS'.⁶⁹⁸ However, the number of parties to UNFSA has been increasing in recent years. Furthermore, strong fishing nations such as Japan and the Republic of Korea have recently ratified the

⁶⁹¹ For example, Canada at the Grand Banks area, and the US and Russia at the Donut Hole area. See R. Churchill, A. Lowe (1999), *supra* note 462, at 306.

⁶⁹² *Ibid.* at 308.

⁶⁹³ Concerning the "Protection of the oceans, all kinds of seas, including enclosed and semi-enclosed seas, and coastal areas and the protection, rational use and development of their living resources".

⁶⁹⁴ ENB, Vol. 07, online: <http://www.iisd.ca/vol07/0701001e.html>; see also O. Vicuña, *The Changing International Law of High Seas Fisheries* (Cambridge: Cambridge University Press, 1999) at 122-127.

⁶⁹⁵ Agenda 21, Chapter 17, Para. 17.50.

⁶⁹⁶ O. Vicuña (1999), *supra* note 694. See also Chapter 1, Section 1.2 (c) of this thesis.

⁶⁹⁷ At the time of writing there were 75 Parties to the Fish Stocks Agreement. DOALOS, online: http://www.un.org/Depts/los/reference_files/status2008.pdf (assessed 18 Sep. 09).

⁶⁹⁸ At the time of writing there were 159 Parties to UNCLOS. DOALOS, online: http://www.un.org/Depts/los/reference_files/status2008.pdf (accessed 18 Sep. 09).

Agreement (see discussion on UN bodies in promoting adherence to UNFSA in Chapter 1). Moreover, as discussed in Chapter 1, UNFSA expands on UNCLOS provisions on straddling and highly migratory fish stocks, without disregarding the duties and rights established by UNCLOS. In actual fact, as stated by Balton:

“The conference [UNFSA Conference] (...) repeatedly rejected proposals that would have conflicted with the Convention [UNCLOS], such as provisions that would have given coastal states fishery jurisdiction beyond 200 miles, or that would have undermined the exclusive fishery jurisdiction of coastal states within 200 miles.”⁶⁹⁹

However, compatibility of conservation and management measures within and beyond EEZs was one of the most discussed themes during the inter-session meetings of the UNFSA Conference.⁷⁰⁰ While coastal States tried to achieve an extended jurisdiction over adjacent waters on the high seas in order to establish conservation measures compatible with their national measures, distant water fishing nations rejected this approach under the principle of the freedom of the high seas.⁷⁰¹ The agreed text reaffirms UNCLOS’ provisions on straddling and highly migratory stocks,⁷⁰² making clear that compatibility ought to be achieved “[w]ithout prejudice to the sovereign rights of coastal States for the purpose of exploring and exploiting, conserving and managing the living marine resources within areas under national jurisdiction (...), and the right of all States for their nationals to engage in fishing on the high seas in accordance with the Convention [UNCLOS]”.⁷⁰³

UNFSA also establishes the duty of coastal and distant fishing nations to achieve compatibility of conservation and management measures, as follows:

“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

⁶⁹⁹ D. Balton, “Strengthening the Law of the Sea: The New Agreement on Straddling Fish Stocks and Highly Migratory Fish Stocks” (1996) 27 ODIL 125-51, at 135. See also UNFSA, Art. 4.

⁷⁰⁰ J. Douman, *Structure and Process of the 1993-1995 United Nations Conference on Straddling Fish Stocks and Highly Migratory Fish Stocks*, FAO Fisheries Circulars - C898 (1995), 81 pp.

⁷⁰¹ *Ibid.*

⁷⁰² UNFSA, Art. 7 (1) (a) (b).

⁷⁰³ UNFSA, Art. 7 (1) (a) (b).

high seas have a duty to cooperate for the purpose of achieving compatible measures in respect of such stocks.”⁷⁰⁴

An example of compatibility reached over conservation of living resources among coastal (U.S. and Russia) and distant water fishing (China, Japan, Republic of Korea and Poland) States was the signature of the Convention on the Conservation and Management of Pollock Resources in the Central Bering Sea⁷⁰⁵ even before the adoption of the UNFSA. Straddling fish stocks, such as Pollock were being over-exploited by Japan, Korea and Poland in the high seas area known as the ‘Doughnut Hole’ surrounded by the U.S. and Russia’s EEZs leading to the species collapse.⁷⁰⁶ After intense negotiations and proposed unilateral action by the US to extend its fisheries jurisdiction beyond the 200 nautical miles, the Convention was adopted establishing an international regime for the conservation, management and optimum utilization of pollock resources in the area.⁷⁰⁷

UNFSA also expands on UNCLOS provisions by requiring States to adopt a number of actions (as listed in UNFSA, Article 7 (2) (a) to (f)) in order to achieve compatibility of conservation measures for straddling and highly migratory fish stocks within and beyond the EEZs. For example, measures established in the high seas for a certain straddling or highly migratory species must complement the ones established in the EEZ of coastal State where the stocks migrate.⁷⁰⁸ Therefore, measures established in the high seas for those stocks, cannot present lower standards in a manner that undermines the effectiveness of conservation measures established by the coastal State in its EEZ. Moreover, if a regional fisheries management organisation or arrangement has agreed on specific conservation measure in the high seas, this measure must be taken into account by all States (even the ones that are not members of the RFMO).⁷⁰⁹

⁷⁰⁴ UNFSA, Art. 7 (2).

⁷⁰⁵ *Convention on the Conservation and Management of Pollock Resources in the Central Bering Sea*, 16 June 1994, 34 ILM 67 (1994).

⁷⁰⁶ O. Vicuña (1999), *supra* note 694. See also S. Garcia, M. Hayashi, “Division of the Oceans and Ecosystem Management: A Contrastive Spatial Evolution of Marine Fisheries Governance” (2000) 43 *Ocean & Coastal Management* 445-474; R. Churchill, A. Lowe (1999), *supra* note 462.

⁷⁰⁷ R. Churchill, A. Lowe (1999) *ibid.*

⁷⁰⁸ UNFSA, Art. 7 (2) (a).

⁷⁰⁹ UNFSA, Art. 7 (2) (c).

In line with the ecosystem-based approach (see Chapter 1), UNFSA also establishes that States have the duty to take into account the “biological unity and other biological characteristics of the stocks and the relationships between the distribution of the stocks, the fisheries and the geographical particularities of the region concerned, including the extent to which the stocks occur and are fished in areas under national jurisdiction”.⁷¹⁰ As stated by the chairman⁷¹¹ of the United Nations Conference on Straddling Fish Stocks and Highly Migratory Fish Stocks, during the negotiations of the Agreement, at the opening of the second session in 1993:

“The biological nature and distribution of these stocks necessitate compatible and coherent management measures over their entire range. In this respect, fish know no boundaries, and at different times during their life cycles, they may be found both within areas of national jurisdiction and on the high seas.”⁷¹²

Therefore, States must consider the whole geographical range in which stocks migrate when establishing compatible conservation and management measures.⁷¹³

UNFSA also conforms to EBFM when imposing the obligation to “ensure that such measures [conservation and management measures] do not result in harmful impact on the living marine resources as a whole” [emphasis added].⁷¹⁴ Oude notes that the choice of using the word ‘ensure’ “indicates that an objective is concerned, which always has to be attained in determining compatible measures”,⁷¹⁵ while the use of the term ‘take into account’ in the previous paragraphs of Article 7 (2) ((a) to (e)) “implies that depending on the specific case it can be given only

⁷¹⁰ UNFSA, Art. 7 (2) (d).

⁷¹¹ The chairman of the Conference was Ambassador Satya Nandan from Fiji. See J. Douman (1995), *supra* note 700.

⁷¹² United Nations Conference on Straddling Fish Stocks and Highly Migratory Fish Stocks Organizational Session, New York, 19-23 April 1993, *Statement made by the chairman of the conference at the opening of the organizational session, held on 19 April 1993*, UN Doc. A/CONF.164/7, 4 May 1993. Online: <http://www.un.org/Depts/los/fish_stocks_conference/fish_stocks_conference.htm> (accessed 24 Sep.09).

⁷¹³ A. Elferink (1999), *supra* note 677.

⁷¹⁴ UNFSA, Art. 7 (2) (f).

⁷¹⁵ A. Elferink (1999), *supra* note 677.

limited weight or no weight at all in establishing compatible measures.”⁷¹⁶ However, in accordance with Article 7 (2) (f), management measures adopted for both within and beyond national jurisdictions cannot, under any circumstances, negatively impact the marine ecosystems.

It is not within the scope of this work to analyse UNCLOS or UNFSA’s dispute settlement procedures. However, it is noteworthy that if an agreement concerning compatible conservation measures cannot be achieved within a reasonable time (not established by UNFSA as it will depend on the specific case, for example, if stocks are collapsing, this period cannot be long⁷¹⁷), the respective States can invoke the procedures for the settlement of disputes established under Part VIII of UNFSA⁷¹⁸ and in accordance with Part XV of UNCLOS.⁷¹⁹ Moreover, if States cannot agree on provisional arrangements on compatible measures, the States concerned can submit the dispute to the ICJ or to the International Tribunal for the Law of the Sea (ITLOS) in order to obtain provisional measures.⁷²⁰ It is noteworthy that under Article 297 (3) (a) of UNCLOS coastal States are not “obliged to accept the submission to such settlement of any dispute relating to its sovereign rights with respect to the living resources in the exclusive economic zone or their exercise (...)”.⁷²¹ As decided by the Arbitral Tribunal in the *Barbados/Trinidad and Tobago* maritime boundary case in 2006:

“(...) Disputes over such rights and duties [of the Parties in relation to the fisheries occurring in their EEZs] fall outside the jurisdiction of this Tribunal because Article 297(3)(a) stipulates that a coastal State is not obliged to submit to the jurisdiction of an Annex VII Tribunal “any dispute relating to [the coastal State’s] sovereign rights with respect to the living resources in the exclusive economic zone”, and Trinidad and Tobago has made plain that it does not consent to the decision of such a dispute by this Tribunal.”⁷²²

⁷¹⁶ *Ibid*

⁷¹⁷ *Ibid*.

⁷¹⁸ UNFSA, Art. 7 (4), (5).

⁷¹⁹ UNFSA, Art. 30 (1), (2).

⁷²⁰ UNFSA, Art. (5).

⁷²¹ UNCLOS, Art. 297 (3) (a). See also A. Boyle, “Problems of Compulsory Jurisdiction and the Settlement of Disputes Relating to Straddling Fish Stocks” (1999) 14 IJMCL 1-26.

⁷²² *Barbados /Trinidad and Tobago case* (2006), *supra* note 678, at Para. 276.

As addressed in the next section, the tribunal emphasised the importance of reaching an agreement between the Parties to reach proper cooperation in regards to fisheries access in Trinidad and Tobago's EEZ subject to the duty to ensure proper conservation measures for the fish stock in question.⁷²³

In view of the restrictions of Article 297 (3) (a), in the case of a coastal State's failure to ensure proper conservation and management measures of the stocks occurring in its EEZ, the dispute can be submitted to compulsory conciliation.⁷²⁴

However, an interesting aspect on dispute settlement established by UNFSA is found in Article 30 (5):

“Any court or tribunal to which a dispute has been submitted under this Part shall apply the relevant provisions of the Convention [UNCLOS], of this Agreement [UNFSA], as well as generally accepted standards for the conservation and management of living marine resources and other rules of international law not incompatible with the Convention, with a view to ensuring the conservation of the straddling fish stocks and highly migratory fish stocks concerned.”⁷²⁵

Even though “generally accepted standards for the conservation and management of living marine resources” was not defined under the Agreement, the ecosystem-based approach can be considered one of these standards. As demonstrated in Chapter 1, intense discussions on EBFM/EBM have been taking place within the UN arena. Furthermore, a number of UNGA resolutions (adopted by consensus) have been endorsing the implementation of EBFM. Albeit they are not binding (as discussed in Chapter 1), they indicate a degree of *opinio juris* that cannot be disregarded. As also seen in Chapter 1, EBFM is not contrary to UNCLOS principles and is in consonance with the UNFSA scope and principles (as demonstrated above). Therefore, it would be possible to have the EBFM/EBM measures applied by the ICJ or by ITLOS when deciding a specific dispute among UNFSA Parties. However, these measures would, in principle, be only applied in regards to the high seas, due to the compulsory jurisdiction exceptions of UNCLOS Article 297 (3) (a) mentioned above. This

⁷²³ *Ibid.*, Para. 292.

⁷²⁴ UNCLOS, Art. 297 (3) (b) (i) and Annex V, Section 2. See also A. Boyle (1999), *supra* note 721.

⁷²⁵ UNFSA, Art. 30 (5).

provision constitutes a drawback on the duty to achieve compatible conservation measures within and beyond areas of national jurisdiction.⁷²⁶

It is also worth mentioning that UNFSA provides for an additional element consonant with the implementation of the EBFM/EBM; that is the mandatory application of the precautionary approach to conservation measures in both areas within and beyond national jurisdiction, which must be applied in relation to non-target and associated or dependent species as well as in adopting plans to protect crucial habitats (see Chapter 1).⁷²⁷ Therefore, in order to comply with this provision, States have to agree on compatible precautionary conservation measures in accordance with the guidelines established by annex II of the Agreement (see Chapter 1 on precautionary reference points).

Hence, even though UNFSA has advanced the establishment of clearer guidelines on achieving compatible conservation and management measures to be adopted within and beyond national jurisdiction, it is noteworthy that ecological problems derived from political boundaries and fragmented policies and management are still common. The following section will address a few boundary dispute cases to illustrate how decisions have been taken in this regard (i.e. ecological boundaries v. political boundaries).

c) Case Law on Maritime Boundaries Disputes

With regard to the problems imposed by political boundaries, this subsection will focus on a few dispute settlement cases to demonstrate how maritime boundary disputes have been resolved in practice.

In accordance with Article 15 of UNCLOS, the rule to delimitate the territorial sea between States with opposite or adjacent coasts (when agreement has not been reached) is to draw a median line or equidistant line between the two coasts

⁷²⁶ See also A. Boyle (1999), *supra* note 721.

⁷²⁷ UNFSA, Art. 6.

respectively, if no previous agreement has been reached between them. The exception to this rule encompasses historic title or the existence of “other special circumstances”⁷²⁸, which is analysed further in this section. In regards to the delimitation of the EEZ between States with opposite or adjacent coasts, it must be done by agreement with the means to achieve an ‘equitable solution’.⁷²⁹ Comments on this are provided as we consider the cases below. As for the continental shelf, UNCLOS establishes that the delimitation between States with opposite or adjacent coasts must be done by agreement with the aim of achieving an *equitable solution*.⁷³⁰ If no agreement can be reached, the conflict can be submitted to the dispute settlement procedures of part XV.

It is important to note that it is not the aim of this section to analyse every single boundary dispute related to fisheries interests to date, as the scope of the current work is on the high seas and not on the Continental Shelves, EEZs or territorial waters. Notwithstanding this, the objective of this section is to briefly illustrate how ecological boundaries have not been taken into account by courts and tribunals when deciding boundaries disputes. For this purpose, two cases are presented as a means to exemplify the issue, namely: *the Delimitation of the Maritime Boundary in the Gulf of Maine Area*,⁷³¹ and the *Maritime Delimitation in the Area between Greenland and Jan Mayen*,⁷³² followed by a brief examination of how courts have been interpreting ‘special/relevant circumstances’ in recent cases.

Gulf of Maine case

The best example (in the author’s view) of a dispute settlement case expressing the conflicts derived from political versus natural boundaries is found in

⁷²⁸ UNCLOS, Art. 15.

⁷²⁹ UNCLOS, Art. 74 (1). However, if no agreement is reached, States are entitled to submit the case to a dispute settlement procedure in accordance with Part XV (UNCLOS, Art. 74 (2)). States can, however, opt out from the compulsory jurisdiction by signing a declaration (UNCLOS, Art. 298, 1 (a)), which in this case, the dispute would be submitted to conciliation under Annex V, section 2.

⁷³⁰ It is noteworthy that Articles 74 and 83 were negotiated together. For further details, see Virginia Commentary, *supra* note 152, Vol. II (1993).

⁷³¹ *Delimitation of the Maritime Boundary in the Gulf of Maine Area* (Canada/United States of America), Judgment, ICJ Reports 1984, p. 246. [*Gulf of Maine case*]

⁷³² *Maritime Delimitation in the Area between Greenland and Jan Mayen*, Judgment, ICJ Reports 1993, p. 38. [*Jan Mayen Case*]

the *Gulf of Maine* case between Canada and the United States. The parties requested the Court to draw a single maritime boundary to divide both the continental shelf and the fisheries zone of the two countries.⁷³³ The Court noted that there is no rule of international law contrary to single maritime boundary establishment,⁷³⁴ and accepted the request. In fact, as emphasised years later in the *Qatar/Bahrain* case:

“The Court observes that the concept of a single maritime boundary does not stem from multilateral treaty law but from State practice, and that it finds its explanation in the wish of States to establish one uninterrupted boundary line delimiting the various – partially coincident – zones of maritime jurisdiction appertaining to them.”⁷³⁵

The *Gulf of Maine* dispute generally concerned the Georges Bank region, which constitutes a rich fishing ground area.⁷³⁶ The US claimed the delimitation of a single maritime boundary (as seen above), which in its view “requires the application of equitable principles, taking into account the relevant circumstances in the area, to produce an equitable solution.”⁷³⁷ The US divided relevant circumstances (relevant circumstances are addressed further in this subsection) into three categories as follows:

- i) Relevant geographical circumstances in the area, such as the direction, protrusion and length of the coasts in question;
- ii) Relevant environmental circumstances in the area, which included:

“(a) the three separate and identifiable ecological régimes associated, respectively, with the Gulf of Maine Basin, Georges Bank, and the Scotian Shelf ; and
(b) the Northeast Channel as the natural boundary dividing not only separate and identifiable ecological régimes of Georges Bank and the Scotian Shelf, but also

⁷³³ *Gulf of Maine* case, ICJ Reports 1984, *supra* note 731. On single boundary, see also: *Continental Shelf (Libyan Arab Jarnahiriya/Malta)*, Judgment, ICJ Reports 1985, p. 13; *Delimitation of the Maritime Boundary between Guinea and Guinea-Bissau*, Award of the Arbitral Tribunal 1985, 77 ILR 635, and (1986) 25 ILM 251; *Maritime Delimitation and Territorial Questions between Qatar and Bahrain*, Merits, Judgment, ICJ Reports 2001, p. 40; *Barbados/Trinidad and Tobago Case* (2006), *supra* note 678, Paras. 234 and 235.

⁷³⁴ *Gulf of Maine* case, ICJ Reports 1984, *supra* note 731.

⁷³⁵ *Qatar/Bahrain* case (2001) ICJ Reports, *supra* note 733, at Para. 173.

⁷³⁶ *Gulf of Maine* case, ICJ Reports 1984, *supra* note 731.

⁷³⁷ *Ibid.*, at 16.

most of the commercially important fish stocks associated with each such régime.”⁷³⁸

- iii) Relevant circumstances relating to predominant interest of the US, which included American fishermen interests, historical aspects of US presence in the area conducting scientific research, fisheries conservation and management, among other factors.

The focus of this section is on the relevant environmental circumstances presented by the US, as well as the biogeographic factors offered by Canada and the Court’s decision in regard to these arguments.

Canada accepted the US identification of three distinct ecosystems in the disputed area, but added that the Georges Bank was part of a biogeographical province that starts in Newfoundland, as follows:

“(…) Canada's pleadings acknowledge that there is a distinct ecosystem on Georges Bank, which is geographically defined by the Great South Channel and the Northeast Channel. But on the basis of its experts' research it also submits that, despite the particularly congenial conditions favouring the above-mentioned concentration, Georges Bank forms part of a continuous oceanic system belonging to the Nova Scotian biogeographical province. This province, according to Canada, stretches from Newfoundland to the vicinity of the coastal alignment between Cape Cod and Nantucket Island. East of the Great South Channel separating Georges Bank from the Nantucket Shoals the continuity is said to give way to a transition from northern cold-water fauna and flora to southern warm-water varieties typical of a different, Virginian, mid-Atlantic biogeographical province. At any rate, it is only thereabouts that, according to Canada, any kind of oceano-biological boundary is discernible; that boundary, however, would lie at the extreme western limit of the delimitation area and therefore could not be relevant to the delimitation that has to be carried out within the area itself.”⁷³⁹

It is interesting to note that Dr. Alan Longhurst (see section 3.1 (a)) was one of the experts for Canada in the *Gulf of Maine* case.⁷⁴⁰ As seen in section 3.1 (a) above, the concept of biogeographic provinces was introduced by Longhurst, and

⁷³⁸ *Ibid.*, at 17.

⁷³⁹ *Ibid.*, Para. 50.

⁷⁴⁰ *Ibid.*

since then, it has been improving and developing with the assistance of other scientists and managers,⁷⁴¹ as seen in section 3.2.

Notwithstanding the scientific explanations on natural boundaries/biogeographical provinces, Canada did not convince the Court which based its decision solely on legal-political factors, as transcribed below:

“The Chamber is not however convinced of the possibility of discerning any genuine, sure and stable “natural boundaries” in so fluctuating an environment as the waters of the ocean, their flora and fauna. It has thus reached the conviction that it would be vain to seek, in data derived from the biogeography of the waters covering certain areas of sea-bed, any element sufficient to confer the property of a stable natural boundary - and what is more, one serving a double purpose - on a geomorphological accident which influences superadjacent waters but which is clearly inadequate to be seen as a natural boundary in respect of the sea-bed itself.
(...)

It must, however, be emphasized that a delimitation, whether of a maritime boundary or of a land boundary, is a legal-political operation, and that it is not the case that where a natural boundary is discernible, the political delimitation necessarily has to follow the same line. But in any event the problem does not arise in the present instance, since, as we have noted, there are no geological, geomorphological, ecological or other factors sufficiently important, evident and conclusive to represent a single, incontrovertible natural boundary.”⁷⁴²

The Court also stressed that as it was deciding over a single maritime boundary, it could not provide more weight to the delimitation of the water column than to the continental shelf; i.e., the criterion method should be suitable for the delimitation of both areas altogether.⁷⁴³ Therefore, issues such as fisheries distribution raised by the US were rejected by the Court, which based its decision primarily on geographical factors.⁷⁴⁴ In fact, the Court stated that fishing (as well as other activities, such as navigation, defence or mineral resources exploitation) could not be considered a relevant circumstance when drawing the boundary line, as the method used was not “likely to entail catastrophic repercussions for the livelihood and economic well-being of the population of the countries concerned.”⁷⁴⁵

⁷⁴¹ It is noteworthy that the Convention on Biological Diversity has been working on marine biogeographic criteria as means to identify areas in need of protection, as addressed in section 3.2.

⁷⁴² *Gulf of Maine* case, ICJ Reports 1984, *supra* note 731, Paras. 54 and 56.

⁷⁴³ *Ibid.* Paras. 167 and 168.

⁷⁴⁴ *Ibid.*

⁷⁴⁵ *Ibid.*, Para. 237.

In the end, the Court gave the US roughly two-thirds of the Gulf of Maine and three-quarters of Georges Bank.⁷⁴⁶ However, the one-quarter left to Canada is considered to be the richest part of the Bank in regards to fisheries resources.⁷⁴⁷

The recognition that there was a need to cooperate in order to properly manage the ecosystems of the Gulf of the Maine region in a compatible way led to the adoption of the ‘Gulf of Maine Agreement on the Marine Environment’ in 1989.⁷⁴⁸ The Agreement was signed by the Maine, New Hampshire and Massachusetts Governors and by the Nova Scotia and New Brunswick Premiers.⁷⁴⁹

The administrative arm of the Agreement is the Gulf of Maine Council (composed of federal and local government agencies, as well as NGOs and business interest groups), which was established in order to “maintain and enhance environmental quality in the Gulf of Maine and to allow for sustainable resource use by existing and future generations.”⁷⁵⁰ It is interesting to note that the Council’s work is led by four guiding principles: *ecologically sustainable development*, *ecosystem-based planning and management*, *environmental protection through precaution* and *public information and participation*.⁷⁵¹ ‘Ecosystem-based planning and management’ as a guiding principle means that “[t]he Council supports collaborative management that integrates economic, social, and ecological values and objectives, emphasizing natural rather than political boundaries.”⁷⁵²

At the time of writing, the council has been working on implementing its Action Plan for 2007-2012, which includes three goals: ‘coastal and marine habitats are in a healthy productive and resilient condition’; ‘environmental conditions in the Gulf of Maine support ecosystem and human health’; and ‘Gulf of Maine coastal

⁷⁴⁶ E. Collins Jr, M. Rogoff, “The Gulf of Maine Case and the Future of Ocean Boundary Delimitation” (1986) 38 Me. L. Rev. 1-48.

⁷⁴⁷ *Ibid.*

⁷⁴⁸ L. Hildebrand, V. Pebbles, D. A. Fraser, “Cooperative Ecosystem Management across the Canada-US Border: Approaches and Experiences of Transboundary Programs in the Gulf of Maine, Great Lakes and Georgia Basin/Puget Sound” (2002) 45 Ocean & Coastal Management 421-457.

⁷⁴⁹ *Ibid.*

⁷⁵⁰ Gulf of Maine Council on the Marine Environment, *Gulf of Maine Council on the Marine Environment Action Plan 2007–2012* (2007), 30 p., at 1.

⁷⁵¹ *Ibid.*

⁷⁵² *Ibid.*, at 5.

communities are vibrant and have marine-dependent industries that are healthy and globally competitive.”⁷⁵³ Notwithstanding the fact that the Gulf of Maine Council does not take binding decisions, it provides an important forum for discussion on the protection of the area’s environment with the participation of scientists, universities, NGOs, government, industry. These discussions serve to integrate different sectors and ultimately to enhance the collaboration between Canada and the US in managing the Gulf. Furthermore, the Council has been raising grants to support a wide-range of environmental projects in the region, including habitats restoration as part of the ecosystem-based management approach.⁷⁵⁴

Furthermore, the Gulf of Maine region is located within the NAFO Convention area (even though outside NAFO’s regulatory area, which excludes the States EEZs).⁷⁵⁵ This means that NAFO also provides a forum for discussion and cooperation on conservation and the establishment of management measures for fisheries resources in the area. This is properly addressed in Chapter 4.

From this it is clear that although the court’s decision did not take into account natural boundaries/biogeographical criteria as a relevant circumstance, cooperation between Canada’s and the US’ local governments have been able to accomplish good results in managing a fragile ecosystem divided by legal-political boundaries.

Jan Mayen Case

In the *Maritime Delimitation in the Area between Greenland and Jan Mayen* (*Jan Mayen case*) the Court was asked by Denmark to draw a single line of delimitation of the fishing zone and continental shelf area of Greenland (between Greenland and Jan Mayen) at a distance of 200 nautical miles from Greenland baselines; while Norway requested the Court to declare a median line between Jan Mayen and Greenland.⁷⁵⁶ The Court rejected these claims and decided to draw

⁷⁵³ *Ibid.*, at 17.

⁷⁵⁴ *Ibid.*

⁷⁵⁵ NAFO, online: <http://www.nafo.int/about/frames/about.html> (accessed on 01.03.08).

⁷⁵⁶ *Jan Mayen Case*, ICJ Reports 1993, *supra* note 732.

boundaries for the fisheries zones and continental shelves of the parties, which ultimately coincided and ended up being a single boundary.⁷⁵⁷

It is noteworthy that in this case the Court considered fisheries issues (i.e. capelin distribution) as a relevant circumstance, differently from the *Gulf of Maine* decision. The reason for adopting a different approach, under Churchill's point of view, had to do with the fact that in the *Gulf of Maine* case, the court was asked to draw a single maritime boundary, while in the *Jan Mayen* case, the intention was to draw different boundaries for continental shelf and fisheries zones, as follows:

“The difference between the cases can, however, be explained and justified. In the *Gulf of Maine* (as in the *Canada/France* case) the court was concerned with a single maritime boundary and took the view that it should exclude factors which bore particularly on either the continental shelf (e.g. sea-bed resources) or the water column (e.g. fisheries) and concentrate on factors there were common to both, which were primarily the geographical. In the present case the court was concerned with a fishery zone boundary. Just as the court has recognised that seabed resources may be relevant to continental shelf delimitation, so by analogy fishery resources can be regarded as relevant to fishery zone delimitation (although, strictly speaking, the court in the present case is concerned with “equitable access” to the resources, rather than the resources themselves, as a relevant factor).”⁷⁵⁸

As Churchill notes above, it is important to stress that fisheries distribution was taken into account in this case in order to provide an equitable solution in sharing the resources; i.e. ecological factors were not taken into account. Other relevant circumstances were also taken into consideration in this case, such as coastal geography factors such as proportionality of the coasts in question,⁷⁵⁹ but this is beyond the scope of current work.

Relevant Circumstances

In regards to relevant or special circumstances, it is noteworthy that the text prepared by the ILC and presented at UNCLOS I on continental shelf delimitation,

⁷⁵⁷ *Ibid.*

⁷⁵⁸ R. Churchill, “The Greenland-Jan Mayen Case and its Significance for the International Law of Maritime Boundary Delimitation” (1994), 9 IJMCL 1-30, at 22. See also, *Case Concerning the Delimitation of the Maritime Areas between Canada and France*, Award of 10 June 1992, 31 ILM 1145 (1992).

⁷⁵⁹ *Jan Mayen* Case, ICJ Reports 1993, *supra* note 732.

considered 'special circumstances' as limited exceptions to the equidistance/median line rule.⁷⁶⁰ However, during the course of the negotiations, other elements were raised as being part of special circumstances, such as oil installations, socio-economic and geographical issues. From the outcomes of the UNCLOS negotiations, geographical factors were the predominant element to be considered as a special circumstance.⁷⁶¹ As stated by Evans, "[i]t was recognised that non-geographical factors could be special circumstances but there was neither clarification nor consensus as to what they might be."⁷⁶²

Decisions of courts, tribunals and arbitration bodies show a lack of consistency on what have been considered relevant/special circumstances over the years until the late 1990s. As seen in the *Gulf of Maine* case, environmental factors were rejected by the court. It is noteworthy, however, that in the *Guinea/Guinea-Bissau* case⁷⁶³ the Arbitral Tribunal made the following statement:

"The factors and methods referred to result from legal rules, although they evolve from physical, mathematical, historical, political, economic or other facts. However, they are not restricted in number and none of them is obligatory for the Tribunal, since each case of delimitation is a unicum, as has been emphasized by the International Court of Justice (...). Where factors are concerned, the Tribunal must list them and assess them. They result from the circumstances of each particular case and, in particular, from characteristics peculiar to the region. These circumstances will be taken into consideration only when the Tribunal considers them relevant to the case in point. These circumstances are varied and are not restricted to physical facts whether geographical, geological or geomorphological."⁷⁶⁴

It is safe to assume, that the range of possibilities is not limited to coastal geography and the existence or non-existence of geological features, such as islands. In fact, fisheries considerations were taken into account in the *Jan Mayen* case, as seen above. However, it is important to keep in mind that, in accordance with

⁷⁶⁰ M. Evans, "Maritime Delimitation and Expanding Categories of Relevant Circumstances" (1991) 40 ICLQ 1-33.

⁷⁶¹ *Ibid.*

⁷⁶² *Ibid.*, at 5.

⁷⁶³ *Guinea/Guinea-Bissau Arbitration* (1985), supra note 733.

⁷⁶⁴ *Ibid.*, at Para. 89.

UNCLOS and with the recent positions of the courts and tribunals,⁷⁶⁵ the delimitation of the continental shelf and the EEZ between States with opposite or adjacent coasts must be done in order to achieve an equitable solution.⁷⁶⁶ In fact, even the fisheries issues taken into account in the *Jan Mayen* case were for the purpose of ensuring an equitable/proportional share of the resources, and not for conservational or biological purposes. The recent decision of the Arbitral Tribunal on the *Guyana-Suriname* case (2007) reaffirmed this view, by stating that “[e]mphasis is placed in both of these Articles [UNCLOS, Arts. 74 and 83] on the equitable result.”⁷⁶⁷ The Tribunal then, agreed with the award granted in the *Barbados/Trinidad and Tobago* case, where a significant weight was given to the achievement of equitable results, as follows:

“The determination of the line of delimitation thus normally follows a two-step approach. First, a provisional line of equidistance is posited as a hypothesis and a practical starting point. While a convenient starting point, equidistance alone will in many circumstances not ensure an equitable result in the light of the peculiarities of each specific case. The second step accordingly requires the examination of this provisional line in the light of relevant circumstances, which are case specific, so as to determine whether it is necessary to adjust the provisional equidistance line in order to achieve an equitable result (*Cameroon v. Nigeria*, I.C.J. Reports 2002, p. 303; Prosper Weil, *Perspectives du droit de la délimitation maritime* p. 223 (1988)). This approach is usually referred to as the “equidistance/relevant circumstances” principle (*Qatar v. Bahrain*, I.C.J. Reports 2001, p. 40; *Cameroon v. Nigeria*, I.C.J. Reports 2002, p. 303). Certainty is thus combined with the need for an equitable result.”⁷⁶⁸

From what was seen, it would be extremely unlikely that courts, tribunals or arbitrators would interpret that marine biogeographical factors could represent a special/relevant circumstance when delimitating a maritime boundary (see *Gulf of Maine* case); even if it is for the purpose of ensuring best conservation and

⁷⁶⁵ For further details on recent approaches to maritime delimitation, see: *Case Concerning Maritime Delimitation in the Black Sea (Romania v. Ukraine)*, Judgment, ICJ Reports 2009, p.69; *Yemen/Eritrea Case*, Award of the Arbitral Tribunal on Maritime Delimitation, PCA (1996); *Qatar/Bahrain case*, *supra* note 733; *Land and Maritime Boundary between Cameroon and Nigeria (Cameroon v. Nigeria: Equatorial Guinea intervening)*, Judgment, ICJ Reports 2002, p. 303; *Barbados/Trinidad and Tobago Case* (2006), *supra* note 678; *Case Concerning Territorial and Maritime Dispute between Nicaragua and Honduras in the Caribbean Sea (Nicaragua v. Honduras)*, Judgment ICJ Reports 2007, p. 94; *Guyana/Suriname case*, Award of the Arbitral Tribunal, (2007), PCA, p. 167.

⁷⁶⁶ UNCLOS, Arts. 83 and 74. See also Virginia Commentary *supra* note 152, Vol. II (1993), at 948-985 on the negotiations of Arts. 74 and 83.

⁷⁶⁷ *Guyana/Suriname case* (2007), Para. 332.

⁷⁶⁸ *Barbados/Trinidad and Tobago Case* (2006), *supra* note 678, at Para. 242. See also, *Guyana/Suriname case*, (2007) *ibid*, at Para. 340.

management measures to the marine living resources. Applying biogeographical criteria on maritime delimitation would not be able to guarantee an equitable solution between the parties to the dispute. Moreover, biogeographical boundaries can change depending on the season of the year and migration patterns.⁷⁶⁹ Therefore, it would be unreasonable to fix political boundaries based on such criteria. Charney comments on the position of courts and tribunals which emphasise coastal geography elements in lieu of ecological factors, as follows:

“Some have been reluctant fully to embrace the limitation to coastal geography because maritime boundaries have human and economic impacts. Thus, the conservation and management of marine resources may be made more difficult if maritime boundaries do not reflect natural boundaries or exploitation patterns. Arguably, the maritime boundary might be designed to conform to natural or traditional behaviour patterns or social needs. The boundary could be drawn to divide the value of resources in the disputed area into equal shares. Arguments along those lines have been put forward in the past. With the exception of the *Jan Mayen* Judgement, the ICJ and ad hoc arbitration tribunals have been unable or unwilling to base maritime boundary lines on these considerations. Not only is it difficult to find credible evidence to support a boundary that reconciles these factors, but resource interests and human activities change over time, making a permanent delimitation constructed to accommodate them untenable. Similarly, international forums have been unable to delimit maritime boundaries on the basis of geologic considerations because of the uncertainties of that science, the difficulty of adapting it to international maritime boundaries that require relatively precise delimitation and the minimal relevance of such considerations to contemporary international relations.”⁷⁷⁰

In view of this, it is important to stress the importance of cooperation among States in order to implement compatible conservation measures in regards to straddling and highly migratory fish stocks, dependant and associated species, as well as to protect critical marine habitats. As seen in section 3.1 (a) above, taking into consideration the statement of the Parties in regards to the intention to cooperate, the Arbitral Tribunal in the *Barbados/Trinidad and Tobago* case, decided, *inter alia*, that:

“Trinidad and Tobago and Barbados are under a duty to agree upon the measures necessary to co-ordinate and ensure the conservation and development of flyingfish stocks, and to negotiate in good faith and conclude an agreement that will accord fisherfolk of Barbados access to fisheries within the Exclusive Economic Zone of Trinidad and Tobago, subject to the limitations and conditions of that agreement

⁷⁶⁹ A. Longhurst (2007), *supra* note 658.

⁷⁷⁰ J. Charney, “Progress in International Maritime Boundary Delimitation Law” (1994) 88 AJIL 227-256, at 237-8.

and to the right and duty of Trinidad and Tobago to conserve and manage the living resources of waters within its jurisdiction.”⁷⁷¹

A good example of cooperation in establishing multiple boundaries in maritime delimitation was the adoption of the Torres Strait Treaty between Australia and Papua New Guinea, which entered into force in 1985.⁷⁷² The Treaty establishes a regime of multiple boundaries⁷⁷³ between the Parties in a “shallow stretch of water, less than five miles wide”.⁷⁷⁴ Interesting to note is the establishment of the protected zone under Article 10 of the treaty, which states:

“The principal purpose of the Parties in establishing the Protected Zone, and in determining its northern, southern, eastern and western boundaries, is to acknowledge and protect the traditional way of life and livelihood of the traditional inhabitants including their traditional fishing and free movement. A further purpose of the Parties in establishing the Protected Zone is to protect and preserve the marine environment and indigenous fauna and flora in and in the vicinity of the Protected Zone.”⁷⁷⁵

Within the Protected Zone, commercial fisheries are allowed under an allocation based on optimum sustainable yield, which is determined by the Parties as part of the subsidiary conservation and management arrangements.⁷⁷⁶ The Torres Strait Protected Zone Joint Authority is responsible for all fisheries in the protected zone.⁷⁷⁷

To conclude, it is safe to assume that marine ecosystems can be most effectively protected on the basis of cooperation. In addition, particular mechanisms, such as biogeographical criteria should be used as a tool to achieve effective and

⁷⁷¹ *Barbados/Trinidad and Tobago case* (2006), *supra* note 678, Para. 385 (3).

⁷⁷² *Treaty between Australia and the Independent State of Papua New Guinea concerning Sovereignty and Maritime Boundaries in the area between the two Countries, including the area known as Torres Strait, and Related Matters*, (Sydney, 18 December 1978), Australian Treaty Series 1985 No. 4. [Torres Strait Treaty] Online: <http://www.austlii.edu.au/au/other/dfat/treaties/1985/4.html> (accessed on 3 March 2008).

⁷⁷³ The Treaty establishes fisheries boundaries, sea-bed boundaries, a protected zone between the two States, and defines the maritime zones of several Australian islands.

⁷⁷⁴ S. Kaye, “The Torres Strait Treaty: A Decade in Perspective” (1994) 9 *IJMCL* 311-336., at 311.

⁷⁷⁵ Torres Strait Treaty, *supra* note 772, Art. 10 (3) and (4).

⁷⁷⁶ *Ibid.*, Art.23 (2). See also: S. Taylor, J. Prescott, J. Kung, (eds.) (2004), *A Guide to Management Arrangements in the Torres Strait - June 2004*. Australian Fisheries Management Authority, Canberra, Australia.

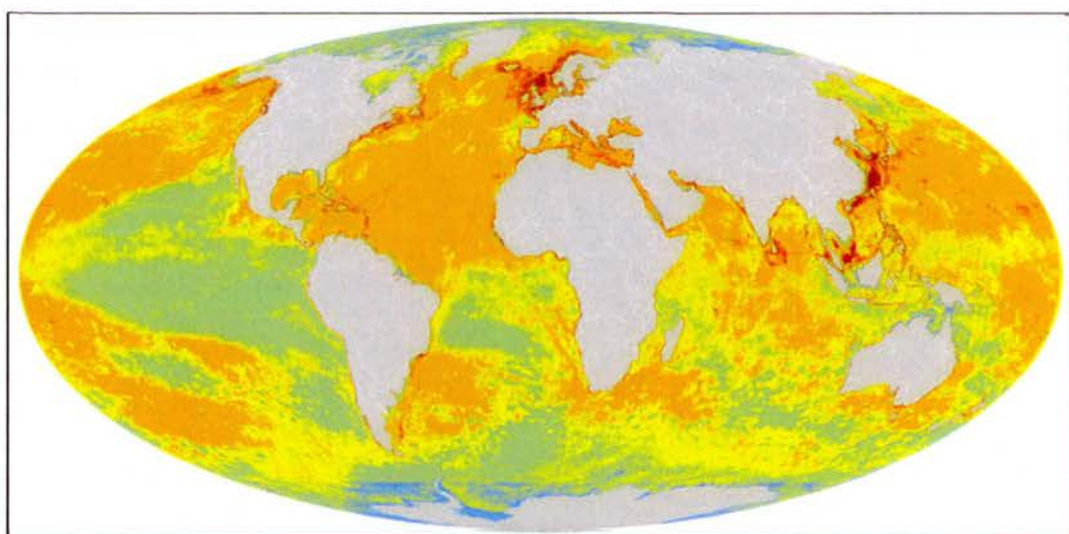
⁷⁷⁷ Torres Strait Protected Zone Joint Authority, online: <http://www.pzja.gov.au/about_us/what.htm> (accessed 24 Sep. 09).

compatible conservation and management measures of the marine living resources and ecosystems, resolving problems derived from the establishment of political boundaries, as discussed in the following section.

3.2 Is it Possible to Overcome Political Boundaries Problems by Adopting the Ecosystem-Based Approach?

This section aims to demonstrate how ecosystem-based management can overcome problems related to incompatibilities derived from political boundaries. The key element here is still cooperation among States, as provided for by UNCLOS and UNFSA. However, this section focuses on practical tools, such as the use of biogeographical classification systems, which can be utilised to identify areas in need of protection, as suggested by the CBD and to promote a sustainable management of marine living resources (as discussed below).

Initially, it is worth considering the big picture of the world's oceans in order to visualize the anthropogenic impacts on marine ecosystems. The map below represents the human impact on marine ecosystems, as developed by Halpern et al:



Very Low Impact (<1.4) Medium Impact (4.95–8.47) High Impact (12–15.52)
Low Impact (1.4–4.95) Medium High Impact (8.47–12) Very High Impact (>15.52)

Figure 2: global map of human impact on marine ecosystems. Halpern et al (Science, Feb. 2008)

This map addresses the following marine ecosystems:⁷⁷⁸

- a) Beach;
- b) Coral reefs;
- c) Rocky reef;
- d) Hard shelf;
- e) Hard slope;
- f) Deep hard bottom;
- g) Intertidal mud;
- h) Kelp;
- i) Mangroves;
- j) Surface waters;
- k) Deep waters;
- l) Rocky intertidal;
- m) Sub-tidal soft bottom;
- n) Soft shelf;
- o) Soft slope;
- p) Deep soft benthic;
- q) Salt marsh;
- r) Seagrass;
- s) Seamounts;
- t) Suspension-feeder reef.

The following impacts on the marine environment were taken into account:⁷⁷⁹

- a) Land-based drivers (land based source of pollution, i.e. nutrient input);

⁷⁷⁸ B. Halpern, S. Walbridge, K. Selkoe, C. Kappel, F. Micheli, C. D'Agrosa, J. Bruno, K. Casey, C. Ebert, H. Fox, R. Fujita, D. Heinemann, H. Lenihan, E. Madin, M. Perry, E. Selig, M. Spalding, R. Steneck, R. Watson, "A Global Map of Human Impact on Marine Ecosystems" Supporting online material (2008) 319 *Science* 948. See also CBC News, <<http://www.cbc.ca/technology/story/2008/02/14/science-map-impact.html>> (accessed 14 Feb. 2008); The New York Times: <http://www.nytimes.com/interactive/2008/02/25/science/earth/20080225_COAST_GRAPHIC.html> (accessed 25 Feb. 2008) and the National Center for Ecological Analysis and Synthesis, online: <http://www.nccas.ucsb.edu/GlobalMarine> (accessed 14 Feb. 2008).

⁷⁷⁹ *Ibid.*

b) Ocean-based drivers:

- 1) commercial fishing (divided into 5 categories of fishing gear – i.e. pelagic low-bycatch, pelagic high-bycatch, demersal habitat-modifying, demersal non-habitat-modifying low-bycatch, and demersal non-habitat-modifying high bycatch);
- 2) Artisanal fishing;
- 3) Benthic structures (oil rigs);
- 4) Commercial Activity (shipping lanes);
- 5) Invasive species (ports);
- 6) Ocean pollution (shipping lanes, ports);
- 7) Climate change (on the sea surface temperature, intensity of ultraviolet (UV) radiation reaching the oceans and acidification of the ocean waters).

The final map (fig. 1) was created after overlaying the impact maps (from the activities listed above) onto the marine ecosystems (listed above) as well as using vulnerability scores to rate the overall impact.⁷⁸⁰

As seen in Chapter 1, ecosystem-based management takes into consideration the cumulative impacts of all activities taking place in the oceans in regards to a specific ecosystem.⁷⁸¹ This map (fig. 2), therefore, indicates the areas of the world's oceans that present the highest ecological impacts of human activities, which need more appropriate conservation and management measures (not only related to fisheries).⁷⁸² It is noteworthy that according to the map, one of the least impacted areas is the Torres Strait (see section 3.1 (c) above). The study did not provide an explanation for this. However, it is interesting to recall that the regime established by the Torres Strait Treaty includes a protected zone where cooperative conservation and management measures are jointly established by Australia and Papua New Guinea. Therefore, this reinforces the idea that cooperation in establishing conservation measures is a key component in managing the oceans.

⁷⁸⁰ *Ibid.*

⁷⁸¹ As addressed in Chapter 1, EBFM can be the first step to achieve EBM.

⁷⁸² B. Halpern, et al (2008), *supra* note 778.

It is also noteworthy that even though the highest impact rates are found in coastal zones, vast areas in the high seas (mostly in the North Atlantic and Pacific) have been classified as medium-high to high impact (see figure 2 above). It confirms that human pressure on the coast has been extended to areas beyond national jurisdiction (as demonstrated in Chapter 1). Therefore, a new management approach, such as EBM, is required in order to limit the depletion of high seas ecosystems and habitats.

In order to properly manage ecosystems, a number of approaches have been developed (see Chapter 1). As discussed in Chapter 1, Sherman developed the Large Marine Ecosystems⁷⁸³ concept, which has been used only in coastal areas. The partition of the oceans based on biogeographic provinces as proposed by Longhurst is one of the options to divide the world's oceans (including the high seas) in order to better understand the species interactions and habitat issues within a specific marine area delimited by natural boundaries. This section will provide a brief explanation on the importance of understanding the natural boundaries in implementing EBM/EBFM and will further comment on recent developments of such an approach by the Convention on Biological Diversity.

Natural boundaries in the marine environment can be found more easily in regions which present physical discontinuities, like major fronts or frontal systems in the open oceans.⁷⁸⁴ It is noteworthy that frontal zones are usually areas of biological enhancement, due to a physical dynamic which forces exchanges of water in the area.⁷⁸⁵ Therefore, “(...) fronts in the ocean are not only boundaries but also habitats having the attributes of ecotones (...).”⁷⁸⁶ Ecotones (or “transition zone between two ecological communities”⁷⁸⁷) in the sea are usually associated with water

⁷⁸³ LMEs are areas of roughly 200,000km² with distinct bathymetry, hydrography, productivity and trophically dependent populations. See Chapter 1; See also, LME Portal, online: <http://www.lme.noaa.gov/>

⁷⁸⁴ Longhurst (2007), *supra* note 658.

⁷⁸⁵ *Ibid.*

⁷⁸⁶ *Ibid.*, at 35.

⁷⁸⁷ *Ibid.*, at 35.

masses convergence or divergence⁷⁸⁸; eddies in the open ocean; and semidiurnal tides in coastal waters.⁷⁸⁹ Moreover, it is noteworthy that “[b]ecause the biota in convergent oceanic fronts may have access to resources supplied from each of the adjacent water masses, and because of physical aggregation there, a greater biomass may indeed build up within the frontal zone than on either side.”⁷⁹⁰ As noted by Longhurst, processes which cause the stratification of the oceans’ surface layers induce distinct phytoplankton regimes.

With this in mind, Longhurst initially proposed a partition of the oceans based on four ocean biomes (Polar Biome; Westerlies Biome; Trade Biome; and Coastal Biome). Each of these four biomes present distinct discontinuities in physical processes as referred to above, as well as differences in irradiation. This partition is then followed by a division of these 4 biomes into 57 biogeographic provinces (see fig. 3 below). ‘Provinces’ can be defined as:

“Large areas defined by the presence of distinct biotas that have at least some cohesion over evolutionary timeframes. Provinces will hold some level of endemism, principally at the level of species. Although historical isolation will play a role, many of these distinct biotas have arisen as a result of distinctive abiotic features that circumscribe their boundaries. These may include geomorphological features (isolated island and shelf systems, semienclosed seas); hydrographic features (currents, upwellings, ice dynamics); or geochemical influences (broadest-scale elements of nutrient supply and salinity).”⁷⁹¹

⁷⁸⁸ Convergence and divergence zones can be derived from wind-driven surface currents. For further details, see K. Sverdrup et al (2004), *supra* note 36, at 235.

⁷⁸⁹ Longhurst (2007), *supra* note 658, at 35.

⁷⁹⁰ *Ibid.*, at 35.

⁷⁹¹ M. Spalding, H. Fox, G. Allen, N. Davidson, Z. Ferdana, M. Finlayson, B. Halpern, M. Jorge, A. Lombana, S. Lourie, K. Martin, E. McManus, J. Molnar, C. Recchia, J. Robertson “Marine Ecoregions of the World: A Bioregionalization of Coastal and Shelf Areas” (2007), 57 *BioScience* 573-583, at 575.

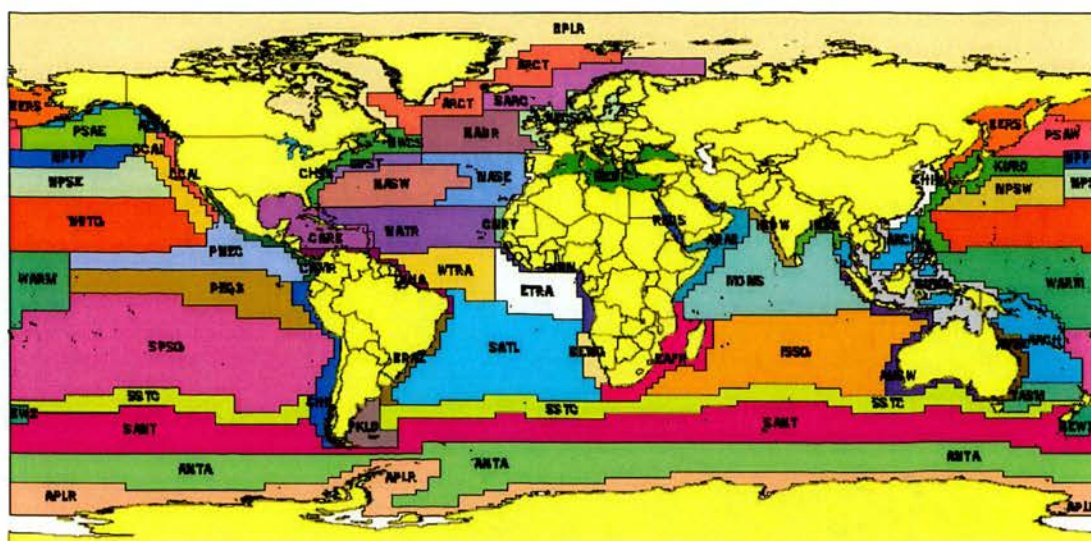


Figure 3: Oceans divided into 57 biogeographical provinces. Extracted from Pauly et al (2000).

Therefore, each one of the 57 biogeographic provinces comprise a specific regime of physical processes, such as water mixing, which influences the nutrient supply patterns in each area, leading to a distinct primary production.⁷⁹² With regards to modification in circulation patterns derived from the regular changes in weather systems, Longhurst affirms that:

“Conditions within regions change, but boundaries between them do not. It is perhaps only in the Trade Wind biome and perhaps the equatorward parts of the Westerlies biome that the boundaries of provinces risk being modified significantly during for example, an El Nino event. It is, of course, the provinces of the Indo-Pacific Trade Wind biome that have the potential to show the greatest modification, and especially the western Pacific Warm Pool Province (WARM), whose eastern boundary might become difficult to define.”⁷⁹³

Further developments on the study of biogeographical provinces, suggest that they could be merged with Sherman’s LMEs, which ultimately would constitute subunits of the provinces.⁷⁹⁴ As part of the Sea Around Us and FishBase Projects,

⁷⁹² D. Pauly, R. Watson, V. Christensen, “Ecological geography as a framework for a transition toward responsible fishing” (2003), Chapter 6, P. 87-101, in M. Sinclair and G. Valdimarson (eds.) *Responsible Fisheries in the Marine Ecosystem*. FAO and CABI Publishing, 448p.

⁷⁹³ A. Longhurst (2007), *supra* note 658, at 128.

⁷⁹⁴ D. Pauly, V. Christensen, R. Froese, A. Longhurst, T. Platt, S. Sathyendranath, K. Sherman, R. Watson, “Mapping Fisheries onto Marine Ecosystems: A Proposal for a Consensus Approach for

Pauly et al proposes that this new approach could complement the FAO statistical areas on global marine fisheries data.⁷⁹⁵ In fact the 18 FAO statistical areas do not rely on oceanographic boundaries as perceived today, as follows:

“Consider the partitioning of global fishery statistics among subareas of the ocean by the United Nations Food and Agricultural Organisation (FAO) for the past many decades. These compartments have been discussed (Gulland, 1971) as if they represented natural areas of the ocean, though a glance at the FAO map will show that they conform to no possible oceanographic reality. One of the most extreme examples is FAO area “H2”, which runs from the Bay of Bengal to Tasmania and includes the whole eastern part of the Indian Ocean. To put a part of the Southern Ocean together with the Bay of Bengal for fishery purposes is a breathtaking denial of the natural order of the ocean and also (dare I say?) of political reality. All this suggests that biological oceanographers face the same difficulty as did Tomczak and Godfrey (1994), who commented that previous regional systems fail to match our present understanding of ocean circulation. They pointed out that the widely used subdivision of the ocean basins adopted by the International Hydrographic Bureau (IHB) is not optimal for scientific description of natural processes.”⁷⁹⁶

The approach proposed by Pauly et al aims to assess the fisheries catches for each of these units (provinces and subprovinces/LME), which represent a particular ecosystem or a group of related ecosystems. Therefore, it would be easier to assess interaction among species, as well as among species and their habitats, and cumulative impacts of human activities in the provinces. Another feature of this project is the incorporation of political boundaries to the database in order to assess catches per country and in the high seas.⁷⁹⁷

From this, it is possible to affirm that biogeographical partition of the oceans could be used as a tool, in order promote ecosystem-based fisheries management or even ecosystem-based management (which includes all cumulative impacts on ecosystems – see Chapter 1). As discussed in Chapter 5, the creation of marine protected areas is one of the tools of EBFM/EBM. Following this line, it is noteworthy that the CBD (see Chapter 1 for relationship between the CBD and UNCLOS) has been convening expert meetings and promoting the use of

Regional, Oceanic and Global Integrations” (2000) Sea Around Us Project Methodology Review 13-22.

⁷⁹⁵ *Ibid.*

⁷⁹⁶ A. Longhurst (2007), *supra* note 658, at 104.

⁷⁹⁷ D. Pauly, et al (2000), *supra* note 794.

biogeographical classification systems as a means to identify potential MPAs sites;⁷⁹⁸ “In particular, a biogeographical classification system is essential in cases where the main objective of a MPA network is to protect a representative range of marine habitats/ecosystems.”⁷⁹⁹

The biogeographical classification system under study by the CBD experts does not necessarily conform to Longhurst’s biogeographical provinces. Critics of Longhurst’s approach argue that “this system does not strictly follow the surface circulation patterns in a number of areas. Some of his broader-scale biomes cut right across major ocean gyres, splitting in half some of the most reliable units of taxonomic integrity (...).”⁸⁰⁰ Taking into consideration some of the constraints and strengths offered by Longhurst’s (biogeographical provinces) and Sherman’s (LMEs) models (among others),⁸⁰¹ the CBD experts have been working on the development of an appropriate planning tool which will incorporate several layers of data into bioregions or provinces in marine areas beyond national jurisdiction “and oceanward of continental shelves in those regions where continuity of the same ecosystem exists”.⁸⁰² This study has been denominated ‘Global Open Oceans and Deep Sea-habitats (GOODS) Bioregional Classification’, which was presented at the CBD COP 9 in 2008⁸⁰³ (see Chapter 5).

⁷⁹⁸ UNEP/CBD/COP/DEC/VIII/24, *supra* note 271, Para. 46 and Annex II.

⁷⁹⁹ UNEP/CBD, *Protected Areas: Consideration of the Recommendations of the Ad Hoc Open-Ended Working Group on Protected Areas – Summary of existing ecological criteria for identification of potential marine areas for protection and biogeographical classification systems* (6 Feb. 2006) Doc. UNEP/CBD/COP/8/1/INF/16, Para. 11.

⁸⁰⁰ M. Vierros, “Approaches to Biogeographic Classification of the World’s Oceans” (2007) presented as a background document at the CCAMLR Bioregionalisation Workshop (Brussels, Belgium 13-17 August 2007), at 4.

⁸⁰¹ Several models were developed in an attempt to divide the oceans into ecological regions, such as *Zoogeography of the Sea* (Ekman 1953), *Marine biogeography* (Hedgpeth 1957), *Marine Zoogeography* (Briggs 1974), *Classification of Coastal and Marine Environments* (Hayden et al 1984), *Large Marine Ecosystems* (Sherman and Alexander 1989), *Ecological Geography of the Sea* (Longhurst 1998, 2007), *Ecoregions: the ecosystem geography of the oceans and continents* (Bailey 1998), *Marine Ecoregions of the World (MEOW)* (Spalding et al 2006). For further details, see: M. Vierros (2007) *ibid*.

⁸⁰² UNEP/CBD, “Draft Report on Global Open Oceans and Deep Sea-Habitats (GOODS) Bioregional Classification” SBSTTA 13th Meeting. (2008) Doc. UNEP/CBD/SBSTTA/13/INF/19, at 5.

⁸⁰³ *Ibid*.

In the study, the group of experts opted for separating the pelagic and benthic environments based on their different characteristics. For the pelagic bioregions, they identified 29 provinces based on the following features:

- a) Core areas or gyres;
- b) Equatorial upwelling;
- c) Upwelling zones at basin edges;
- d) Major transitional areas, including convergence and divergence areas.

All the provinces present distinct characteristics related to temperature, depth and primary production.⁸⁰⁴ The experts acknowledge that such pelagic bioregionalisation has been confronted with a number of challenges due to time constraints or lack of scientific certainty on particular issues.

With regards to the benthic bioregional classification, the experts initially identified three large depth zones:⁸⁰⁵

- a) Lower bathyal – between 800 and 3500 m, divided into 9 biogeographic provinces;
- b) Abyssal – between 3500 and 6500 m – divided into 10 biogeographic provinces;
- c) Hadal – deeper than 6500, including trenches – divided into 10 provinces.

Within the benthic bioregional classification, the experts also identified separate hydrothermal vent provinces (10 bioregions) based on biological data from field sampling.⁸⁰⁶

⁸⁰⁴ *Ibid.*

⁸⁰⁵ *Ibid.* For the maps of the proposed bioregionalisation, see United Nations University – Institute of Advanced Studies (UNU-IAS), online: http://www.ias.unu.edu/resource_centre/Proposed%20draft%20marine%20bioregions%20maps.pdf (accessed 6 Mar. 08).

⁸⁰⁶ UNEP/CBD/SBSTTA/13/INF/19, *supra* note 802.

It is noteworthy that, as discussed in Chapter 1, the UN General Assembly established 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. The first meeting of the group in 2006 recognized the importance of developing criteria for identification of ecologically and biologically significant areas, MPAs, as well as biogeographic classification systems.⁸⁰⁷ In light of this, the initiative taken by the CBD in developing a marine bioregional classification has been acknowledged by the UN General Assembly in 2007, as follows:

*“Notes the work of States, relevant intergovernmental organizations and bodies, including the Convention on Biological Diversity, in the assessment of scientific information on, and compilation of ecological criteria for the identification of, marine areas that require protection, in the light of the objective of the World Summit on Sustainable Development to develop and facilitate the use of diverse approaches and tools such as the establishment of marine protected areas consistent with international law and based on scientific information, including representative networks by 2012;”*⁸⁰⁸

Moreover, as demonstrated in Chapter 1, in regards to the conservation of biodiversity in marine areas beyond national jurisdiction, the mandates of UNCLOS and CBD somewhat complement each other. As noted by Boyle and Chinkin, “[t]he relationship between the 1982 UNCLOS and the 1992 Convention on Biological Diversity (CBD) shows how successive treaties on rather different topics can nevertheless contribute to the development of an integrated legal regime”⁸⁰⁹ (see Chapters 1 and 5 for further discussion on the relationship between UNCLOS and CBD). Therefore, cooperation between the DOALOS and the CBD Secretariat is imperative (see Chapter 1). Fortunately, there has been cooperation between the two Conventions, in particular with regards to the implementation of ecosystem-based approach in marine management, as affirmed by the UNGA Resolution A/62/215 (2007):

⁸⁰⁷ *Report of the 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* (20 March 2006) UN Doc. A/61/65, Para. 60.

⁸⁰⁸ UNGA Res. A/62/215 (22 Dec. 2007), at Para. 112.

⁸⁰⁹ A. Boyle, C. Chinkin (2007), *supra* note 105, at 256.

“Reaffirms paragraph 119 of its resolution 61/222 regarding ecosystem approaches and oceans, including the proposed elements of an ecosystem approach, means to achieve implementation of an ecosystem approach and requirements for improved application of an ecosystem approach, and in this regard:

(...)

(c) Recalls that States should be guided in the application of ecosystem approaches by a number of existing instruments, in particular [UNCLOS], which sets out the legal framework for all activities in the oceans and seas, and its implementing Agreements, as well as other commitments, such as those contained in the Convention on Biological Diversity and the World Summit on Sustainable Development call for the application of an ecosystem approach by 2010;

(d) Encourages States to cooperate and coordinate their efforts and take, individually or jointly, as appropriate, all measures, in conformity with international law, including the Convention and other applicable instruments, to address impacts on marine ecosystems within and beyond areas of national jurisdiction, taking into account the integrity of the ecosystems concerned;”⁸¹⁰

Ecosystem-based management can help increase cooperation between States and RFMOs, as political boundaries cannot hinder living resources from migrating. Therefore, the constant endorsement of EBFM/EBM by the UNGA as well as CBD COP’s decisions reinforces this idea and promotes the *opinio juris* of States (see Chapter 1). As observed by Brunnée: “(...) consensus decision-making, in many cases, may be more conducive to interactional law-making. (...) [C]onsensus-based processes can generate “common feeling”, may be the “key to the building of community consciousness”, and can promote the learning by States of their “real interests”.⁸¹¹ As noted above, EBFM can be more easily implemented if there is a consensus on natural boundaries of the oceans. Biogeographic partition of the oceans or bioregionalisation will help understand processes and interactions among species and their habitats, as well as migration patterns. Moreover, it will help to identify areas in need of protection within each of the provinces (as discussed in Chapter 5). Therefore, natural partition of the oceans can also help better coordination between States and organisations (including RFMOs – this is discussed in Chapter 4) in order to promote conservation strategies to safeguard a range of biodiversity components and rebuild fish populations in each province. In light of this, even though cooperation is still a challenging issue, it can be affirmed that EBFM/EBM is able to overcome problems derived from political boundaries.

⁸¹⁰ UNGA Res. A/62/215 (22 Dec. 2007), at Para. 99.

⁸¹¹ J. Brunnée (2002), *supra* note 232, at 40.

3.3 Conclusions

It was demonstrated in this Chapter that political maritime boundaries established by UNCLOS do not conform to natural boundaries. Even though UNCLOS provides for the adoption of compatibility measures in managing fish stocks occurring within and beyond its Parties EEZs, it does not provide any further guidelines on this.

The UNFSA was adopted in 1995 and entered into force in 2001, providing for, *inter alia*, compatibility of conservation and management measures for straddling and highly migratory fish stocks. The Agreement listed a number of actions to be taken by its Parties in order to achieve such compatibility. It was noted in this Chapter that those measures should also be based on the ecosystem-based approach and precautionary approach, taking into account the precautionary reference points of UNFSA, Annex II. However, constraints imposed by the dispute settlement provisions of UNCLOS (Art. 297 (3)) are also applied to UNFSA. Under this provision, coastal States are not “obliged to accept the submission to such settlement of any dispute relating to its sovereign rights with respect to the living resources in the exclusive economic zone or their exercise (...)”. In fact, as seen in this Chapter, the Arbitral Tribunal in the *Barbados/Trinidad and Tobago* case rejected Barbados’ claim on fisheries allocation within Trinidad and Tobago’s EEZ based on Article 297 (3). However, the Tribunal obliged both Parties to negotiate in good faith an agreement, taking into consideration conservation measures for the living resources existent in the area.

Other disputes over boundary delimitation were presented in order to demonstrate how Courts and Tribunals do not consider natural boundaries a relevant circumstance. The most notorious case on this is the *Gulf of Maine* case, where the Court disregarded the US considerations on relevant environmental circumstances and Canada’s explanation on biogeographical provinces. Recent cases were

presented as a means to identify the current approach to relevant circumstances, which prioritizes an equitable solution.

Section 3.2 then turned to the analysis of how ecosystem-based approach can overcome political/legal boundaries related constraints. It was seen that biogeographical/bioregional criteria for partition of the oceans is in consonance with EBFM/EBM, as it defines an ocean area by its natural characteristics. Therefore, the adoption of this criterion would assist EBFM/EBM implementation, as well as the identification of potential sites for the establishment of MPAs (as addressed in Chapter 5).

It was noted that the CBD has been working on the development of such an approach as a means to identify marine areas in need of protection. As seen in Chapter 1, UNCLOS and CBD are closely linked, as the CBD complements UNCLOS and helps its interpretation. Moreover, the UNGA Resolutions have been recognizing the importance of CBD work on the protection of biodiversity in marine areas beyond national jurisdiction, as well as acknowledging the study on bioregionalisation. As seen in Chapter 1, forums of discussions, such as COPs and UNGA can enhance the understanding of the States Parties to UNCLOS on the need to implement EBFM/EBM. The next Chapter focuses on RFMOs and continues the discussion on biogeographical criteria, as adopted by a few RFMOs as part of their ecosystem-based management approach.

CHAPTER 4 - Regional Fisheries Management Organisations and the Implementation of EBFM

The sustainability of high seas fisheries is mostly dependant on conservation measures adopted by RFMOs. These organisations bring together coastal and distant fishing States to the same forum and provide the grounds for the necessary cooperation required by UNCLOS and UNFSA. It is argued here that conservation measures adopted by RFMOs need to be based on EBFM/EBM principles, where interactions amongst species, species and their habitats, as well as other environmental and anthropogenic impacts are incorporated into fisheries management (see Chapter 1).

This Chapter aims to analyse the role of RFMOs in implementing EBFM/EBM by demonstrating some of the initiatives developed by a number of these organisations. The ultimate goal of this Chapter is therefore to provide EBFM/EBM models that could be adopted by other RFMOs. Moreover, it aims to demonstrate State practice in implementing EBFM/EBM in marine areas beyond national jurisdiction through these organisations.

The first section of the Chapter focuses on: (a) the role of RFMOs in implementing EBFM/EBM, by briefly analysing the relationship of UNCLOS, UNFSA and regional fisheries agreements; and (b) on objection procedures often utilised by RFMO's members to avoid compliance with conservation measures, which can undermine the implementation of EBFM/EBM.

The second section focuses on examples of EBFM/EBM implementation by a number of RFMOs. It is noteworthy that there are over thirty RFMOs to date.⁸¹² It is not within the scope of the current work to analyse each one of these organisations. This Chapter draws on the information provided by Mooney-Seus and Rosenberg in the Technical Study No. 1 on "Regional Fisheries Management Organizations:

⁸¹² See J. Swan, *Summary Information on the Role of International Fishery Organizations or Arrangements and Other Bodies Concerned with the Conservation and Management of Living Aquatic Resources*, FAO Fisheries Circular No. 985 (Rome: FAO, 2003), 114p.

Progress in Adopting the Precautionary Approach and Ecosystem-Based Management”⁸¹³ as the basis for the discussion. With this in mind, EBFM/EBM practices of the following RFMOs are taken into account:

- (i) Commission for the Conservation of Antarctic Marine Living Resources (CCAMLR);⁸¹⁴
- (ii) Commission for the Conservation of Southern Bluefin Tuna (CCSBT);⁸¹⁵
- (iii) Inter-American Tropical Tuna Commission (IATTC);⁸¹⁶
- (iv) International Commission for the Conservation of Atlantic Tunas (ICCAT);⁸¹⁷
- (v) International Whaling Commission (IWC);⁸¹⁸
- (vi) North East Atlantic Fisheries Commission (NEAFC);⁸¹⁹
- (vii) Northwest Atlantic Fisheries Organization (NAFO);⁸²⁰
- (viii) South East Atlantic Fisheries Organization (SEAFO);⁸²¹
- (ix) Western and Central Pacific Fisheries Commission (WCPFC).⁸²²

The third section focuses on jurisdictional aspects of dispute settlement procedures of regional fisheries agreements. Distinct procedures can impose fragmentation of the legal fisheries regime in the high seas and therefore undermine the adoption of EBFM. With this in mind, this section aims to demonstrate how a number of RFMOs have been addressing this constraint by amending their conventions.

⁸¹³ M. Mooney-Seus, A. Rosenberg, *Recommended Best Practices for Regional Fisheries Management Organizations – Technical Study No. 1. Regional Fisheries Management Organizations: Progress in Adopting the Precautionary Approach and Ecosystem-Based Management*. (London: Chatham House, 2007).

⁸¹⁴ CCAMLR, Online: <http://www.ccamlr.org/>

⁸¹⁵ CCSBT, Online: <http://www.ccsbt.org/>

⁸¹⁶ IATTC, Online: <http://www.iattc.org/>

⁸¹⁷ ICCAT, Online: <http://www.iccat.int/>

⁸¹⁸ IWC, Online: <http://www.iwcoffice.org/>

⁸¹⁹ NEAFC, Online: <http://www.neafc.org/>

⁸²⁰ NAFO, Online: <http://www.nafo.int/>

⁸²¹ SEAFO, Online: <http://www.seafo.org/>

⁸²² WCPFC, Online: <http://www.wcpfc.int/>

4.1 The Role of RFMOs in adopting EBFM

This section aims to analyse the important role of RFMOs in implementing EBFM/EBM in the context of UNCLOS' and UNFSA's provisions. Section 4.1 (a) focuses on the relationship between UNCLOS, UNFSA and regional fisheries agreements. Section 4.1 (b) discusses the drawback of RFMOs' decision-making procedures that allows the utilization of 'opt out' mechanisms by their members as a means to avoid adherence to the conservation measures adopted by these organisations. Objection procedures can undermine the implementation of conservation measures, including those based on EBFM/EBM. In light of this, a number of RFMOs have adopted stricter rules in regards to objection procedures as demonstrated in section 4.1 (b).

(a) Relationship between UNCLOS, UNFSA and Regional Fisheries Agreements

UNCLOS and Regional Fisheries Agreements

Regional fisheries organisations have a long history. A number of these organisations were established by multilateral agreements prior to the negotiation of UNCLOS. Some of these pre-UNCLOS fisheries organisations include: the Asia-Pacific Fishery Commission;⁸²³ the Inter-American Tropical Tuna Commission;⁸²⁴ the International Pacific Halibut Commission;⁸²⁵ the General Fisheries Commission for the Mediterranean;⁸²⁶ the International Commission for the Conservation of

⁸²³ The Asia-Pacific Fishery Commission was established in 1948, see FAO, online: <http://www.fao.org/fishery/rfb/apfic/en> (accessed 29 Jul. 09).

⁸²⁴ IATTC was established in 1949. See <http://www.iattc.org/> (accessed 29 Jul. 09).

⁸²⁵ The International Pacific Halibut Commission was created in 1923, see FAO, online: <http://www.fao.org/fishery/rfb/iphc/en> (accessed 29 Jul. 09).

⁸²⁶ The General Fisheries Commission for the Mediterranean was established in 1952, see FAO, online: http://www.fao.org/fishery/org/gfcm_inst/en (accessed 29 Jul. 09).

Atlantic Tunas;⁸²⁷ the International Commission for the Northwest Atlantic Fisheries;⁸²⁸ and in regards to marine mammals, the International Whaling Commission.⁸²⁹

As discussed in Chapter 1, UNCLOS established a comprehensive “legal order for the seas and oceans”,⁸³⁰ which includes rules on the “conservation of [marine] living resources, and the study, protection and preservation of the marine environment”.⁸³¹ The Convention envisioned a system where States must cooperate, particularly through sub-regional and regional fisheries organisations in order to implement its provisions on the conservation and management of living resources in the high seas.⁸³² UNCLOS also recognizes the need for cooperation, especially through such fisheries organisations, on the conservation and management of shared,⁸³³ straddling⁸³⁴ and highly migratory⁸³⁵ fish stocks, anadromous stocks⁸³⁶ and marine mammals.⁸³⁷ UNCLOS therefore sets forth a general framework for the conservation of these living resources, relying on regional agreements for the operationalization of its provisions. In practice, however, the fragmented nature of this system can undermine the comprehensive regime envisioned by UNCLOS. As observed by Boyle:

“(…) while recognizing that the problems of ocean space are ‘closely interrelated’ and ‘need to be considered as a whole’, the Convention is replete with references to regional rules, regional programmes, regional operation and so on. It is clear therefore that in certain contexts further regional development of the law of the sea is not merely envisaged but encouraged. There is an obvious tension between sustaining an integrated global regime and allowing further development on a regional basis. Understanding the limits of permissible regionalism is thus an

⁸²⁷ The ICCAT was established in 1969, see ICCAT, online: <http://www.iccat.int/> (accessed 29 Jul. 09).

⁸²⁸ Created in 1949 and replaced by NAFO in 1979. See NAFO, online: <http://www.nafo.int/> (accessed on 29 Jul. 09).

⁸²⁹ IWC was established in 1946, see IWC online: <http://www.iwcoffice.org/> (accessed 29 Jul. 09).

⁸³⁰ UNCLOS, fourth preambular paragraph.

⁸³¹ *Ibid.*

⁸³² UNCLOS, Arts. 118 and 119 (2).

⁸³³ UNCLOS, Art. 63 (1).

⁸³⁴ UNCLOS, Art. 63 (2).

⁸³⁵ UNCLOS, Art. 64.

⁸³⁶ UNCLOS, Art. 66 (5).

⁸³⁷ UNCLOS, Art. 65.

essential preliminary to any attempt to use regional treaties as a means of developing the law of the sea.”⁸³⁸

In order to understand this comprehensive legal regime consisting of UNCLOS and regional agreements, it is worth noting the relationship between UNCLOS and other special conventions as provided for by Articles 237 and 311. States’ obligations under special conventions on the protection and preservation of the marine environment “should be carried out in a manner consistent with the general principles and objectives of [UNCLOS]”.⁸³⁹ As noted in Chapter 1, even though UNCLOS does not expressly refer to the ecosystem-based approach, it acknowledges some of the intrinsic elements of this approach, such as the need to take measures “to protect and preserve rare or fragile ecosystems as well as the habitat of depleted, threatened or endangered species and other forms of marine life”.⁸⁴⁰ Moreover, UNCLOS provides for the need to ‘take into consideration’ dependent and associated species when adopting conservation and management measures for living resources in the high seas⁸⁴¹ (see Chapter 1). It would be reasonable to conclude that conventions which provides for ecosystem-based fisheries management, such as CCAMLR,⁸⁴² are consistent with UNCLOS.

In providing for the relationship with other international agreements, Article 311 states that UNCLOS “shall not alter the rights and obligations of States Parties which arise from other agreements *compatible with this Convention* which do not affect the enjoyment by other States Parties of their rights or the performance of their obligations under this Convention” (emphasis added).⁸⁴³ States Parties are also allowed to conclude *inter se* agreements “modifying or suspending the operation of provisions of [UNCLOS] (...) provided that such agreements do not relate to a provision derogation from which is incompatible with the effective execution of the object and purpose of [UNCLOS]”⁸⁴⁴ and that the application of the basic principles of the Convention and the rights and obligations of other States Parties are not

⁸³⁸ A. Boyle (2005), *supra* note 577, at 566-7.

⁸³⁹ UNCLOS, Art. 237 (2).

⁸⁴⁰ UNCLOS, Art. 194 (5).

⁸⁴¹ UNCLOS, Art. 119 (b).

⁸⁴² See section 4.2 below.

⁸⁴³ UNCLOS, Art. 311 (2).

⁸⁴⁴ UNCLOS, Art. 311 (3).

affected. Based on this, RFMOs agreements should supplement UNCLOS' provisions on conservation of living resources in the high seas contributing to a consistent international fisheries regime. In order to be consistent with UNCLOS, the conservation measures adopted by States through RFMOs have to follow the general provisions of Article 119,⁸⁴⁵ *inter alia*:

a) Conservation measures shall be based on the “best scientific evidence available (...) to maintain or restore populations of harvested species at [MSY] levels (...)”;⁸⁴⁶

b) These measures shall “take into account fishing patterns, the interdependence of stocks and any generally recommended international minimum standards, whether subregional, regional or global”;⁸⁴⁷

c) The impacts of fisheries on associated or dependent species shall be taken into account in order to maintain or restore those populations “above levels at which their reproduction may become seriously threatened”;⁸⁴⁸

d) Relevant available scientific information shall be exchanged among RFMOs and other organisations, such as FAO.⁸⁴⁹

Even though UNCLOS attributes to fisheries organisations the general role of management and conservation of living resources in the high seas, it does not provide many details or further guidelines apart from the provisions of Article 119 mentioned above.⁸⁵⁰ States parties of UNCLOS, through RFMOs, are obliged to implement these provisions, and nothing precludes them from adopting even stricter conservation measures, as long as they do not interfere with other rights conferred by

⁸⁴⁵ According to UNCLOS Art. 311 aforementioned, UNCLOS prevails upon incompatible conventions. Therefore, UNCLOS' States parties are obliged to comply with Art. 119, and RFMOs' agreements cannot derogate this Article as this would be incompatible with UNCLOS' object and purposes. Non-compliance with Article 119 constitutes a breach of the Convention. Therefore, any other State party with an interest in the matter can institute legal proceedings against the non-compliant State. An example of this situation is found in the *Southern Bluefin Tuna Cases (Southern Bluefin Tuna Cases - Provisional Measures (New Zealand v. Japan; Australia v. Japan) (1999)*, ITLOS Nos. 3 and 4; and *Southern Bluefin Tuna Arbitration*, *supra* note 195), as discussed in section 4.3 *infra*.

⁸⁴⁶ UNCLOS, Art. 119 (1) (a). See Chapter 1.

⁸⁴⁷ UNCLOS, Art. 119 (1) (a).

⁸⁴⁸ UNCLOS, Art. 119 (1) (b).

⁸⁴⁹ UNCLOS, Art. 119 (2).

⁸⁵⁰ See Chapter 1.

UNCLOS and they are entitled by their respective RFMOs' treaties. As noted by Treves:

“The language adopted, as well as the fact that cooperation “through” competent international organizations is usually indicated as an alternative to cooperation to be engaged in “directly” among States, seem to indicate that the role of the organizations is seen merely as that of a forum for inter-States cooperation. Nothing can, however, preclude the competent international organization to seek a wider role, if this is admissible according to its powers, explicit or implicit.”⁸⁵¹

Article 119 (1) (a) also suggests that RFMOs have a role in developing “generally recommended international minimum standards” for conservation measures of living resources in the high seas.⁸⁵² If EBFM is widely adopted by RFMOs, this approach could eventually be interpreted as an international minimum standard under UNCLOS. Moreover, as noted by Boyle, “(...) regional agreements also have an important and continuing role in giving effect to Chapter 17 of Rio Agenda 21 and meeting the goals of sustainability and integrated ecosystem management set out there and in the 2002 Johannesburg Declaration and Plan of Implementation”⁸⁵³ (see Chapter 1).

It is clear from this, that RFMOs have the important role⁸⁵⁴ of giving effect to UNCLOS provisions on conservation of living resources in the high seas and in developing necessary minimum standards for the protection of those resources. In light of this, RFMOs constitute the main vehicle for the implementation of EBFM in the high seas. By widely implementing EBFM, not only could such an approach to fisheries management be interpreted as a ‘minimum international standard’ under UNCLOS, but it could also provide strong evidence of State practice⁸⁵⁵ of EBFM

⁸⁵¹ T. Treves, “The Role of Universal International Organizations in Implementing the 1982 UN Law of the Sea Convention” pp. 14-37, in A. Soons (ed.), *Implementation of The Law of the Sea Convention Through International Institutions* (Honolulu: The Law of the Sea Institute, 1990), at 19-20.

⁸⁵² See B. Applebaum, A. Donohue, “The Role of Regional Fisheries Management Organizations” in E. Hey (ed.) *Developments in International Fisheries Law* (The Hague: Kluwer Law International, 1999) p. 217-249.

⁸⁵³ A. Boyle (2005), *supra* note 577, at 576.

⁸⁵⁴ RFMOs have a moral responsibility, but not the obligation, as UNCLOS is binding only upon States. However, States Parties to UNCLOS who are also members of an RFMO have the obligation to comply with UNCLOS provisions on conservation of living resources.

⁸⁵⁵ See R. Churchill, “The Impact of State Practice on the Jurisdiction Framework Contained in the LOS Convention” 91-143, in A. Elferink (ed.), *Stability and Change in the Law of the Sea: The Role of the LOS Convention* (Leiden: Martinus Nijhoff Publishers, 2005).

implementation. In view of this, it can be said that RFMOs have the important role in developing UNCLOS in the light of emerging fisheries management approaches that are based on the best available scientific research.

UNFSA and Regional Fisheries Agreements

In the 1990s, with the collapse of a number of fish stocks around the world, including the cod collapse off the coast of Newfoundland, it became clear that the regime established by UNCLOS was incomplete and needed further regulation.⁸⁵⁶ During the 1992 UNCED States agreed to convene an “intergovernmental conference under the United Nations auspices (...) with a view to promoting effective implementation of the provisions of [UNCLOS] on straddling fish stocks and highly migratory fish stocks.”⁸⁵⁷ The objective of this conference was to “identify and assess existing problems related to the conservation and management of such fish stocks, and consider means of improving cooperation on fisheries among States, and formulate appropriate recommendations.”⁸⁵⁸ Such a conference was convened between 1993 and 1995, culminating in the adoption of UNFSA in 1995.⁸⁵⁹

Notwithstanding the fact that UNFSA was adopted as an implementation agreement⁸⁶⁰ to UNCLOS, its provisions are only binding upon its Parties. The Agreement strengthens the legal framework for straddling and highly migratory fish stocks by departing from UNCLOS,⁸⁶¹ and goes further in terms of incorporating new concepts such as the precautionary approach and applying such an approach to

⁸⁵⁶ See Chapter 3. See also M. Lodge, S. Nandan, “Some Suggestions Towards Better Implementation of the United Nations Agreement on Straddling Fish Stocks and Highly Migratory Fish Stocks of 1995” (2005) 20 IJMCL 345-379; D. Balton (1996), *supra* note 699; R. Rayfuse, “The Interrelationship Between the Global Instruments of International Fisheries Law” pp. 107-158, in E. Hey (ed.) (1999), *supra* note 852.

⁸⁵⁷ Agenda 21, Chapter 17, Para. 17.50.

⁸⁵⁸ Agenda 21, Chapter 17, Para. 17.50. See also Chapter 3 of this thesis on the history of UNFSA.

⁸⁵⁹ See Chapters 1 and 3.

⁸⁶⁰ See also Chapter 5.

⁸⁶¹ See M. Hayashi, “The Straddling and Highly Migratory Fish Stocks Agreement” pp. 55-83 in E. Hey (ed.) (1999), *supra* note 852.

fisheries.⁸⁶² UNFSA also incorporates, although not expressly, the ecosystem-based approach⁸⁶³ by addressing the impacts of fisheries on, *inter alia*, associated or dependent species, habitats and marine biodiversity.⁸⁶⁴ As noted by Henriksen et al:

“In implementing the precautionary approach, states are not obliged to set multi-species reference points, which is probably more consistent with a holistic approach to fisheries management. But in setting and applying the reference points, states shall also take into consideration the uncertainties relating to the impacts of fishing on non-target, associated or dependent species (Art. 6 (3) (c)). In practical terms, this means that in determining the reference points for a straddling fish stock, weight must be given to its importance as a component of the food chain (e.g. as prey) and the ecosystem.”⁸⁶⁵

By acknowledging the biological unity⁸⁶⁶ of stocks occurring within and beyond the limits of national jurisdiction, UNFSA provides for the establishment of compatible conservation and management measures by coastal States and States fishing in the high seas.⁸⁶⁷ Although States are allowed to seek cooperation directly, cooperation through regional fisheries management organisations is strongly encouraged under UNFSA’s regime. For instance, States that are party to UNFSA, but which are non-members of an RFMO in a particular high seas area, are only allowed to fish in that area if they apply the conservation and management measures adopted by the respective RFMO.⁸⁶⁸ Therefore, RFMOs are key components of the fisheries regime developed by UNFSA. As observed by Lodge:

“The essential purpose of an RFMO is to provide an effective forum for international cooperation to enable states to agree on conservation and management measures in respect of high seas fish stocks. In the absence of such cooperation, experience has shown that in the case of common pool resources, open to exploitation by all, the objectives of long-term sustainability and optimum utilization become extremely difficult, if not impossible, to achieve.”⁸⁶⁹

⁸⁶² UNFSA, Art. 6 and the ‘Guidelines for the Application of Precautionary Reference Points in Conservation and Management of Straddling Fish Stocks and Highly Migratory Fish Stocks’ - UNFSA, Annex II. See also analysis of precautionary reference points in Chapter 1.

⁸⁶³ UNFSA, Art. 5 (b), (d), (e), (f), (g).

⁸⁶⁴ See Chapter 1.

⁸⁶⁵ T. Henriksen, G. Hønneland, A. Sydnes, *Law and Politics in Ocean Governance- The UN Fish Stocks Agreement and Regional Fisheries Management Regimes* (Leiden/Boston: Martinus Nijhoff Publishers, 2006), at 28-9.

⁸⁶⁶ UNFSA, Art. 7 (d). See also Chapter 3.

⁸⁶⁷ UNFSA, Art. 7. See Chapter 3.

⁸⁶⁸ UNFSA, Art. 8 (4).

⁸⁶⁹ M. Lodge, “Managing International Fisheries: Improving Fisheries Governance by Strengthening Regional Fisheries Management Organizations” (March 2007), Chatham House, at 2.

In order to achieve a unified international fishery regime, UNFSA establishes a whole set of rules on States' obligations when creating or becoming a member of an RFMO, including: cooperation, new entrants, transparency mechanisms and scientific research⁸⁷⁰. UNFSA also introduces enforcement mechanisms, such as the possibility of boarding and inspection in the high seas.⁸⁷¹ Furthermore, the Agreement stresses the role of RFMOs in adopting conservation measures "to ensure the long-term sustainability of straddling fish stocks and highly migratory fish stocks".⁸⁷² This emphasis on conservation constitutes a shift from the pre-UNFSA regime, when the mandates of most RFMOs were primarily focused on allocation of quotas rather than on conservation objectives.⁸⁷³ In fact, according to Lodge and Nandan:

"It must be recalled that the progressive step that was introduced by UNFSA was to list comprehensively, in a legally binding form, the matters upon which states are expected to be able to agree in order to achieve sustainable management of fisheries. By implication therefore, RFMOs used as the vehicle for such co-operation need to be structured in such a manner that their institutional arrangements are capable of delivering an environment which enables member states to agree on the matters set out in Article 10. The fact is that most of the existing RFMOs pre-date UNFSA and many of them do not live up to the institutional standards established by UNFSA."⁸⁷⁴

By establishing common rules to be followed by States when creating or becoming a member of an RFMO, UNFSA attempts to unify the regional fisheries regime as previously envisioned by UNCLOS. By doing so UNFSA created a more consistent legal system which encompasses minimum standards, such as the precautionary and ecosystem-based approaches for the conservation and management of straddling and highly migratory fish stocks. In addition to its own standards, UNFSA requires RFMO members⁸⁷⁵ to "adopt and apply any generally recommended international minimum standards for the responsible conduct of fishing operations".⁸⁷⁶ By doing so, UNFSA goes beyond UNCLOS' general

⁸⁷⁰ See UNFSA, Part III.

⁸⁷¹ UNFSA, Part VI.

⁸⁷² UNFSA, Art. 10 (a).

⁸⁷³ See M. Lodge, S. Nandan (2005), *supra* note 856; See also T. Henriksen, et al (2006), *supra* note 865.

⁸⁷⁴ *Ibid*, at 357.

⁸⁷⁵ Obviously, these RFMO members have to be parties to UNFSA to be bound by this provision.

⁸⁷⁶ UNFSA, Art. 10 (c).

obligation on States to merely ‘take into account’ international minimum standards when adopting conservation measures for living resources in the high seas. Accordingly, soft-law instruments, such as the FAO Code of Conduct and its respective IPOAs, could be easily incorporated into the obligations of RFMO members. As noted by Birnie et al:

“(…) it seems possible within the terms of this article for ‘generally recommended international minimum standards’ to be adopted by intergovernmental organizations, including FAO, the CBD, and the UN General Assembly, opening up the possibility of these bodies in effect legislating for RFMO member states in the same way that IMO resolutions or IAEA Codes may become binding under Part XII of UNCLOS (...). This is particularly relevant to FAO’s Code of Conduct on Responsible Fishing and UNGA resolutions on driftnets and bottom trawling.”⁸⁷⁷

However, the fact that UNFSA has only 75 parties as opposed to UNCLOS, which has 159 parties to date, constitutes a problem as a unified system cannot exist unless universal (or quasi-universal) participation is assured. This is a reason for concern, especially when key fishing members of an RFMO are not parties to UNFSA⁸⁷⁸ and the convention which created the respective RFMO does not incorporate UNFSA’s standards. As noted by Rayfuse:

“The potential therefore exists for conflict between parties and non-parties, between members of regional or sub-regional fisheries organizations or arrangements and between members and non-members of these organizations and arrangements, who have undertaken different legal obligations. Such conflict is likely to have adverse consequences for the effective operation of regional organizations and arrangements and for conservation and management efforts as a whole.”⁸⁷⁹

A solution to this problem is the incorporation of UNFSA’s standards into the RFMO’s agreements when necessary. In view of this, UNGA Resolution A/RES/60/31 (2005) urged RFMOs to “strengthen and modernize their mandates to include an ecosystem approach to fisheries management and biodiversity considerations (...) to ensure that they effectively contribute to long-term conservation and management of marine living resources”.⁸⁸⁰ This resolution

⁸⁷⁷ P. Birnie, et al (2009), *supra* note 170, at 739.

⁸⁷⁸ For example, China and Taiwan, as well as most Latin American countries are not parties to UNFSA.

⁸⁷⁹ R. Rayfuse (1999), *supra* note 856, at 114.

⁸⁸⁰ UNGA Res. A/RES/60/31 (2005), Para. 58.

also encouraged States to initiate a performance review process of the RFMOs of which they are members.⁸⁸¹ One of the aims of performance reviews is to consider whether or not an RFMO has been fulfilling its functions in accordance with UNFSA.⁸⁸² During UNFSA's Review Conference in 2006, the significant role played by RFMOs in implementing the Agreement was recognized. Therefore, a number of States agreed to "urge RFMOs of which they were members to undergo performance reviews on an urgent basis; encourage the inclusion of some element of independent evaluation in such reviews; and ensure that the results are made publicly available."⁸⁸³

Moreover, participants of the Review Conference agreed that RFMOs' conservation measures should follow the same standards provided for by UNFSA as a matter of priority. In order to do that, a number of pre-UNFSA RFMOs have initiated amendment processes of their respective conventions, as seen in section 4.2 below. In respect to RFMOs' agreements adopted after the conclusion of UNFSA, these were negotiated through the lens of this new regime. Therefore, some of these new conventions already incorporate UNFSA's standards, such as EBA (see section 4.2). By doing so, RFMOs help extend UNFSA's principles to stocks not regulated by the 1995 Agreement, such as discrete high seas stocks (see Chapter 2). Even though UNFSA applies only to straddling and highly migratory fish stocks, RFMOs can, depending on their mandates, regulate fisheries for discrete high seas stocks.⁸⁸⁴ Furthermore, by reviewing their mandates and incorporating UNFSA's principles RFMOs are able to strengthen the international fisheries regime. As noted by Henriksen et al, "[w]hen [RFMOs] are applying the Fish Stocks Agreement, although not all members are parties to it, its provisions could eventually have a wider and more general application than feared."⁸⁸⁵

⁸⁸¹ *Ibid.*, Para. 60.

⁸⁸² FAO COFI, "Strengthening Regional Fisheries Management Organizations and Their Performances including the Outcome of the 2007 Tuna RFMOs Meeting" (2007), FAO Doc. COFI/2007/9 Rev.1.

⁸⁸³ *Ibid.*, at Para. 23. See also D. Balton, H. Koehler, "Reviewing the United Nations Fish Stocks Treaty" (2006) 7 Sustainable Development Law & Policy 5-9.

⁸⁸⁴ NAFO, NEAFC and SEAFO are examples of RFMOs that regulate a number of discrete high seas stocks fisheries. See T. Henriksen, et al (2006), *supra* note 865.

⁸⁸⁵ T. Henriksen, et al (2006), *supra* note 865, at 210.

From this, it is clear that RFMOs are key actors in the international fishery regime as provided for by UNCLOS and further developed by UNFSA. They can help implement this comprehensive fisheries regime for straddling and highly migratory fish stocks as provided for by UNFSA, and, by applying the ecosystem-based approach to all their managed stocks they can help fill UNFSA's loophole on discrete fish stocks. However, most of these organisations have not yet exercised their full potential in terms of implementing EBFM (as discussed in section 4.2 below). Several reasons contribute to the insufficient implementation of EBFM by RFMOs, including political reasons and problems related to overcapacity, fisheries subsidies, IUU fishing, irresponsible flag States, along with many others that are beyond the scope of this study. However, one of the obstacles for the implementation of ecosystem-based conservation measures is the utilization of 'opt out' mechanisms as discussed in the following section.

(b) RFMOs' Objection Procedures

In order to have a sustainable fisheries regime in the high seas, where EBFM is properly implemented, RFMOs have to adopt robust⁸⁸⁶ conservation measures. As stated by Charles, "[i]f fisheries are to be managed sustainably within an uncertain environment, it is crucial to follow more robust and adaptive methods of management ones designed to function successfully even given unexpected changes in nature's course, or an ignorance of nature's inherent structure."⁸⁸⁷ The problem is that States members of RFMOs may not be obliged to follow the conservation measures adopted by the organisation. For example, if the respective convention provides for objection procedures members opposing EBFM measures are not required to comply with such measures. Through 'opt out' mechanisms or objection procedures States can exempt themselves from complying with a regulation that they did not consent to.

⁸⁸⁶ See A. Charles (2001), *supra* note 49, Chapter 15.

⁸⁸⁷ *Ibid.*, at 313.

It is common for RFMOs to adopt their regulations by majority vote. Regulations adopted by RFMOs include, *inter alia*:

- (a) limits on time fishing, gear restrictions, establishing closed areas and seasons, fish size limitations, etc;
- (b) setting the TAC, and quota allocation.⁸⁸⁸

Opt out mechanisms have been extensively used amongst RFMO members as a means to avoid being bound by the regulations they do not agree with. For example, according to the Canadian Department of Fisheries and Oceans' statistics there has been an average of 10 objections per year during the late eighties and nineties and an average of 2 to 4 objections per year during the last decade by NAFO members.⁸⁸⁹ The most common kind of objection by NAFO members relates to quota allocations; for example, in 2004 Denmark, on behalf of the Faroe Islands and Greenland objected to the 2004 NAFO-set shrimp quota for area 3L, which established the quota of 144 tonnes. Denmark individually set a quota of 1,344 tonnes for the year of 2004.⁸⁹⁰ McDorman describes the situation as follows:

“The challenge regarding decision-making processes within RFMOs is to have a process that respects state sovereignty while minimising the scope of states to hinder the adoption and effective implementation of conservation and management measures that science and the state of stocks require.”⁸⁹¹

UNFSA strengthened the RFMO decision-making procedures by imposing upon its parties the obligation to “agree on decision-making procedures which facilitate the adoption of conservation and management measures in a timely and effective manner.”⁸⁹² Therefore, as observed by Birnie et al:

⁸⁸⁸ *Ibid*, Chapter 15; T. McDorman, “Implementing Existing Tools: Turning Words Into Actions – Decision-Making Processes of Regional Fisheries Management Organisations (RFMOs)” (2005) 20 *IJMCL* 423-458.

⁸⁸⁹ DFO, *The NAFO objection procedure* (2004). Online: < <http://www.dfo-mpo.gc.ca/media/backfiche/2004/hq-ac90a-eng.htm> > (accessed 25 Sep. 09). http://www.dfo-mpo.gc.ca/media/backgrou/2004/hq-ac90a_e.htm

⁸⁹⁰ *Ibid*.

⁸⁹¹ T. McDorman (2005), *supra* note 888, at 426.

⁸⁹² UNFSA, Art. 10 (j).

“[c]ompliance is obligatory: arguably, even a state party which opts out of RFMO conservation measures in such a way as to defeat their purpose will not be compliant with Article 10, and the continued use of such opt-outs may itself fail to meet the required standard of timely and effective decision-making.”⁸⁹³

In addition, UNFSA also obliges States Parties to “agree on and comply with conservation and management measures to ensure the long-term sustainability of straddling fish stocks and highly migratory fish stocks”.⁸⁹⁴ Moreover, States Parties to UNFSA are also entitled to implement the precautionary approach, which includes the observance of scientific information by managers. Article 6 (3) (a) establishes that:

“In implementing the precautionary approach, States shall improve decision – making for fishery resource conservation and management by obtaining and sharing the best scientific information available and implementing improved techniques for dealing with risk and uncertainty”.⁸⁹⁵

This is a significant provision, as one of the main problems attributed to RFMOs’ management is the lack of adherence to scientific advice⁸⁹⁶ (as seen in section 4.2 below).

Therefore, States Parties who do not comply with those provisions can be subject to the procedures for the settlement of disputes under the Agreement.⁸⁹⁷ However, it is important to emphasise here the constraint related to UNFSA’s limited focus on straddling and highly migratory stocks (as discussed in Chapter 2). Therefore, the above mentioned provisions cannot be applied in case an RFMO has been having difficulties to adopt conservation measures in regards to discrete species.

⁸⁹³ P. Birnie, et al (2009), *supra* note 170, at 739.

⁸⁹⁴ UNFSA, Art. 10 (a).

⁸⁹⁵ UNFSA, Art. 6 (3) (a).

⁸⁹⁶ See M. Mooney-Seus, A. Rosenberg (2007), *supra* note 813; T. McDorman (2005) *supra* note 888.

⁸⁹⁷ P. Birnie, A. Boyle, *International Law and the Environment*, Second Ed. (Oxford: Oxford University Press, 2002), at 210.

Another constraint related to UNFSA is the relatively small number of States that are parties to the Agreement.⁸⁹⁸ This weakens the fisheries legal system as a whole. On the other hand, it must be emphasised that a number of important fishing nations have recently acceded to the Agreement. Japan's accession in 2006 and the Republic of Korea's in 2008 indicate that the fisheries regime in the high seas may be becoming more robust. The accession of significant fishing nations to UNFSA will ultimately strengthen the decision-making process of RFMOs which they are members.

Therefore, especially for RFMOs which contains a number of members that are not parties to UNFSA or for RFMOs dealing with discrete stocks, objection procedures constitute an obstacle to the effectiveness of the respective conservation and management measures. Considering the RFMOs addressed in section 4.2, it is interesting to note the provisions on decision-making procedures in the respective Conventions,⁸⁹⁹ as demonstrated in the table below:

⁸⁹⁸ UNFSA has 75 Parties at the time of writing. DOALOS, online: <http://www.un.org/Depts/los/convention_agreements/convention_overview_fish_stocks.htm> (accessed 25 Sep. 09).

⁸⁹⁹ For more details on decision-making procedures in RFMOs Convention see T. McDorman (2005), *supra* note 888.

Convention	Decision-Making Procedures	Objection Procedures
CCAMLR (1980) ⁹⁰⁰	Consensus	yes
CCSBT (1993) ⁹⁰¹	Consensus	no
IATTC (1949) ⁹⁰²	Consensus	no
ICCAT (1966) ⁹⁰³	majority vote	yes
IWC (1946) ⁹⁰⁴	¾ majority vote	yes
NAFO (1979) ⁹⁰⁵	majority vote	yes
NEAFC (1980) ⁹⁰⁶	2/3 majority vote	yes
SEAFO (2001) ⁹⁰⁷	Consensus	yes
WCPFC (2000) ⁹⁰⁸	mixed (Consensus; if consensus is not reached, then ¾ majority vote. For allocation: consensus only.)	no, with exceptions (see explanation below)

Figure 4: Decision-Making Procedures in nine RFMOs Conventions

The major benefit of decisions adopted by consensus relates to its wide support and ultimately stronger compliance. However, in order to achieve consensus the decision might not be as strict as it should be in terms of conservation and management of living resources and ecosystems.⁹⁰⁹ On the other hand, a majority vote may result in stricter measures. However, it may also imply that the States who did not agree with the decision will not comply with it.

It is noteworthy that even though the existence of objection procedures in RFMO treaties is more commonly associated with texts that provide for majority voting, such procedures can also be found in texts where the decision-making is

⁹⁰⁰ *Convention on the Conservation of Antarctic Marine Living Resources*, 20 May 1980, 1329 U.N.T.S. 48. [CCAMLR Convention]

⁹⁰¹ *Convention for the Conservation of Southern Bluefin Tuna*, 10 May 1993, 1819 U.N.T.S. 360 [CCSBT Convention].

⁹⁰² *Convention for the Establishment of an Inter-American Tropical Tuna Commission*, 31 May 1949, TIAS 2044 [IATTC Convention].

⁹⁰³ *International Convention for the Conservation of Atlantic Tunas*, 14 May 1966, 673 U.N.T.S. 64 [ICCAT Convention].

⁹⁰⁴ *International Convention for the Regulation of Whaling*, 02 December 1946, 161 U.N.T.S. 72 [IWC Convention].

⁹⁰⁵ *Convention on Future Multilateral Cooperation in the Northwest Atlantic Fisheries*, 24 October 1978, 1135 U.N.T.S. 369 [NAFO Convention].

⁹⁰⁶ *Convention on the Future Multilateral Cooperation in North-East Atlantic Fisheries*, 18 November 1980, Misc. No 2 (1982); Cmnd. 8474 [NEAFC Convention].

⁹⁰⁷ *Convention on the Conservation and Management of Fishery Resources in the South East Atlantic Ocean*, 20 April 2001, 2221 U.N.T.S. 189 [SEAFO Convention]

⁹⁰⁸ *Convention on the Conservation and Management of Highly Migratory Fish Stocks in the Western and Central Pacific Ocean*, 5 September 2000, 2004 ATS 15 [WCPFC Convention].

⁹⁰⁹ T. McDorman (2005), *supra* note 888.

based on consensus.⁹¹⁰ For example, even though the SEAFO Convention provides for decision-making procedures based on consensus, objection procedures are allowed.⁹¹¹ However, as with NEAFC the objecting State needs to indicate an alternative measure that it wants to undertake.⁹¹² Moreover, this does not exclude the rights of other parties to invoke the binding dispute settlement procedures of the Convention (Art. 24) in case they do not agree with such objection.⁹¹³

Objection procedures constitute a challenge for sustainable fisheries management, including the adoption of EBFM by RFMOs. Therefore, the best way to overcome this procedure is to find a middle ground which still guarantees States' rights to fish in the high seas without undermining their duty to adopt conservation and management measures. In light of this, the WCPFC Convention found an interesting way to deal with objections.⁹¹⁴ The general rule of decision-making in the Commission is by consensus, which is defined in the Convention as "the absence of any formal objection made at the time the decision was taken".⁹¹⁵ Objections to decisions taken by consensus (where the Convention so determines) are submitted to a conciliator to reconcile "the differences in order to achieve consensus on the matter."⁹¹⁶

In case no consensus is reached and when the convention does not prescribe otherwise decisions can be taken by a majority vote⁹¹⁷ (decisions on questions of substance are to be taken by 3/4 majority vote of those present and voting).⁹¹⁸ Members who vote against the decision or who were absent during the respective meeting have 30 days to claim a review of the decision by a review panel

⁹¹⁰ *Ibid.*

⁹¹¹ SEAFO Convention, Art. 23 (1). See also: T. McDorman (2005), *ibid.*

⁹¹² *Ibid.*

⁹¹³ SEAFO Convention, Art. 23 (3).

⁹¹⁴ For detailed discussion on the negotiations of the WCPFC Convention, including of its decision-making procedures see A. Sydnes, "Establishing a Regional Fisheries Management Organisation for the Western and Central Pacific Ocean Tuna Fisheries" (2001) 44 *Ocean & Coastal Management* 787-811.

⁹¹⁵ WCPFC Convention, Art. 20 (1).

⁹¹⁶ WCPFC Convention, Art. 20 (4).

⁹¹⁷ WCPFC Convention, Art. 20 (2).

⁹¹⁸ WCPFC Convention, Art. 20 (2).

(constituted under Annex II of the Convention).⁹¹⁹ However, it is interesting to observe that this review can only be made on the grounds that:

- “a) the decision is inconsistent with the provisions of this Convention, the Agreement [UNFSA] or the 1982 Convention [UNCLOS]; or
- b) the decision unjustifiably discriminates in form or in fact against the member concerned.”⁹²⁰

The review panel consists of three members from the UNCLOS, Annex VIII list of experts on fisheries (or similar list kept by the Commission’s executive director).⁹²¹ One of the members is to be appointed by the applicant,⁹²² whilst the other members are appointed by the other members of the Commission.⁹²³ If members of the Commission cannot agree on the appointments then the President of ITLOS will be designated to make such appointments.⁹²⁴

Annex II of the WCPFC Convention provides for the operation of the review panel, including timeframes and deadlines for the decision to be made. If the review panel consider that the decision does not need to be modified, amended or revoked it will then become binding upon all members.⁹²⁵ On the other hand, if the panel finds that the decision does need to be modified, amended or revoked the Commission shall comply with these recommendations on its next annual meeting “or it may decide to revoke the decision provided that, if so requested in writing by a majority of the members, a special meeting of the Commission shall be convened within 60 days of the date of communication of the findings and recommendations of the review panel.”⁹²⁶

The approach described above can be an alternative approach for objection procedures on the grounds that it still keeps the rights of States to fish in the high seas while attempting not to hinder the effectiveness of conservation measures

⁹¹⁹ WCPFC Convention, Art. 20 (6).

⁹²⁰ WCPFC Convention, Art. 20 (6) (a) and (b).

⁹²¹ WCPFC Convention, Annex II, Art. 2 (a).

⁹²² WCPFC Convention, Annex II, Art. 2, (b).

⁹²³ WCPFC Convention, Annex II, Art. 2, (e).

⁹²⁴ WCPFC Convention, Annex II, Art. 2 (f).

⁹²⁵ WCPFC Convention, Art. 20 (8).

⁹²⁶ WCPFC Convention, Art. 20 (9).

adopted in the respective area. This formula allows a certain degree of opt-out as the modification of the decision based on unjustifiable discrimination may entail the “non-application of the decision to that state as an alternative to revocation of the decision and, in this way, an “opt-out” equivalent to the results of an objection procedure may arise.”⁹²⁷ However, as properly observed by McDorman, “[t]he grounds for attaining an opt-out are very narrow, the burden is on the objecting state and there is a dispute settlement process for dealing with a state’s complaint.”⁹²⁸

In effect, other RFMOs have been attempting to adopt similar procedures. For example, in 2007 NAFO adopted an amendment⁹²⁹ of its 1979 Convention reviewing its original objection procedures and dispute settlement provisions. According to the new text objections are still allowed, but the objector needs to justify its reasons, which can only be accepted in case the decision is inconsistent with the Convention or the measure unjustifiably discriminates against it.⁹³⁰ Moreover, the objector is also required to provide a “declaration of the actions it intends to take following the objection or notification, including a description of the alternative measures it intends to take or has taken for conservation and management of the relevant fishery resources consistent with the objective of this Convention.”⁹³¹ The objection and respective explanations are to be submitted to the Commission or to an *Ad Hoc* Panel for consideration.⁹³² After conclusion of the decision-making procedures, any Party of the convention can invoke the dispute settlement procedures of the Convention (as amended), which incorporates UNCLOS and UNFSA’s provisions.⁹³³

Therefore, this ‘middle ground’ approach, where States can object under certain conditions, may be the best solution for opt out mechanisms. The combination of conditions for the grounds of objection; restriction of objection procedures to a number of subjects within the convention; recourse to binding

⁹²⁷ T. McDorman (2005), *supra* note 888, at 432.

⁹²⁸ *Ibid.*, at 432.

⁹²⁹ The amendment was not yet in force at the time of writing (05 Sep. 09). It requires ¾ of NAFO Convention’s Parties to ratify the amendment to enter into force.

⁹³⁰ *Amendment to the Convention on Future Multilateral Cooperation in the Northwest Atlantic Fisheries*, (GC Doc. 07/4), Art. XIV, (5).

⁹³¹ *Ibid.*, Art. XIV (5).

⁹³² *Ibid.*, Art. XIV.

⁹³³ *Ibid.*, Art. XIV (12).

dispute settlement procedures; as well as the reversal of the burden on the objecting State may prove effective in limiting the number of objections when adopting conservation and management measures,⁹³⁴ including those related to EBFM.

4.2 The Recent Practice of RFMOs in Implementing EBFM/EBM

The adoption of EBFM/EBM measures by RFMOs is essential for achieving and keeping the integrity of marine ecosystems and services. This section aims to demonstrate how some RFMOs have been implementing EBFM, including precautionary measures (i.e. prudent approach, taking into account long-term considerations). As seen in Chapter 1, ecosystem-based management to fisheries means reaching “sustainability of catches without compromising the inherent structure and functioning of the marine ecosystem”.⁹³⁵

With this in mind, this Chapter analyses whether the following RFMOs have been applying EBFM and the precautionary approach (PA) indicating how they have been making use of such concepts:

- (i) Commission for the Conservation of Antarctic Marine Living Resources;⁹³⁶
- (ii) Commission for the Conservation of Southern Bluefin Tuna;⁹³⁷
- (iii) Inter-American Tropical Tuna Commission;⁹³⁸
- (iv) International Commission for the Conservation of Atlantic Tunas;⁹³⁹
- (v) International Whaling Commission;⁹⁴⁰
- (vi) North East Atlantic Fisheries Commission;⁹⁴¹
- (vii) Northwest Atlantic Fisheries Organization;⁹⁴²

⁹³⁴ See T. McDorman (2005), *supra* note 888, at 432.

⁹³⁵ M. Mooney-Seus, A. Rosenberg (2007), *supra* note 813, at x (Executive Summary).

⁹³⁶ CCAMLR. Online: <http://www.ccamlr.org/>

⁹³⁷ CCSBT. Online: <http://www.ccsbt.org/>

⁹³⁸ IATTC. Online: <http://www.iattc.org/>

⁹³⁹ ICCAT. Online: <http://www.iccat.int/>

⁹⁴⁰ IWC. Online: <http://www.iwcoffice.org/>

⁹⁴¹ NEAFC. Online: <http://www.neafc.org/>

⁹⁴² NAFO. Online: <http://www.nafo.int/>

(viii) South East Atlantic Fisheries Organization;⁹⁴³

(ix) Western and Central Pacific Fisheries Commission.⁹⁴⁴

Before examining the above RFMOs' EBFM and PA management measures, one aspect that is worth mentioning relates to the geographical characteristics of the convention area.⁹⁴⁵ As seen in Chapter 3, a number of criteria have been developed to divide the oceans into biogeographical areas which present similarities in terms of ecological conditions (see Chapter 3). RFMOs are not established based on these grounds, which represent recent scientific findings and are still under development. Therefore, implementing EBFM can be challenging under these circumstances (i.e., managing fisheries within an area that does not comprise the entire ecosystem to which that stock belongs).

Moreover, in some cases the RFMO's regulatory area does not cover the entire range of a particular stock. For example, one redfish stock is known to migrate between the NAFO Convention Area and the NEAFC Convention area.⁹⁴⁶ In order to resolve these types of issues, cooperation amongst RFMOs is an essential component. In this particular case, NAFO and NEAFC established a joint working group in 2001 to discuss alternatives to co-manage the redfish stock.⁹⁴⁷

In order to facilitate cooperation and communication amongst RFMOs, FAO have taken a number of initiatives such as the organisation of the First Meeting of the Regional Fishery Body Secretariats Network (RSN-1) in 2007, as well as hosting

⁹⁴³ SEAFO. Online: <http://www.seafo.org/>

⁹⁴⁴ WCPFC. Online: <http://www.wcpfc.int/>

⁹⁴⁵ It is beyond the scope of the present study to analyse this issue in detail. General considerations on this topic in respect to MPAs are provided in Chapter 5.

⁹⁴⁶ A. Thomson, "The Management of Redfish (*Sebastes mentella*) in the North Atlantic Ocean – A Stock in Movement," in FAO, Papers presented at the Norway-FAO Expert Consultation on the Management of Shared Fish Stocks, Bergen, Norway, 7-10 October 2002. *FAO Fisheries Report. No. 695, Suppl.* (Rome: FAO, 2003) 240p.

⁹⁴⁷ *Ibid.*

meetings of RFMOs for the past six years.⁹⁴⁸ It should also be noted that initiatives to enhance cooperation amongst tuna bodies have been undertaken since 1999.⁹⁴⁹

Notwithstanding the obstacles faced by RFMOs to implement EBFM and PA (as seen above) a number of these organisations have been taking steps towards the application of these approaches. The next subsections indicate a number of these initiatives as a means to provide examples of RFMOs best practices.⁹⁵⁰

(i) Commission for the Conservation of Antarctic Marine Living Resources

Amongst the RFMOs analysed in this Chapter, CCAMLR provides the best example in terms of implementation of EBFM and PA measures.⁹⁵¹ CCAMLR was established by the 1980 Convention on the Conservation of Antarctic Marine Living Resources⁹⁵² in order to achieve the “conservation of Antarctic marine living resources”⁹⁵³ in the regulatory area showed below:

⁹⁴⁸ FAO, *Report of the First Meeting of Regional Fishery Body Secretariats Network*, (Rome, 12–13 March 2007), *FAO Fisheries Report* No. 837. (Rome: FAO, 2007), 38p.

⁹⁴⁹ See Network of Tuna Agencies and Programs website for further details, online: <<http://www.tuna-org.org/>> (accessed on 26 Sep. 09).

⁹⁵⁰ Based on M. Mooney-Seus, A. Rosenberg (2007), *supra* note 813.

⁹⁵¹ *Ibid*; see also C. Redgwell, “Protection of Ecosystems under International Law: Lessons from Antarctica” in A. Boyle and D. Freestone (eds.), (2001), *supra* note 110.

⁹⁵² CCAMLR Convention, *supra* note 900, Art. IX.

⁹⁵³ CCAMLR convention, Art. II (1).

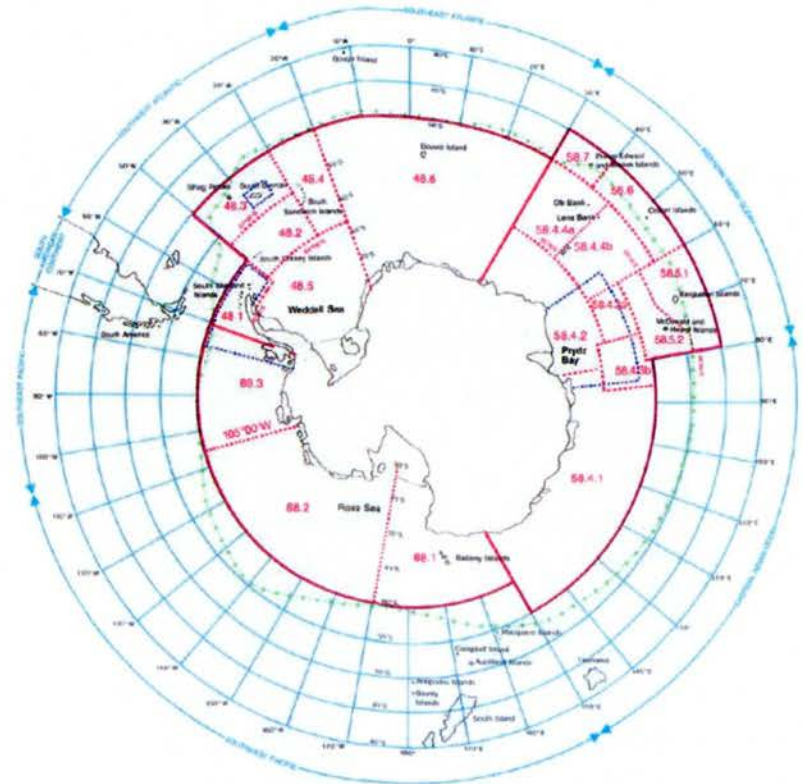


Figure 5: CCAMLR Regulatory Area.

Online: <http://www.ccamlr.org/pu/e/conv/map.htm>

The CCAMLR Convention “balances “conservation” and “rational use” to ensure that existing ecological relationships between harvested, dependent and related species are maintained and that depleted populations are restored to levels at which their biological productivity is greatest.”⁹⁵⁴ The Convention provides a good example of provisions entitling its Parties to apply EBFM and PA. The principles of conservation under the Convention include:

- “a) *prevention* of decrease in the size of any harvested population to levels below those which ensure its stable recruitment (...);
- b) maintenance of the *ecological relationships* between harvested, depended and related populations of Antarctic marine living resources and the restoration of depleted populations (...);
- c) *prevention* of changes or minimisation of the risk of changes in the *marine ecosystem* which are not potentially reversible over two or three decades, taking into account the state of *available knowledge* of the direct impact of harvesting, the effect of the introduction of alien species, the effects of *associated activities on the marine ecosystem* and of the effects of *environmental changes*, with the aim of

⁹⁵⁴ D. Miller, E. Sabourenkov, D. Ramm, “Managing Antarctic Marine Living Resources: The CCAMLR Approach” (2004) 19 IJMCL 317- 363, at 320.

making possible the sustained conservation of Antarctic marine living resources.”⁹⁵⁵ [emphasis added]

The above mentioned principles in the CCAMLR Convention reflect EBFM and the PA. In respect to the implementation of PA, it is noteworthy that the establishment of precautionary catch limits “take into account uncertainties in abundance, biomass and potential yield estimates.”⁹⁵⁶ It is noteworthy that the CCAMLR Convention was the first instrument of this kind to choose the ecosystem approach over the traditional single-species management approach.⁹⁵⁷ The Commission adds ecosystem considerations to the establishment of reference points in order to ensure that predators will still have prey to consume. As explained by Mooney-Seus and Rosenberg:

“(…) CCAMLR’s krill management strategy, which is designed for use with previously unexploited (or very lightly exploited) stocks for which an estimate of pre-exploitation biomass is available, includes both target and limit reference points. (...) CCAMLR considers two probabilities and then chooses the more conservative of the two probabilities from which to derive its TAC. The strategy goes even further, because it contains not only an explicit single-species biological reference point (limit), but also an additional ecosystem constraint. In other words, this strategy captures both the now common single-species constraint on the probability of a stock falling below a biological reference point in a given time span, and a further constraint to leave at least some of the prey for other predators.”⁹⁵⁸

The Commission adopts conservation and management measures based on the Scientific Committee advice, which has two subsidiary bodies: the Working Group on Ecosystem Monitoring and Management and the Working Group on Fish Stock Assessment.⁹⁵⁹ The ‘Ecosystem Monitoring Program’ (CEMP) was established in 1984. Its purpose is not only to monitor target species, but also extends to dependent species such as predators.⁹⁶⁰ The main objective of the program is to

⁹⁵⁵ CCAMLR convention, Art. II (3).

⁹⁵⁶ M. Mooney-Seus, A. Rosenberg (2007), *supra* note 813, at 06.

⁹⁵⁷ S. Andresen, “The Convention for the Conservation of Antarctic Marine Living Resources (CCAMLR): Improving Procedures but Lacking Results” pp. 379-429, in E. Miles, A. Underdal, S. Andresen, J. Wettestad, J. Skjaereth, E. Carlin (eds.) *Environmental Regime Effectiveness – Confronting Theory with Evidence* (Cambridge: MIT Press, 2002).

⁹⁵⁸ M. Mooney-Seus, A. Rosenberg (2007), *supra* note 813, at 15.

⁹⁵⁹ CCAMLR, Scientific Committee, online: <<http://www.ccamlr.org/pu/e/sc/intro.htm>> (accessed 26 Sep. 09).

⁹⁶⁰ CCAMLR, CEMP. For further details see report “CCAMLR Ecosystem Monitoring Program – Standard methods” (2004) Online:< <http://www.ccamlr.org/pu/c/sc/cemp/intro.htm>> (accessed 26 Sep. 09).

“monitor the key life-history parameters of selected dependent species”,⁹⁶¹ which are seen as ‘indicator species’ in responding to fluctuations in the availability of the target species.⁹⁶²

It is important to note that the Convention provides for the obligation of the Commission to take “full account of the recommendations and advice of the Scientific Committee”.⁹⁶³ However, as seen above, the downside of the CCAMLR Convention is that even though its decision-making procedures requires consensus it also allows objection procedures⁹⁶⁴ (see subsection 4.1 (b) above). Therefore, member States can be exempted from the obligation to comply with a respective conservation and management measure that they do not agree with.

As seen in Chapter 2, bycatch constitutes a threat to a healthy marine ecosystem. In order to avoid bycatch CCAMLR uses an interesting mechanism: TACs for target species can be associated to allowable bycatch.⁹⁶⁵ CCAMLR monitors the level of bycatch of a number of species and establishes bycatch TACs. Therefore, it is possible to close or relocate a particular fishery when it reaches the bycatch TAC (even if the TAC for the target species has not been reached at that point).⁹⁶⁶ Moreover, the use of high seas driftnets was banned in the regulatory area in order to avoid bycatch (see Chapter 2 on driftnets).⁹⁶⁷ In addition, CCAMLR has also been adopting conservation measures to minimise the incidental mortality and injury of seabirds and marine mammals.⁹⁶⁸ It is mandatory to have international scientific observers in all longline fishing vessels and trawling vessels for new and exploratory fisheries in the regulatory area.⁹⁶⁹ Moreover, measures such as delaying

⁹⁶¹ *Ibid.*

⁹⁶² *Ibid.*

⁹⁶³ CCAMLR Convention, Art. IX (4).

⁹⁶⁴ CCAMLR Convention, Art. IX, (6) (c) and (d).

⁹⁶⁵ A. Constable, W. de la Mare, D. Agnew, I. Everson, D. Miller, “Managing Fisheries to Conserve the Antarctic Marine Ecosystem: Practical Implementation of the Convention on the Conservation of Antarctic Marine Living Resources” (2000) 57 ICES Journal of Marine Science 778-791.

⁹⁶⁶ M. Mooney-Seus, A. Rosenberg (2007), *supra* note 813, at 12.

⁹⁶⁷ *Ibid.*

⁹⁶⁸ D. Miller, et al (2004), *supra* note 954; see also: CCAMLR, Incidental Effects of Fishing, online: <<http://www.ccamlr.org/pu/e/sc/imaf/ic-intro.htm>> (accessed 26 Sep. 09).

⁹⁶⁹ CCAMLR, *CCAMLR’s work on the elimination of seabird mortality associated with fishing* (CCAMLR Secretariat, Nov. 2007), online:

the commencement of the fishing season until the end of the breeding season for a number of albatross and petrel species have also been adopted.⁹⁷⁰ Other measures include the use of night sets instead of day sets, and the use of streamer lines⁹⁷¹ (see Chapter 2).

Another element of EBFM is habitat protection (see Chapters 1 and 5). In respect to habitat protection CCAMLR has been adopting a number of conservation measures in order to increase the protection of critical habitats. These measures include: restricted use of bottom trawling in particular areas for habitat protection purposes; regulation of plastic packages disposal, as well as oil, garbage and sewage discharges; studies on marine protected areas.⁹⁷² Note should be made to the work of the Commission on bioregionalisation. As discussed in Chapter 3, the oceans can be divided into biogeographical provinces, which present similar ecological and physical characteristics. CCAMLR organised the Workshop on Bioregionalisation of the Southern Ocean in 2007 with a means to advance on technical methods for bioregionalisation (based on biogeographical provinces) of the Southern Ocean; and to consider methods for the selection and designation of MPAs⁹⁷³ (see Chapter 3 for further information on ocean's partition/biogeographical provinces; and Chapter 5 for designation of MPAs based on biogeographical criteria).

Limitations to the full application of EBFM and PA by CCAMLR observed by Mooney-Seus and Rosenberg include the lack of guidelines “to ensure that the resumption of harvests in fisheries previously closed for the purpose of rebuilding depleted stocks does not again result in overfishing. There is also no mechanism to prevent overfishing of stocks for which TACs have not been established.”⁹⁷⁴ However, in general CCAMLR management approach is in consonance with

http://www.ccamlr.org/pu/e/sc/imaf/docs/CCAMLR_elimination%20of%20IMAF.pdf (accessed 26 Sep. 09).

⁹⁷⁰ *Ibid.*

⁹⁷¹ M. Mooney-Seus, A. Rosenberg (2007), *supra* note 813.

⁹⁷² *Ibid.*

⁹⁷³ CCAMLR, Workshop on Bioregionalisation of the Southern Ocean (Brussels, Belgium, 13-17 August 2007). Executive Summary – Report of the Workshop (prepared by Drs. P. Penhale and S. Grant). Online: < http://www.ccamlr.org/pu/e/e_pubs/sr/07/a09.pdf > (accessed 26 Sep. 09).

⁹⁷⁴ M. Mooney-Seus, A. Rosenberg (2007), *supra* note 813, at 16.

UNFSA, Annex II guidelines for the application of precautionary reference points⁹⁷⁵ (see Chapter 1).

(ii) Commission for the Conservation of Southern Bluefin Tuna

The CCSBT was created by the 1993 Convention for the Conservation of Southern Bluefin Tuna⁹⁷⁶ by Australia, Japan and New Zealand in order to “ensure, through appropriate management, the conservation and optimum utilisation of southern bluefin tuna.”⁹⁷⁷ The number of parties to the Convention has increased since then, and now counts the Republic of Korea, the Fishing Entity of Taiwan and Indonesia as members of the Commission.⁹⁷⁸

In terms of associated species, the CCSBT Convention provides for the obligation of the Parties to cooperate in collecting and exchanging fisheries data on southern bluefin tuna and ‘ecologically related species’⁹⁷⁹ (i.e., “(...) living marine species which are associated with southern bluefin tuna, including but not restricted to both predators and prey of southern bluefin tuna”⁹⁸⁰). The Scientific Committee (which is an advisory body of the Commission) shall “report to the Commission its findings or conclusions, including consensus, majority and minority views, on the status of the southern bluefin tuna stock and, where appropriate, of ecologically related species”.⁹⁸¹ There is no provision in the Convention that obliges the commission to adopt conservation measures to prevent the decline of such related species. However, the Commission established a Working Group on Ecologically Related Species in order to adopt measures to reduce the impact of southern bluefin tuna fisheries on such species. This includes measures against bycatch, and incidental seabird catches, such as mandatory use of Tori poles in all longline fisheries for

⁹⁷⁵ *Ibid.*

⁹⁷⁶ CCSBT Convention, *supra* note 901.

⁹⁷⁷ CCSBT Convention, Art. 3.

⁹⁷⁸ CCSBT, Management of SBT, online: <<http://www.ccsbt.org/docs/management.html>> (accessed 08 Sep. 09).

⁹⁷⁹ CCSBT Convention, Art. 5 (3).

⁹⁸⁰ CCSBT Convention, Art. 2 (a).

⁹⁸¹ CCSBT Convention, Art. 9 (2) (c).

southern bluefin tuna below 30° South and educational initiatives on sharks and seabirds for fishermen engaged in SBT fishing.⁹⁸² Seabird bycatch is a significant problem in the CCSBT area, as it encompasses the routes of 14 out of 16 species of albatross.⁹⁸³

In respect to PA, the Convention does not directly provide for the implementation of such approach. However, in 2006 the Commission adopted an interim measure based on the advice of the Scientific Committee to “promote the rebuilding of the stock and to ensure that there is a 50% chance that the spawning stock biomass will be above the 2004 level by 2014.”⁹⁸⁴ Rebuilding targets are in line with the PA reference points, although, it is important to note that in this case, the recommendation of the Scientific Committee to reduce the TAC by 5,000 tonnes is not enough to rebuild the stock, as demonstrated by Mooney-Seus and Rosenberg:

“(…) just implementing a 5,000-tonne TAC reduction in 2006 would only rebuild the median biomass to half the 1980 level by 2022. This means that although CCSBT has some rebuilding targets, its corresponding management actions and catch limits will not achieve these targets.”⁹⁸⁵

In regards to the adherence to scientific advice by the Commission, it was noted by the Chatham House study that “[s]cientific advice is inconsistently followed when establishing catch limits, and catch limits are inconsistently adhered to once established.”⁹⁸⁶

(iii) Inter-American Tropical Tuna Commission

The IATTC was created by the 1949 Convention for the establishment of an Inter-American Tropical Tuna Commission⁹⁸⁷ in order to manage tuna fisheries, as well as other species caught by tuna fishers in the eastern Pacific Ocean.⁹⁸⁸ IATTC

⁹⁸² CCSBT, Ecologically Related Species, online: <<http://www.ccsbt.org/docs/eco.html>> (accessed 26 Sep. 09).

⁹⁸³ M. Mooney-Seus, A. Rosenberg (2007), *supra* note 813.

⁹⁸⁴ *Ibid.*

⁹⁸⁵ *Ibid.*, at 26.

⁹⁸⁶ *Ibid.* at 32.

⁹⁸⁷ IATTC Convention, *supra* note 902.

⁹⁸⁸ IATTC Convention, Art. II.

target species include yellowfin, bigeye, albacore, skipjack, bonito, Pacific Bluefin tuna, sailfish, billfish (such as marlin and swordfish).⁹⁸⁹ In 2003 the Antigua Convention⁹⁹⁰ was adopted under the auspices of the IATTC Convention in order to strengthen the Commission. The Antigua Convention came into force in October 2008,⁹⁹¹ prevailing over the 1949 IATTC Convention.⁹⁹²

The Antigua Convention incorporates some of the developments related to the Law of the Sea. For example, it refers to UNCLOS, UNFSA and the FAO Code of Conduct for Responsible Fisheries and the Agreement on the International Dolphin Conservation Program⁹⁹³ (AIDCP) in its text. The AIDCP is a binding agreement adopted in May 1998, which entered into force in February 1999 under the auspices of IATTC.⁹⁹⁴

Moreover, the Antigua Convention obliges the IATTC members to apply the precautionary approach in accordance with UNFSA and the FAO Code of Conduct.⁹⁹⁵ In addition, the Convention makes use of precaution in regards to associated or dependent species by stating the following:

“Where the status of target stocks or non-target or associated or dependent species is of concern, the members of the Commission shall subject such stocks and species to enhanced monitoring in order to review their status and the efficacy of conservation and management measures. They shall revise those measures regularly in the light of new scientific information available.”⁹⁹⁶

This concern in respect to associated and dependant species reflects a certain degree of commitment to the application of EBFM (see Chapter 1). It is still too early to evaluate the outcomes of this provision, but it is noteworthy that the IATTC has been following scientific advice on the use of precaution in the absence of

⁹⁸⁹ M. Mooney-Seus, A. Rosenberg (2007), *supra* note 813.

⁹⁹⁰ *Inter-American Tropical Tuna Commission convention for the Strengthening of the Inter-American Tropical Tuna Commission established by the 1949 Convention between the United States of America and the Republic of Costa Rica* (“Antigua Convention”), 27 June 2003.

⁹⁹¹ Antigua Convention, Art. XXXI (1).

⁹⁹² Antigua Convention, Art. XXXI (3).

⁹⁹³ *Agreement on the International Dolphin Conservation Program*, 15 May 1998, 37 ILM 1246.

⁹⁹⁴ IATTC, International Dolphin Conservation Program, Online:

<<http://www.iattc.org/IDCPENG.htm>> (accessed 26 Sep. 09).

⁹⁹⁵ Antigua Convention, Art. IV.

⁹⁹⁶ Antigua Convention, Art. IV (3).

information.⁹⁹⁷ In addition, as observed by Mooney-Seus and Rosenberg: “A working group on reference points has been established to suggest precautionary limits and targets. (...) In addition, the amended Agreement on the AIDCP [see 2007 AIDCP amendments]⁹⁹⁸ does much more than just promote the protection of dolphins in tuna fisheries. It is a broad sweeping agreement with implications for both the PA and EBM.”⁹⁹⁹

From the initiatives taken by the Commission in regards to EBFM to date, the most obvious is the establishment of the International Dolphin Conservation Program mentioned above. The AIDCP requires IATTC to develop and implement measures to enhance the protection of tuna species and their ecosystems, which includes: the minimization of high grading and bycatch; the development of environmentally safe fishing gears and techniques; assessments on sustainability of tuna stocks and associated species.¹⁰⁰⁰ More specifically, the AIDCP aims to:

- Reduce incidental dolphin mortalities in the tuna purse-seine fishery to levels approaching zero, through the setting of annual limits;
- seek ecologically sound means of capturing large yellowfin tunas not in association with dolphins; and
- take into consideration the interrelationship among species in the ecosystem, with special emphasis on, inter alia, avoiding, reducing and minimizing bycatch and discards of juvenile tunas and non-target species.”¹⁰⁰¹

In respect to other associated species, the Commission has adopted resolutions on sharks,¹⁰⁰² marine turtles¹⁰⁰³ and seabirds¹⁰⁰⁴ over the past years.

⁹⁹⁷ M. Mooney-Seus, A. Rosenberg (2007), *supra* note 813.

⁹⁹⁸ IATTC, IDCP Documents, AIDCP Amendments (Oct. 07). Online:

<<http://www.iattc.org/PDFFiles2/AIDCP-amendments-Oct-2007.pdf>> (accessed 26 Sep. 09)

⁹⁹⁹ M. Mooney-Seus, A. Rosenberg (2007), *supra* note 813, at 50-51.

¹⁰⁰⁰ *Ibid.*

¹⁰⁰¹ *Ibid.* See also Chapter 2 for further information on interactions between dolphins and tuna purse-seine fishing.

¹⁰⁰² IATTC, Resolution C-05-03, *Resolution on the Conservation of Sharks Caught in Association with Fisheries in the Eastern Pacific Ocean* (73rd Meeting, June 2005).

¹⁰⁰³ IATTC, Resolution C-07-03, *Resolution to Mitigate the Impact of Tuna Fishing Vessels on Sea Turtles* (75th Meeting, June 2007).

¹⁰⁰⁴ IATTC, Resolution C-05-01, *Resolution on Incidental Mortality of Seabirds* (73rd Meeting, June 2005).

An important element of the IATTC management is that decisions are to be adopted by unanimity and therefore, no objection procedures are allowed.¹⁰⁰⁵ As observed by Mooney-Seus and Rosenberg, IATTC decisions are consistently based on scientific advice on catch limits. “However, it could be argued that catch limits might be ‘inconsistently’ complied with as a result of overages from regulatory discards of undersized tuna.”¹⁰⁰⁶

(iv) International Commission for the Conservation of Atlantic Tunas

The ICCAT was created by the 1966 International Convention for the Conservation of Atlantic Tunas¹⁰⁰⁷ as the responsible commission for the conservation of tunas and tuna-like species in the Atlantic Ocean and adjacent seas, as demonstrated by the following map.¹⁰⁰⁸

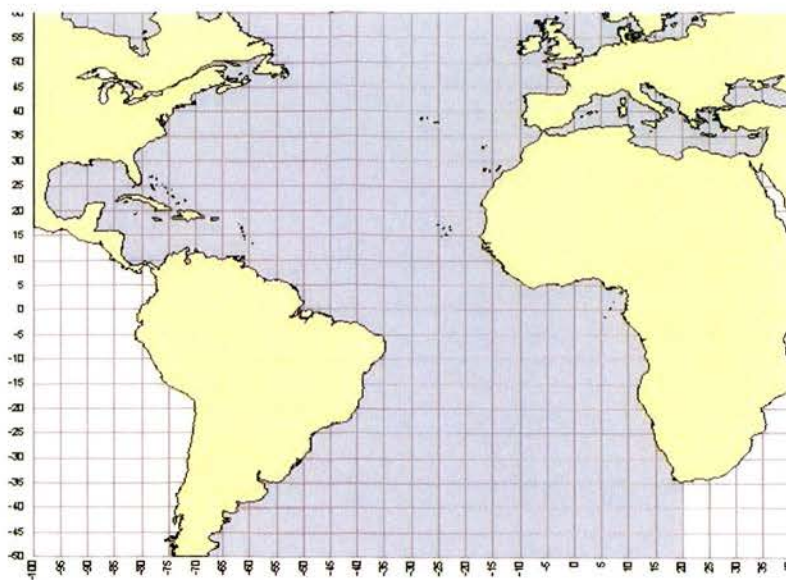


Figure 6: ICCAT Convention Area.

Extracted from ICCAT, online: <http://www.iccat.int/convarea.htm>

¹⁰⁰⁵ J. Swan, *Decision-Making in Regional Fishery Bodies or Arrangements: The Evolving Role of RFBs and International Agreement on Decision-Making Processes*, *FAO Fisheries Circular No. 995* (Rome: FAO, 2004) 82p.

¹⁰⁰⁶ M. Mooney-Seus, A. Rosenberg (2007), *supra* note 813, at 54.

¹⁰⁰⁷ ICCAT Convention, *supra* note 903.

¹⁰⁰⁸ ICCAT, Introduction. Online: <<http://www.iccat.int/en/introduction.htm>> (accessed 26 Sep. 09).

ICCAT target species comprise: Atlantic bluefin, skipjack, yellowfin, albacore and bigeye tuna; swordfish, billfishes, including white and blue marlins, sailfish and spearfish; mackarels; small tunas (including black skipjack, frigate tuna and Atlantic bonito).¹⁰⁰⁹

In terms of EBFM, ICCAT established a Sub-Committee on Ecosystems under the Standing Committee on Research and Statistics (SCRS) in order to “integrate the monitoring and research activities related to the ecosystem that are required by the SCRS in fulfilling its advisory role to the Commission. In so doing, the Sub-Committee will serve as the scientific cornerstone in support of an Ecosystem Approach to Fisheries (EAF) in ICCAT.”¹⁰¹⁰

In respect to habitat protection, ICCAT has adopted time/area closures in the Gulf of Guinea. However, as noted by Mooney-Seus and Rosenberg due to the non permanence of such measure and to the non limitation of bottom fisheries these closures “(...) have negligible habitat protection benefits”.¹⁰¹¹ The most significant practice in terms of ICCAT habitat protection regards the prohibition of targeting bluefin tuna in the Gulf of Mexico spawning grounds.¹⁰¹²

In respect to associated species, ICCAT adopted resolutions restricting Atlantic sharks’ bycatch¹⁰¹³ and the incidental catch of seabirds.¹⁰¹⁴ However scientific analysis of such measures concludes that the data maintained by the

¹⁰⁰⁹ *Ibid.*

¹⁰¹⁰ ICCAT, Standing Committee on Research and Statistics, Terms of Reference for a Sub-Committee on Ecosystems (2005), Online: <http://www.iccat.int/Documents/SCRS/ToFR%20SC_ECO_ENG.pdf> (accessed 26 Sep. 09).

¹⁰¹¹ M. Mooney-Seus, A. Rosenberg (2007), *supra* note 813, at 69.

¹⁰¹² *Ibid.*, at 69.

¹⁰¹³ ICCAT, Recommendation by ICCAT Concerning the Conservation of Sharks Caught in Association with Fisheries Managed by ICCAT No. 04-10 (2004).

¹⁰¹⁴ ICCAT, Recommendation by ICCAT on Reducing Incidental By-Catch of Seabirds in Longline Fisheries No. 07-07 (2007).

Commission is insufficient to complete necessary assessments and make effective management recommendations.¹⁰¹⁵

As for PA initiatives, ICCAT adopted rebuilding plans for blue and white marlin, but, according to the scientific opinion of Mooney-Seus and Rosenberg these efforts are not sufficient as they do not encompass precautionary reference points (instead, ICCAT uses MSY as a reference target), as explained below:

“For instance, there is conflicting evidence among abundance indices used to assess blue and white marlin. Some indices suggest that neither stock is actually recovering under the current rebuilding plans. However, the SCRS [Standing Committee on Research and Statistics] did not recognize this discrepancy, because the management advice it gave to the Commission in 2006 does not include a conservative (precautionary) option for rebuilding blue and white marlin stocks.”¹⁰¹⁶

Moreover, ICCAT established a working group on the precautionary approach in 1997, but its last meeting was held in 1999 due to lack of sufficient data.¹⁰¹⁷ Mooney-Seus and Rosenberg argue that:

“The fact that ICCAT has not adopted provisional reference points in cases where data are lacking (e.g. targeted shark fisheries, skipjack and small tuna fisheries), and the fact that the Ad Hoc Precautionary Approach Working Group has not met since 1999 because it is awaiting better scientific data, suggests that ICCAT is using insufficient information as a justification for not moving ahead with PA implementation for managed stocks, rather than accounting for uncertainty in its management decisions.”¹⁰¹⁸

Another ICCAT management constraint relates to its decision-making procedure, which entitles its members to objection procedures (as seen in section 4.1 (b) above). Therefore, even though ICCAT has been adopting some initiatives towards the implementation of EBFM and PA, there is still a long way to go.

¹⁰¹⁵ M. Mooney-Seus, A. Rosenberg (2007), *supra* note 813, at 70.

¹⁰¹⁶ *Ibid.*, at 69

¹⁰¹⁷ *Ibid.*, at 70.

¹⁰¹⁸ *Ibid.* at 70.

(v) International Whaling Commission

Whaling is an ancient activity. The first written record of whaling comes from rock art in Korea, as described by Roberts:

“Detailed rock carvings at the Neolithic site of Bangu-dae in South Korea date from 6000 to 1000 BC. They show Pacific grey, northern right, sperm, killer and minke whales. They also show the pursuit and capture of whales by people in small boats, using harpoons and ropes to which air-filled bladders were attached to help secure the whales. The resistance of the bladders tired the whale, allowing hunters to track its position from the surface, homing in for the kill when the whale was exhausted”¹⁰¹⁹

Explorers from the sixteenth century were amazed by the large amount of whales in the sea, as noted by Cartier during his voyage to the Gulf of St. Lawrence in 1535:

“There are also many Whales, Porposes, Seahorses, and Adthothuis, which is a kind of fish that we had never seene nor heard of before [beluga whale]. They are as great as Porposes, as white as any snow, their bodie and head fashioned as a greyhound, they are wont always to abide betweene the fresh & salt water, which beginneth betweene the river of Saguenay and Canada.”¹⁰²⁰

The Basques and Biscayans knowledge on how to catch and process whales was passed to the Dutch and British in the seventeenth century, and by the end of that century whale fishery had begun in New England.¹⁰²¹ By the eighteenth century whale fishery comprised an important part of the industrialized economy, as described by Roberts:

“By the eighteenth century, whale oil lit the streets, salons and parlours of Europe and America. Uses for whales diversified as the industry prospered. Whales helped lubricate the wheels of industry, cleanse the bodies of a newly hygiene-conscious society, and suppress the waists of its ladies. It was vital to maintain supplies. With local stocks much depleted by the eighteenth century, New Englanders sought fresh hunting grounds. In 1726, George Shelvocke, a British navigator, alerted them to possibilities in the south Atlantic.”¹⁰²²

¹⁰¹⁹ C. Roberts, *The Unnatural History of the Sea – The Past and Future of Humanity and Fishing* (London: Island Press, 2007), at 88-89.

¹⁰²⁰ S. Kelly, D. Scott, A.B. MacDiarmid, R.C. Babcock, “Spiny lobster, *Jasus edwardsii*, recovery in New Zealand marine reserves” (2000) 92 *Biological Conservation* 359-369, cited in C. Roberts (2007) *ibid.*, at note 47, p. 91.

¹⁰²¹ C. Roberts (2007), *supra* note 1019, at 95.

¹⁰²² *Ibid.*, at 95.

Whaling in the high seas started in the late eighteenth century for sperm whales after the depletion of coastal populations in the North Atlantic Ocean.¹⁰²³ It is interesting to note that whaling was the first fisheries occurring in the high seas.¹⁰²⁴ In the nineteenth century, the decline of whale stocks was evident, while in the meantime the cheap exploitation of mineral resources, such as oil and gas was supplanting the demand for whale oil.¹⁰²⁵ However, in the late nineteenth and early twentieth centuries large scale whaling re-started due to technological advances and the use of steam power and diesel.¹⁰²⁶ With these developments, boats were able to cruise at high speeds and therefore, able to catch fast swimming whales.¹⁰²⁷ The following years of unsustainable practices led to an extreme situation. As noted by Roberts *et al*, “[s]ubsequently, the whaling industry embarked on a suicidal course of eliminating its quarry, species by species, place by place, until a halt was called to all commercial whaling in 1986.”¹⁰²⁸ This moratorium was adopted by the IWC in 1982 and came into force in 1986.¹⁰²⁹

The IWC was created by the 1946 International Convention for the Regulation of Whaling¹⁰³⁰ in order “to ensure proper and effective conservation and development of whale stocks.”¹⁰³¹ The Convention area comprises the entire globe.

Before continuing the analysis of IWC, it is interesting to note that UNCLOS lists seven families of cetaceans, including the following whale species, as highly migratory species,¹⁰³² *inter alia*: sperm whale; minke; humpback, blue whale; bowhead and right whales; gray whale; beluga and narwhal; beaked whales; orcas, pilot whales.

¹⁰²³ C. Roberts et al (2006), *supra* note 112.

¹⁰²⁴ *Ibid.*

¹⁰²⁵ *Ibid.*

¹⁰²⁶ *Ibid.*

¹⁰²⁷ *Ibid.*

¹⁰²⁸ *Ibid.*, at 16.

¹⁰²⁹ IWC, Conservation and Management, online:

<<http://www.iwcoffice.org/commission/iwcmain.htm>> (accessed 26 Sep. 09).

¹⁰³⁰ IWC Convention, *supra* note 904.

¹⁰³¹ IWC Convention, Preamble.

¹⁰³² UNCLOS, Annex I.

In addition, Article 65 of UNCLOS provides for the conservation of marine mammals, as follows:

“Nothing in this Part [V] restricts the right of a coastal State or the competence of an 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 organizations for their conservation, management and study.”¹⁰³³

As observed by Birnie et al, “[t]he 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.”¹⁰³⁴

The IWC is responsible for reviewing the measures defined by the Convention Schedule regularly, which provides for, *inter alia*, “the complete protection of certain species; designate specified areas as whale sanctuaries; set limits on the numbers and size of whales which may be taken; prescribe open and closed seasons and areas for whaling; and prohibit the capture of suckling calves and female whales accompanied by calves.”¹⁰³⁵

The IWC was entitled to set catch quotas annually based on the Scientific Committee’s advice; however, in 1982 the Commission adopted a moratorium on commercial whaling.¹⁰³⁶ It is noteworthy that the moratorium was adopted mainly due to difficulties of the Scientific Committee in reaching consensus about the status of the stock, “given the prevailing uncertainties regarding the data and their interpretation.”¹⁰³⁷ Therefore, this moratorium can be interpreted as an application of the precautionary approach.¹⁰³⁸ The limit reference point used before the moratorium was MSY.¹⁰³⁹ The moratorium has been challenged by objection procedures evoked by Norway, as well as by the ‘scientific research’ allocations claimed by Japan,

¹⁰³³ UNCLOS, Art. 65.

¹⁰³⁴ P. Birnie, et al (2009), *supra* note 170, at 724.

¹⁰³⁵ M. Mooney-Seus, A. Rosenberg (2007), *supra* note 813, at 86.

¹⁰³⁶ IWC, Commercial Whaling Catch Limits, Online:

<<http://www.iwcoffice.org/conservation/catches.htm>> (accessed 26 Sep. 09).

¹⁰³⁷ M. Mooney-Seus, A. Rosenberg (2007), *supra* note 813, at 86.

¹⁰³⁸ D. Freestone, E. Hey (1996), *supra* note 482, at 10-11.

¹⁰³⁹ M. Mooney-Seus, A. Rosenberg (2007), *supra* note 813, at 85.

Iceland, the Republic of Korea and Norway over the past years.¹⁰⁴⁰ This resulted in more than thirty thousand whales being killed during the moratorium.¹⁰⁴¹

In respect to EBM, the IWC has established programmes under the Scientific Committee in order to better analyse and understand the ecological interactions between whales and their habitats, including physical and biological variability¹⁰⁴² and the analysis of anthropogenic impacts, such as pollution.¹⁰⁴³ The Commission has also been working on ecosystem modelling plans.¹⁰⁴⁴ Other initiatives adopted by IWC in consonance with EBM and PA include the establishment of sanctuaries where whaling is prohibited, as shown in the map below.



Figure. Boundaries of the Southern Ocean and Indian Ocean Sanctuaries.

Figure 7: IWC Southern and Indian Ocean Whale Sanctuaries

Extracted from IWC. Online: <http://www.iwcoffice.org/conservation/images/sanctuaries.jpg>

The downside of these sanctuaries is that they are not permanent – their existence is reviewed from time to time.¹⁰⁴⁵ Two other sanctuaries in the South

¹⁰⁴⁰ *Ibid.* at 87.

¹⁰⁴¹ WWF, *Whales, Whaling & the International Whaling Commission – WWF Position on whaling and the IWC* (June 2008).

¹⁰⁴² Southern Ocean Whale and Ecosystem Research Programme (SOWER), see IWC, *The Environment – Its effects on global whale abundance*, online:

<http://www.iwcoffice.org/conservation/environment.htm> (accessed 26 Sep. 09).

¹⁰⁴³ *Ibid.*

¹⁰⁴⁴ M. Mooney-Seus, A. Rosenberg (2007), *supra* note 813.

¹⁰⁴⁵ IWC, *Whale Sanctuaries*, online: <http://www.iwcoffice.org/conservation/sanctuaries.htm> (accessed on 26 Sep. 09); see also P. Birnie, “Are Twentieth-Century Marine Conservation

Pacific and in the South Atlantic Oceans have been under proposal at the Commission's meetings for a long period of time. However, the Commission has been failing to reach the $\frac{3}{4}$ majority vote required to adopt the respective protected areas.¹⁰⁴⁶ This constitutes a drawback in the IWC management, because, as seen in Chapter 5, marine reserves (including whale sanctuaries) are relevant tools of EBFM/EBM and PA.

With respect to PA, Mooney-Seus and Rosenberg considered that the IWC's Revised Management Procedure (RMP)¹⁰⁴⁷ is in line with the precautionary approach; i.e., "[t]he RMP takes a realistic view of the uncertainties inherent in current and likely future data and in baleen whale dynamics."¹⁰⁴⁸ RMP is an initiative taken by the Scientific Committee on reviewing the status of whales stocks in order to establish a "scientifically robust method of setting safe catch limits for certain stocks (groups of whales of the same species living in a particular area) where the numbers are plentiful."¹⁰⁴⁹ This is supposed to be implemented after the moratorium ends (i.e., it needs $\frac{3}{4}$ majority vote for the moratorium to be suspended). The management objectives of the RMP are the following:

1. "Catch limits should be as stable as possible;
2. catches should not be allowed on stocks below 54% of the estimated carrying capacity;
3. the highest possible continuing yield should be obtained from the stock."¹⁰⁵⁰

This conforms to the precautionary approach, according to the scientific opinion of Mooney-Seus and Rosenberg.¹⁰⁵¹ In addition, PA is currently applied to aboriginal subsistence whaling, as follows: "As a precautionary measure when establishing

Conventions Adaptable to Twenty First Century Goals and Principles? Part II" (1997) 12 IJMCL 488-532.

¹⁰⁴⁶ M. Mooney-Seus, A. Rosenberg (2007), *supra* note 813. See also IWC, Chair's Report of the 59th Annual Meeting (28-31 May 2007, Anchorage, Alaska), March 2008.

¹⁰⁴⁷ See IWC, Revised Management Scheme, online:

<<http://www.iwcoffice.org/conservation/rms.htm>> (accessed 26 Sep. 09).

¹⁰⁴⁸ M. Mooney-Seus, A. Rosenberg (2007), *supra* note 813, at 89.

¹⁰⁴⁹ IWC, The Comprehensive Assessment and the Revised Management Procedure (RMP), online:

<<http://www.iwcoffice.org/conservation/rms.htm>> (accessed 26 Sep. 09).

¹⁰⁵⁰ IWC, The Revised Management Procedure (RMP), *ibid.*

¹⁰⁵¹ M. Mooney-Seus, A. Rosenberg (2007), *supra* note 813, at 89-90.

TACs, the IWC Scientific Committee determines a Strike Limit Algorithm (SLA), where the TAC includes an allotted catch as well as set number of vessel strikes.”¹⁰⁵²

Notwithstanding the efforts of the IWC in restoring population levels, some scientists still challenge their findings. For instance, based on logbook and historical records, IWC calculated the number of humpback and fin whales that used to exist before whaling in the North Atlantic.¹⁰⁵³ The Commission’s conclusion that there used to be approximately twenty thousand humpbacks and thirty thousand fin whales was questioned by two scientists in the United States, who used genetic data in order to estimate the populations’ size in the past.¹⁰⁵⁴ These scientists estimated that there were on the order of 240 million humpback whales and up to 360 million fin whales – therefore, nine to twelve times higher than the IWC estimates.¹⁰⁵⁵

According to Roberts, these scientists’ estimates are more in line with the descriptions from past voyagers and explorers. Moreover, logbooks could have been lost and catches might not have been accurately registered.¹⁰⁵⁶ Current estimates for population sizes of humpback and fin whales are between nine to twelve thousand, and fifty-six thousand respectively; as properly stated by Roberts:

“Using whaling commission estimates, this suggests fin whales are fully recovered and humpbacks are well on the way. The truth could be very different. If the genetic estimates of population sizes are accurate, then early resumption of whaling based on a false assumption of recovery could imperil whales once more.”¹⁰⁵⁷

In the light of so much uncertainty, the most appropriate option is to maintain the moratorium until science is able to provide a sound and conclusive answer on the real status of recovery of whale populations.

¹⁰⁵² *Ibid.*, at 90.

¹⁰⁵³ C. Roberts (2007), *supra* note 1019.

¹⁰⁵⁴ *Ibid.*; see also J. Roman, S. Palumbi, “Whales before Whaling in the North Atlantic” (2003) 301 *Science* 508-510.

¹⁰⁵⁵ *Ibid.*

¹⁰⁵⁶ *Ibid.*

¹⁰⁵⁷ C. Roberts (2007), *supra* note 1019, at 102.

(vi) Northwest Atlantic Fisheries Organization

NAFO was established by the 1978 Convention on Future Multilateral Cooperation in the Northwest Atlantic Fisheries¹⁰⁵⁸ in order to “contribute through consultation and cooperation to the optimum utilization, rational management and conservation of the fishery resources of the Convention Area”.¹⁰⁵⁹ NAFO is responsible for the management of straddling and discrete fish stocks occurring in the Convention Area.¹⁰⁶⁰ Amongst the twenty-five commercial species targeted in the NAFO area, eleven species are managed by the organisation.¹⁰⁶¹ The convention area is indicated in the map below:

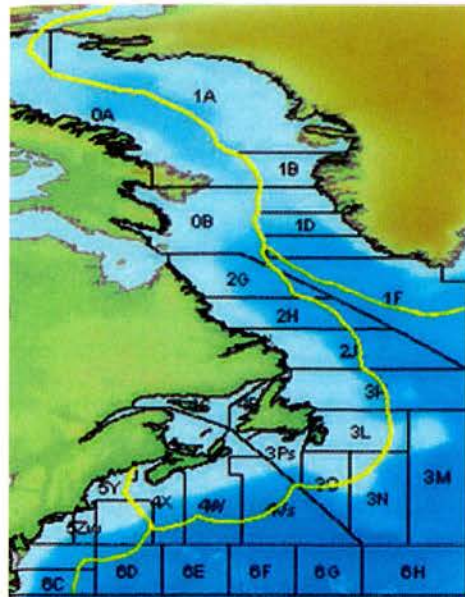


Figure 8: NAFO Convention Area

Extracted from NAFO, online: <http://www.nafo.int/about/frames/about.html>

As seen in section 4.1 (a) and (b) above, NAFO adopted a significant amendment to the Convention in its 2007 meeting following a two-year process.¹⁰⁶² The 2007 amendment includes, *inter alia*, reference to UNCLOS, UNFSA, the FAO

¹⁰⁵⁸ NAFO Convention, *supra* note 905.

¹⁰⁵⁹ NAFO Convention, Art. II (1).

¹⁰⁶⁰ T. Henriksen, et al (2006), *supra* note 865.

¹⁰⁶¹ M. Mooney-Seus, A. Rosenberg (2007), *supra* note 813.

¹⁰⁶² NAFO Amendment. (GC Doc. 07/4), *supra* note 930.

Code of Conduct for Responsible Fisheries. It is also interesting to note that the amended preamble includes reference to ‘sustainable use of fishery resources’; and states, *inter alia*, the following:

a) “Mindful that effective conservation and management of these fishery resources should be based on the *best available scientific advice* and the *precautionary approach*”¹⁰⁶³ [emphasis added].

b) “Committed to apply an *ecosystem approach to fisheries management* 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*,”¹⁰⁶⁴ [Emphasis added]

The language used demonstrates the effort to conform to new developments of international law (hard and soft law) as well as with recent management approaches. Particularly on EBFM, it is interesting to note that it was specifically added to the objective of the Convention, which reads: “The objective of this Convention 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.*”¹⁰⁶⁵

In addition, the amended general principles of the Convention include the obligation of State Parties to apply, *as appropriate*, the PA in accordance with Article 6 of UNFSA; prevent or eliminate overfishing; and to take into account the impact of fishing activities in the marine ecosystems, adopting measures to minimise such impact.¹⁰⁶⁶ The use of the term ‘as appropriate’ weakens these obligations. This reflects the level of compromise that involves international negotiations and demonstrates that some States may remain cautious to commit themselves to the full implementation of the PA and EBFM.

Moreover, it should be noted that the Convention Area¹⁰⁶⁷ includes areas within national jurisdiction (Canada, USA, France in respect of St. Pierre and

¹⁰⁶³ *Ibid.*, Art. 2, which deletes the 1979 preamble and adopts a new text.

¹⁰⁶⁴ *Ibid.* Art. 2.

¹⁰⁶⁵ *Ibid.*, Art. 3, in reference to Article II of the 1978 Convention.

¹⁰⁶⁶ *Ibid.*, Art. 3, in reference to Article III of the 1978 Convention.

¹⁰⁶⁷ NAFO Convention, Art. I (1).

Miquelon, and Denmark in respect of Greenland), with, NAFO's regulatory area¹⁰⁶⁸ comprising only the areas beyond national jurisdiction. In view of this, it is understandable that the language used requires a degree of caution in order not to interfere with the respective States sovereignty. This is clear from the amended Article VI (8), which states that in applying the principles of Article III in relation to the *Regulatory Area*, the Commission shall adopt, *inter alia*:

- a) "conservation and management measures to achieve the objective of this Convention;
- b) conservation and management measures to minimize the impact of fishing activities on living resources and their ecosystems;
- c) total allowable catches and/or levels of fishing effort and determine the nature and extent of participation in fishing."¹⁰⁶⁹

The language used for the Regulatory Area does not make use of the term 'as appropriate', and therefore, obliges the Commission to apply the EBFM as stated in the objective of the Convention. Moreover, the amendment of the decision-making procedures as addressed in section 4.1 (b) above demonstrates a significant improvement of the previous text where objection procedures were allowed without restrictions. In addition, the 2007 amendment includes provisions on dispute settlement in accordance with UNCLOS and UNFSA (see section 4.3 below), and which can be used to contest objection procedures (see sections 4.1 (b) and 4.3).

The overall implications of the 2007 amendment can be interpreted as a big step towards the adoption of PA and EBFM. However, in order for the amendment to enter into force it needs to be ratified by $\frac{3}{4}$ of the Convention's Parties.¹⁰⁷⁰ The ratification process was initiated in September 2008.¹⁰⁷¹ It is still too early to say if it will succeed. Depending on the good will and bureaucracy constraints found within the respective State Parties' domestic policies this may take some time.

¹⁰⁶⁸ NAFO Convention, Art. I (2).

¹⁰⁶⁹ NAFO Amendment (GC Doc. 07/4), *supra* note 930, Art. 3, in reference to Art. VI (8) of the Convention.

¹⁰⁷⁰ NAFO Convention, Art. XXI.

¹⁰⁷¹ NAFO, Press Release, Online: <<http://www.nafo.int/about/frames/media-press.html>> (accessed 11 Aug. 09).

To date, under the 1979 regime, a number of PA initiatives can be identified; i.e., NAFO has implemented a moratorium for nine of the stocks managed (cod in divisions 3L, 3 M and 3NO; redfish in division 3LN; American plaice in divisions 3L and 3NO; witch founder in divisions 2J, 3 K, 3L and 3NO; and capelin in division 3NO).¹⁰⁷² Moreover, in 1997 a Precautionary Approach Working Group was established in order to develop a provisional framework to implement PA based on UNFSA, Annex II¹⁰⁷³ (see Chapter 1). The Precautionary Approach Framework was adopted in 2004 in respect to two stocks (3LNO yellowtail flounder and 3M shrimp).¹⁰⁷⁴ Currently the Framework has been extended to only 3LNO shrimp. In addition, under the PA Framework biological reference points have been studied which are to be applied to 3 NO cod.¹⁰⁷⁵ In terms of recovery plans, NAFO has instituted a plan for Greenland halibut, but, according to Mooney-Seus and Rosenberg, “while the target and limit reference points established may be sufficient to rebuild the stock, the TACs are consistently overfished.”¹⁰⁷⁶

In terms of EBFM, NAFO has been monitoring bycatch particularly for the moratorium stocks.¹⁰⁷⁷ Moreover, the organisation has adopted a number of measures in order to minimise bycatch and high grading.¹⁰⁷⁸ However, more advances need to be achieved. This is expected under the new regime where emphasis is given to EBFM as demonstrated above. To date, NAFO’s management has been done on a “stock-by-stock and single-species basis”.¹⁰⁷⁹

In terms of habitat protection (which can be interpreted as part of both PA and EBFM), NAFO has adopted some significant initiatives, such as a moratorium on bottom trawling on four seamounts and a large coral area in the Northwest

¹⁰⁷² M. Mooney-Seus, A. Rosenberg (2007), *supra* note 813.

¹⁰⁷³ *Ibid.*

¹⁰⁷⁴ T. Henriksen, et al (2006), *supra* note 865. For details see: NAFO Precautionary Approach Framework, NAFO/FC Doc. 04/18, online: <<http://www.nafo.int/science/research/docs/fcdoc04-18.pdf>> (accessed 26 Sep. 09).

¹⁰⁷⁵ M. Mooney-Seus, A. Rosenberg (2007), *supra* note 813.

¹⁰⁷⁶ *Ibid.*, at 102.

¹⁰⁷⁷ *Ibid.*

¹⁰⁷⁸ *Ibid.*

¹⁰⁷⁹ *Ibid.*, at 98.

Atlantic.¹⁰⁸⁰ Moreover, it has established an *Ad Hoc* Working Group of Fishery Managers and Scientists on Vulnerable Marine Ecosystems in order to provide advice on measures to protect vulnerable marine ecosystems.¹⁰⁸¹

In terms of adherence to scientific advice it was observed by Mooney-Seus and Rosenberg that NAFO usually sets TACs at the high end or above limits recommended by the Scientific Council.¹⁰⁸²

(vii) North East Atlantic Fisheries Commission

The NEAFC was established by the 1980 Convention on Future Multilateral Co-operation in the North East Atlantic Fisheries,¹⁰⁸³ which entered into force in 1982 in order to “ensure the long-term conservation and optimum utilisation of the fishery resources in the Convention Area, providing sustainable economic, environmental and social benefits.”¹⁰⁸⁴ NEAFC target species include redfish, herring, mackerel, blue whiting, haddock and deep-sea species (since 2003) such as, *inter alia*, alfonosinos, blue ling, orange roughy and Greenland halibut.¹⁰⁸⁵ The Convention area and respective regulatory area is demonstrated in the map below:

¹⁰⁸⁰ NAFO, Press Release, online: <http://www.nafo.int/about/frames/media.html> (accessed 26 Sep. 09).

¹⁰⁸¹ *Ibid.*

¹⁰⁸² M. Mooney-Seus, A. Rosenberg (2007), *supra* note 813.

¹⁰⁸³ NEAFC Convention, *supra* note 906.

¹⁰⁸⁴ NEAFC Convention, Art. 2 (as amended in 2006).

¹⁰⁸⁵ NEAFC, NEAFC's Main fisheries, online: <<http://www.neafc.org/catch>> (accessed 26 Sep. 09).



Figure 9: Map of the NEAFC Convention Area (in blue) and Regulatory Area (in orange).

Extracted from NEAFC. Online: <http://www.neafc.org/about/ra.htm>

NEAFC receives scientific advice from the International Council for the Exploration of the Sea (ICES), which has provided advice on the implementation of precautionary approach. For example, based on ICES' advice, NEAFC has adopted precautionary TACs for five stocks of redfish, blue whiting, Norwegian spring-spawning herring, mackerel and Rockall haddock.¹⁰⁸⁶

With respect to deep-sea species (see Chapters 1 and 2), which require a higher level of protection due to its characteristics, NEAFC establishes annual adjustments in order to improve its previous regulatory measures.¹⁰⁸⁷ For the year of 2008, NEAFC recommended the Contracting Parties limit their fishing efforts of deep-sea species in the Regulatory Area to a maximum of 65% "of the highest level put into deep-sea fishing in previous years for the relevant species."¹⁰⁸⁸ Moreover, the 2006 amendment to the Convention included the obligation of the Commission to

¹⁰⁸⁶ M. Mooney-Seus, A. Rosenberg (2007), *supra* note 813.

¹⁰⁸⁷ NEAFC, Measures 2008: Conservation and Management Measures for Deep-Sea Species, online: <http://www.neafc.org/measures/current_measures/15_deep-sea_species_2008.html> (accessed 12 Sep. 08); M. Mooney-Seus, A. Rosenberg (2007) *ibid*.

¹⁰⁸⁸ NEAFC, Recommendation XV: 2008, online: <http://www.neafc.org/measures/current_measures/docs/15-rec_deepsea_species_2008.pdf> (accessed 12 Sep. 08).

apply the precautionary approach to its recommendations.¹⁰⁸⁹ Notwithstanding these efforts to better manage these species, the 2006 performance review assessment of the Commission concluded that there is no evidence that short term reductions on TACs can be effective, as follows:

“Expansion of the deep-sea fisheries has been rapid, and at a greater pace than scientific information has become available (...). It is believed that most species and stocks are not being fished sustainably and ICES has recommended immediate reductions in the fisheries unless they can be shown to be sustainable. It is also believed that within the ICES area some species/stocks have been depleted before appropriate management measures have been implemented. (...) In the NEAFC Regulatory Area, Contracting Parties agreed to freeze effort in 2003 and 2004, and then reduce it by 30% for 2005 and 2006. There are no long term management objectives, nor are there any long term management plans in place. There remain questions as to appropriate management. It is unknown whether the 30% reduction in effort is sufficiently precautionary or not. While useful, the effort reduction may not, alone, deal with some of the species/stock issues.”¹⁰⁹⁰

It is noteworthy that NEAFC was one of the first RFMOs to conduct a performance review, as recommended by FAO/COFI in order to assess the Commission’s conformity with the NEAFC Convention, UNCLOS and UNFSA.¹⁰⁹¹

With respect to PA, NEAFC prohibited fishing for orange roughy in the ICES subareas V, VI and VII of its Regulatory Area as a precautionary measure based on information that the stocks have been severely depleted.¹⁰⁹² Even though fishing for orange roughy is allowed in the other areas, a number of precautionary conditions were established.¹⁰⁹³

In addition, NEAFC in conjunction with ICES have developed precautionary reference points for the primary stocks; however, in the view of Mooney-Seus and Rosenberg, “it has not always been consistent in adopting conservative management measures to prevent stock declines. Furthermore, it does not appear to account for the

¹⁰⁸⁹ NEAFC Convention, Art. 4 (2) (b).

¹⁰⁹⁰ NEAFC, *Performance Review Panel Report of the North East Atlantic Fisheries Commission*, (2006), at 32-33, online: <http://www.neafc.org/> (accessed on 13 Sep. 08).

¹⁰⁹¹ M. Mooney-Seus, A. Rosenberg (2007), *supra* note 813; NEAFC (2006), *ibid.*

¹⁰⁹² NEAFC, Recommendation VIII (2008).

¹⁰⁹³ *Ibid.*

impact of regulatory discards and misreporting when establishing its management measures.”¹⁰⁹⁴

In regards to the application of EBFM, the 2006 amendment to the Convention included that the “long term conservation and optimum utilisation of the fishery resources of the North-East Atlantic area” should be done in a manner to “safeguard the marine ecosystems in which the resources occur”.¹⁰⁹⁵ In addition, the 2006 amendment also included the obligation of the Commission to recommend measures that “take due account of the impact of fisheries on other species and marine ecosystems, and in doing so adopt, where necessary, conservation and management measures that address the need to minimise harmful impacts on living marine resources and marine ecosystems”,¹⁰⁹⁶ as well as “due account of the need to conserve marine biological diversity.”¹⁰⁹⁷

In 2005, in order to avoid bycatch, NEAFC temporarily banned the used of gillnets, entangling and trammel nets in its Regulatory Area at depths greater than 200 meters until the measures controlling the impacts of such gears were developed.¹⁰⁹⁸ This not only demonstrates a degree of adherence to EBFM (in decreasing bycatch), but also to PA in suspending that harmful activity until a solution to the problem could be achieved.

In terms of habitat protection, NEAFC has been adopting closures of ridges and seamounts to bottom trawling since 2001.¹⁰⁹⁹ For example, bottom trawling and fishing with static gear have been prohibited in the Hecate and Faraday, Altair and Antialtair seamounts and a section of the Reykjanes Ridge.¹¹⁰⁰ Research continues on the need to expand or re-locate the closures. The latest meeting of the NEAFC Permanent Committee on Management and Science held in 2008 concluded that:

¹⁰⁹⁴ M. Mooney-Seus, A. Rosenberg (2007), *supra* note 813, at 119.

¹⁰⁹⁵ NEAFC Convention, Preamble.

¹⁰⁹⁶ NEAFC Convention, Art. 4 (2) (c).

¹⁰⁹⁷ NEAFC Convention, Art. 4 (2) (d).

¹⁰⁹⁸ M. Mooney-Seus, A. Rosenberg (2007), *supra* note 813.

¹⁰⁹⁹ *Ibid.*

¹¹⁰⁰ NEAFC, Recommendation VII (2008); see Chapters 3 and 5 on seamounts ecosystem.

“Expanded areas would be more likely to facilitate restoration of depleted resources and damaged invertebrate communities, and safeguard production of currently exploited resources by e.g. constituting significant protected sources of emigrants that may disperse to adjacent open areas. It is believed that new knowledge facilitates such a selection of representative areas of presumed more appropriate spatial scales than those selected in 2004.”¹¹⁰¹

In addition, NEAFC has also established measures to protect cold-water corals, such as the prohibition of bottom trawling, static gear, including bottom set gillnets and longlines in areas of the Hatton Bank, Rockall Bank and South-West Rockall.¹¹⁰² The boundaries of these areas can be adjusted if more precise scientific evidence is provided on the deep-water corals distribution.¹¹⁰³

In respect to adherence to scientific advice, Mooney-Seus and Rosenberg note that scientific advice is not consistently followed by the Commission when establishing TACs.¹¹⁰⁴ This undermines the effective conservation of marine living resources and ecosystems in NEAFC’s regulatory area.

(viii) South East Atlantic Fisheries Organization

SEAFO was established by the 2001 Convention on the Conservation and Management of Fishery Resources in the South-East Atlantic Ocean¹¹⁰⁵ and entered into force in 2003. The objective of the Convention is to “ensure the long-term conservation and sustainable use of the fishery resources in the Convention Area through [its] effective implementation (...)”¹¹⁰⁶. SEAFO’s target species include, sedentary, discrete high-seas stocks (and therefore several deep-sea species are covered by the organisation) and straddling fish stocks.¹¹⁰⁷ The Convention area is indicated in the map below:

¹¹⁰¹ NEAFC, Permanent Committee on Management and Science (PECMAS) of the North-East Atlantic Fisheries Commission, Report of the Meeting (London, 17-18 June 2008), Annex 2, at 3.

¹¹⁰² NEAFC, Recommendation IX (2008).

¹¹⁰³ *Ibid.*

¹¹⁰⁴ M. Mooney-Seus, A. Rosenberg (2007), *supra* note 813.

¹¹⁰⁵ SEAFO Convention, *supra* note 907.

¹¹⁰⁶ SEAFO Convention, Art. 2.

¹¹⁰⁷ SEAFO, Introduction, online: <<http://www.seafo.org/welcome.htm>> (accessed 26 Sep. 09).

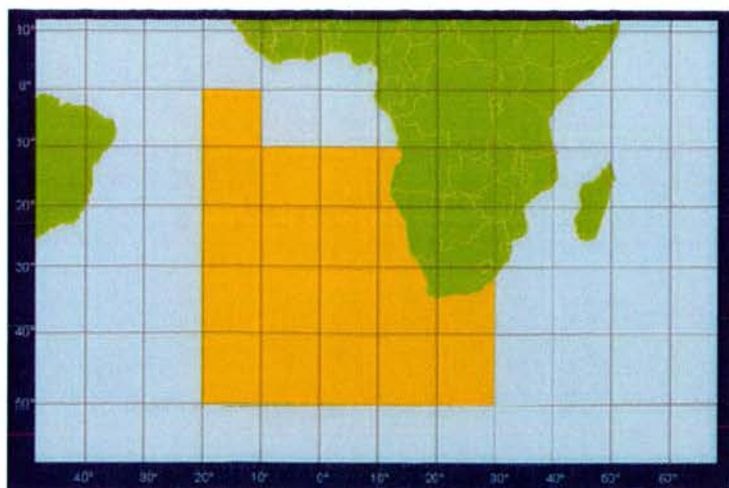


Figure 10: Map of the SEAFO Convention Area.

Extracted from FAO, online: <http://www.fao.org/fishery/rfb/seafo/en>

SEAFO was one of the first RFMOs established after the adoption of UNFSA,¹¹⁰⁸ and therefore, it incorporates a number of elements of the Agreement. For example, its general principles include the precautionary approach and the ecosystem-based approach.¹¹⁰⁹ It is interesting to note that SEAFO is the only RFMO that encompasses all the Parties to UNFSA.¹¹¹⁰ Moreover, as seen in section 4.1 (a) above SEAFO incorporates the dispute settlement provisions of UNCLOS and UNFSA. Furthermore, even though it provides for the possibility of objection procedures it sets the burden on the objector (see section 4.1 (b)).

In respect to conservation measures adopted in the context of EBFM and PA, SEAFO has adopted fisheries closures on the following seamounts:¹¹¹¹ Dampier, Molloy, Schmidt-Ott, Erica, Africana, Panzarini, Vema, Wust, Discovery, Junoy and Shannon seamounts.¹¹¹² In 2008, SEAFO adopted a conservation measure restricting bottom trawling in vulnerable marine habitats pursuant to UNGA Resolution 61/105

¹¹⁰⁸ T. Henriksen, et al (2006), *supra* note 865.

¹¹⁰⁹ SEAFO Convention, Arts. 3 (b), (c), (d), (e), (f), and 7.

¹¹¹⁰ M. Mooney-Seus, A. Rosenberg (2007), *supra* note 813.

¹¹¹¹ SEAFO, Conservation measure 11/07 laying down conditions for the resumption of fishing activities in areas subject to closure through conservation measure 06/06 (2007).

¹¹¹² M. Mooney-Seus, A. Rosenberg (2007), *supra* note 813.

(2006).¹¹¹³ In addition, the organisation has also established measures to reduce sharks' and seabirds' bycatch.¹¹¹⁴

Precautionary reference points have not been established by SEAFO to date. Mooney-Seus and Rosenberg observe that:

“(…) the reluctance of the organization to institute provisional reference points in line with those for similar or better-known stocks, or to establish interim measures (e.g. an interim cap on deep-water fisheries) until adequate information about the status of resources can be collected, is clearly not in keeping with the Precautionary Approach.”¹¹¹⁵

Due to the early stages of SEAFO it is still soon to conclude whether scientific advice has been followed. However, as noted by Mooney-Seus and Rosenberg, in 2005 the commission did not follow the Scientific Committee's advice to freeze fishing effort in the Convention area. Moreover, in the Commission's meeting of 2007, adherence to the scientific advice on banning all forms of trawling and gillnetting in the Convention area was refused on the grounds that: “Parties felt that all types of fishing gears have impacts on vulnerable habitats and there was no ground for selecting one from the others.”¹¹¹⁶ From this, it can be assumed that scientific advice has not been consistently followed by the organisation, undermining the effective implementation of EBFM.

(ix) Western and Central Pacific Ocean Commission

WCPFC was established by the 2000 Convention on the Conservation and Management of Highly Migratory Fish Stocks in the Western and Central Pacific Ocean¹¹¹⁷ and entered into force in 2004. The Convention's objective is to “ensure, through effective management, the long-term conservation and sustainable use of highly migratory fish stocks in the western and central Pacific Ocean in accordance

¹¹¹³ SEAFO, Conservation Measure 12/08 on Bottom Fishing Activities in the SEAFO Convention Area (2008).

¹¹¹⁴ SEAFO, Conservation & Management Measures: Recommendations, online: <<http://www.seafo.org/welcome.htm>> (accessed 26 Sep. 09).

¹¹¹⁵ M. Mooney-Seus, A. Rosenberg (2007), *supra* note 813, at 129.

¹¹¹⁶ SEAFO, Report of the 4th Annual Meeting of the Commission (2007), at 4.

¹¹¹⁷ WCPFC Convention, *supra* note 908.

with the 1982 Convention [UNCLOS] and the Agreement [UNFSA].”¹¹¹⁸ Target species are all highly migratory species occurring in the Convention area, with the exception of sauries.¹¹¹⁹ This includes, *inter alia*, skipjack tuna, yellowfin tuna, albacore tuna and bigeye tuna, swordfish and marlin.¹¹²⁰ The Convention area is indicated in the map below:

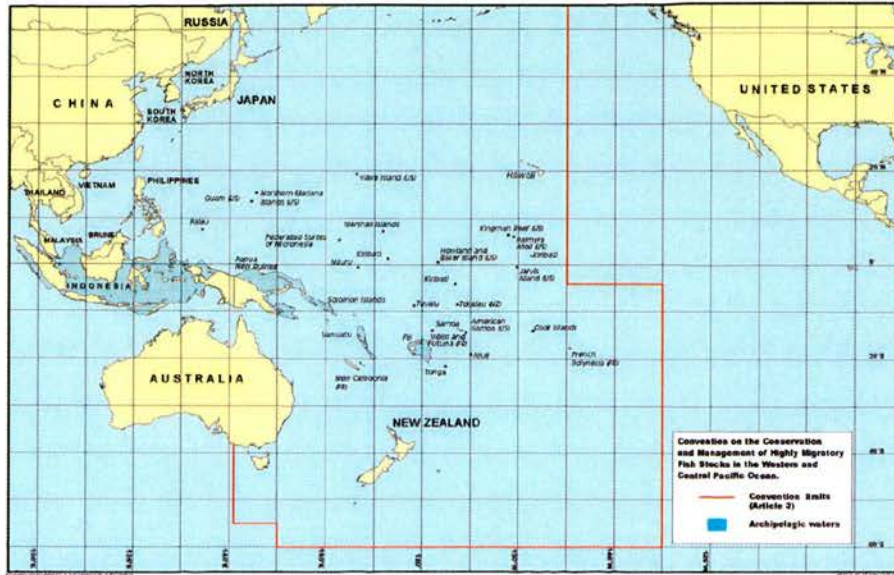


Figure 11: Map of the WCPFC Convention area.

Extracted from WCPFC, online: <http://www.wcpfc.int/pdf/Map.pdf>

From the objectives of the Convention it is clear that its text was negotiated in order to conform to UNCLOS and UNFSA. In addition, Article 4 provides for the relationship between the Convention and UNCLOS, stating that: “[n]othing in this Convention shall prejudice the rights, jurisdiction and duties of States under the 1982 Convention and the Agreement. This Convention shall be interpreted and applied in the context of and in a manner consistent with the 1982 Convention and the Agreement.”¹¹²¹ Moreover, as a consequence of this narrow relationship, the Convention provides for the application of the PA and EBFM,¹¹²² and provides for

¹¹¹⁸ WCPFC Convention, Art. 2.

¹¹¹⁹ M. Mooney-Seus, A. Rosenberg (2007), *supra* note 813.

¹¹²⁰ *Ibid.*

¹¹²¹ WCPFC Convention, Art. 4.

¹¹²² *Ibid.*, Art. 5.

dispute settlement procedures in conformity with UNCLOS and UNFSA (see section 4.3 below).

Amongst the principles and measures that shall be adopted by the members of the Commission for conservation and management of highly migratory fish stocks, the Convention provides for, *inter alia*: the protection of biodiversity in the marine environment; measures to prevent and eliminate overfishing; the adoption of measures based on the best scientific evidence available and that “are designated to maintain or restore stocks at levels capable of producing maximum sustainable yield.”¹¹²³

Measures adopted by the Commission in conformity with the EBFM, include:

- a) Conservation and management measure to mitigate the impact of fishing for highly migratory fish stocks on seabirds¹¹²⁴ (adopted in 2007) in consonance with the IPOA-seabirds (see Chapter 2 on IPOA-Seabirds);
- b) Conservation and management measure for sharks in the western and central Pacific Ocean¹¹²⁵ (adopted in 2006), under which the Commission members are obliged to implement the IPOA-sharks (see Chapter 2 on IPOA-Sharks).

In the latest meeting of the Commission, scientific advice on reduction of fishing mortality rate of yellowfin tuna was accepted.¹¹²⁶ It is interesting to note Australia’s observation “that MSY-based reference points are not particularly precautionary and are generally considered to be limited reference points, rather than targets.”¹¹²⁷ Based on this, Australia recommended a target biomass of 20% above the MSY biomass. Moreover, as a precautionary measure, the Scientific Committee recommended that fishing mortality of Pacific bluefin tuna should not be increased from current levels.¹¹²⁸ This recommendation was also endorsed by the

¹¹²³ *Ibid.*, Art. 5 (b), (f), (g).

¹¹²⁴ WCPFC, Conservation and Management Measure 2007-04.

¹¹²⁵ WCPFC, Conservation and Management Measure 2006-05.

¹¹²⁶ WCPFC, Fourth regular session, summary report, 2–7 December 2007, (WCPFC, 2008).

¹¹²⁷ *Ibid.*, at Para. 79.

¹¹²⁸ *Ibid.*, at Para. 82.

Commission.¹¹²⁹ In addition, the Commission has endorsed the Scientific Committee's recommendation in establishing a future work programme on reviewing reference points.¹¹³⁰ Moreover, the Ecosystem and Bycatch Specialist Working Group established by the Commission has indicated its priority in developing ecosystem models, indicators and reference points.¹¹³¹

From this it can be said that the Commission has been consistently following scientific advice.¹¹³²

4.3 Further Obstacles to the Implementation of EBFM by RFMOs: Jurisdictional Conflicts between Regional Fisheries Agreements, UNCLOS and UNFSA

Implementation of ecosystem approach to fisheries management in marine areas beyond national jurisdiction can only be successful if RFMOs and Arrangements start to integrate this concept into their management measures. As seen above, States are entitled to cooperate through these entities and arrangements to reach UNCLOS' and UNFSA's goals on conservation of living resources in the high seas. However, it is important to note that jurisdictional conflicts may arise from this fragmented system, which encompasses global treaties such as UNCLOS and UNFSA (not to mention other related conventions, including the CBD and the CMS), and regional agreements, which establish the respective RFMOs. The *Bluefin Tuna* Cases (Provisional Measures) and Arbitration provide an example of this kind of conflict. In view of this, section 4.3 (i) briefly analyses aspects of the *Southern Bluefin Arbitration*¹¹³³ related to jurisdiction to illustrate such a conflict; and section 4.3 (ii) then follows with a brief analysis of jurisdiction under UNFSA and RFMOs Agreements.

¹¹²⁹ *Ibid.*, at Para 82.

¹¹³⁰ *Ibid.*, at Para. 88.

¹¹³¹ M. Mooney-Seus, A. Rosenberg (2007), *supra* note 813.

¹¹³² For further details see *ibid.*

¹¹³³ *Southern Bluefin Tuna Case* (2000), *supra* note 195.

(i) UNCLOS and Regional Fisheries Agreements: Jurisdictional Aspects

UNCLOS establishes a binding compulsory dispute settlement under Part XV, section II that is supposed to ensure the commitment by the Parties with all its provisions.¹¹³⁴ As noted by Boyle, “(...) binding compulsory dispute settlement becomes the cement which should hold the whole structure together and guarantee its continued acceptability and endurance for all parties.”¹¹³⁵

However, disputes involving RFMOs can prove to be detrimental to the binding, compulsory mechanism put in place under UNCLOS. The controversial decision on the *Southern Bluefin Tuna Arbitration* is an example of this situation. The Arbitral Tribunal was constituted under Annex VII of UNCLOS to decide on the fishery dispute between Australia, New Zealand and Japan over the conservation of bluefin tuna.

The Arbitral Tribunal concluded that it lacked jurisdiction to decide the merits of the case and thus, also revoked the provisional measures prescribed by ITLOS in the *Southern Bluefin Tuna Cases*¹¹³⁶ based on, *inter alia*:

(i) Article 286 of UNCLOS, which reads:

“Subject to section 3 [limitations and exceptions to applicability of section 2, including fisheries disputes within a coastal state’s EEZ, as discussed in Chapter 3], any dispute concerning the interpretation or application of this Convention shall, where no settlement has been reached by recourse to section 1, be submitted at the request of any party to the dispute to the court or tribunal having jurisdiction under this section.”

(ii) Article 281 (1) of UNCLOS, which reads:

“If the States Parties which are parties to a dispute concerning the interpretation or application of this Convention have agreed to seek settlement of the disputes by a peaceful means of their own choice, the procedures provided for in this Part apply only where no settlement has been reached by recourse to such means *and the*

¹¹³⁴ See Chapter 3 for exceptions related to EEZ fisheries.

¹¹³⁵ A. Boyle, “Dispute Settlement and the Law of the Sea Convention: Problems of Fragmentation and Jurisdiction” (1997) 46 ICLQ 37-54, at 38.

¹¹³⁶ *Southern Bluefin Tuna Cases - Provisional Measures (New Zealand v. Japan; Australia v. Japan)* (1999), ITLOS Nos. 3 and 4.

agreement between the parties does not exclude any further procedure.” [Emphasis added]

(iii) Article 16 of the CCSBT, which is considered by the Tribunal to be the ‘agreement between the parties excluding any further procedure’ of UNCLOS, Article 281 (1). Thus, in the Tribunal’s view, Article 16 of CCSBT excludes the compulsory procedures of Section 2, Part XV of UNCLOS. Article 16 of the CCSBT reads:

“1. If any dispute arises between two or more of the Parties concerning the interpretation or implementation of this Convention, those Parties shall consult among themselves with a view to having the dispute resolved by negotiation, inquiry, mediation, conciliation, arbitration, judicial settlement or other peaceful means of their own choice.

2. Any dispute of this character not so resolved shall, with the consent in each case of all parties to the dispute, be referred for settlement to the International Court of Justice or to arbitration; but failure to reach agreement on reference to the International Court of Justice or to arbitration shall not absolve parties to the dispute from the responsibility of continuing to seek to resolve it by any of the various peaceful means referred to in paragraph 1 above.

3. In cases where the dispute is referred to arbitration, the arbitral tribunal shall be constituted as provided in the Annex to this Convention. The Annex forms an integral part of this Convention.”

(iv) The Tribunal also considered that the dispute between the parties was a single dispute which arose from both Conventions (UNCLOS and CCSBT).¹¹³⁷ Therefore, in its view, the dispute settlement provisions of CCSBT would prevail due to the exclusion provision of Article 281 (1) of UNCLOS.¹¹³⁸

Before proceeding with the analysis of this decision, it is noteworthy that the Tribunal did not accept Japan’s argument that the CCSBT constituted a *lex specialis* that prevailed over UNCLOS.”¹¹³⁹ The Tribunal properly refused this contention as follows:

“There is frequently a parallelism of treaties, both in their substantive content and in their provisions for settlement of disputes arising thereunder. The current range of international legal obligations benefits from a process of accretion and cumulation; in the practice of States, the conclusion of an implementing convention

¹¹³⁷ *Southern Bluefin Tuna Arbitration* (2000), *supra* note 195, at Para. 54.

¹¹³⁸ *Ibid.*, at Para. 59.

¹¹³⁹ *Ibid.*, at Para. 52.

does not necessarily vacate the obligations imposed by the framework convention upon the parties to the implementing convention. (...)”¹¹⁴⁰

As pointed out in the ILC study on Fragmentation of International Law there are two types of *lex specialis*: (i) the one which refers to the application of a general rule; and (ii) the one that is regarded as a “*modification, overruling or a setting aside*”¹¹⁴¹ of a general rule. The former does not imply a conflict between the norms: it thus encompasses the “*simultaneous application of the special and the general standard*”;¹¹⁴² while the latter modifies the original provision.

In light of this, it is clear that the CCSBT falls into the first category of *lex specialis* (‘application of a general rule’). Moreover, Article 4 of this Convention states that “[n]othing in this Convention nor any measures adopted pursuant to it shall be deemed to prejudice the positions or views of any Party with respect to its rights and obligations under treaties and other international agreements to which it is party or its positions or views with respect to the law of the sea.”¹¹⁴³ Considering the preamble (where the Parties acknowledge UNCLOS) and the objective of the Convention,¹¹⁴⁴ which reiterates Article 64 of UNCLOS, it is evident that the obligations contracted under UNCLOS remain preserved between the Parties.¹¹⁴⁵

On this issue, the Tribunal concluded that the dispute “while centered in the 1993 Convention, also implicates obligations under UNCLOS.”¹¹⁴⁶ However, by grounding its decision on Article 281 (1) as a reason for refusing its jurisdiction under UNCLOS, the Tribunal contradicted itself. As appropriately observed by Boyle:

“(...) the fact that other agreements, even post-UNCLOS, make no provision for compulsory jurisdiction tells us nothing about the parties’ intention with regard to the settlement of UNCLOS disputes. It is entirely obvious that Article 16 of the

¹¹⁴⁰ *Ibid.*, at Para. 52.

¹¹⁴¹ ILC (2006), *supra* note 122, at Para. 88.

¹¹⁴² *Ibid.*, at Para. 88.

¹¹⁴³ CCSBT, Art. 4.

¹¹⁴⁴ “The objective of this Convention is to ensure, through appropriate management, the conservation and optimum utilisation of southern bluefin tuna.” CCSBT, Art. 3.

¹¹⁴⁵ For detailed explanation on *lex specialis*, see A. Boyle, C. Chinkin (2007), *supra* note 105, at 248-255.

¹¹⁴⁶ *Southern Bluefin Tuna Arbitration* (2000), *supra* note 195, at Para. 54.

CCSBT is meant to exclude compulsory jurisdiction over disputes *under that convention*, but it is far from obvious that it is meant also to exclude compulsory disputes under UNCLOS.”¹¹⁴⁷

In effect, even though the Tribunal recognized that there are obligations under UNCLOS it interpreted Article 16 of the CCSBT as excluding UNCLOS jurisdiction on settlement of disputes, notwithstanding the fact that this is not mentioned at all in the CCSBT text. As correctly observed by Judge *Ad Hoc* Shearer (designated by Australia and New Zealand) in his separate opinion in the *Southern Bluefin Tuna (Provisional Measures) Cases*, Article 16 of CCSBT does not provide a final answer in case the parties do not agree on a peaceful settlement of disputes mechanism:

“As can be seen, this dispute resolution procedure is essentially circular, since if the parties are not agreed on reference to arbitration or judicial settlement the process of negotiation goes around and around, potentially without end. It was because of their frustration with the failure of Japan to agree to a binding dispute settlement procedure under this provision that Australia and New Zealand instituted proceedings under Part XV of the United Nations Convention on the Law of the Sea.”¹¹⁴⁸

Moreover, it is clear from Article 16 text that it does not exclude further procedures under UNCLOS. Article 16 only refers to procedures under ‘this’ (CCSBT) Convention. If it was intended to extend its jurisdiction to other Conventions it should have expressly contained a provision excluding any further procedure under other agreements or treaties. On this Sir Kenneth Keith, in his separate opinion to the Arbitration contended that “Article 16 applies only to disputes concerning the CCSBT and does not necessarily extend to disputes concerning UNCLOS.”¹¹⁴⁹

Therefore, relying on Article 281 (1) as an impediment for the Tribunal’s jurisdiction in this case is somewhat peculiar. Article 281 (1) implies an *exclusion* by the parties of any further procedure for settling a UNCLOS dispute.¹¹⁵⁰ Such

¹¹⁴⁷ A. Boyle, “The Southern Bluefin Tuna Arbitration” (2001) 50 ICLQ 447-452, at 449.

¹¹⁴⁸ Separate Opinion of Judge *Ad Hoc* Shearer, *Southern Bluefin Tuna Cases - Provisional Measures*, (1999) ITLOS, cases 3 and 4.

¹¹⁴⁹ Separate Opinion of Justice Sir Kenneth Keith, *Southern Bluefin Tuna Arbitration*, 39 ILM 1359, at Para. 8.

¹¹⁵⁰ *Ibid.*, at Para. 17.

exclusion entails an ‘opting out’ procedure differently from, for example, Articles 282, 284 (2) and (4) and 288 (2), which require a positive agreement (‘opt in’) to binding procedures.¹¹⁵¹ Therefore, Article 281 (1) should never have been utilised as a basis for the Tribunal’s decision. As noted by Boyle:

“(…) it is *prima facie* curious to use Article 281 to explain the relationship between the 1993 CCSBT and the 1982 UNCLOS Part XV. The more obvious article on which to rely for this purpose is Article 282, under which dispute settlement procedures of other agreements apply in lieu of UNCLOS Part XV, provided they entail a *binding decision*. Of course Article 16 of the 1993 CCSBT does not entail such an outcome, so it could not have deprived the arbitrators of jurisdiction in this case, hence the implausible resort to Article 281.”¹¹⁵²

In fact, Article 282 of UNCLOS on ‘obligations under general, regional or bilateral agreements’ would be the most appropriate provision to be evoked in this case, if the CCSBT disposed of binding dispute settlement procedures, or if the parties agreed otherwise. Article 282 reads as follows:

“If States Parties which are parties to a dispute concerning the interpretation or application of this Convention have agreed, through a general, regional or bilateral agreement or otherwise, that such dispute shall, at the request of any party to the dispute, be submitted to a procedure that entails a binding decision, that procedure shall apply in lieu of the procedures provided for in this Part, unless the parties to the dispute otherwise agree.”¹¹⁵³

As seen above, Article 16 of the CCSBT does not entail binding decisions; therefore, Article 282 of UNCLOS would not exclude the Arbitral Tribunal’s jurisdiction in this case either. Moreover, if Article 281 was to be interpreted as eligible for application in this case it would hinder UNCLOS jurisdiction over any conflicts involving regional agreements.¹¹⁵⁴ Therefore, there would not be the need for Article 282’s exclusion or even existence. Therefore, the interpretation of Article 281 in this case was not appropriate.

Each case involving a conflict between members of RFMOs, which are also Parties to UNCLOS, will entail a distinct result depending on the respective dispute settlement clauses of the RFMO’s Convention. In the *Southern Bluefin Tuna*

¹¹⁵¹ *Ibid.*, at Para. 17.

¹¹⁵² A. Boyle (2001), *supra* note 1147, at 449.

¹¹⁵³ UNCLOS, Art. 282.

¹¹⁵⁴ A. Boyle (2001), *supra* note 1147, at 449.

Arbitration it is clear that Articles 64, 116-119 of UNCLOS were violated by Japan and that based on what was seen above the Arbitral Tribunal constituted under Annex VII of UNCLOS did have jurisdiction to decide the merits of the case. Even though the two Conventions are related, UNCLOS' jurisdiction on the case should have not been disregarded. As precisely observed by Boyle:

“What might have seemed a relatively comprehensive system of compulsory settlement of disputes concerning the marine environment has become a minefield of jurisdictional complexity, revealed most plainly in *MOX Plant* and *Southern Bluefin Tuna*. The most difficult aspect of this problem concerns the relationship between the LOSC and regional treaties. Regional environmental and fisheries treaties often amplify the framework provisions of the LOSC; only rarely do they mirror its dispute settlement provisions. How should a LOSC tribunal respond to a dispute which straddles both the LOSC and a regional implementation treaty? The answers are confused.”¹¹⁵⁵

While in the *Southern Bluefin Tuna Arbitration* UNCLOS and the CCSBT were considered integrated and because of this the Arbitral Tribunal presumed that it had no jurisdiction under UNCLOS to decide the merits of the case; in the *MOX Plant Case*, ITLOS¹¹⁵⁶ and the Arbitral Tribunal¹¹⁵⁷ understood that the dispute was based on distinct regimes (e.g. UNCLOS and the 1992 Convention for the Protection of the Marine Environment of the North-East Atlantic (OSPAR Convention)).¹¹⁵⁸ Because of this, ITLOS and the Arbitral Tribunal constituted pursuant to UNCLOS Annex VII, have *prima facie* jurisdiction to prescribe provisional measures. However, due to the fact that the Conventions were inferred to have a ‘separate existence’¹¹⁵⁹, the OSPAR Convention was not incorporated as part of ‘other applicable law’ as established in Article 293 of UNCLOS.¹¹⁶⁰

¹¹⁵⁵ A. Boyle, “The Environmental Jurisprudence of the International Tribunal for the Law of the Sea” (2007) 22 IJMCL 369-381, at 380-81. See also R. Churchill, “The International Tribunal for the Law of the Sea: Survey for 2003” (2004) 19 IJMCL 369-382.

¹¹⁵⁶ *Mox Plant (Provisional Measures) Case, (Ireland v United Kingdom)* (2001), ITLOS No. 10, Paras. 48-53.

¹¹⁵⁷ *MOX Plant Arbitration* (2003) PCA, Statement by the President, Para. 5.

¹¹⁵⁸ A. Boyle (2007), *supra* note 1155, at 380-81.

¹¹⁵⁹ See *Mox Plant (Provisional Measures)*, *supra* note 1156, Para. 50; *MOX Plant Arbitration*, *supra* note 1157, Para. 5.

¹¹⁶⁰ Art. 293 (1) reads: “A court or tribunal having jurisdiction under this section shall apply this Convention and other rules of international law not incompatible with this Convention. (2) Paragraph 1 does not prejudice the power of the court or tribunal having jurisdiction under this section to decide a case *ex aequo et bono*, if the parties so agree.”

To conclude, in order to prevent jurisdictional problems attributed to misinterpretation of UNCLOS' settlement of disputes provisions Parties to RFMOs' Conventions should be more careful when choosing the language to be adopted in respect to dispute settlement in their respective treaties. An example of a clear text that incorporated UNCLOS and UNFSA's dispute settlement procedures is the one used in the Convention on the Conservation and Management of Highly Migratory Fish Stocks in the Western and Central Pacific Ocean,¹¹⁶¹ which established the WCPFC.

Applicable Law

Having briefly analysed jurisdictional issues under UNCLOS and fisheries agreements it is worthwhile to reflect on the scope of applicable law that courts and tribunals are entitled to apply under UNCLOS. Article 293 of UNCLOS states the following:

1. "A court or tribunal having jurisdiction under this section shall apply this Convention and *other rules of international law* not incompatible with this Convention.
2. Paragraph 1 does not prejudice the power of the court or tribunal having jurisdiction under this section to decide a case *ex aequo et bono*, if the parties so agree." [Emphasis added]

UNCLOS allows a court or tribunal to apply not only this Convention, but also "other rules of international law" which are not incompatible with its provisions. But what does 'other rules of international law' encompass in this context? In the *OSPAR Arbitration*¹¹⁶² the court rejected Ireland's claim to apply soft law instruments to the case, and explained that "(...) the Tribunal may apply, where appropriate, other extant international agreements insofar as they are admissible for purposes of interpretation under Article 31 of the Vienna Convention."¹¹⁶³ This means that the Tribunal can apply other rules of international law if it helps interpret the application of UNCLOS (and not the application of the other instrument). According to Boyle and Chinkin:

¹¹⁶¹ *Convention on the Conservation and Management of Highly Migratory Fish Stocks in the Western and Central Pacific Ocean*, *supra* note 908.

¹¹⁶² *Dispute Concerning Access to Information under Article 9 of the OSPAR Convention* (Ireland v. UK and Northern Ireland), Final Award, PCA, (2003) [*OSPAR Arbitration*].

¹¹⁶³ *Ibid.*, at Para. 105.

“(…) UNCLOS tribunals may adjudicate on questions of general international law only insofar as it is within their jurisdiction and not inconsistent with UNCLOS to do so: that is, only where other rules of law are expressly incorporated by specific articles of the Convention, or where it is necessary to apply other rules in order to decide the UNCLOS dispute.”¹¹⁶⁴

As observed by Churchill and Lowe, “[d]isputes arising under the Law of the Sea Convention and any other international treaty will usually be decided by the interpretation of the treaty in question. The rules for interpretation are conveniently summarised in the 1969 Vienna Convention on the Law of Treaties.”¹¹⁶⁵ The general rule of interpretation is provided for Article 31 of the Vienna Convention, which affirms that a “treaty shall be interpreted in good faith in accordance with the ordinary meaning to be given to the terms of the treaty in their context and in the light of its object and purpose.”¹¹⁶⁶ As discussed in Chapter 1, in terms of the context of the treaty Article 31 (3) (c) reflects the ‘principle of systemic integration’, of which a treaty shall be interpreted in the light of its normative environment.¹¹⁶⁷ As highlighted by the ILC in its study on ‘Fragmentation of International Law’ “all international law exists in systemic relationship with other law” or its “normative environment”.¹¹⁶⁸

If the normative environment is to be taken into account when interpreting a treaty the fact that UNCLOS and CCSBT were considered integrated in the *Southern Bluefin Tuna Arbitration* would not have been an obstacle for the Arbitrators to decide the case under UNCLOS. It is not to say that in this case they should have applied the CCSBT provisions (as the tribunal did not have jurisdiction to do so). However they could have applied UNCLOS’ relevant provisions (i.e., Arts. 64, 116-119) without disregarding the existence of CCSBT. As properly noted by the ILC:

“(…) although a tribunal may only have jurisdiction in regard to a particular instrument, it must always *interpret* and *apply* that instrument in its relationship to its normative environment - that is to say “other” international law. This is the

¹¹⁶⁴ A. Boyle, C. Chinkin (2007), *supra* note 105, at 274.

¹¹⁶⁵ R. Churchill, A. Lowe (1999), *supra* note 462, at 460.

¹¹⁶⁶ VCLT, Art. 31 (1).

¹¹⁶⁷ For analysis of the principle of systemic integration see Chapter 1; C. McLachlan (2005), *supra* note 115; ILC (2006), *supra* note 122.

¹¹⁶⁸ ILC (2006), *supra* note 122, at Para. 423.

principle of systemic integration to which article 31 (3) (c) VCLT gives expression.”¹¹⁶⁹

In view of this, tribunals and courts deciding a dispute under UNCLOS should interpret the Convention in the context of its normative environment and therefore could apply other rules of international law in order to help interpret UNCLOS. However, it cannot apply other rules of international law beyond its competence unless it is fundamental to resolving the dispute under UNCLOS. As seen above, Article 282 of UNCLOS restricts the binding compulsory procedures under UNCLOS in case the parties to a dispute are also parties to a general, regional or bilateral agreement that provides for a binding procedure. However, it is also a fact that Article 282 can be interpreted differently. As seen above, in the *MOX Plant Case (Provisional Measures)*¹¹⁷⁰ ITLOS considered that the regional treaties in question (OSPAR and EU Treaties) provided for disputes arising from the interpretation and application of these treaties instead of disputes arising under UNCLOS.¹¹⁷¹ As observed by Judge Treves in his separate opinion:

“In the circumstances of the present case, it may be further observed that the application of article 282 in order to conclude that *prima facie* the Annex VII arbitral tribunal lacked jurisdiction would have had the consequence that a dispute concerning the application or interpretation of the Convention would have been left to be considered in separate parts by different courts or tribunals, and taken away from the only tribunal competent to deal with it in its entirety. It may be argued that such a consequence would have been incompatible with the very purpose of article 282, seen in the context of Part XV of the Convention.”¹¹⁷²

It is clear that there are a number of different interpretations on jurisdiction and applicable law that may arise from disputes involving UNCLOS and regional agreements. In order to achieve a consistent and coherent fisheries legal system the best option is for regional fisheries treaties to incorporate the binding compulsory dispute settlement provisions of UNCLOS. As discussed above, some parties to these

¹¹⁶⁹ ILC (2006), *supra* note 122, at Para. 423.

¹¹⁷⁰ *Mox Plant (Provisional Measures)*, *supra* note 1156.

¹¹⁷¹ See R. Churchill, J. Scott, “The Mox Plant Litigation: The First half-Life” (2004) 53 ICLQ 643-676.

¹¹⁷² Separate Opinion of Judge Treves, *Mox Plant (Provisional Measures) Case*, (2001), ITLOS No. 10, at Para. 6.

treaties have agreed on this solution even when it involves the amendment of the respective treaties (e.g. NEAFC Convention).

(ii) UNFSA and Regional Fisheries Agreements: Jurisdictional Aspects

After UNFSA came into force in 2001, it changed the complex scenario of dispute settlement described above in regards to its Parties in respect to the management and conservation of straddling and highly migratory stocks. UNFSA goes further on UNCLOS provisions and establishes that Part XV of UNCLOS applies *mutatis mutandis* to:

“(…) any dispute between States Parties to this Agreement concerning the interpretation or application of a subregional, regional or global fisheries agreement relating to straddling fish stocks or highly migratory fish stocks to which they are parties, including any dispute concerning the conservation and management of such stocks, whether or not they are also Parties to the Convention [UNCLOS].”¹¹⁷³

This Article clarifies the situation for Parties of UNFSA that are also Parties of a RFMO responsible for managing straddling and highly migratory fish stocks. It is noteworthy that this does not apply to disputes involving discrete high seas stocks or to RFMO’s Conventions responsible for exclusively discrete stocks. It is also important to stress that, as seen in Chapter 3 the compulsory binding dispute settlement procedures of UNCLOS (to be applied *mutatis mutandis* to UNFSA and to RFMOs Conventions) only apply to conflicts occurring in areas beyond national jurisdiction as UNFSA incorporates the exceptions of Article 297 (3) of UNCLOS (see Chapter 3).¹¹⁷⁴ Thus, if agreement is not reached by recourse to Section I of Part XV of UNCLOS all disputes related to UNFSA or RFMOs Conventions (on straddling and highly migratory stocks) not included in the exceptions of Article 297 can be submitted to compulsory binding procedures.¹¹⁷⁵ However, before engaging in the dispute settlement procedures Parties to UNFSA are obliged to cooperate in order to prevent such a dispute via RFMO’s decision making procedures.¹¹⁷⁶

¹¹⁷³ UNFSA, Art. 30 (2).

¹¹⁷⁴ UNFSA, Art. 32.

¹¹⁷⁵ UNCLOS, Art. 286.

¹¹⁷⁶ UNFSA, Art. 28.

As seen above, according to Article 30 of UNFSA, Part XV of UNCLOS applies *mutatis mutandis* to fisheries agreements. As noted by Boyle, the most appropriate interpretation of this provision would be that the Agreement (Article 30 (2)) amended RFMOs' Conventions by incorporating UNCLOS' dispute settlement procedures to these treaties.¹¹⁷⁷ Obviously the amendment only applies to UNFSA's Parties.¹¹⁷⁸ Moreover, Article 30 (5) on applicable law, confirms this interpretation, when "prescrib[ing] the law to be applied in all disputes arising under the Agreement or any other fishery treaty"¹¹⁷⁹ by any courts or tribunals. As affirmed by Judge Treves:

"(...) in becoming party to the Agreement, a state accepts that disputes concerning the interpretation or application of a fishery agreement to which it is a party may be submitted by the other party to those means of settlement even when no rules for the settlement of disputes, or different means, or means not as compulsory, are provided for in the relevant fishery agreement. This entails – as between the parties to the Agreement – a very penetrating change in the functioning of regional fisheries agreements."¹¹⁸⁰

In view of this, if UNFSA was in force at the time of the Southern Bluefin Tuna Convention, and Japan, Australia and New Zealand were Parties to the Agreement, the Arbitral Tribunal would have no alternative other than to recognise its jurisdiction to decide the merits of the case. Moreover, in respect to applicable law, the tribunal would have had jurisdiction to apply CCSBT in addition to UNCLOS and UNFSA to the dispute (in accordance with UNFSA, Article 30 (5))¹¹⁸¹.

Therefore, by amending RFMOs conventions UNFSA integrates this complex jurisdictional system and clarifies the procedures to be adopted by its Parties. As

¹¹⁷⁷ A. Boyle (1999), *supra* note 721.

¹¹⁷⁸ See: A. Boyle (1999) *ibid.*

¹¹⁷⁹ *Ibid.*, at 23.

¹¹⁸⁰ T. Treves, "The Settlement of Disputes According to the Straddling Stocks Agreement of 1995" pp. 253-269, in A. Boyle, D. Freestone (eds.) (2001), *supra* note 110, at 257.

¹¹⁸¹ Article 30 (5) reads: "Any court or tribunal to which a dispute has been submitted under this Part shall apply the relevant provisions of the Convention [UNCLOS], of this Agreement and of any relevant subregional, regional or global fisheries agreement, as well as generally accepted standards for the conservation and management of living marine resources and other rules of international law not incompatible with the Convention, with a view to ensuring the conservation of the straddling fish stocks and highly migratory fish stocks concerned."

observed by Judge Treves: “Through the provisions on the settlement of disputes of the Agreement, the Convention and the above-mentioned fisheries agreements, which are independent from each other and from the Agreement, become parts of a system.”¹¹⁸²

It is interesting to note that some recent conventions (adopted after 1995) establishing RFMOs have incorporated Part XV of UNCLOS and Part VIII of UNFSA to their dispute settlement procedures. Amongst the nine RFMOs¹¹⁸³ addressed in section 4.2, two of them were established after 1995;¹¹⁸⁴ both of their respective Conventions incorporated UNCLOS and UNFSA dispute settlement provisions. The Convention on the Conservation and Management of Fishery Resources in the South East Atlantic Ocean¹¹⁸⁵, which establishes SEAFO, reaffirms UNFSA’s obligation of States Parties to cooperate to prevent disputes.¹¹⁸⁶ In case a dispute arises between the parties, they can resolve it by negotiation, inquiry, mediation, conciliation, arbitration, judicial settlement or other peaceful means of their choice.¹¹⁸⁷

If the dispute concerns technical issues and the parties were not able to find a resolution between themselves, they can submit the dispute to an *Ad Hoc* Expert Panel. In this case (disputes of technical nature) recourse to binding procedures is excluded.¹¹⁸⁸ However, for all other disputes, if not submitted to settlement in a ‘reasonable’ time or not resolved by recourse to the means referred above in a reasonable period of time, “such dispute shall, at the request of any party to the dispute, be submitted for binding decision in accordance with procedures for the settlement of disputes provided in Part XV of the 1982 Convention [UNCLOS] or, where the dispute concerns one or more straddling stocks, by provisions set out in Part VIII of the 1995 Agreement. The relevant part of the 1982 Convention and the

¹¹⁸² T. Treves (2001), *supra* note 1180, at 254.

¹¹⁸³ See Annex V for table on settlement of disputes provisions of all the 9 RFMOs’ Conventions addressed in the next subsection.

¹¹⁸⁴ SEAFO (2001) and WCPFC (2000).

¹¹⁸⁵ SEAFO Convention, *supra* note 907.

¹¹⁸⁶ SEAFO Convention, Article 24 (1).

¹¹⁸⁷ SEAFO Convention, Art. 24 (2).

¹¹⁸⁸ SEAFO Convention, Art. 24 (3).

1995 Agreement shall apply *whether or not the parties to the dispute are also Parties to these instruments*¹¹⁸⁹ [emphasis added]. On applicable law, the Convention reaffirms Article 30 (5) of UNFSA (discussed above) that the Court or Tribunal or Panel to which the dispute is submitted is entitled to apply the relevant provisions of SEAFO Convention, UNCLOS, UNFSA, “as well as generally accepted standards for the conservation and management of living marine resources and other rules of international law, compatible with the 1982 and the 1995 Agreement, with a view to ensuring the conservation of the fish stocks concerned.”¹¹⁹⁰

Another example is the Convention on the Conservation and Management of Highly Migratory Fish Stocks in the Western and Central Pacific Ocean,¹¹⁹¹ which created the WCPFC. The convention’s objective is to ensure “the long-term conservation and sustainable use of highly migratory fish stocks in the western central Pacific Ocean in accordance with the 1982 Convention and the Agreement.”¹¹⁹² In order to clarify the relationship between this Convention and UNCLOS, it contains a special article on the ‘relationship between this Convention and the 1982 Convention’, which reads: “Nothing in this Convention shall prejudice the rights, jurisdiction and duties of States under the 1982 Convention and the Agreement. This Convention shall be interpreted and applied in the context of and in a manner consistent with the 1982 Convention and the Agreement.”¹¹⁹³

The WCPFC Convention negotiations were essentially based on UNCLOS and the 1995 Agreement.¹¹⁹⁴ Therefore it is not surprising that in respect to the dispute settlement provisions, the Convention is very clear in incorporating UNFSA: “The provisions relating to the settlement of disputes set out in Part VIII of the

¹¹⁸⁹ SEAFO Convention Art. 24 (4).

¹¹⁹⁰ SEAFO Convention, Art. 24 (5).

¹¹⁹¹ WCPFC Convention, *supra* note 908.

¹¹⁹² WCPFC Convention, Art. 2.

¹¹⁹³ WCPFC Convention, Art. 4.

¹¹⁹⁴ WCPFC, *Final Act of the Multilateral High-Level Conference on the Conservation and Management of Highly Migratory Fish Stocks in the Western and Central Pacific* (2000), online: <http://www.wcpfc.int/> (accessed on 27 Aug. 08).

Agreement apply, *mutatis mutandis*, to any dispute between members of the Commission, whether or not they are also Parties to the Agreement.”¹¹⁹⁵

Another example of RFMO Conventions conforming to UNCLOS and UNFSA is the NEAFC Convention.¹¹⁹⁶ Notwithstanding the fact that it was adopted in 1982 it was in effect amended in 2004¹¹⁹⁷ to incorporate UNCLOS and UNFSA settlement of disputes and in 2006 to incorporate UNCLOS and UNFSA to the preamble and definitions of Article 1. Before the amendment, the Convention lacked any clauses on dispute settlement¹¹⁹⁸ (See Annex V for a list of other RFMO Conventions - amongst the ones addressed in this Chapter - that do not include provisions for dispute settlement).

According to the new text, Parties should cooperate to prevent any dispute (in accordance with UNFSA).¹¹⁹⁹ However, if a dispute arises it shall seek resolution by consultation, negotiation, inquiry, mediation, conciliation, arbitration, judicial settlement or other peaceful means of their own choice or an *Ad Hoc* Panel.¹²⁰⁰ In case the dispute is not resolved by recourse to the referred means:

“(…) one of the parties to the dispute may refer the dispute to compulsory procedures entailing binding decisions. Such procedures shall be governed *mutatis mutandis* by the provisions relating to the settlement of disputes set out in Part XV of the United Nations Convention on the Law of the Sea of 10 December 1982 (1982 UN Convention) or, where the dispute concerns one or more straddling stocks, by the provisions set out in Part VIII of 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 of 4 August 1995 (1995 Agreement). The relevant parts of the 1982 UN Convention and the 1995 Agreement shall apply whether or not the parties to the dispute are also Parties to these instruments.”¹²⁰¹

¹¹⁹⁵ WCPFC Convention, Art. 31.

¹¹⁹⁶ NEAFC Convention, *supra* note 906.

¹¹⁹⁷ NEAFC Convention, Annex K – Amendment of the Convention on Dispute Settlement. Adopted at the 23rd Annual Meeting November 2004.

¹¹⁹⁸ See J. Peel, “A Paper Umbrella which Dissolves in the Rain? The Future for Resolving Fisheries Disputes under *UNCLOS* in the Aftermath of the Southern Bluefin Tuna Arbitration” (2002) 3 *Melb. J. Int’l L.* 53-78.

¹¹⁹⁹ NEAFC Convention, Art. 18 (1).

¹²⁰⁰ NEAFC Convention, Art. 18 (2) (3).

¹²⁰¹ NEAFC Convention, Art 18 (5).

In respect to the applicable law, the amendment also made it clear that, as appropriate, UNCLOS, UNFSA and other rules of international law compatible with those, as well as recommendations of the Commission applicable to the dispute shall be applied.¹²⁰² It is noteworthy that all these instruments shall be applied as appropriate “with a view to ensuring the conservation and optimum utilisation of the fish stocks concerned.”¹²⁰³ This emphasises the idea that conservation and optimum utilisation shall be the objective and the outcome of any dispute between the Parties. Moreover, this text is very similar to UNFSA’s Article 30 (5). However, as seen above UNFSA is only applied to straddling and highly migratory fish stocks. As NEAFCs scope of regulation includes for example deep sea species this provision will also be applied to species other than straddling and highly migratory within the Commission’s regulatory area.

Another example is the 2007 amendment to the 1978 NAFO Convention.¹²⁰⁴ The amendment (which still has to entry into force) included provisions on dispute settlement, which were previously nonexistent in the 1978 Convention. It incorporates UNFSA’s provision on the obligation to prevent disputes.¹²⁰⁵ However, in case a dispute arises on the interpretation or application of NAFO Convention shall seek to resolve the dispute by negotiation, inquiry, mediation, conciliation, arbitration, judicial settlement, ad hoc panels or other peaceful means of their choice.¹²⁰⁶ If the dispute concerns an objection¹²⁰⁷ to a particular conservation or management measure it may be submitted to a non binding *ad hoc* panel pursuant to the Convention’s Annex II.¹²⁰⁸ However, if the *ad hoc* panel is unable to resolve the dispute it can be submitted to binding compulsory procedures pursuant to Section 2 of Part XV of UNCLOS or to Part VIII of UNFSA.¹²⁰⁹

¹²⁰² NEAFC Convention, Art. 18 (6).

¹²⁰³ NEAFC Convention, Art. 18 (6).

¹²⁰⁴ NAFO Convention, *supra* note 905.

¹²⁰⁵ NAFO Amendment (GC Doc. 07/4), *supra* note 930, Art. XV (1).

¹²⁰⁶ *Ibid.*, Art. XV (2).

¹²⁰⁷ See section 4.1 (b) above on objection procedures.

¹²⁰⁸ NAFO Amendment, *supra* note 930 Art. XV (3).

¹²⁰⁹ *Ibid.*, Art. XV (6).

With respect to applicable law, the 2007 Amendment states that the court, tribunal or the *ad hoc* panel shall apply the relevant provisions of UNCLOS, UNFSA, as well as “generally accepted standards for the conservation and management of living resources and other rules of international law not incompatible with this Convention with a view to attaining the objective of this Convention.”¹²¹⁰

It is interesting to note that the 2007 amendment used very specific language to prevent courts, tribunals or arbitrators coming to the same conclusion reached in the *Southern Bluefin Tuna Arbitration*, as follows:

“Nothing in this Convention shall be argued or construed to prevent a Contracting Party to a dispute, as State Party to the 1982 Convention, from submitting the dispute to compulsory procedures entailing binding decisions against another State Party pursuant to Section 2 of Part XV of the 1982 Convention, or as State Party to the 1995 Agreement from submitting the dispute to compulsory procedures entailing binding decisions against another State Party pursuant to Article 30 of the 1995 Agreement.”¹²¹¹

From this it can be said that Parties to UNFSA are entitled to a much clearer system in regards to dispute settlement procedures over conflicts involving straddling and highly migratory fish stocks in the high seas. In addition, the effort of some RFMOs members to include UNFSA and UNCLOS provisions to their respective conventions needs to be acknowledged. For those RFMOs, there is no remaining doubt concerning jurisdictional issues and applicable law, as seen above.

However, there are still a number of different situations that may occur. For example:

- (i) Non-party to UNFSA, but party to UNCLOS and to a RFMO Convention.
- (ii) Parties to UNFSA and UNCLOS and parties to a RFMO Convention dealing with discrete high seas stocks.

¹²¹⁰ *Ibid.*, Art. XV (11).

¹²¹¹ *Ibid.*, Art. XV (12).

Each case will demand detailed examination of all the legal instruments involved. However, from what was seen in this subsection it is clear that disputes over straddling and highly migratory fish stocks in the high seas present a consistent binding compulsory dispute procedure under UNFSA. On the other hand, disputes concerning discrete high seas stocks will certainly involve UNCLOS and the respective RFMO Convention. The results of such disputes will depend on how clear and consistent the regional Convention is. Therefore, initiatives to conform RFMO Conventions to UNCLOS and UNFSA's dispute settlement provisions such as the amendment of the NEAFC and NAFO Conventions should be widely promoted.

4.4 Conclusions

RFMOs constitute the main agents for the implementation of EBFM in the high seas. In applying EBFM through management and conservation measures, conflicts may arise within RFMOs members leading to a lack of observance of the respective measures. Therefore, dispute settlement provisions constitute a significant part of these conventions. It was noted that jurisdictional aspects between RFMOs Conventions and UNCLOS can create an obstacle to conflict resolution as illustrated by the *Southern Bluefin Tuna Arbitration*.

In order to overcome this constraint, it is suggested that RFMOs start amendment processes to their respective conventions where appropriate so as to conform their texts to UNCLOS and UNFSA compulsory dispute settlement procedures. A number of RFMOs have initiated such a process (e.g. NEAFC, NAFO), while more recent RFMOs (post-UNFSA) have incorporated UNCLOS and UNFSA's compulsory dispute settlement provisions to their original texts. This should allow a more unified fisheries regime in the high seas.

In addition, objection procedures used by RFMOs' members also impose a constraint to the application of conservation measures, and therefore, undermines the implementation of EBFM. A way to overcome this constraint is to use creative text,

which, for example reverse the burden to the objector, impose conditions for objections and provides for recourse to compulsory dispute settlement procedures. A number of RFMOs have been adopting such restrictions to objections (e.g. WCPFC, NEAFC, NAFO 2007 amendment). It is imperative that these restrictions are incorporated by other RFMOs in order to allow EBFM measures to be consistently implemented in the high seas.

This Chapter also addressed some initiatives adopted by eight RFMOs and the IWC in conforming to EBM and PA. From what was seen, CCAMLR seems to provide the best EBFM and PA model. According to Mooney-Seus and Rosenberg:

“None of the aforementioned agreements [this includes all of the respective agreements that established the RFMOs under analysis in this section] offer detailed advice on how reference points need to be modified to take ecosystem interactions into account. Nonetheless, ecosystem-based reference points are needed to allow for natural mortality to support predator-prey interactions. Only two RFMOs have made significant progress on this front – the CCAMLR and the IATTC, the latter with respect to dolphins. The CCAMLR approach could generally be used as a model for other RFMOs.”¹²¹²

In addition, an important aspect regarding the application of EBFM and PA by RFMOs, relates to the RFMO ability to follow the respective scientific advice. From the RFMOs analysed only CCAMLR and IATTC seem to be consistently following scientific advice.

Examples of RFMOs’ best practices include, *inter alia*:

- (i) The adoption of precautionary reference points for catch limits;
- (ii) Taking into account dependent and associated species when establishing these reference points (e.g. CCAMLR reference points that ensures that predators are left with enough prey to consume);
- (iii) The adoption of areas’ closures in vulnerable marine habitats (e.g. seamounts closures adopted by NEAFC);
- (iv) Adherence to scientific advice (e.g. CCAMLR and IATTC);

¹²¹² *Ibid.*, at 03.

- (v) Preparation of performance reviews on a regular basis to assess the conformity of the respective RFMO's conservation measures with international agreements and scientific advice (e.g. 2006 NEAFC performance review);
- (vi) Adoption of amendments to RFMOs Conventions when necessary in order to include EBFM and PA provisions, as well as dispute settlement provisions in conformity with UNCLOS and UNFSA (e.g. NEAFC);
- (vii) Limitations to objection procedures (NEAFC, 2007 NAFO amendment);
- (viii) Strict conservation measures in respect to deep-sea species and marine mammals due to their life span characteristics ;
- (ix) Adoption of measures to minimise bycatch and high grading (e.g. CCAMLR and IATTC);
- (x) Creation of MPAs (e.g. IWC in respect to marine sanctuaries);
- (xi) Adoption of PA when there is uncertainty in relation to the status of stocks, ecosystems interactions or habitat conditions.

These measures must be broadly implemented and incorporated by all RFMOs as part of EBFM. As seen in Chapter 1, if ecosystem-based conservation measures are not comprehensively adopted we will evidence a major stocks collapse by 2048.¹²¹³

From this, it can be said that a combination of elements – convention text and best practices incorporating EBFM by RFMOs - can be used as a model for future RFMOs. In respect to existing RFMOs a number of ideas can be gathered from the RFMOs discussed above. Moreover, this Chapter demonstrates that it is possible to advance towards the adoption of EBFM. Although there is still much to achieve, the examples provided indicate that RFMOs' members have been gradually working towards this goal. This is an evidence of the international community's acceptance of

¹²¹³ B. Worm, et al (2006), *supra* note 17.

EBFM as a new fisheries management approach, which can eventually be accepted as an 'international minimum standard' under UNCLOS.

CHAPTER 5 - High Seas Marine Protected Areas

Marine protected areas have been the focus of a number of assessments where scientists and international organisations, such as FAO, conclude that they are effective tools for fisheries management.¹²¹⁴

With this in mind, the current Chapter aims to demonstrate the benefits of high seas marine protected areas (HSMPAs) as a sound tool for the implementation of EBFM/EBM. The first section of this Chapter provides the *definition* of marine protected areas; the second section focuses on the *effectiveness* of MPAs in fisheries management; the third section follows up on the discussion initiated in Chapter 3 on bioregionalisation of the oceans, addressing the *criteria for selection* of HSMPAs' sites; with the fifth section analysing the *legal aspects* of the establishment of HSMPAs. It is noteworthy that even though enforcement and compliance are important components of MPAs, it is beyond the scope of this work to address such issues.

5.1 Definition

The term 'protected area' is defined by the Convention on Biological Diversity as "a geographically defined area which is designated or regulated and managed to achieve specific conservation objectives."¹²¹⁵ However, there is no

¹²¹⁴ See for example: F. Gell, C. Roberts, *The Fishery Effects of Marine Reserves and Fishery Closures* (Washington DC: WWF-US, 2003); W. Halpern, R. Warner, "Marine Reserves have rapid and lasting effects" (2002) 5 *Ecology Letters* 361-366; C. Roberts (2007), *supra* note 1019; FAO, *Benefits of marine Protected Areas (MPAs) to Fisheries*, online: <<http://www.fao.org/fishery/mpas/en>>; D. Pauly, et al (2002), *supra* note 2 ; See also: S. Jennings, "The Role of Marine Protected Areas in Environmental Management" (2009) 66 *ICES Journal of Marine Science* 16–21; F. Gell, C. Roberts "Benefits beyond Boundaries: the Fishery Effects of Marine Reserves" (2003) 18(9) *Trends in Ecology and Evolution* 448-455; G. Stefansson, A. Rosenberg, "Designing Marine Protected Areas for Migrating Fish Stocks" (2006) 69 (Suppl. C) *Journal of Fish Biology* 66-78.

¹²¹⁵ CBD, Art. 2.

international legal definition of *marine* protected area. The CBD *Ad Hoc* Technical Expert Group on Marine and Coastal Protected Areas defined ‘marine and coastal protected area’ as:

“(…) any defined 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. Areas within the marine environment include permanent shallow marine waters; sea bays; straits; lagoons; estuaries; subtidal aquatic beds (kelp beds, seagrass beds; tropical marine meadows); coral reefs; intertidal muds; sand or salt flats and marshes; deep-water coral reefs; deep-water vents; and open ocean habitats.”¹²¹⁶

This definition incorporates the IUCN concept of MPA, which reads as “any area of intertidal or subtidal terrain, together with its overlying 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.”¹²¹⁷

The generic concept of MPA can be divided into different categories with distinct levels of protection, objectives, and therefore restrictions to be established in the respective area. For example, IUCN, endorsed by the CBD *Ad Hoc* Technical Expert Group on Marine and Coastal Protected Areas, divides ‘protected areas’ into six categories, which can be applied to MPAs, as follows:¹²¹⁸

- Category I: (a) Strict Nature Reserve, which only allows scientific uses; and (b) Wilderness Area, for which the main goal is the protection of the wilderness;
- Category II: National Park, which aims to protect ecosystems, whilst allowing recreational activities;
- Category III: Natural Monument, which aims to protect natural and cultural components;

¹²¹⁶ CBD, COP 7, Decision VII/5, Para. 10.

¹²¹⁷ IUCN, Resolution 17.38 (1988), reaffirmed in IUCN Resolution 19.46 (1994); see also G. Kelleher, *Guidelines for Marine Protected Areas* (Gland: IUCN, 1999).

¹²¹⁸ G. Kelleher (1999), *ibid.* It is noteworthy that the CBD COP 7 ‘welcomed’ the Ad Hoc Technical Expert Group on Marine and Coastal Protected Areas report that endorsed these IUCN categories.

- Category IV: Habitat or Species Management Area, aiming at the conservation of a specific habitat or species through the adoption of management interventions;
- Category V: Protected Landscape/Seascape, which allows recreational uses;
- Category VI: Managed Resource Protected Area, which targets the sustainable use of natural resources within a specific area.

At national levels, States also recognise the importance of establishing MPAs. Each State uses different terminologies to categorize MPAs based on their legislation. For example, Canada has three types of MPAs listed in its Federal Marine Protected Areas Strategy:¹²¹⁹ a) Marine Protected Areas; b) Marine Wildlife Areas; and c) National Marine Conservation Areas. Whilst, MPAs in the UK are divided into the following categories:¹²²⁰ a) Special Areas of Conservation; b) Marine Nature Reserves; c) Special Protected Areas; d) Voluntary Marine Conservation Areas; and e) Voluntary Marine Nature Reserves.

5.2 Effectiveness of MPAs in Fisheries Management

The establishment of MPAs is not a recent practice. In Europe, for example, the idea of creating marine protected areas was first developed in the late eighteenth-century in France.¹²²¹ Some marine areas were closed to all fishing as a means to benefit fisheries, as described by Roberts: “(...), trawling was prohibited near Marseilles between 1793 and 1830. When the area was reopened to fishing, the catches were said to be almost miraculous, with as much as 7 tonnes caught per tow, and the landings dominated by fat dories and hake.”¹²²²

¹²¹⁹ DFO, Federal Marine Protected Areas Strategy, online: <http://www.dfo-mpo.gc.ca/oceans-habitat/oceans/mpa-zpm/fedmpa-zpmfed/index_e.asp> (accessed 27 Jan. 09).

¹²²⁰ UK MPA Centre, About Marine Protected Areas, online: <<http://www.ukmpas.org/about.html>> (accessed on 27 Jan. 09)

¹²²¹ C. Roberts (2007), *supra* note 1019.

¹²²² *Ibid*, at 361.

In 1912, the French fishery scientist Marcel Hérubel described how marine reserves were an effective tool of fisheries management by: (i) *protecting fish from capture*, which therefore could live longer and achieve larger sizes. Large fish produce more offspring than smaller individuals. By the time the fish larvae develop into juveniles, ocean currents have carried them to fishing grounds, where they are caught; and (ii) *enhancing spillovers* (i.e., fish migration from within the reserve to fishing grounds outside the reserve). This happens as the population within the protected area becomes too dense and therefore start to migrate to outside of the reserve to have more space.¹²²³ Hérubel also defended the idea of establishing networks of reserves in order to increase the benefit to fisheries.¹²²⁴ His ideas were visionary at the time. Almost another century had passed before scientists resumed the discussion on MPAs and MPAs' network as a tool of fisheries management.

Currently, it is irrefutable to scientists that by enhancing biodiversity and habitat protection within MPAs, fish populations increase and ecosystems can be restored. In light of this, FAO has also been conducting studies on the benefits of MPAs for fisheries management. The 2006 'Expert Workshop on Marine Protected Areas and Fisheries Management', convened by FAO, agreed that the objectives of a MPA as a fishery management tool should be the achievement of conservation and sustainability of fisheries management, as well as biodiversity and habitat conservation.¹²²⁵ It is noteworthy that FAO, which is a 'food and agriculture-oriented' organisation, acknowledges that conservation of biodiversity and marine habitats are essential components of sustainable fisheries. Therefore, fisheries are not perceived as an isolated activity any longer.

In fact, it has been demonstrated in an increasing number of studies and practices around the world that MPAs are effective instruments in restoring and/or maintaining fish populations. For instance, Halpern and Warner analysed the

¹²²³ *Ibid.*

¹²²⁴ *Ibid.*

¹²²⁵ FAO, Report and documentation of the Expert Workshop on Marine Protected Areas and Fisheries Management: Review of Issues and Considerations. Rome, 12–14 June 2006. *FAO Fisheries Report*. No. 825. (Rome: FAO, 2007). 332 pp.

effectiveness of 80 marine reserves (no-take zones) to fish population recovery.¹²²⁶ The results demonstrated that the average value of all biological measures were higher within the protected area than outside, as well as prior to the establishment of the reserve; i.e., population density was 91% higher, biomass was 192% higher and the average size of organisms and diversity were 20-30% higher inside the reserves.¹²²⁷ It is noteworthy that the size of the reserve did not influence the results, proving that even small protected areas can be beneficial in recovering fish population and biological diversity.¹²²⁸

Furthermore, intensive fisheries practices, where top predators are targeted, simplify marine food webs (see Chapter 1). The simplification of food webs increases the vulnerability of fish populations to environmental changes,¹²²⁹ such as climate change or even natural events such as El Niño. In light of this, Pauly et al suggest that marine reserves mitigate such effects of environmental fluctuations on fisheries resources, by enhancing resilience, as demonstrated by the graph below:

¹²²⁶ B. Halpern, R. Warner (2002), *supra* note 1214.

¹²²⁷ *Ibid.*

¹²²⁸ See also C. Roberts (2007), *supra* note 1019, at Chapter 25.

¹²²⁹ D. Pauly, et al (2002), *supra* note 2 .

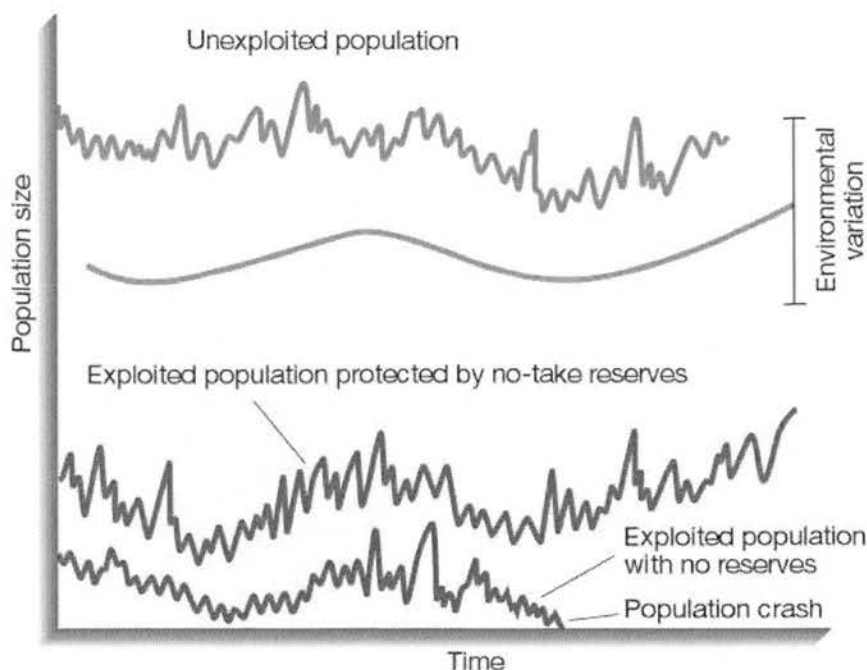


Figure 12: How marine reserves mitigate the effects of environmental fluctuations on exploited fish population (Pauly et al, 2002)

MPAs also benefit migratory species, as explained by Pauly et al:

“Although migrating species would not benefit from the local reduction in fishing mortality caused by an MPA, the MPA would still help some of these species by rebuilding the complexity of their habitat destroyed by trawling, and thus decrease mortality of their juveniles. Enforcement of the no-take zones within MPAs would benefit from the application of high technology (for example, satellite monitoring of fishing vessels), presently used mainly to increase fishing pressure. There is still much fear among fisheries scientists (...) that the export of fish from such reserves would not be sufficient to compensate for the loss of fishing ground. (...) Focused studies on the appropriate size and location of marine reserves and their combination into networks, given locale-specific oceanographic conditions, should therefore be supported. This will lead to the identification of reserve designs that would optimize export to adjacent fished areas (...).”¹²³⁰

In fact, for Roberts, the establishment of *marine reserves*¹²³¹ should constitute the basis (or as he refers to “the heart”) of fishery management reform.¹²³² As he points out:

¹²³⁰ *Ibid*, at 694. See also A. Fonteneau, “Potential Use of Marine Protected Areas Applied to Tuna Fisheries and Offshore Pelagic Ecosystems” pp. 55-65, in H. Thiel, J. Koslow (eds.), *Managing Risks to Biodiversity and the Environment on the High Sea, Including Tools Such as Marine Protected Areas - Scientific Requirements and Legal Aspects*, (Bonn: BfN, 2001).

¹²³¹ C. Roberts (2007) *supra* note 1019, D. Pauly, et al (2002), *supra* note 2, Halpern and Warner (2002), *supra* note 1214, endorsed by several other scientists strongly emphasize the benefits of **marine reserves** to fisheries management. As seen in section 5.1, marine reserves are one of the

“Reserves do not just promote resilience of the species we catch to eat, but will also restore them in their habitats. Putting areas off-limits to fishing allows recovery of species, such as corals, sponges, sea squirts, and molluscs, that create complex bottom structures that bind the seabed and perform countless other vital roles, like filtering the water.”¹²³³

Roberts also emphasises that having marine reserves as part of fisheries management facilitates multi-species management,¹²³⁴ which is the heart of EBFM (see Chapter 1). In light of all the benefits to fisheries and marine ecosystems, establishing a series of marine reserves and respective networks in strategic sites (see section 5.3 below) should be the basis of the implementation of EBFM within and beyond areas of national jurisdiction. The question of how much is needed and where they should be established in order to ensure healthy marine ecosystems in areas beyond national jurisdiction is addressed in the following section.

5.3 Criteria for Selection of High Seas MPAs

The question of how much protection and where marine reserves should be located in order to maximise their benefits has been raised by a number of scientists. At present, roughly 0.6% of the oceans are protected by MPAs.¹²³⁵ Scientific models indicate the need for 20% to 40% of the entire oceans to be protected, either by the establishment of marine reserves or no-take zones.¹²³⁶ It is argued that this level of protection will “maximise returns to the fishing industry, provide adequate refuges for vulnerable species, sustain genetic variability in populations, and afford protection to the full spectrum of biodiversity.”¹²³⁷

The location of MPAs is also extremely important in this context. It is evident that sedentary species and habitats will benefit from the establishment of

categories of MPAs. They comprise the most conservative kind of MPA, where only scientific uses are allowed within their limits.

¹²³² C. Roberts (2007), *supra* note 1019, at 376.

¹²³³ *Ibid.*, at 377.

¹²³⁴ *Ibid.*

¹²³⁵ *Ibid.*

¹²³⁶ *Ibid.*; See also: F. Gell, C. Roberts (2003), “Benefits beyond Boundaries (...)”, *supra* note 1214;

F. Gell, C. Roberts (2003), *The fishery Effects (...)*, *supra* note 1214.

¹²³⁷ C. Roberts (2007), *supra* note 1019, at 379.

marine reserves or no-take zones. However, migratory species can also receive a considerable degree of protection if MPAs are located strategically. For example, it is well known that seamounts and convergence zones are feeding grounds for tunas in their oceanic migration. As observed by Roberts: “Protecting some of these places in particular could significantly increase tuna survival.”¹²³⁸

In view of this, a number of studies have been conducted to assess the most strategic sites for MPAs (see Chapter 3). In 2000, Margules and Pressey called for a systematic approach to locate and design protected areas “if a large proportion of today’s biodiversity is to exist in a future of increasing numbers of people and their demands on natural resources”.¹²³⁹ This paper propelled the development of models and software, such as MARXAN, which has been broadly used by scientists, managers, academia, NGOs, etc. to select appropriate sites for MPAs.¹²⁴⁰ As noted by Rosenberg et al:

“Effective habitat protection within the context of EBFM first requires the identification and mapping of all habitats that occur in the large marine ecosystem in which fishing occurs. Since certain habitats are more sensitive than others, each habitat type should be assessed to determine its vulnerabilities to fishing and other anthropogenic disturbances, and their biological and ecological significance. Those habitat types that are most vulnerable to fishing and critical to population or ecosystem processes warrant special management attention. EBFM ensures that essential habitats for fish and other sensitive areas, such as cold-water coral forests, are protected from bottom trawling and other potentially destructive fishing practices. Area closures and marine protected areas (MPAs) can be effective management tools to protect essential fish habitat and other sensitive areas.”¹²⁴¹

Furthermore, as seen in Chapter 3, a number of criteria, such as biogeographical classification, have been developed in order to assist, *inter alia*, the selection of MPAs’ sites. As for marine areas beyond national jurisdiction, the most significant work on this (in terms of political, and eventually legal impacts) has been coordinated by the CBD Secretariat and the United Nations University and is entitled

¹²³⁸ *Ibid.*, at 380.

¹²³⁹ C. Margules, R. Pressey, “Systematic Conservation Planning” (2000) 405 *Nature* 243-253, at 243.

¹²⁴⁰ MARXAN, University of Queensland, Australia. Online: <http://www.uq.edu.au/marxan/> (accessed on 06 Feb. 09).

¹²⁴¹ A. Rosenberg, et al (2006), *supra* note 10, at 09.

'Global Open Oceans and Deep Seabed (GOODS) Biogeographic Classification',¹²⁴² (see Chapter 3). The group of experts involved in this work divided the marine areas beyond national jurisdiction into 29 pelagic provinces and 3 large benthic zones (see Chapter 3, section 3.2). This classification "will assist (...) in understanding the scales for ecosystem-based management and identifying areas representative of major ecosystems."¹²⁴³ Furthermore, "from a policy perspective, such a classification is a necessary component when considering area-based management options, such as marine protected areas, particularly when assessing representativity of a potential network."¹²⁴⁴

This classification is particularly important in the context of marine biodiversity protection and management as it has been analysed and discussed by the CBD Parties. CBD COP 9 welcomed the GOODS report¹²⁴⁵ (see analysis of the respective legal aspects in section 5.4 (b) below) and adopted scientific criteria "for identifying ecologically or biologically significant marine areas in need of protection, and the scientific guidance (...) for designing representative networks of marine protected areas".¹²⁴⁶

The scientific criteria for identifying ecologically or biologically significant marine areas in need of protection in open-ocean waters and deep-sea habitats adopted by COP 9 are the following:¹²⁴⁷

- i) Uniqueness or rarity;
- ii) Special importance for life-history stages of species;
- iii) Importance for threatened, endangered or declining species and/or habitats;
- iv) Vulnerability, fragility, sensitivity, or slow recovery;
- v) Biological productivity;

¹²⁴² UNEP/CBD/SBSTTA/13/INF/19, *supra* note 802; and Revised Report UNEP/CBD/COP/9/INF/44, *supra* note 16.

¹²⁴³ *Ibid.*, at ix.

¹²⁴⁴ *Ibid.*, at xi.

¹²⁴⁵ CBD COP 9, Decision IX/20, Para. 13.

¹²⁴⁶ *Ibid.*, at Para. 14.

¹²⁴⁷ *Ibid.*, Annex I.

- vi) Biological diversity; and
- vii) Naturalness.

While the scientific guidance for selecting areas to establish a representative network of marine protected areas, including in open ocean waters and deep-sea habitats are:¹²⁴⁸

- i) Ecologically and biologically significant areas;
- ii) Representativity;
- iii) Connectivity;
- iv) Replicated ecological features;
- v) Adequate and viable sites.

COP 9 also ‘took note’ of the four initial steps to be considered in the development of representative networks of MPAs as follows:

- “1. *Scientific identification of an initial set of ecologically or biologically significant areas.* The criteria in annex I [for identifying ecologically or biologically areas in need of protection in open oceans and deep-sea habitats] to decision IX/20 should be used, considering the best scientific information available, and applying the precautionary approach. This identification should focus on developing an initial set of sites already recognized for their ecological values, with the understanding that other sites could be added as more information becomes available.
2. *Develop/choose a biogeographic, habitat, and/or community classification system.* This system should reflect the scale of the application and address the key ecological features within the area. This step will entail a separation of at least two realms-pelagic and benthic.
3. *Drawing upon steps 1 and 2 above, iteratively use qualitative and/or quantitative techniques to identify sites to include in a network.* Their selection for consideration of enhanced management should reflect their recognised ecological importance or vulnerability, and address the requirements of ecological coherence through representativity, connectivity, and replication.
4. *Assess the adequacy and viability of the selected sites.* Consideration should be given to their size, shape, boundaries, buffering, and appropriateness of the site-management regime.”¹²⁴⁹

While the CBD parties have been discussing the most appropriate way to designate HSMPAs as demonstrated above, Roberts et al have already tackled this

¹²⁴⁸ *Ibid.*, Annex II.

¹²⁴⁹ *Ibid.*, Annex III.

issue when, in 2007, they proposed the following network of 29 high seas marine reserves:

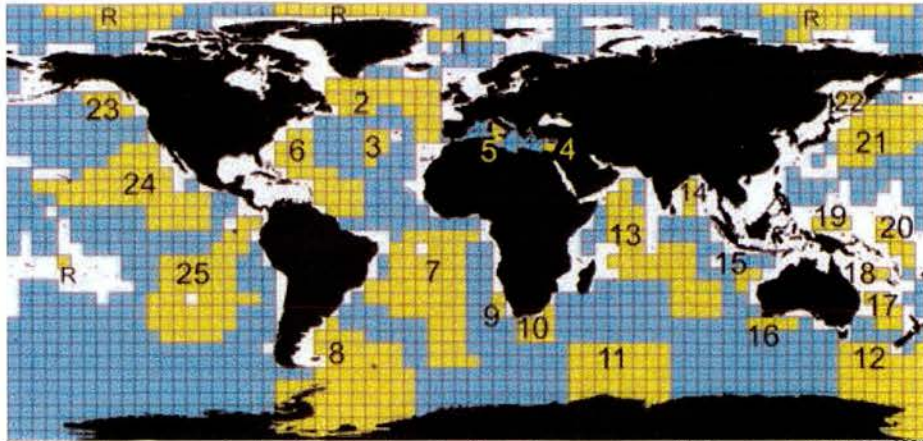


Figure 13: Roberts' proposal of a global network of marine reserves. (Roberts et al, 2007)¹²⁵⁰

This proposal covers 40.8% of the oceans, representing all of the 12 biogeographic zones identified. The methodology used by Roberts et al differs from the one used by the GOODS group of experts, which identified 29 pelagic provinces and 3 benthic provinces, as previously discussed. The GOODS group of experts considered the sites proposed by Roberts et al to be too large to be accepted on a regional scale.¹²⁵¹

5.4 Establishing High Seas MPAs as EBFM/EBM Tools – Legal Aspects

Protected areas can be designated in a number of different ways, each encompassing a number of different purposes (e.g. protection of the marine environment from pollution, as it is the case of the IMO Particularly Sensitive Sea

¹²⁵⁰ Figure 2 represents areas in the following regions: (1) Greenland Sea; (2) North Atlantic; (3) Azores/Mid-Atlantic Ridge; (4) Eastern Mediterranean; (5) Sargasso Sea/Western Atlantic; (6) South-Central Atlantic; (8) Antarctic-Patagonia; (9) Vema Seamount-Benguela; (10) South Africa-Agulhas current; (11) Southern Ocean; (12) Southern Ocean-Australia/New Zealand; (13) Central Indian Ocean-Arabian Sea; (14) Bay of Bengal; (15) Northwestern Australia; (16) South Australia; (17) Lord Howe Rise and Norfolk Ridge; (18) Coral Sea; (19) Northern New Guinea; (20) Western Pacific; (21) Kuroshi-Oyahio Confluence; (22) Sea of Okhotsk; (23) Gulf of Alaska; (24) Northeastern Pacific; (25) Southeastern Pacific; (R) Representative Areas, including particular ecosystems, bottom types, etc. (C. Roberts, et al (2006), *supra* note 112).

¹²⁵¹ Jeff Ardron, Director High Seas Program, Marine Conservation Biology Institute, GOODS Biogeographic Classification Revised Report Editor (pers. comm. dated 13 Feb. 09).

Areas;¹²⁵² protection of specific species, as it is the case of the IWC¹²⁵³ whale sanctuaries (see Chapter 4); fisheries closures (see Chapter 2), etc). However, the kind of marine protected area that would be ideal as a tool for implementation of EBM/EBFM would take into consideration all the different impacts occurring in the area and its designation would be based on biogeographical classification (as seen in section 5.3 above). To date, two regional organisations – OSPAR Commission and CCAMLR - have initiated the process of biogeographic classification in their respective Convention areas with a means to establish MPAs, including in areas beyond national jurisdiction (see section 5.4 (a) below). However, an international legal framework for the creation of HSMPAs on a global level is still non-existent.

The establishment of a global legal framework for the creation of HSMPAs is necessary in order to harmonize the criteria for selection of sites in need of protection, as well as improve coordination among international bodies and different sectors. Under this global framework, regional initiatives (see section (a) below) could benefit from an enhanced coordination and integration. As seen in Chapter 3 and section 5.3 above, biogeographical classification provides an appropriate scientific basis for the selection of HSMPA sites as it is based on natural boundaries. However, the boundaries of biogeographical provinces, in many cases, will not conform to, for example, the RFMOs' or other regional entity's regulatory areas. Therefore, a global framework for the creation of HSMPAs in addition to the regional initiatives in this regard (which are also important) would facilitate a systemic approach and consequently reinforce the principles of ecosystem-based management.

With this in mind, this section analyses: (a) two current regional initiatives on the creation of HSMPAs; and (b) what is required at a global level for a sound

¹²⁵² It is beyond the scope of the current work to analyse PSSAs. For detailed analysis see: L. de La Fayette, "The Protection of the Marine Environment" (2000) 30/1-2 Environmental Policy and Law 51-60; D. Freestone, "The Road from Rio: International Environmental Law after the Earth Summit" (1994) 6 (2) Journal of Environmental Law 193-218; K. Gjerde, D. Freestone (eds.), "Particularly Sensitive Sea Areas – an Important Environmental Concept at a Turning-Point?" (1994) 9 (4) IJMCL Special Issue; K. Gjerde, "Protecting Particularly Sensitive Sea Areas from Shipping: A Review of IMO's New PSSA Guidelines" pp. 123-131, in H. Thiel, J. Koslow (eds.) (2001), *supra* note 1230 .

¹²⁵³ See Chapter 4.

creation of HSMPAs as a tool for the implementation of EBFM/EBM, considering UNCLOS and the CBD.

a) Regional Initiatives

This section aims to briefly describe recent initiatives of establishing MPAs in areas beyond national jurisdiction of two distinct international organisations - i.e. the OSPAR Commission and CCAMRL.

OSPAR Commission

The OSPAR Commission operates under the scope of the 1992 Convention for the Protection of the Marine Environment of the North-East Atlantic¹²⁵⁴ (OSPAR Convention), which replaced the 1972 Oslo Convention against dumping and the 1974 Paris Convention in order to include all sources of pollution, as well as other human impacts on the marine environment within its regulatory area.¹²⁵⁵ It is noteworthy that roughly 40% of OSPAR maritime area is located beyond national jurisdiction.¹²⁵⁶ Contracting Parties of the 1992 OSPAR Convention are obliged to “take all possible steps to prevent and eliminate pollution and shall take the necessary measures to protect the maritime area against the adverse effects of human activities so as to safeguard human health and to conserve marine ecosystems and, when practicable, restore marine areas which have been adversely affected”.¹²⁵⁷

Fisheries activities are not regulated by the OSPAR Convention. However, in 1998 a new annex was adopted on the protection and conservation of the ecosystems and biodiversity (annex V of the Convention), in which fishing impacts are also considered (as further addressed in this section). Annex V, which has now entered

¹²⁵⁴ *Convention for the Protection of the Marine Environment of the North-East Atlantic*, 22 Sep. 1992, OJ L104 (03/04/1998) [OSPAR Convention].

¹²⁵⁵ OSPAR Convention, Preambular Paragraph.

¹²⁵⁶ J. Ardron, K. Gjerde, S. Pullen, V. Tilot, "Marine Spatial Planning in the High Seas" (2008) 32 *Marine Policy* 832– 839.

¹²⁵⁷ OSPAR Convention, Art. 2 (1) (a).

into force for all contracting parties of the Convention,¹²⁵⁸ endorses the definitions of 'biological diversity', 'ecosystem' and 'habitat' of the CBD. Moreover, Annex V develops a further interaction with the CBD by stating that:

"In fulfilling their obligation under the Convention to take, individually and jointly, the necessary measures to protect the maritime area against the adverse effects of human activities so as to safeguard human health and to conserve marine ecosystems and, when practicable, restore marine areas which have been adversely affected, as well as their obligation under the Convention on Biological Diversity of 5 June 1992 to develop strategies, plans or programmes for the conservation and sustainable use of biological diversity, Contracting Parties shall:

- a. take the necessary measures to protect and conserve the ecosystems and the biological diversity of the maritime area, and to restore, where practicable, marine areas which have been adversely affected; and
- b. cooperate in adopting programmes and measures for those purposes for the control of the human activities identified by the application of the criteria in Appendix 3."¹²⁵⁹

In addition, under Annex V, the OSPAR Commission has the duty to, *inter alia*, apply "an integrated ecosystem approach".¹²⁶⁰ Therefore, as mentioned above, fisheries impacts on the marine ecosystems and habitats should be considered. However, the OSPAR Commission does not have the mandate to regulate fisheries in the North-East Atlantic. In light of this, cooperation between RFMOs that do have that mandate and OSPAR needs to be enhanced. Article 4 (1) of Annex V states that:

"In accordance with the penultimate recital of the Convention, no programme or measure concerning a question relating to the management of fisheries shall be adopted under this Annex. However where the Commission considers that action is desirable in relation to such a question, it shall draw that question to the attention of the authority or international body competent for that question. Where action within the competence of the Commission is desirable to complement or support action by those authorities or bodies, the Commission shall endeavour to cooperate with them."¹²⁶¹

A positive outcome of this provision was the adoption of a Memorandum of Understanding between OSPAR and NEAFC¹²⁶² in September 2008.¹²⁶³ The same is

¹²⁵⁸ EC, Belgium, Denmark, Finland, France, Germany, Ireland, Luxembourg, Netherlands, Norway, Portugal, Spain, Sweden, Switzerland and UK.

¹²⁵⁹ OSPAR Convention, Annex V, Art. 2.

¹²⁶⁰ OSPAR Convention, Annex V, Art. 3 (1) (b) (iv).

¹²⁶¹ OSPAR Convention, Annex V, Article 4 (1).

¹²⁶² See Chapter 4 for discussion on NEAFC.

¹²⁶³ Memorandum of Understanding between the North East Atlantic Fisheries Commission (NEAFC) and the OSPAR Commission (05 September 2008). Online:

provided for maritime transport, where cooperation between OSPAR and IMO is also encouraged.¹²⁶⁴

One of the elements of the OSPAR Commission strategy on biological diversity and ecosystems is the establishment of marine protected areas. The aim is to establish an ecologically coherent¹²⁶⁵ network of MPAs, including in areas beyond national jurisdiction.¹²⁶⁶ For this purpose, OSPAR defines MPAs as “areas for which protective, conservation, restorative or precautionary measures have been instituted for the purpose of protecting and conserving species, habitats, ecosystems or ecological processes of the marine environment.”¹²⁶⁷

The ecological criteria that have been used to identify potential MPAs sites include: “threatened and/or declining features, important species and habitats/biomes, ecological significance, high natural biological diversity, representativity, sensitivity, and naturalness.”¹²⁶⁸ Furthermore, other considerations such as “size, potential for restoration, degree of acceptance, potential for success of management measures, potential damage to the area by human activities, and scientific value”¹²⁶⁹ will also be incorporated in the selection process. OSPAR has also worked with the concept of fine scale delineation of biogeographic provinces as

http://www.neafc.org/system/files/%252Fhome/neafc/drupal2_files/opsar_mou.pdf (accessed 29 Apr. 09).

¹²⁶⁴ OSPAR Convention, Annex V, Art. 4 (2).

¹²⁶⁵ J. Ardron describes an ecologically coherent network of MPAs, as a network that “interacts and supports the wider environment; maintains the processes, functions and structures of the intended protected features across their natural range; functions synergistically as a whole, such that the individual protected sites benefit from each other to achieve the above two objectives.” J. Ardron, “The Challenge of Assessing Whether the OSPAR Network of Marine Protected Areas is Ecologically Coherent” (2008) 606 *Hydrobiologia* 45–53, at 48.

¹²⁶⁶ OSPAR Commission, Biological Diversity and Ecosystems. Online:

<http://www.ospar.org/content/content.asp?menu=00180302000000_000000_000000> (accessed 29 Apr. 09)

¹²⁶⁷ OSPAR Commission, OSPAR Network of Marine Protected Areas, Online:

<http://www.ospar.org/content/content.asp?menu=00180302000011_000000_000000> (accessed 29 Apr. 09).

¹²⁶⁸ J. Ardron, et al (2008), *supra* note 1256, at 835.

¹²⁶⁹ *Ibid.*, at 835.

proposed by Dinter,¹²⁷⁰ which is compatible with the broad-scale CBD GOODS biogeographic classification.¹²⁷¹

Even though the selection of 106 MPAs has been reported by Contracting Parties of the OSPAR as components of such a network, none of them are located in marine areas beyond national jurisdiction, and only one (Rainbow Hydrothermal Vent) is located on Portugal's extended continental shelf.¹²⁷² Nonetheless, the Commission has been working towards the designation of the Charlie Gibbs Fracture Zone, which is located on the Mid Atlantic Ridge,¹²⁷³ as its first MPA located in an area beyond national jurisdiction.¹²⁷⁴ The work has involved consultations with *inter alia* RFMOs, FAO, ISA and DOALOS.¹²⁷⁵ It is noteworthy that the 2008 OSPAR meeting recommended the consideration of relevant CBD COP 9 "decisions and implications for OSPAR's work in establishing MPAs in ABNJ".¹²⁷⁶ As seen in section 5.3 above, COP 9 adopted the scientific criteria for identifying ecologically or biologically significant marine areas in need of protection in open-ocean waters and deep-sea habitats, as well as the scientific guidance for selecting areas to establish a representative network of marine protected areas, including in open ocean waters and deep-sea habitats (see section 5.3).

Even though advances in designating HSMPAs by OSPAR has been slow, the work of the Commission in adopting Annex V on protection of marine biodiversity and ecosystems and further work on establishing an ecologically coherent network of MPAs, which will eventually include those located in ABNJ, is commendable. Furthermore, coordinating its further actions with CBD COP

¹²⁷⁰ W. Dinter, *Biogeography of the OSPAR Maritime Area* (Bonn: German Federal Agency for Nature Conservation, 2001).

¹²⁷¹ UNEP/CBD/COP/9/INF/44, *supra* note 16.

¹²⁷² OSPAR Commission, OSPAR Network of Marine Protected Areas, *supra* note 1267.

¹²⁷³ This area has been described by WWF during the 2008 OSPAR meeting as rich in: baleen and toothed whales, sharks, seabirds, cold-water coral reefs, coral gardens, deepwater sponge fields, seamount ecosystems, and deep-water fish such as orange roughy and deep-water sharks. For further details, see: OSPAR, Summary Record OSPAR 2008, at Para. 7.21.

¹²⁷⁴ OSPAR, "General outline of roadmap for further work on the Charlie Gibbs Fracture Zone (CGFZ/Mid Atlantic Ridge proposal 2008/09)", *Summary Record OSPAR 2008*, Annex 10. Meeting of the OSPAR Commission, Brest (France), 23-27 June 2008.

¹²⁷⁵ *Ibid.*

¹²⁷⁶ OSPAR, Tasks for ICG-MPA, Summary Record OSPAR 2008, Annex 9, at Para. 5.

decisions, RFMOs and other relevant bodies provides a good example of how MPAs can be effectively designated in marine areas beyond national jurisdiction by regional organisations.

CCAMLR

As seen in Chapter 4, CCAMLR provides the best example of marine ecosystem based management among existing RFMOs (see Chapter 4 for analysis of EBFM under the CCAMLR Convention and conservation measures adopted by the Commission).

In respect to MPAs, the Commission is entitled to adopt conservation measures, which includes “the designation of the opening and closing of areas, regions or sub-regions for purposes of scientific study or conservation, including *special areas for protection and scientific study*” [emphasis added].¹²⁷⁷ This provision entitles the Commission to create MPAs within the Convention area.

In 2005, CCAMLR convened a workshop on marine protected areas in order to, *inter alia*, provide advice to the Commission and to the Scientific Committee on the designation of MPAs in the CCAMLR area, and discuss how MPAs could contribute to achieving the objectives of the Convention (i.e., conservation of Antarctic marine living resources, including rational use¹²⁷⁸). The Workshop agreed on using the IUCN definition of MPAs (see section 5.1 above). During the workshop, it was recognised that the creation of MPAs in the CCAMLR area would complement the work of the commission on ecosystem management.¹²⁷⁹ Moreover, the Australian initiative in creating the Heard Island and McDonald Island (HIMI) Marine Reserve¹²⁸⁰ within the Convention area (Division 58.5.2) was cited as a good

¹²⁷⁷ CCAMLR Convention, Art. IX (2) (g).

¹²⁷⁸ CCAMLR Convention, Art. II.

¹²⁷⁹ CCAMLR, Report of the XXIV Meeting of the Scientific Committee (2005), Annex 7, on the ‘Report of the CCAMLR Workshop on Marine Protected Areas’ (Silver Spring, MD, USA, 29 August to 1 September 2005).

¹²⁸⁰ HIMI Marine Reserve, online: <http://www.heardisland.aq/index.html> (accessed on 30 Apr. 09).

example, which could be followed by the Commission.¹²⁸¹ The procedure used on the designation of the HIMI Marine Reserve was also noted as a useful model, which could be developed by the Commission in establishing a network of MPAs within the Convention area.¹²⁸² This included, *inter alia*, the adoption of interim measures and wide consultations with stakeholders. In fact, the HIMI Marine Reserve example was followed by other members of the Commission, such as South Africa on the establishment of the Prince Edwards Islands MPA.

The workshop concluded “that MPAs had considerable potential for furthering CCAMLR’s objective in applications ranging from protection of ecosystem processes, habitats and biodiversity, to protection of species (including population and life history stages)”.¹²⁸³ Furthermore, it was agreed that the process of creating a system of MPAs in the CCAMLR area would require:

- “a broad-scale bioregionalisation of the Southern Ocean;
- a fine-scale subdivision of biogeographic provinces, which may include hierarchies of spatial characteristics and features within regions, giving particular attention to areas identified in the bioregionalisation;
- identification of areas that might be used to achieve the conservation objectives [of the Convention];
- determination of areas requiring interim protection.”¹²⁸⁴

In 2007, CCAMLR convened a follow up workshop on bioregionalisation of the Southern Ocean based on benthic and pelagic systems with a means to provide advice on fine-scale subdivision of the Convention area in biogeographic provinces.¹²⁸⁵ The classification adopted, which was based on the outcomes of the 2006 Bioregionalisation of the Southern Ocean Experts Workshop, also separates the benthic and pelagic environments.¹²⁸⁶

¹²⁸¹ CCAMLR, Report of the XXIV Meeting of the Scientific Committee (2005), Annex 7.

¹²⁸² *Ibid.*

¹²⁸³ *Ibid.*, at Para. 36.

¹²⁸⁴ *Ibid.*, at Para. 107.

¹²⁸⁵ See CCAMLR, Report of the XXVI Meeting of the Scientific Committee (2007), SC-CCAMLR-XXVI, Annex 9; See also: S. Grant, A. Constable, B. Raymond, S. Doust, *Bioregionalisation of the Southern Ocean: Report of Experts Workshop* (Hobart: WWF-Australia/ACE CRC, 2006).

¹²⁸⁶ S. Grant, et al (2006) *ibid.*

The 2008 meeting of the Commission endorsed the Scientific Committee's conclusion that the establishment of "a system of marine areas for biodiversity conservation in the Southern Ocean should be addressed as a matter of priority" and that the "benthic and pelagic bioregionalisations developed by the 2007 Bioregionalisation Workshop were adequate for use in such work".¹²⁸⁷ It is noteworthy that the method used to classify biogeographic provinces in the Southern Ocean is compatible with the CBD GOODS biogeographic classification (see Chapter 3 and section 5.2 above). In fact, CCAMLR finer-scale classification complements the broad-scale GOODS categorization.¹²⁸⁸

Regional vs. Global: Some Conclusions

Regional initiatives such as the OSPAR Commission and CCAMLR in establishing MPA networks, including HSMPAs based on biogeographic classification of the oceans provide a good model that can be adopted by other regional organisations. Notwithstanding the fact that regional initiatives such as these should be encouraged and implemented on a large scale, the adoption of a global legal framework for the implementation of EBM/EBFM through the creation of marine protected areas in ABNJ would be extremely advantageous. This is because the boundaries of regional organisations do not always conform to natural biogeographic boundaries of the marine environment. As noted in the GOODS report:

"The boundaries used to delineate Regional Fisheries or Oceans Management Organizations are generally based on the distributions of fish stocks managed by the RFMOs/ROMOs, and/or the jurisdictions of the states participating in the RFMOs/ROMOs. Although they may be somewhat internally homogeneous in fauna, their boundaries cannot be counted on to coincide with any major discontinuities in species composition. Rather the boundaries reflect the limits of legal agreements and historic patterns of fisheries or other ocean uses. Hence the boundaries may be set rather arbitrarily compared to the full range of biodiversity, and coverage of deep and open ocean areas beyond the limits of national jurisdiction is far from complete."¹²⁸⁹

¹²⁸⁷ CCAMLR, Report of the XXVII Meeting of the Commission (2008), item 7.2 (i), (ii).

¹²⁸⁸ UNEP/CBD/COP/9/INF/44, *supra* note 16.

¹²⁸⁹ UNEP/CBD/COP/9/INF/44, *supra* note 16, at 10.

The adoption of a global agreement on MPAs based on biogeographical provinces in marine areas beyond national jurisdiction has the potential to integrate and promote further coordination amongst different sectors and activities that occur within each province. This would be a significant first step towards the implementation of EBM/EBFM in marine areas beyond national jurisdiction. Therefore the current piecemeal approach reflected in this fragmented regime would be replaced by a well coordinated and science based regime. As emphasised by the GOODS report:

“Recent policy discussions on the conservation and sustainable use of biodiversity, including genetic resources, in marine areas beyond national jurisdiction have pointed out – *inter alia* – the need for more information on the biodiversity to be found in those areas, and for a classification of those areas to be developed according to scientific criteria. These processes have all recognized, directly and/or in the context of informal discussions associated with those negotiations, that biogeographic classification can contribute to policy-setting and implementation.”¹²⁹⁰

Thus, the adoption of a global mechanism for the establishment of HSMPAs would be capable of promoting further cooperation among RFMOs and other organisations with specific mandates in the protected site. RFMOs’ mandate is to manage and regulate fishing activities. Therefore, for example, they would not be able to close a certain area to deep seabed mining or to shipping. Coordination amongst entities such as, *inter alia*, RFMOs, Regional Seas Agreements secretariats, FAO, the International Seabed Authority, IMO, the CBD Secretariat and DOALOS would be enhanced, reinforcing UNCLOS’ emphasis on cooperation. Therefore, an implementing agreement to UNCLOS (see section 5.4 (b) (iii) below), which is a framework for the regulation of these activities, would enable such coordination amongst different sectors and entities without interfering with their respective mandates.

¹²⁹⁰ *Ibid.*, at 53.

b) Global Level: HSMPAs in the context of UNCLOS and the CBD

As discussed above, there is no global international treaty providing for the creation of marine protected areas in areas beyond national jurisdiction. In terms of international policy instruments, the most significant in this regard is the 2002 WSSD Plan of Implementation, which expressly calls for the “(...) establishment of marine protected areas consistent with international law and based on scientific information, including representative networks by 2012 and time/area closures for protection of nursery grounds and periods (...)”.¹²⁹¹ As seen in Chapter 1, the WSSD Plan of Implementation was adopted by consensus and even though it is a policy instrument, it can still produce legal effects through the promotion of *opinio juris* and eventually State practice (see Chapter 1).

In respect to binding agreements, UNCLOS is a key treaty in this context, because even though it does not provide for the establishment of marine protected areas, it imposes the “duty of States to adopt (...) measures for the conservation of the living resources of the high seas”¹²⁹² (see Chapter 1). Moreover, “States have the obligation to protect and preserve the marine environment”¹²⁹³ through the adoption of measures that “shall include those necessary to protect and preserve rare or fragile ecosystems as well as the habitat of depleted, threatened or endangered species and other forms of marine life”.¹²⁹⁴ It was discussed in Chapter 1 that UNCLOS provisions constitute a sound basis for the implementation of further conservation measures encompassing EBFM principles, which would include the establishment of HSMPAs. The drawback is that UNCLOS does not regulate the creation of HSMPAs and does not provide any guidelines on this subject matter. The question therefore is under which legal framework should HSMPAs be created. With this in mind, this section analyses UNCLOS and CBD as the possible legal framework under which a system of ecologically coherent HSMPAs should be created.

¹²⁹¹ WSSD Plan of Implementation, Para. 31 (c).

¹²⁹² UNCLOS, Art. 117.

¹²⁹³ UNCLOS, Art. 192.

¹²⁹⁴ UNCLOS, Art. 194 (5). See T. Scovazzi, “Marine Protected Areas on the High Seas: Some Legal and Policy Considerations” (2004) 19 IJMCL 1-17.

As seen in Chapter 1, UNCLOS does not provide specifically for the implementation of EBFM/EBM or for the creation of HSMPAs. However, this Convention is the legal framework for the regulation of all activities at sea. Furthermore, UNCLOS' provisions do not oppose the creation of HSMPAs as conservation measures of living resources on the high seas (see Article 117). In fact, the right to fish in the high seas (Art. 116) is subject to "conditions"¹²⁹⁵ such as the duty of States to cooperate "in the conservation and management of living resources in the areas of the high seas."¹²⁹⁶

As noted by Henriksen, "[t]he exercise of the right [to fish in the high seas] triggers several obligations[,] including duties to take necessary conservation measures and to cooperate with the other states involved in the relevant fisheries. Consequently, the conservation obligation has become a prominent feature of the high seas fishing regime."¹²⁹⁷ Henriksen also argues that "[g]iven that the obligations of Articles 116–119 are described as "conditions," it is possible to understand them as meaning that their fulfilment is a prerequisite for the right of states to fish on the high seas."¹²⁹⁸ Therefore, under an evolutionary interpretation of UNCLOS¹²⁹⁹ the establishment of HSMPAs as a tool for the implementation of EBM/EBFM could be understood within the context of such conservation and management measures that States, in cooperation with each other, have the obligation to adopt or, at least, negotiate in good faith.¹³⁰⁰ In view of this, UNCLOS constitutes an appropriate framework for the regulation of HSMPAs.

In regards to the CBD, even though the Convention does not provide for the creation of HSMPAs *per se*, it does provide for *in-situ* conservation in areas under national jurisdiction, where the contracting Parties shall "as far as possible and as

¹²⁹⁵ UNCLOS, Arts. 87 (1) (e) and 116.

¹²⁹⁶ UNCLOS, Art. 118.

¹²⁹⁷ T. Henriksen, "Revisiting the Freedom of Fishing and Legal Obligations on States Not Party to Regional Fisheries Management Organizations" (2009), 40 ODIL 80-96, at 85.

¹²⁹⁸ *Ibid.*, at 86.

¹²⁹⁹ Such interpretation would **take into account** recent developments such as soft-law instruments, including, *inter alia*, UNGA Resolutions, Chapter 17 of Agenda 21, the WSSD Plan of Implementation and CBD COPs decisions. For further details on this, see Chapter 1. See also A. Boyle, C. Chinkin (2007), *supra* note 105, at 244-247.

¹³⁰⁰ See UNCLOS, Art. 118.

appropriate (...) establish a system of protected areas or areas where special measures need to be taken to conserve biological diversity”.¹³⁰¹ As seen in Chapter 1, CBD is applied to marine and/or terrestrial areas, as well as to areas within and beyond national jurisdiction.¹³⁰² However, its application to areas beyond national jurisdiction is limited to “processes and activities” carried out under the contracting Parties control, and not to components of biological diversity *per se*.¹³⁰³ Therefore, in respect to areas beyond national jurisdiction, Contracting Parties have the duty to cooperate, “as far as possible and as appropriate (...) with other Contracting Parties, directly or, where appropriate, through competent international organizations, (...) and on other matters of mutual interest, for the conservation and sustainable use of biological diversity.”¹³⁰⁴ Thus, HSMPAs could be established based on such a duty to cooperate for the conservation and sustainable use of biodiversity.

In fact, CBD has been addressing the creation of MPAs, including HSMPAs in a number of its Conferences of the Parties. For example, State Parties at the 2004 COP 7 agreed on the adoption of the WSSD Plan of Implementation’ approach on the establishment of MPAs and respective networks by 2012 and the implementation of EBA.¹³⁰⁵ This same COP also agreed that:

“(...) the goal for work under the Convention relating to marine and coastal protected areas should be: the establishment and maintenance of marine and coastal protected areas that are effectively managed ecologically based and contribute to a global network of marine and coastal protected areas, building upon national and regional systems, including a range of levels of protection, where human activities are managed, particularly through national legislation, regional programmes and policies, traditional and cultural practices and international agreements, to maintain the structure and functioning of the full range of marine and coastal ecosystems, in order to provide benefits to both present and future generations.”¹³⁰⁶

Moreover, COP 7 confirms that the establishment of protected areas systems are in accordance with Article 8 of CBD on *in situ* conservation and such systems are crucial to the implementation of the “ecosystem approach [and] the three objectives

¹³⁰¹ CBD, Art. 8 (a).

¹³⁰² CBD, Art. 4.

¹³⁰³ CBD, Art. 4 (a) and (b).

¹³⁰⁴ CBD, Art. 5.

¹³⁰⁵ CBD COP 7, Decision VII/5, Para. 19.

¹³⁰⁶ CBD COP 7, Decision VII/5, Para 18.

of the Convention (...);¹³⁰⁷ that is “the conservation of biological diversity; the sustainable use of its components; and the fair and equitable sharing of the benefits arising out of the utilization of genetic resources”.¹³⁰⁸

More importantly, COP 7 adopted a Programme of Work on protected areas aiming to, *inter alia*, establish and maintain by 2012 a “comprehensive, effectively managed, and ecologically representative national and regional systems of [marine] protected areas that collectively, *inter alia* through a global network contribute to achieving the three objectives of the Convention and the 2010 target to significantly reduce the current rate of biodiversity loss”.¹³⁰⁹ In order to facilitate and implement the Programme of Work, an open-ended *ad hoc* working group on protected areas was created.¹³¹⁰ The relationship between the CBD and UNCLOS was then reinforced, as one of the primary tasks of the *ad hoc* working group was to “explore options for cooperation for the establishment of marine protected areas in marine areas beyond the limits of national jurisdiction, consistent with international law, including the United Nations Convention on the Law of the Sea, and based on scientific information”.¹³¹¹ It is noteworthy that the 2004 UNGA Resolution 59/24 welcomed this decision,¹³¹² therefore reassuring the cooperation between the two Conventions.

It is also important to note that notwithstanding the work done by CBD on protected areas, its Parties have been constantly reaffirming the role of UNCLOS as a framework for the creation of HSMPAs. For example, at the 2006 COP 8, CBD Parties:

“Recognizes that the Convention on Biological Diversity has a key role in supporting the work of the General Assembly with regard to marine protected areas beyond national jurisdiction, by focusing on provision of scientific and, as appropriate, technical information and advice relating to marine biological

¹³⁰⁷ CBD COP 7 Decision VII/28, Para. 1.

¹³⁰⁸ CBD, Art. 1.

¹³⁰⁹ CBD, COP 7, Decision VII/28, Para. 18.

¹³¹⁰ *Ibid.*, Para. 25.

¹³¹¹ *Ibid.*, Para. 29 (a).

¹³¹² UNGA Resolution A/RES/59/24 (4 February 2005), at Para. 71. This resolution was adopted by 141 votes to 1 with 2 abstentions on 17 November 2004.

diversity, the application of the ecosystem approach and the precautionary approach, and in delivering the 2010 target;”¹³¹³

From all of this, it is clear that not only do CBD parties recognize UNCLOS as the relevant framework for the establishment of HSMPAs, but they also acknowledge the UN General Assembly as the appropriate forum for discussing evolving issues on the Law of the Sea. Nevertheless the language used has been carefully chosen so it does not imply in any way that the General Assembly can create these protected areas. The role of the UNGA in this context is no less important (see Chapter 1). As noted by Boyle and Chinkin, “[t]he UN General Assembly is a forum for discussion, negotiation and coordination. It also has responsibility for ‘encouraging the progressive development of international law and its codification’.”¹³¹⁴ Furthermore, the role of UNGA in discussing emerging issues on the Law of the Sea should be noted. As stated by Judge Treves:

“[t]he United Nations, and in particular the General Assembly, has occupied a lot of space concerning the development of international law as regards issues arising beyond the scope of the Convention [UNCLOS]. (...) In the light of the vigorous development of the role of the General Assembly, and of the broad consensus that has accompanied it, it seems unlikely that the General Assembly will lose its position as the main forum for general discussions on the implementation of the Convention or on new law-making efforts beyond the Convention.”¹³¹⁵

In effect, as mentioned above, UNGA resolutions endorse initiatives on the establishment of MPAs. For instance, the 2002 UNGA Resolution 57/141 called upon States to “(...) develop and facilitate the use of diverse approaches and tools, including the ecosystem approach (...), the establishment of marine protected areas consistent with international law and based on scientific information, including representative networks by 2012”.¹³¹⁶ This endorses the timeframe on MPAs network adopted by the WSSD Plan of Implementation. The UNGA has been reaffirming

¹³¹³ CBD, COP 8, Decision VIII/24, Para. 42. The 2010 target referred to in this decision relates to the Programme of Work on Marine and Coastal Biodiversity aiming to “achieve significant reduction of the current rate of marine and coastal biological diversity loss by the year 2010”¹³¹³ (see Chapter 1).

¹³¹⁴ A. Boyle, C. Chinkin (2007), *supra* note 105, at 116.

¹³¹⁵ T. Treves, “The General Assembly and the Meeting of States Parties in the Implementation of the LOS Convention” pp. 55-74, in A. Elferink (ed.) (2005), *supra* note 855, at 66-8.

¹³¹⁶ UNGA Res. A/RES/57/141 (21 February 2003), at Para. 53. This resolution was adopted by 132 votes to 1, with 2 abstentions on 12 December 2002.

such an endorsement ever since in its annual resolutions on ‘oceans and the law of the sea’.¹³¹⁷

In 2008, the CBD COP 9 reiterated “the United Nations General Assembly’s role in addressing issues relating to the conservation and sustainable use of biodiversity in marine areas beyond national jurisdiction.”¹³¹⁸ Furthermore, as seen in Chapter 3 and section 5.3 above, CBD has been conducting studies on scientific criteria for the selection of sites in need of protection in marine areas beyond national jurisdiction. In this context COP 9 ‘took note’ of the GOODS Biogeographic Classification report, which will be made available for discussion at the meeting of the Subsidiary Body on Scientific, Technical and Technological Advice prior to COP 10.¹³¹⁹ CBD COP 9 also:

- adopted the scientific criteria for identifying ecologically or biologically significant marine areas in need of protection (see section 5.3 above);
- adopted the scientific guidance for designing representative networks of MPAs, including in open-oceans and deep-sea habitats (see section 5.3 above,);¹³²⁰
- requested the Executive Secretary to transmit such information on the adopted scientific criteria and guidance to the “relevant General Assembly processes”;¹³²¹
- ‘took note’ of the “four initial steps¹³²² to be considered in the development of representative networks of marine protected areas”, also requesting the Executive Secretary to transmit this information to the UNGA processes.¹³²³

¹³¹⁷ UNGA Resolution A/RES/58/240 (5 March 2004), at Para. 54; UNGA Resolution A/RES/59/24 (4 February 2005), at para. 72; UNGA Res. A/RES/60/30 (8 March 2006), at para. 74; UNGA Res. A/RES/61/222 (16 March 2007), at para. 97; UNGA Res. A/RES/62/215 (14 March 2008), at para. 111; UNGA Res. A/RES/63/111 (12 February 2009), at Para. 134.

¹³¹⁸ CBD, COP 9, Decision IX/20, Preambular Paragraph.

¹³¹⁹ *Ibid.*, Para. 6.

¹³²⁰ *Ibid.*, Para. 14.

¹³²¹ *Ibid.*, Para. 14.

¹³²² 1. scientific identification of an initial set of ecologically or biologically significant areas; 2. develop/choose a biogeographic, habitat, and /or community classification system; 3. use qualitative and/or quantitative techniques to identify sites to include in the network; 4. assess the adequacy and viability of the selected sites.

¹³²³ CBD COP 9, Decision IX/20, Para. 16.

From all of this, it is clear that the CBD Parties recognise UNCLOS as the treaty under which high seas marine protected areas are to be created.¹³²⁴ It is equally clear that the role of CBD in informing this process with scientific and technical considerations on marine biodiversity and ecosystems, including bioregionalisation of the oceans, and precautionary approaches is extremely relevant.¹³²⁵ In effect, the 2008 UNGA Resolution 63/111 acknowledges the work of the CBD:

“(...) in the assessment of scientific information on, and compilation of ecological criteria for the identification of, marine areas that require protection (...) and notes with satisfaction that the [COP 9] adopted scientific criteria for identifying ecologically or biologically significant marine areas in need of protection in open-waters and deep-sea habitats and the scientific guidance for selecting areas to establish representative networks of marine protected areas (...)”¹³²⁶

This level of cooperation between UNCLOS and CBD is also required by the two Conventions, especially considering Article 22 (2) of the CBD, which expressly states that its Parties “shall implement this Convention with respect to the marine environment consistently with the rights and obligations of States under the law of the sea.” This implies that UNCLOS would prevail over the CBD. However, if the exercise of those rights and obligations by UNCLOS Parties “would cause a serious damage or threat to biological diversity”¹³²⁷ (e.g. through fishing in the high seas) then the CBD would prevail over UNCLOS, but only in respect to UNCLOS’ Parties who are also parties to the CBD. As noted by Boyle:

“Thus, for example, the adoption under the CBD of protected zones intended to reduce serious damage to biodiversity on the high seas would not be incompatible with the LOSC and would be consistent with Article 22 of the CBD. However, such zones would not be opposable to non-parties to the CBD, whose LOSC rights Article 311 expressly protects. Any meaningful attempt to regulate marine biodiversity in this way, thus, would in practice depend principally on the parties to the LOSC rather than on the parties to the CBD.”¹³²⁸

¹³²⁴ *Ibid.*, 5th Preambular Paragraph.

¹³²⁵ *Ibid.*

¹³²⁶ UNGA Res. A/RES/63/111 (12 February 2009), at Para. 135. This Resolution was adopted by 155 votes to 1 with 4 abstentions (5 December 2008). See section 5.3 above on the CBD scientific criteria.

¹³²⁷ CBD, Art. 22 (1).

¹³²⁸ A. Boyle (2007), *supra* note 285, at 139-40.

Therefore, in light of what was discussed in this section, UNCLOS should be the legal framework under which HSMPAs are to be established with the appropriate support (i.e., scientific and technical assistance) of the CBD.

The next question then is: which procedure would be the most appropriate for the establishment of HSMPAs under UNCLOS? The following sections aim to provide a brief analysis of three alternatives: (i) An amendment to UNCLOS; (ii) Expanding the International Seabed Authority's mandate; (iii) Adopting an implementing Agreement to UNCLOS.

(i) Amending UNCLOS

Considering the history of negotiations of the Convention,¹³²⁹ an amendment to UNCLOS to include specific provisions on the implementation of EBM/EBFM through, *inter alia*, the adoption of HSMPAs seems highly unlikely to happen any time soon. The fact that UNCLOS was negotiated as a 'package deal' exerts a strong influence against any amendments to the Convention. Notwithstanding this strong opposition, during the negotiations of the Convention it was emphasized that changes to the actual circumstances would eventually require the amendment of UNCLOS.¹³³⁰

The result of such negotiations culminated with the adoption of amendment procedures as provided for by Articles 312-316 of UNCLOS, which allows parties (since 2004; that is, ten years after entering into force) to "propose specific amendments to this Convention, other than those relating to activities in the Area, and request the convening of a conference to consider such proposed amendments."¹³³¹ Such a conference will be convened if at least half of the State parties reply favourably within a period of 12 months from the circulation of such

¹³²⁹ See D. Freestone, A. Elferink, "Flexibility and Innovation in the Law of the Sea – Will the LOS Convention Amendment Procedures Ever Be Used?" pp.169-221, in A. Elferink (ed.) (2005), *supra* note 855.

¹³³⁰ See *ibid*, document cited in footnote 29.

¹³³¹ UNCLOS, Art. 312 (1); see also VCLT, Art. 40.

communication.¹³³² The decision-making procedure adopted by the Conference should be based upon consensus, although exceptions are allowed if “all efforts at consensus have been exhausted”.¹³³³

Alternatively, “a State Party may, by written communication addressed to the Secretary-General of the United Nations, propose an amendment to this Convention, other than an amendment relating to activities in the Area, to be adopted by the simplified procedure set forth in [Art. 313] without convening a conference.”¹³³⁴ However, if any of the States Parties to the Convention object to this proposal within a period of 12 months from the date of circulation of the respective communication, the amendment would be rejected.¹³³⁵ As noted by Judge Treves:

“The fact that this procedure has never been used, even though the time limit of ten years from entry into force of the Convention set out in art. 312 for amendments through the convening of a conference does not apply to it, seems to show that the risk of rejection of a proposal within such framework is considered too high. One objection is in fact sufficient to nullify the effort.”¹³³⁶

For an amendment to enter into force, it requires the ratification or accession by two thirds of the States Parties,¹³³⁷ which currently amounts to roughly 104 States.¹³³⁸ However, “[a]n amendment may provide that a larger number of ratifications or accessions shall be required for its entry into force (...)”¹³³⁹ As noted by Freestone and Oude Elfeink:

“(...) meeting the requirement of accession or ratification by two-thirds of the States Parties is likely to prove an insurmountable hurdle for most amendments. The 1995 Agreement [UNFSA] can be taken as an example. As of 5 January 2005, the 1995 Agreement had 52 States Parties, including the European Community. Had the 1995 Agreement been adopted in accordance with the amendment procedures of the LOS Convention, it would still need a further 46 [as of Jan. 2005] accessions or ratifications before it could have entered into force. It would seem that any amendment, to stand a chance of entry into force, would need to be uncontroversial and beneficial to all the major law of the sea interest groups.”¹³⁴⁰

¹³³² UNCLOS, Art. 312 (1).

¹³³³ UNCLOS, Art. 312 (2).

¹³³⁴ UNCLOS, Art. 313 (1).

¹³³⁵ UNCLOS, Art. 313 (2).

¹³³⁶ T. Treves (2005), *supra* note 1315, at 73, footnote 54.

¹³³⁷ UNCLOS, Art. 316 (1).

¹³³⁸ As of 23 April 2009.

¹³³⁹ UNCLOS, Art. 316 (2).

¹³⁴⁰ D. Freestone, A. Elferink (2005), *supra* note 1329, at 177-8.

In light of this, an amendment to UNCLOS providing for specific tools for the implementation of EBM/EBFM, including the establishment of HSMPAs, does not seem to be the most appropriate solution.

(ii) Expanding the International Seabed Authority's Mandate

As seen in Chapter 1, Part XI of UNCLOS regulates the exploitation of mineral resources (solid, liquid or gaseous) in the Area “at or beneath the seabed”.¹³⁴¹ UNCLOS defines the Area as “the seabed and ocean floor and subsoil thereof, beyond the limits of national jurisdiction”¹³⁴². The Area and its mineral resources are a common heritage of mankind,¹³⁴³ and therefore not subject to appropriation of any kind.¹³⁴⁴

Mining activities and scientific research taking place in the Area are organised and controlled by the International Seabed Authority,¹³⁴⁵ established by Article 156 of UNCLOS (see Chapter 1). Although the Authority is entitled to take measures to protect the marine environment “from harmful effects” of the mining activities conducted in the Area,¹³⁴⁶ its mandate is restricted to the Area and does not apply to the living resources found in the water column above the deep seabed. In order for the Authority to have the mandate to establish HSMPAs, which would include the water column, ISA’s original mandate would have to be expanded.

Much has been discussed in regards to the expansion of ISA’s mandate in order to regulate the exploitation of genetic resources in marine areas beyond

¹³⁴¹ UNCLOS, Art. 133 (a). See also the 1994 Agreement relating to the Implementation of Part XI of the United Nations Convention on the Law of the Sea of 10 December 1982 (28 July 1994), Adopted by UNGA Res. A/RES.48/263 (1994).

¹³⁴² UNCLOS, Art. 1 (1) (1).

¹³⁴³ UNCLOS, Art. 136. See also, P. Birnie, et al (2009), *supra* note 170, at 197-8; T. Henriksen (2009), *supra* note 1297, at 85.

¹³⁴⁴ UNCLOS, Art. 137.

¹³⁴⁵ See: D. Rothwell, “Building on the Strengths and Addressing the Challenges: The Role of Law of the Sea Institutions” (2004) 35 ODIL 131-156; M. Lodge, “Current Legal Developments International Seabed Authority” (2009) 24 IJMCL 185-193.

¹³⁴⁶ UNCLOS, Art. 145.

national jurisdiction.¹³⁴⁷ Nonetheless, the analysis of bioprospecting regulation is beyond the scope of this work. In regards to the expansion of ISA's mandate to establish HSMPAs, where fishing activities would be restricted, this would require the amendment of UNCLOS, Part XI.

An amendment to UNCLOS relating exclusively to activities in the Area to enter into force would require at least 118 State Parties¹³⁴⁸ to ratify or accede to it,¹³⁴⁹ while amendments not related exclusively to activities in the Area would require 104 Parties, as discussed above. Therefore, the option of amending UNCLOS to expand ISA's mandate would be subject to the same obstacles discussed in section (i) above.

It is noteworthy that the adoption of the 1994 Agreement relating to the Implementation of Part XI of the United Nations Convention on the Law of the Sea of 10 December 1982 (Part XI Agreement) provides a good example of an alternative to amendment procedures. The Agreement clarified certain provisions of the Convention, and revised and modified others.¹³⁵⁰ Even though this Agreement amended some of UNCLOS' provisions in practice, it was adopted as an implementing agreement (see section (iii) below) and therefore did not follow the amendment procedures of UNCLOS, which would be impossible, as UNCLOS was not into force at the time.¹³⁵¹ As noted by Anderson:

“The main precedent for this procedure was the report of the UN High Commissioner for Refugees in 1967 concerning the proposal to amend by means of a protocol the Convention on the Status of Refugees of 1951. Another precedent in the maritime field was the Protocol of 1978 to the MARPOL Convention of 1973.

¹³⁴⁷ T. Scovazzi, (2004), *supra* note 364; See also: UN Doc. A/61/65 (2006), *supra* note 807; *Letter dated 15 May 2008 from the Co-Chairpersons of the 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 addressed to the President of the General Assembly*, UNGA doc. A/63/79 (16 May 2008).

¹³⁴⁸ As of 27 Apr. 09.

¹³⁴⁹ UNCLOS, Art. 316 (5), requires the ratification or accession by $\frac{3}{4}$ of States Parties for an amendment relating exclusively to activities in the Area to enter into force.

¹³⁵⁰ See R. Churchill, A. Lowe (1999), *supra* note 462, Introduction; T. Scovazzi, (2004), *supra* note 364; D. Anderson, “Efforts to Ensure Universal Participation in the United Nations Convention on the Law of the Sea” (1993) 42 (3) ICLQ 654-664.

¹³⁵¹ The Part XI Agreement was adopted on 28 July 1994 and UNCLOS entered into force in 16 Nov. 1994. See A. Boyle, C. Chinkin (2007), *supra* note 501.

In line with these precedents, the draft resolution proposed that the General Assembly should adopt an agreement on the implementation of Part XI."¹³⁵²

As for the legal status of the Agreement, Anderson noted prior to its adoption that:

"The Agreement is clearly a treaty, governed by the Vienna Convention on the Law of Treaties. Although it does not expressly amend any provisions of Part XI, there is no doubt that the agreement will result in the terms of Part XI being implemented, interpreted and applied in a new way, as described in the annex."¹³⁵³

Nonetheless, regardless of the format (i.e., amendment to UNCLOS or adoption of another implementing Agreement expanding ISA's mandate over the high seas), this alternative is not realistic.¹³⁵⁴ In fact, the proposal to make all natural resources (including living resources) beyond areas of natural jurisdiction a common heritage of mankind and managed by the 'International Ocean Space Institution' was suggested by Ambassador Arvid Pardo (see Chapter 1) in 1971.¹³⁵⁵ However, this proposal was not accepted during the negotiations of UNCLOS.

In view of this, expanding ISA's mandate over the water column above the Area and its resources would be conflicting with RFMOs mandates (see Chapter 4) and would constitute a major modification of the Law of the Sea regime, which would clearly require the observance of the amendment procedures discussed above. Therefore, this alternative is highly unlikely to be accepted by UNCLOS Parties. A more reasonable alternative would be to encourage the ISA to designate a system of protected areas based on biogeographic classification in the Area to protect vulnerable geological features¹³⁵⁶ of the deep seabed from mining impacts.¹³⁵⁷ This would not require any amendment procedures and would be complementary to what is proposed in the next section; i.e., the adoption of an implementing Agreement to UNCLOS on marine ecosystem-based management, including through the designation of marine protected areas in areas beyond national jurisdiction.

¹³⁵² D. Anderson, "Further Efforts to Ensure Universal Participation in the United Nations Convention on the Law of the Sea" (1994) 43 (4) ICLQ 886- 893, at 888.

¹³⁵³ *Ibid.*, at 892.

¹³⁵⁴ This is different from expanding ISA's mandate to cover bioprospecting, as this is a new activity.

However, this subject is beyond the scope of the current work.

¹³⁵⁵ T. Scovazzi (2004), *supra* note 364.

¹³⁵⁶ Such as seamounts and hydrothermal vents.

¹³⁵⁷ See T. Scovazzi (2004), *supra* note 364.

(iii) An Implementing Agreement to UNCLOS

It has been debated among UNCLOS State Parties whether there is a need for an implementing agreement to the Convention providing for the duty of States to adopt EBM/EBFM (see Chapter 1) and/or to address the conservation and management of marine biodiversity in marine areas beyond national jurisdiction. Whilst some States Parties to UNCLOS argue that there is a gap in the current legal regime in addressing these issues, others say that there is no need for further legislation and that priority should be given to the implementation of existing legal instruments (see Chapter 1).¹³⁵⁸

However, as seen in the previous Chapters the implementation of EBM/EBFM requires a wide range of activities, from preventing bycatch and restricting, or banning destructive fishing gears (see Chapter 2 and 4) to the creation of marine protected areas. In respect of the latter, the designation of HSMPAs as a tool for the implementation of EBM/EBFM should be formally agreed through the adoption of a legally binding instrument,¹³⁵⁹ as this is not regulated by any other instrument to date.

As seen in section 5.4 (a) above, the creation of HSMPAs by regional or sectoral organizations has been initiated in a few regions. However, regional initiatives have not been coordinated in a comprehensive way and therefore, do not necessarily follow the GOODS biogeographical classification (see section 5.3), with the exception of OSPAR and CCAMLR. A sectoral approach does not conform to EBM principles, as the cumulative impacts of different activities need to be considered as a whole.

¹³⁵⁸ See "Summary of the Working Group on Marine Biodiversity beyond Areas of National Jurisdiction: 13-17 February 2006", ENB vol. 25 No. 25 (IISD, 2006), online: <http://www.iisd.ca/download/pdf/enb2525e.pdf> (accessed on 15 Apr. 09).

¹³⁵⁹ See CBD, COP 7, Decision VII/5, Para. 10.

Even though UNCLOS contains general principles on the protection and preservation of the marine environment (Part XII) and on conservation and management of living resources of the high seas (Section 2, Part VII) as well as on straddling and highly migratory fish stocks and marine mammals (Arts. 63, 64 and 65), more detailed guidelines are still required in order to create HSMPAs and respective networks in conformity with EBM. As noted by Ardron et al “UNCLOS is premised on the duty of cooperation, but it did not create a mechanism to coordinate and discuss substantive implementation issues, share best practices, or promote compliance.”¹³⁶⁰

It can be argued that there are international policy and soft-law instruments such as the WSSD Plan of Implementation and CBD COP decisions reinforcing the need for an ecologically coherent network of MPAs in the high seas and establishing criteria for selection of sites. These instruments have been informing and shaping States opinions and hopefully their behaviour (see Chapter 1 and section 5.4 (a) on OSPAR and CCAMLR initiatives). As HSMPAs discussions are widely intensified in forums like the UNGA, ICP and CBD COPs, this should be seen as an opportunity to develop a new binding agreement based on soft-law instruments that have been calling for the implementation of the ecosystem-based approach and the creation of high seas marine protected areas and respective networks of MPAs. The awareness and *opinio juris* (see Chapter 1) fomented by discussions and reflected in these soft-law instruments would facilitate the adoption and compliance with the new instrument. As noted by Boyle and Chinkin, “[d]eliberation is an essential lubricant of any law-making process because it facilitates discussion, negotiation, compromise, persuasion, influence and participation.”¹³⁶¹

The actual designation of a HSMPA, which includes, *inter alia*, the delimitation of a particular area, which will be subject to zoning and specific use restrictions, should be done via a legally binding instrument. Such an agreement should be based on EBM/EBFM principles (see Chapter 1). Depending on the

¹³⁶⁰ J. Ardron, et al (2008), *supra* note 1256, at 833.

¹³⁶¹ A. Boyle, C. Chinkin (2007), *supra* note 105, at 100.

specific provisions of the agreement, it could be regulated by Article 311 (3)¹³⁶² and (4) of UNCLOS, which allows State Parties to conclude agreements “modifying or suspending the operation of [UNCLOS] provisions, applicable solely to the relations between [such parties]”.¹³⁶³ Nevertheless, such agreements cannot:

“(…) relate to a provision derogation from which is incompatible with the effective execution of the object and purpose of [the] Convention (…), and provided further that such agreements shall not affect the application of the basic principles embodied herein, and that the provisions of such agreements do not affect the enjoyment by other States Parties of their rights or the performance of their obligations under [UNCLOS].”¹³⁶⁴

In order to adopt such an agreement, interested States Parties have to “notify the other State Parties through the depositary of this Convention of their intention to conclude the agreement and of the modification or suspension for which it provides”.¹³⁶⁵ Concluding an agreement such as this would be more efficient than trying to amend UNCLOS, as seen in section (i) above. As noted by Freestone and Elferink:

“An Article 311 (3) agreement that has duly entered into force may exert a greater influence on the further development of the regime contained in the Convention and customary international law than an amendment to the Convention that has not yet entered into force and which may never do so.”¹³⁶⁶

Alternatively, if there is no need for modification of UNCLOS provisions, the UNGA could call for an international conference on the implementation of Part VII, section 2 of UNCLOS on conservation and management of the living resources of the high seas. More specifically, the conference could address the implementation of EBM/EBFM and tools such as HSMPAs in the context of the duty of States to adopt measures for the conservation of the living resources of the high seas (Article 117). This conference could follow the example of the United Nations Conference on

¹³⁶² Which is based on Articles 41 and 58 of the VCLT. For further analysis see A. Boyle (2007) *supra* note 285, at 135.

¹³⁶³ UNCLOS, Art. 311 (3).

¹³⁶⁴ UNCLOS, Art. 311 (3).

¹³⁶⁵ UNCLOS, Art. 311 (4).

¹³⁶⁶ D. Freestone, A. Elferink (2005), *supra* note 1329, at 181.

Straddling Fish Stocks and Highly Migratory Fish Stocks,¹³⁶⁷ which culminated with the negotiation and adoption of the 1995 Fish Stocks Agreement.¹³⁶⁸

An implementation agreement, such as UNFSA, would be the most appropriate solution in this case, as there is no need to modify¹³⁶⁹ UNCLOS provisions in practice. As seen in this Chapter and in Chapter 1, UNCLOS already provides a sound legal framework for the adoption of conservation measures of living resources in the high seas. Therefore, an implementing agreement providing more detailed guidelines on the implementation of EBM/EBFM and the establishment of HSMPAs would be consistent with the existing UNCLOS provisions on conservation measures for living resources in the high seas, and ultimately with the provisions on the protection of the marine environment.

Suggested Provisions for a New Implementing Agreement to UNCLOS

An implementing agreement to UNCLOS imposing the application of ecosystem based management in areas beyond national jurisdiction would be an important first step towards the marine management shift that is required to protect marine ecosystems. An agreement such as this could provide for, *inter alia*:

- a) The implementation of EBFM, based on ecosystem modelling tools developed by the best available science,¹³⁷⁰ to all stocks occurring in the high seas, including discrete stocks, which are not covered by UNFSA;

¹³⁶⁷ See UNGA Resolutions A/RES/47/192 (1992) on the United Nations Conference on Straddling Fish Stocks and Highly Migratory Fish Stocks, and subsequent A/RES/48/194 (1993), A/RES/49/121 (1994) and A/RES/50/24 (1995).

¹³⁶⁸ Even though UNFSA did modify some of UNCLOS provisions, for example, shifting the MSY threshold and introducing precautionary reference points (see Chapter 1), it was adopted as an implementing agreement and therefore did not follow the requirements of Article 311 (4). As stated by Anderson: "As a participant in both negotiations [1994 Agreement relating to the Implementation of Part XI of UNCLOS and 1995 UNFSA], I remain of the view that the word "amend" was best avoided on both occasions in the 1990s". D. Anderson, "Commentary" pp.223-227, in A. Elferink (ed.) (2005), *supra* note 855, at 226.

¹³⁶⁹ See D. Freestone, A. Elferink (2005), *supra* note 1329, on the distinction of 'modifying agreement' and 'interpreting agreement'.

¹³⁷⁰ This would hinder the attempts of States such as Japan and some Caribbean and other developing countries to argue in favour of whaling as an EBFM mechanism. See Chapter 1 and L. Gerber, L.

- b) The definition of EBFM, acknowledging that the goal is to “manage the whole system for long-term sustainability rather than modifying particular trophic levels in an attempt to maximize fishery yield”¹³⁷¹.
- c) The definition and duty to implement EBM, which, in the view of McLeod et al could read:
- “Ecosystem-based management is an integrated approach to management that considers the entire ecosystem, including humans. The goal of ecosystem-based management is to maintain an ecosystem in a healthy, productive and resilient condition so that it can provide the services humans want and need. Ecosystem-based management differs from current approaches that usually focus on a single species, sector, activity or concern; it considers the cumulative impacts of different sectors.”¹³⁷²
- d) The establishment of marine spatial planning in the high seas,¹³⁷³ including the creation of HSMPAs and a respective ecologically coherent network based on the GOODS biogeographical classification. This would provide the necessary link between UNCLOS and CBD in practice. Furthermore, the application of spatial planning based on EBM would propitiate an enhanced coordination and cooperation amongst different sectors and distinct human impacts in the respective area;¹³⁷⁴
- e) The definition and categorization of MPAs, as there is no legally binding definition to date. This would contribute to a uniform and coherent legal system on MPAs;
- f) A provision stating that the existence of HSMPAs under this ‘Agreement’ does not exclude the creation of protected areas by any other means.

Morissette, K. Kaschner, D. Pauly, “Should Whales be Culled to Increase Fishery Yield?” (2009) 323 Science 880-881.

¹³⁷¹ *Ibid.*, at 881.

¹³⁷² K. McLeod, et al (2005), *supra* note 48.

¹³⁷³ See J. Ardron, et al (2008), *supra* note 1256; L. Crowder, E. Norse “Essential Ecological Insights for Marine Ecosystem-Based Management and Marine Spatial Planning” (2008) 32 Marine Policy 772-778; F. Douvère, “The Importance of Marine Spatial Planning in Advancing Ecosystem-Based Sea Use Management” (2008) 32 Marine Policy 762-771; P. Gilliland, D. Laffoley, “Key Elements and Steps in the Process of Developing Ecosystem-Based Marine Spatial Planning” (2008) 32 Marine Policy 787-796.

¹³⁷⁴ See S. Jennings (2009), *supra* note 1214.

Therefore, for instance, RFMOs' initiatives in designating HSMPAs in their regulatory areas could be consistent with the proposed Agreement;

- g) The obligation to develop and adopt an ecosystem-level management plan¹³⁷⁵ for each HSMPA to be established. Some of the elements that should be included in the respective management plans are the following, *inter alia*: purpose and scope of the plan; delimitation of the protected area; description of the physical features of the area, such as ocean currents, frontal systems, geological features, and biological attributes such as productivity, species distribution and trophic interactions occurring in the area; legal framework; zoning; use restrictions; buffer and surrounding areas management measures; surveillance and enforcement mechanisms;¹³⁷⁶ and guidelines for conducting scientific research in the respective area.
- h) Enforcement mechanisms and the use of vessel monitoring systems, such as provided for by UNFSA. The use of enforcement mechanisms, such as boarding and inspection in the high seas (UNFSA, Arts. 21 and 22) has proven to be controversial in international forums.¹³⁷⁷ If 'boarding and inspection' is to be adopted or endorsed in such an Agreement as a means to enforce restrictions inside the HSMPA, it would likely hinder wider participation to this proposed instrument. On the other hand, it would be reasonable to keep a certain degree of consistency with UNFSA, as this proposed implementing Agreement should be also complementary to UNFSA, filling in its gaps and contributing to the evolution of UNCLOS (see Chapter 1). However, it is beyond the scope of this work to address enforcement issues.

¹³⁷⁵ See G. Notarbatolo-Di-Sciara, T. Agardy, D. Hyrenbach, T. Scovazzi, P. V. Klaveren, "The Pelagos Sanctuary for Mediterranean Marine Mammals" (2008) 18 *Aquatic Conservation: Marine and Freshwater Ecosystems* 367-391, at 378.

¹³⁷⁶ See DFO, *National Framework for Establishing and Managing MPAs*, Appendix 2: Checklist for MPA Management Plan. Online: http://www.dfo-mpo.gc.ca/oceans-habitat/oceans/ri-rs/mpaframework-cadrezipm/page08_e.asp (accessed on 21 Apr. 09).

¹³⁷⁷ See: *Summary of the Eighth Round of Informal consultations of States Parties to the Fish Stocks Agreement: 16-19 March 2009*, ENB Vol. 7 No. 64 (IISD, 21 March 2009).

- i) Dispute settlement provisions in accordance with UNCLOS and UNFSA (see Chapter 4). This would avoid jurisdictional conflicts similar to the ones faced in the *Bluefin Tuna Case* (see Chapter 4).
- j) Conference of the Parties meetings (see Chapter 1) to be held on a regular basis with a means to adopt necessary decisions, measures and/or protocols to facilitate the implementation of the proposed Agreement.¹³⁷⁸ The Agreement could also empower the COPs to “consider any additional action that may be required”¹³⁷⁹ to the implementation of the Agreement in order to tackle emerging issues related to EBFM/EBM.

The exact delimitation of the HSMPAs’ network would not have to be defined at the first stage. The implementing Agreement could follow the model of an umbrella/framework treaty,¹³⁸⁰ similar to, *inter alia*, the 1992 CBD, the 1985 Ozone Convention¹³⁸¹ or the 1992 Convention on Climate Change¹³⁸². Thus, further protocols or other instruments could establish the limits of each HSMPA based on the guidelines provided for in the general Agreement. This way, the usual lengthy process of negotiating a new agreement could be significantly reduced when negotiating the Protocols. As explained by Churchill and Ulfstein:

“(…) when an MEA [multilateral environmental agreement] is initially concluded, the parties may reach only limited political agreement on how to tackle the environmental problem at issue; but over the time consensus on taking stricter measures may gradually emerge. These factors explain why some MEAs take the form of framework conventions (for example, the Vienna, Climate Change, Biodiversity and LRTAP Conventions). Thus, from time to time MEA institutions will need to adopt protocols to these framework conventions, as well as amendments to the original text of more specific MEAs. The alternative to such institutional development of MEAs is amendment of agreements through the traditional procedure of ad hoc diplomatic conference followed by ratification – a cumbersome and slow process.”¹³⁸³

¹³⁷⁸ See A. Boyle, C. Chinkin (2007), *supra* note 105, at 151-154; R. Churchill, G. Ulfstein, “Autonomous Institutional Arrangements in Multilateral Environmental Agreements: A Little-Noticed Phenomenon in International Law” (2000) 94 (4) AJIL 623-659.

¹³⁷⁹ *Ibid.*, at 631. See also The Convention on the Prevention of Marine Pollution by Dumping of Wastes and Other Matter [London Convention], 29 Dec. 1972, 1046 U.N.T.S. 120, Art. XIV (4) (f).

¹³⁸⁰ See A. Boyle, C. Chinkin, (2007), *supra* note 105, at 241.

¹³⁸¹ Convention for the Protection of the Ozone Layer, 22 Mar. 1985, 1513 U.N.T.S. 293.

¹³⁸² Convention on Climate Change, 09 May 1992, 31 ILM 849.

¹³⁸³ R. Churchill, G. Ulfstein (2000), *supra* note 1378, at 628-9.

Alternatively, the proposed implementing Agreement could follow the example of the 1995 'Protocol Concerning Specially Protected Areas and Biological Diversity in the Mediterranean' (SPAMI Protocol),¹³⁸⁴ which creates the obligation of the contracting parties to "protect, preserve and manage in a sustainable and environmentally sound way[,] areas of particular natural or cultural value, notably by the establishment of specially protected areas".¹³⁸⁵

The protocol, which applies to areas within and beyond national jurisdiction in the Mediterranean,¹³⁸⁶ adopts a system that allows sites designated as 'specially protected areas of Mediterranean interest' (SPAMIs) to be further included in the 'SPAMI list' as specified by the Protocol.¹³⁸⁷ Once in the list, the State Parties to the Protocol agree "to recognise the particular importance of these areas for the Mediterranean",¹³⁸⁸ and "to comply with the measures applicable to SPAMIs and not to authorise nor undertake any activities that might be contrary to the objectives for which the SPAMIs were established."¹³⁸⁹ The decision to include a proposed area that occurs partially or totally in the high seas on the SPAMI list is to be taken by consensus by the meeting of State Parties, "which shall also approve the management measures applicable to the area".¹³⁹⁰ De-listing procedures or changes in delimitation are also possible under the Protocol; however, this is only allowed when "important reasons for doing so" occur.¹³⁹¹ In this case, the safeguard of the environment and compliance with the obligations of the Protocol must be taken into account.

¹³⁸⁴ Protocol Concerning Specially Protected Areas and Biological Diversity in the Mediterranean (Barcelona, 1995), *Official Journal* L 322, 14/12/1999 pp. 0003 – 0017 [SPAMI Protocol]. The Protocol was adopted under the framework of the 1976 Convention for the Protection of The Mediterranean Sea Against Pollution, which entered into force on 12 Feb. 1978 and was revised in Barcelona, Spain on 10 June 1995 as the 'Convention for the Protection of the Marine Environment and the Coastal Region of the Mediterranean'. Online:

http://www.unep.ch/regionalseas/regions/med/t_barcel.htm (accessed on 24 Apr. 09).

¹³⁸⁵ SPAMI Protocol, Art. 3 (1) (a).

¹³⁸⁶ The areas beyond national jurisdiction in the Mediterranean are the areas beyond territorial seas, i.e., 12 nautical miles, as exclusive economic zones have not been declared in this area.

¹³⁸⁷ SPAMI Protocol, Art. 8. See T. Scovazzi (2004), *supra* note 1294.

¹³⁸⁸ SPAMI Protocol, Art. 8 (3) (a).

¹³⁸⁹ SPAMI Protocol, Art. 8 (3) (b).

¹³⁹⁰ SPAMI Protocol, Art. 9 (4) (c).

¹³⁹¹ SPAMI Protocol, Art. 10.

This seems to be the best suited model for the proposed implementing Agreement to UNCLOS, as the inclusion of such protected areas to a 'HSMPA list' by the Agreement's COP would be faster than negotiating a protocol for each HSMPA, which would require a certain number of ratifications in order to enter into force.

Annex I of the Mediterranean Protocol establishes the 'common criteria for the choice of protected marine and coastal areas that could be included in the SPAMI List'. In the same fashion, the proposed implementing Agreement to UNCLOS could dispose of Annexes establishing:

(i) the CBD GOODS biogeographical classification as the basis of the criteria for selection of HSMPAs' sites (see section 5.3 above) and its further revisions;

(ii) CBD COP 9 scientific criteria for identifying ecologically or biologically significant marine areas in need of protection in open-ocean waters and deep-sea habitats (see section 5.3 above);¹³⁹² and

(iii) the CBD approved scientific guide on MPAs network identification based on: ecologically and biologically significant areas; representativity; connectivity; replicated ecological features; and adequate and viable sites (see section 5.3 above).¹³⁹³

Having these criteria listed in the annex would facilitate eventual and necessary revisions of the scientific standards by the Agreement's COPs. Therefore, the proposed Agreement could expressly provide the COP with the powers to amend its annexes without the need for ratification, as provided for in the SPAMI Protocol¹³⁹⁴. This mechanism is also used in MEAs such as the London Convention, CITES¹³⁹⁵

¹³⁹² See CBD, COP 9, Decision IX/20, Annex I.

¹³⁹³ See CBD, COP 9, Decision IX/20, Annex II.

¹³⁹⁴ SPAMI Protocol, Art. 14.

¹³⁹⁵ *Convention on International Trade in Endangered Species of Wild Fauna and Flora*, 03 Mar. 1973, 993 U.N.T.S. 243 [CITES].

and the Montreal Protocol.^{1396,1397} Such an amendment would be binding upon all the parties, unless objected to within a certain period of time.¹³⁹⁸ Nevertheless, the proposed implementing Agreement should contain a provision specifying that any amendment or revision of the annexes shall be based on the ‘best scientific information’, which is in line with UNCLOS provisions. Therefore, if additional elements are considered important by scientists in order to select sites in need of protection, these could be incorporated in further revisions of the scientific criteria of the Agreement’s annexes.

This model could also facilitate the inclusion of a regional HSMPAs adopted by, for example any RFMO, into the proposed implementing Agreement’s ‘list’ by its Conference of the Parties.¹³⁹⁹ This would enhance cooperation and facilitate coordination amongst different sectors, since the inclusion of a MPA to the list would entail the implementation of EBM/EBFM. Therefore, after being included in the ‘list’ not only fishing impacts would be taken into account, but also other human impacts occurring in the respective area would be considered, such as, *inter alia*, deep seabed mining, acoustic pollution¹⁴⁰⁰ and shipping.

The designation of subsidiary bodies, including management and scientific bodies to the proposed implementing Agreement should also be considered during the negotiations of such an instrument.¹⁴⁰¹ Furthermore, in principle, DOALOS (see Chapter 1) could serve as the Secretariat for such an Agreement.

One of the major challenges to the creation of a system of HSMPAs concerns non-parties. The existence of third parties would still constitute a threat to the effective implementation of such HSMPAs network under an implementing

¹³⁹⁶ Montreal Protocol on Substances that Deplete the Ozone Layer, 19 Sept. 1987, 1522 U.N.T.S. 293 [Montreal Protocol].

¹³⁹⁷ See R. Churchill, G. Ulfstein (2000), *supra* note 1378.

¹³⁹⁸ See *ibid*, for detailed analysis of this tacit amendment procedure.

¹³⁹⁹ An example of this model was the inclusion of the Pelagos Sanctuary for Mediterranean Marine Mammals into the SPAMI List. See G. Notarbatolo-Di-Sciara, et al (2008) *supra* note 1375.

¹⁴⁰⁰ See: J. Hardwood, “Mitigating the Effects of Acoustic disturbance in the Oceans” (2002) 12 *Aquatic Conservation: Marine and Freshwater Ecosystems* 485-488; H. Dotinga, A. Elferink, “Acoustic Pollution in the Oceans: The search for Legal Standards” (2000) 31 *ODIL* 151-182.

¹⁴⁰¹ See R. Churchill, G. Ulfstein (2000), *supra* note 1378.

Agreement to UNCLOS. However, it is noteworthy that all of the 159 contracting-parties¹⁴⁰² to UNCLOS do have the duty to: protect and preserve the marine environment, to cooperate “in the conservation and management of living resources”¹⁴⁰³ in the high seas, as well as to cooperate “in formulating and elaborating international rules, standards and recommended practices and procedures (...) for the protection and preservation of the marine environment (...)”.¹⁴⁰⁴ As noted by Scovazzi:

“[The duty to cooperate] implies a duty to act in good faith in entering into negotiations with a view to arriving at an agreement and in taking into account the positions of the other interested states. As remarked by the International Court of Justice in the judgments of 20 February 1969 on the *North Sea Continental Shelf* cases, states “are under an obligation so to conduct themselves that the negotiations are meaningful, which will not be the case when either of them insists upon its own position without contemplating any modification of it”. According to the Order rendered on 3 December 2001 by the International Tribunal for the Law of the Sea in the *MOX Plant* case, “the duty to co-operate is a fundamental principle in the prevention of pollution of the marine environment under Part XII of the Convention and general international law”. It can thus be concluded that acting in good faith in discussions and negotiations on how to address the threats and risks to vulnerable marine ecosystems and biodiversity beyond national jurisdiction is the content of a true legal obligation incumbent upon all states.”¹⁴⁰⁵

Therefore, even though the proposed implementing Agreement would only be binding on its Parties, UNCLOS Parties have the duty to at least participate in good faith in the negotiations of such an Agreement.

5.5 Conclusions

With the current level of fish stocks in decline around the world and increasing pressures from fishing activities in marine areas beyond national jurisdiction (see Chapter 2), a shift in current fisheries management is imperative. This would encompass the implementation of ecosystem-based management (see

¹⁴⁰² DOALOS, online:

<http://www.un.org/Depts/los/reference_files/chronological_lists_of_ratifications.htm#The%20United%20Nations%20Convention%20on%20the%20Law%20of%20the%20Sea>

(accessed 26 Sep. 09).

¹⁴⁰³ UNCLOS, Art. 118.

¹⁴⁰⁴ UNCLOS, Art. 197.

¹⁴⁰⁵ T. Scovazzi (2004) *supra* note 1294, at 06.

Chapter 1). It was seen in this Chapter that the creation of marine protected areas in areas beyond the limits of national jurisdiction constitute a sound instrument to the implementation of EBM/EBFM in these areas. In addition, the establishment of MPAs has been proven to contribute to fishing resources as a consequence of such an enhanced protection. Fisheries resources increase even in areas outside the limits of the MPA as a result of spill-over. Moreover, critical habitats and features (e.g. seamounts, cold-water corals, etc.) can be protected from destructive practices (see Chapter 2).

In order to have a system of effective HSMPAs, they should be created in a way that incorporates all the possible uses and considers all the different impacts that occur within the respective site (i.e. fisheries, pollution, noise pollution, shipping, mining, bioprospecting etc.), so that use restrictions can be applied to all activities and not only to fishing. The degree of such restrictions varies depending on the category of the HSMPA. For example, Marine Nature Reserves have a high level of protection, and therefore use is restricted to scientific research, while the sustainable use of resources is allowed in a Managed Resource Protected Area.¹⁴⁰⁶ Moreover, the use of mechanisms such as zoning would allow certain activities to take place in a particular area of the MPA, but not in others, as established by its respective management plan.

In view of this, a comprehensive regime for the establishment of HSMPAs needs to be created with a means to coordinate all different sectors and entities with distinct mandates in each marine area in need of protection. While regional initiatives in creating HSMPAs are extremely important (as seen in section 5.4 (a) above), there is a need for an international legal instrument capable of providing guidelines and imposing obligations to the establishment of an ecologically coherent network of HSMPAs based on biogeographic classification.

UNCLOS provides the legal framework for all activities occurring in the seas and provides for the obligation of States to adopt conservation measures of living

¹⁴⁰⁶ In accordance to the non-binding IUCN categorisation of MPAs. See G. Kelleher (1999), *supra* note 1217.

resources in the high seas, as well as the protection of marine habitats. The CBD complements UNCLOS, by conducting studies and adopting recommendations on bioregionalisation of the marine areas beyond national jurisdiction based on biogeographical criteria for the selection of sites in need of protection.

Within this backdrop, it is suggested that an implementing Agreement to UNCLOS should be adopted incorporating recent developments of CBD COP recommendations, which have been endorsed by UNGA resolutions on oceans and the law of the sea.

The proposed Agreement would have the format of an umbrella/framework treaty providing for the implementation of general principles, including EBM/EBFM and the obligation to establish a system of ecologically coherent MPAs in marine areas beyond national jurisdiction based on GOODS biogeographical classification (see section 5.4. (b) (iii) above). A 'HSMPAs list' would be created under the framework Agreement following the example of the SPAMI Protocol. Moreover, the Agreement would establish a Conference of the Parties, which would have the mandate to include marine areas in need of protection to the 'HSMPAs list' under the Agreement. Once in the list, the parties to the Agreement would have the duty to observe the objectives and use restrictions of the respective MPA.

An implementing Agreement such as the one proposed in this Chapter may not be initially accepted by the vast majority of UNCLOS parties. However, the freedom of the high seas, including the right to fish in the high seas is accompanied by the condition to establish conservation measures. Therefore, the designation of HSMPAs is in perfect coherence with such obligations. Moreover, UNCLOS parties have the duty to cooperate on the implementation of such conservation measures. Therefore, the negotiation of such an Agreement should be understood as part of such obligation. As noted by Roberts:

"We can restore the life and habitats of the sea because it is in everyone's interest that we do so. The same large-scale networks of marine reserves, complemented by other measures of fish and habitat protection, best serve the interests of both commerce and conservation. You can have exploitation with protection, because

reserves help sustain catches in surrounding fishing grounds. But you cannot have exploitation without protection, not in the long term.¹⁴⁰⁷

If we expect to continue benefiting from the ecosystem services provided by the oceans and respective biological components, the negotiation of a new implementing Agreement to UNCLOS on EBM/EBFM should be seriously considered. Now is the time to negotiate such an instrument, given the momentum initiated by forums such as the CBD COPs, UNGA, FAO, and even regional organisations, such as OSPAR and CCAMLR in discussing HSMPAs. This would fill a gap that could not be envisioned during the negotiations of UNCLOS, when scientific information was limited in regards to biological diversity in marine areas beyond national jurisdiction. Moreover, the adoption of such an Agreement would reflect the evolution of UNCLOS in the light of current developments and threats to the marine ecosystems, and safeguard its relevance as the 'Constitution for the Oceans'.

¹⁴⁰⁷ C. Roberts (2007), *supra* note 1019, at 387.

CONCLUSION

Overfishing has set an unprecedented crisis upon the oceans. The rapid decline of fish stocks now extends from coastal waters through to the deep waters of marine areas beyond national jurisdiction. As Roberts et al observe: “The deep sea, that final bastion of the remote unknown, is no longer safe from harm.”¹⁴⁰⁸ The narrow sight of the traditional fisheries management – focusing solely on managing single target species – cannot override the fisheries crisis we face today. In fact, according to Roberts, “[d]isregarding the ecosystems in which target fish species live is perhaps the most egregious failure of fisheries management.”¹⁴⁰⁹ In order to reverse the pervasive degradation of marine habitats and the decline of its living resources it is important to understand how marine ecosystems operate. Species do not exist in isolation from one another, nor are they disconnected from particular habitats. By understanding the relationships that occur within marine ecosystems, it is possible to manage fisheries activities in a sustainable way. An increasing number of scientists are calling for the implementation of ecosystem-based fisheries management, which emphasises the preservation of ecosystems’ structure and function rather than elements of the ecosystem. In the light of these new developments in fisheries management and science, this thesis (i) analysed the law-making process of ecosystem-based fisheries management, and (ii) explored the means by which EBFM could be globally operationalized in marine areas beyond national jurisdiction.

The Law-Making of EBFM in ABNJ

Fisheries management should aim to preserve the structure and function of marine ecosystems, rather than focus solely on specific elements of the

¹⁴⁰⁸ C. Roberts, J. Hawkins, F. Gell, “The Role of Marine Reserves in Achieving Sustainable Fisheries” (2005) 360 *Phil. Trans. R. Soc.* 123-132, at 123.

¹⁴⁰⁹ C. Roberts (2007), *supra* note 1019, at 349.

ecosystem.¹⁴¹⁰ Such a shift in focus means increasing the protection of critical marine habitats, such as seamounts and cold water corals, and paying special attention to the relationships between species. As noted by Roberts: “Those charged with looking after the oceans set themselves unambitious management targets that simply attempt to arrest declines, rather than rebuild to the richer and more productive states that existed in the past.”¹⁴¹¹ Rebuilding marine ecosystems is rather a recent aim in fisheries management. Yet, the international community is beginning to understand the need for such a shift in the goal of fisheries management, as demonstrated by, *inter alia*, the recent trends of UNGA resolutions on oceans and law of the sea and sustainable fisheries. In light of these recent developments, this study examined the law-making of EBFM in marine areas beyond national jurisdiction in the context of the 1982 United Nations Convention on the Law of the Sea. As observed by Brunnée: “Through interpretative processes, or processes designed to promote compliance, law is remade as the scope or content of norms shift and give rise to new normative understandings.”¹⁴¹² With this in mind, UNCLOS was analysed in the light of recent developments in international policy and law concerning ecosystem-based fisheries management in ABNJ.

It was demonstrated throughout this study that, in general terms, UNCLOS’ provisions on the conservation of living resources in the high seas can be interpreted in the light of recent developments in international law regarding ecosystem-based fisheries management. However, the means for implementing EBFM in ABNJ will vary according to each particular case, and will also depend on the law applicable between the concerned parties. UNCLOS provides a general framework for the conservation of living resources in the high seas, which allows for the implementation of EBFM, even though some thresholds¹⁴¹³ are set far below the appropriate levels required to rebuild ecosystems. The fact that UNCLOS was negotiated when there was insufficient knowledge about the richness of marine biodiversity and ecosystems beyond the areas of national jurisdiction contributed to

¹⁴¹⁰ See Chapter 1.

¹⁴¹¹ C. Roberts (2007), *supra* note 1019, at xii.

¹⁴¹² J. Brunnée (2002), *supra* note 232, at 36.

¹⁴¹³ For example, Article 119 sets MSY as a target for allowable catch. See Chapter 1 for discussion on MSY.

the incorporation of unambitious thresholds such as ‘maximum sustainable yield’ into the Convention. Nevertheless, the general provisions on conservation of living resources in the high seas can still be used as a framework for the development of more specific guidelines or rules that aim to implement EBFM. UNFSA provides a good example of this. The Fish Stocks Agreement supplements UNCLOS’ provisions on straddling and highly migratory fish stocks by incorporating detailed guidelines and emerging approaches for the conservation and management of those stocks.¹⁴¹⁴ For instance, UNFSA’s parties are obliged to apply the precautionary¹⁴¹⁵ and ecosystem-based approaches when managing fisheries for straddling and highly migratory stocks in the high seas.¹⁴¹⁶ However, UNFSA only applies to these stocks and leaves discrete high seas stocks unregulated. As discussed in Chapter 2, most discrete high seas stocks comprise deep sea species, which are extremely vulnerable to exploitation due to their biological characteristics. For this reason, the general provisions of UNCLOS on conservation of living resources on the high seas alone cannot deter the severe impacts of fishing for deep sea species as the levels of exploitation for those species require the application of reference points well below maximum sustainable yield.¹⁴¹⁷ Nonetheless, the general nature of those provisions allows for their interpretation in the light of recent developments in international policy and law, including soft-law instruments.¹⁴¹⁸

According to the 1969 Vienna Convention on the Law of Treaties, a number of elements are to be taken into account when interpreting a treaty, including: (i) subsequent agreements between the parties on the interpretation of the treaty or application of its provisions, and (ii) relevant rules of international law applicable between the parties.¹⁴¹⁹ Therefore, treaties should be interpreted within the context of the international legal system to which they belong. In effect, judicial decisions such as the *Oil Platform Case*¹⁴²⁰ illustrate how this principle of systemic integration of

¹⁴¹⁴ See Chapter 1.

¹⁴¹⁵ See Article 6 of UNFSA. According to UNFSA, PA must also be implemented within areas of national jurisdiction.

¹⁴¹⁶ See Chapter 1.

¹⁴¹⁷ See Chapter 2.

¹⁴¹⁸ See Chapter 1.

¹⁴¹⁹ VCLT, Art. 31 (3) (a) and (c).

¹⁴²⁰ *Oil Platforms*, ICJ Reports 2003, *supra* note 119, Para. 41.

Article 31 (3) (c) of the Vienna Convention should be applied to treaty interpretation. The WTO *Shrimp-Turtle case*¹⁴²¹ also shows that certain terms within treaties have an evolutionary character and therefore, need to be interpreted in the light of new developments in international policy and law.¹⁴²² Accordingly, it was argued that due to the general and evolutionary characteristics of UNCLOS' provisions on conservation and management of living resources in the high seas their interpretation has to observe new developments in relevant international legal and policy instruments.

Within this context, Chapter 1 discussed the relationship between UNCLOS and, *inter alia*, CBD regarding the implementation of EBFM in ABNJ. As seen in this Chapter, the CBD not only applies to terrestrial biodiversity, but also to marine biodiversity. Therefore, the interaction between this Convention and UNCLOS is particularly relevant. While Article 22 of CBD expressly establishes that its parties “shall implement this Convention with respect to the marine environment consistently with the rights and obligation of States under the law of the sea”, it also provides that “where the exercise of [rights and obligations under any existing international agreement] would cause a serious damage or threat to biological diversity”, the CBD shall prevail. As noted by Boyle and Chinkin: “While in general terms the effect of Article 22 is to ensure that UNCLOS will normally prevail, states parties to the CBD cannot rely on UNCLOS to justify – or tolerate – fishing which causes or threatens serious damages to biodiversity.”¹⁴²³ According to UNCLOS' provisions on its relationship with other agreements, the prevalence of CBD in this case would be acceptable as States parties to UNCLOS can conclude *inter se* agreements “modifying or suspending the operation of [UNCLOS] provisions” as long as this modification is not incompatible with the objective, purpose and basic principles of the Convention.¹⁴²⁴ As discussed in Chapters 1 and 5, the protection of marine biodiversity, even though not expressly provided for by UNCLOS, is not incompatible with its objective, purpose or principles as demonstrated by its

¹⁴²¹ WTO, *Shrimp-Turtle Case – Report of the Appellate Body* (1998) *supra* note 116, Para. 127.

¹⁴²² See Chapter 1.

¹⁴²³ A. Boyle, C. Chinkin (2007), *supra* note 105, at 256.

¹⁴²⁴ UNCLOS, Art. 311 (3).

provisions on conservation of marine living resources, as well as on the protection and preservation of the marine environment. Therefore, States parties to UNCLOS who are also parties to the CBD have the duty to “as far as possible and as appropriate adopt measures relating to the use of biological resources to avoid or minimize adverse impacts on biological diversity”.¹⁴²⁵ Even though this provision lacks strong language, it should still be taken into account when interpreting UNCLOS provisions on freedom of fisheries in the high seas. According to the CBD, ‘ecosystems’ are included in the definition of biological diversity.¹⁴²⁶ Therefore, such a requirement to avoid adverse impacts on biological diversity is in consonance with EBFM. As for initiatives related to *in-situ* conservation, which also conforms to EBFM, the CBD Secretariat has been especially active in coordinating working groups for the development of a criterion of identification of marine areas in need of protection. The CBD COP 9 approved such a criterion and acknowledged the ‘Global Open Oceans and Deep Seabed Biogeographic Classification’¹⁴²⁷ developed by a group of experts in order to help identify sites where marine protected areas beyond national jurisdiction should be established.¹⁴²⁸ Thus, when interpreting UNCLOS’ provisions on the conservation of living resources in the high seas, relevant CBD provisions should be observed.¹⁴²⁹ Moreover decisions of CBD COPs regarding the application of ecosystem-based approach should also be taken into account when interpreting the aforementioned UNCLOS’ provisions. Although not binding, these decisions can influence the formation of *opinio juris*,¹⁴³⁰ and as noted by Brunnée:

“COPs and their subsidiary bodies, in providing stable forums for exchange and examination of problems at hand from different angles, are particularly well placed

¹⁴²⁵ CBD, Art. 10 (b).

¹⁴²⁶ CBD, Art. 2 defines Biological diversity as: “(...)the variability among living organisms from all sources including, *inter alia*, terrestrial, marine and other aquatic ecosystems and the ecological complexes of which they are part: this includes diversity within species, between species and of ecosystems.”

¹⁴²⁷ UNEP/CBD/COP/9/INF/44, *supra* note 16.

¹⁴²⁸ See Chapters 3 and 5.

¹⁴²⁹ Obviously, this is only applicable between the same UNCLOS and CBD parties.

¹⁴³⁰ Here again, the same can be said: CBD COP decisions can be influential on the interpretation of UNCLOS only in regards to the same parties. See Chapter 1; See also J. Brunnée (2002), *supra* note 232.

to facilitate the continuous interactional processes that allow shared understandings to evolve, and collective identities and concerns to be shaped.”¹⁴³¹

Chapter 1 noted that the acknowledgement of EBFM as a necessary fisheries management approach has been growing within forums like CBD COPs, UNGA and FAO COFI. Moreover, soft-law instruments such as the FAO Code of Conduct for Responsible Fisheries, its respective International Plans of Action and the FAO International Guidelines for the Management of Deep-sea Fisheries in the High Seas also reflect the acceptance of EBFM at an international level. All of this provides evidence of a gradual development of States’ *opinio juris* concerning the need for EBFM implementation. Furthermore, international policy instruments such as Chapter 17 of Agenda 21, the Rio Declaration on Environment and Development, the WSSD Plan of Implementation should also be taken into account when interpreting UNCLOS’ provisions on conservation of living resources in the high seas. These instruments set the agenda for political environmental targets, some of which did evolve into legally-binding agreements, contributing to the development of international law.¹⁴³² For example, it was seen in Chapter 1 that the commitment to convene a conference on straddling and highly migratory fish stocks, which eventually culminated with the adoption of UNFSA, emerged during the Rio Conference on Environment and Development and is part of the text of Chapter 17 of Agenda 21.

The necessary shift in global fisheries management requires a strict control of fishing methods. Much is at stake when fishing gears are utilized in an indiscriminate manner. With this in mind, Chapter 2 discussed how EBFM can help avoid the collateral impacts of fishing methods in ABNJ. It was also demonstrated that soft-law instruments such as the Guidelines to Reduce Sea Turtle Mortality in Fishing Operations,¹⁴³³ IPOA-Sharks and IPOA-Seabirds, negotiated under the auspices of FAO, provide some evidence of the acceptance by States of the need to avoid collateral impacts of fishing methods, such as bycatch. These instruments

¹⁴³¹ J. Brunnée (2002), *supra* note 232, at 51.

¹⁴³² See Chapter 1.

¹⁴³³ *FAO Fisheries Report n. 765* (2005), *supra* note 591, Appendix E on *Guidelines to Reduce Sea Turtle Mortality in Fishing Operations*.

provide non-binding guidelines for, *inter alia*, developing scientific research, data collection and by-catch mitigation technology, as well as the use of gear and bait alternatives.

In avoiding by-catch, States implicitly recognize the need for multi-species management. The large-scale high seas driftnet moratorium imposed by UNGA Resolution A/RES/46/215¹⁴³⁴ provides strong evidence of *opinio juris* about the need to avoid by-catch and other fishing impacts. As seen in Chapter 2, driftnets contribute to significant impacts on the biomass of target species, high rates of bycatch of seabirds, marine mammals and sea turtles, as well as high rates of dropout of non-target fish species. This large-scale driftnet ban in the high seas is now considered a rule of customary law.¹⁴³⁵

Yet, the same cannot be said about bottom trawling. Even though the scientific community has provided strong evidence of the severe impacts of bottom trawling on crucial marine habitats such as seamounts and cold water corals, policy-makers are still opposed to a complete ban of this particular fishing method in ABNJ. In the midst of the discussion on the impacts of bottom trawling, UNGA Resolution A/RES/61/105 (2006), adopted by consensus, urged RFMOs and flag States¹⁴³⁶ to ban this fishing method in areas beyond national jurisdiction where vulnerable ecosystems¹⁴³⁷ are found.¹⁴³⁸ Following the adoption of this resolution, a number of States¹⁴³⁹ and some RFMOs have agreed on the closure of areas to bottom trawling, indicating some recognition about the need to protect vulnerable marine habitats. This demonstrates how UNGA resolutions can contribute to the gradual evolution of the law of the sea and to the development of *opinio juris*.¹⁴⁴⁰

¹⁴³⁴ UNGA Res. A/RES/46/215 (1991). This resolution was adopted by consensus. See discussion in Chapter 2.

¹⁴³⁵ See Chapter 2.

¹⁴³⁶ In areas where RFMOs are inexistent.

¹⁴³⁷ Such as seamounts and cold water corals.

¹⁴³⁸ UNGA Resolution A/RES/61/105 (2006), Paragraph 83 (b). See Chapter 2.

¹⁴³⁹ For example, in the North Western Pacific Ocean, Japan, the Republic of Korea, the Russian Federation and the United States adopted interim measures for the management of high seas bottom fisheries in February 2007. See Chapter 2.

¹⁴⁴⁰ See Chapter 2.

It was seen in Chapter 3 that in order to overcome the limitations posed by the existing regime that is based on political and legal boundaries rather than on natural boundaries, it is imperative to achieve compatibility between conservation measures adopted within and beyond marine areas of national jurisdiction. In view of this, UNCLOS establishes a general obligation for States to seek cooperation on the adoption of conservation measures for straddling and highly migratory fish stocks. The 1995 UNFSA goes further by establishing a series of principles, including the ecosystem-based approach and the precautionary approach, which must be observed in establishing such compatible conservation measures. The problem is that UNFSA has only 75 parties to date, as opposed to UNCLOS' 159 parties. This discrepancy in the number of parties contributes to the fragmentation of the international fisheries regime.

As a means to overcome this fragmentation, regional fisheries management organisations have an essential role to play.¹⁴⁴¹ By revising their mandates and incorporating UNFSA's standards, they can help integrate the fisheries regime. Moreover, by managing discrete stocks fisheries with the same or even higher standards than the ones provided for by UNFSA in regards to straddling and highly migratory fish stocks, RFMOs can fill the current gap of international law regarding the regulation of discrete stocks fisheries. For example, they can and should apply the FAO International Guidelines for the Management of Deep-sea Fisheries in the High Seas¹⁴⁴² to the deep-sea species under their mandates. By doing so, RFMOs' members would be acting in accordance with the obligations imposed by UNCLOS to 'take into account' "any generally recommended international minimum standards" for the conservation of living resources in the high seas.¹⁴⁴³ It is noteworthy that States members of RFMOs, which are parties to UNCLOS are obliged to comply with UNCLOS provisions on conservation of living resources in

¹⁴⁴¹ See Chapter 4.

¹⁴⁴² FAO (2009), *supra* note 168.

¹⁴⁴³ UNCLOS, Art. 119 (a). It was seen in Chapter 1 that the obligation to 'take into account' is not sufficiently strong. In light of this, RFMOs should adopt high standards for the conservation of deep-sea species in order to strengthen the current fisheries regime and ensure the implementation of EBFM.

the high seas.¹⁴⁴⁴ If they do not comply with those provisions, the dispute settlement mechanisms of Part XV can be invoked.¹⁴⁴⁵

In addition, RFMOs can and should create their own conservation standards¹⁴⁴⁶ based on EBFM. By implementing EBFM based conservation measures, these organisations can facilitate the widespread acceptance of ecosystem-based fisheries management and its implementation at a global level.¹⁴⁴⁷ Gradually, the acceptance of EBFM has been confirmed by the amendment of some RFMOs' treaties, which now incorporate this approach.¹⁴⁴⁸ Furthermore, recently created RFMOs have also incorporated elements of EBFM into their treaties.¹⁴⁴⁹ However, States members of these organisations can also oppose conservation measures through opt out mechanisms often allowed by RFMOs' decision-making procedures, thereby undermining the implementation of EBFM. In order to overcome the conservation problems associated with these objection procedures, a number of these RFMOs Conventions impose restrictive conditions under which opt out mechanisms can be invoked.¹⁴⁵⁰ The establishment of these conditions can prevent the indiscriminate use of opt out mechanisms by States-members of RFMOs and therefore enhance compliance with conservation measures based on EBFM.

Notwithstanding the increasing acceptance of EBFM among States and RFMOs, it was seen in Chapter 4 that in practice only a few of these organisations have been effectively adopting conservation measures based on ecosystem-based approach and making use of precautionary reference points. CCAMLR has provided the best example in the adoption of conservation measures compatible with EBFM and PA to date. The measures adopted by CCAMLR shed some light on possible means for implementation of EBFM by other fisheries organisations, including

¹⁴⁴⁴ UNCLOS, Art. 117.

¹⁴⁴⁵ See Chapter 4; see also *Southern Bluefin Tuna Cases - Provisional Measures*, *supra* note 1136, and *Southern Bluefin Tuna Arbitration* (2000), *supra* note 195.

¹⁴⁴⁶ UNCLOS, Art. 119 (1) (a).

¹⁴⁴⁷ See UNCLOS, Art. 119 (1) (a). See also Chapter 4.

¹⁴⁴⁸ E.g. NAFO has recently amended its Convention incorporating EBA. See Chapter 4.

¹⁴⁴⁹ E.g. SEAFO, but see Chapter 4 for more details.

¹⁴⁵⁰ E.g., SEAFO, WCPFC, NAFO 2007 amendment. See Chapter 4.

through marine spatial planning.¹⁴⁵¹ As discussed in Chapters 3 and 5 and summarized below, the operationalization of EBFM can be facilitated by the adoption of marine spatial planning in order to indentify areas in need of protection.

In light of what was discussed, it stands to reason that the systemic interpretation of UNCLOS provides a basis for the implementation of EBFM in ABNJ at a global level. A number of international policy¹⁴⁵² and soft-law instruments¹⁴⁵³ should be taken into account when interpreting UNCLOS provisions on conservation and management of living resources in the high seas due to the general and evolutionary character of these provisions. Although not legally-binding, some of these instruments provide, to some extent, evidence of States' *opinio juris* on the acceptance of EBFM. Moreover, binding agreements and standards developed by RFMOs through the adoption of conservation measures should also be observed when interpreting UNCLOS in the context of EBFM. However, the actual implementation of EBFM is more challenging than the mere recognition of its acceptance. Even though the adoption of conservation measures based on EBFM by RFMOs is imperative since these organisations are the vehicle for cooperation among States as envisioned by UNCLOS and UNFSA,¹⁴⁵⁴ RFMOs alone cannot overcome the current status of fisheries decline and marine habitat degradation we face today. As discussed in Chapter 5, the required paradigm shift in fisheries management in ABNJ can, nevertheless, be achieved by the establishment of an ecologically coherent network of marine protected areas. This could also promote the harmonization of conservation measures as well as better coordination among RFMOs, States and other relevant international organisations. In light of this, it was suggested that such a network of MPAs should be established in marine areas beyond national jurisdiction so as to operationalize the global implementation of EBFM, as noted below.

¹⁴⁵¹ See Chapters 4 and 5.

¹⁴⁵² Such as the Stockholm Declaration, Rio Declaration on Environment and Development, Chapter 17 of Agenda 21, WSSD Plan of Implementation, etc.

¹⁴⁵³ Such as the FAO Code of Conduct for Responsible Fisheries and its IPOAs, the FAO International Guidelines for the Management of Deep-sea Fisheries in the High Seas, UNGA Resolutions on oceans and the law of the sea and on sustainable fisheries, CBD COP decisions, etc.

¹⁴⁵⁴ See Chapter 4.

Implementing EBFM in Marine Areas beyond National Jurisdiction

The fragmented nature of the current international fisheries regime does not contribute to a comprehensive implementation of EBFM in marine areas beyond national jurisdiction. It was argued in Chapter 5 that a global legal instrument is needed in order to operationalize EBFM in ABNJ through the establishment of an ecologically coherent network of MPAs. For this purpose, it was recommended that an implementing agreement to UNCLOS would constitute the appropriate means to achieve this goal.¹⁴⁵⁵

Scientific research has demonstrated that the creation of marine protected areas is the best available tool for rebuilding ecosystems.¹⁴⁵⁶ By rebuilding ecosystems, fish will become abundant once again and biodiversity will flourish, ensuring the health and resilience of the oceans. In turn, this will also ensure that fisheries activities taking place outside of the non-take zones of the respective MPAs can carry on for the unforeseeable future.

Accordingly, an implementing agreement, providing for the implementation of EBFM/EBM in marine areas beyond national jurisdiction through the establishment of an ecologically coherent network of MPAs would not contradict UNCLOS, but instead would supplement its provisions regarding the obligation of States to adopt conservation measures for living resources in the high seas¹⁴⁵⁷ and on the protection of the marine environment¹⁴⁵⁸. In view of this, the creation of MPAs in ABNJ can be interpreted as one of the conservation measures that States parties to UNCLOS are obliged to adopt in exchange for the right to fish in the high seas. As noted in Chapter 5, the freedom to fish in the high seas is subject to conditions such as the adoption of conservation measures for the living resources of the high seas.¹⁴⁵⁹ But since UNCLOS does not specifically regulate the creation of MPAs, the

¹⁴⁵⁵ See Chapter 5.

¹⁴⁵⁶ See Chapter 5.

¹⁴⁵⁷ UNCLOS, Art. 117.

¹⁴⁵⁸ UNCLOS, Art. 194 (5).

¹⁴⁵⁹ UNCLOS, Art. 116.

adoption of such an implementing agreement is imperative to ensure the achievement of UNCLOS' purposes on conservation of marine living resources.

The proposed implementing agreement should be based on scientific recommendations, including those prepared by the CBD group of experts on biogeographical classification.¹⁴⁶⁰ Biogeographical partition of the oceans facilitates ecosystem-based management because natural environmental boundaries are observed.¹⁴⁶¹ With this in mind, the CBD group of experts on biogeographical classification took into account biogeographic provinces as proposed by Longhurst¹⁴⁶² in 1998, as well as other recent studies, and developed a new biogeographical classification for marine areas beyond national jurisdiction. The group of experts identified 29 provinces for pelagic bioregions and three large depth zones for benthic regions.¹⁴⁶³ Even though this study was merely 'acknowledged' by CBD COP 9, it represents an important step towards the identification of marine areas beyond national jurisdiction in need of protection. Within this backdrop, the proposed implementing agreement to UNCLOS on the implementation of EBFM/EBM in ABNJ through the establishment of an ecologically coherent network of marine protected areas should be based on biogeographic classification.

In respect to its form, the proposed agreement could follow the format of the 1995 SPAMI Protocol.¹⁴⁶⁴ The Protocol establishes a list of protected areas and whenever a particular marine site is included in this list,¹⁴⁶⁵ the parties become bound by the restrictions applicable to that new protected area. Based on this, the proposed UNCLOS implementing agreement could establish an 'MPA list,' including different categories of MPAs,¹⁴⁶⁶ to enable further incorporation of sites in need of protection through the decisions adopted at its conference of the parties.

¹⁴⁶⁰ See Chapter 3.

¹⁴⁶¹ See Chapter 3.

¹⁴⁶² A. Longhurst, *Ecological Geography of the Sea* (San Diego: Elsevier Academic Press, 1998).

¹⁴⁶³ UNEP/CBD/COP/9/INF/44, *supra* note 16.

¹⁴⁶⁴ SPAMI Protocol, *supra* note 1384.

¹⁴⁶⁵ The inclusion of sites to the SPAMI list is done by consensus during the meeting of the States parties to the Protocol.

¹⁴⁶⁶ The proposed agreement should establish categories of MPAs. The generally accepted categorization of protected areas to date is the one developed by IUCN. However, the IUCN categories apply to land and marine areas. See Chapter 5.

Once a site is incorporated into this MPA list, all parties to the agreement would have to comply with the restrictions applied to the specific category of MPA under which it was created.

The proposed agreement should contain minimum standards such as the use of ecosystem modelling tools developed by the best available science. The agreement should also provide for, *inter alia*:¹⁴⁶⁷

- (i) The establishment of marine spatial planning in the high seas based on the GOODS biogeographical classification and its further revisions;
- (ii) The definition of EBFM, EBM and MPAs, including a categorization of MPAs to be established in ABNJ;
- (iii) Means for coordination between the MPAs established by RFMOs and other regional organisations and those established under the auspices of the proposed agreement;
- (iv) The obligation to adopt an ecosystem-based management plan for all MPAs established under the auspices of the agreement;
- (v) Enforcement and compliance mechanisms;
- (vi) Dispute Settlement mechanisms compatible with UNCLOS Part XV;
- (vii) A Conference of the Parties to be regularly held in order to adopt measures necessary for the operationalization of the agreement, such as the inclusion of recommended areas in need of protection on the list of MPAs;
- (viii) The CBD approved scientific criteria for identifying ecologically or biologically significant marine areas in need of protection in open-ocean waters and deep-sea habitats, and the CBD scientific guide on MPAs network identification and respective further revisions.¹⁴⁶⁸

The adoption of an implementing agreement such as this can enable States and international organisations to shift the current fisheries management paradigm, allowing ecosystems to rebuild. UNCLOS recognises that “the problems of the

¹⁴⁶⁷ See Chapter 5 for further details.

¹⁴⁶⁸ CBD, COP 9, Decision IX/20, Annexes I and II.

ocean space are closely interrelated and need to be considered as a whole”.¹⁴⁶⁹ An implementing agreement to UNCLOS based on principles of ecosystem management and spatial marine management in ABNJ can contribute to a better coordination among all of the oceans’ stakeholders. Of course, it is not expected that all the challenges regarding the implementation of the agreement will be immediately resolved; however, the negotiation of such an agreement could be the first step towards marine ecosystem-based management on a global scale. Based on the recognition that EBFM is a necessary approach to reverse the critical and current status of fisheries decline, the adoption of the proposed agreement would constitute a natural evolution of UNCLOS towards a new integrated international fisheries regime.

The international community is facing its last call to take action and implement EBFM in ABNJ. Scientists are still hopeful that marine ecosystems can rebuild themselves and the health and resilience of the oceans can be restored if at least 20% of the oceans are protected.¹⁴⁷⁰ But, time is pressing. Scientific estimations project a global collapse of fish stocks by 2048 if marine biodiversity and its ecosystems are not restored, through, *inter alia*, the creation of marine reserves.¹⁴⁷¹ Since discussions on the protection of marine ecosystems in ABNJ have been intensified in a number of international forums,¹⁴⁷² States should take advantage of this momentum to initiate the negotiations of the proposed implementing agreement. New rules of international law on MPAs in ABNJ could propitiate the required shift in fisheries management before it is too late. Even though UNCLOS provisions on conservation of living resources in the high seas can be interpreted in the light of new developments in international policy and law, the adoption of such an agreement can operationalize the implementation of EBFM and crystallize a comprehensive international fisheries management regime.

¹⁴⁶⁹ UNCLOS, third preambular paragraph.

¹⁴⁷⁰ Currently only about 0.6 % of the oceans are covered by MPAs. See C. Roberts (2007), *supra* note 1019; See also B. Worm, et al, (2009), *supra* note 8.

¹⁴⁷¹ B. Worm, et al (2006) *supra* note 17.

¹⁴⁷² For example, these discussions have been taking place in CBD COPs and *Ad Hoc* Working Groups, UNGA, ICP, the UN *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, FAO COFI, etc. See Chapter 1.

The adoption of UNCLOS in 1982 reflected not only many years of negotiations, but also the need for a change in the legal regime for the oceans. Regardless of how arduous UNCLOS' negotiations were, in the end States were able to compromise and overcome major polarized opinions in order to ensure a comprehensive legal order of the seas. Today, the regime established by UNCLOS is universally accepted and most of its provisions are considered rules of customary law. Twenty-seven years have passed since the adoption of UNCLOS, and it is natural that some circumstances have changed, science has advanced, and threats to the oceans' have intensified. In light of this, conservation of living resources in ABNJ requires stricter and more detailed regulation. But UNCLOS, in its visionary form, presents a solution to these emerging issues, namely, the obligation imposed upon States to cooperate in the conservation and management of living resources in the high seas,¹⁴⁷³ and their duty to protect and preserve the marine environment.¹⁴⁷⁴ Considering the gradual emergence of *opinio juris* on the need to implement EBFM in ABNJ to effectively protect living marine resources and vulnerable marine habitats,¹⁴⁷⁵ the negotiation of such an implementing agreement should be understood as compliance with UNCLOS' obligations on cooperation and on the protection of the marine environment. Ultimately, the adoption of such an agreement would safeguard UNCLOS' ability to evolve in the light of emerging threats to the marine environment and, most importantly, to rebuild the oceans most valuable asset: the complex web that helps sustain life on this planet.

¹⁴⁷³ UNCLOS, Art. 118.

¹⁴⁷⁴ UNCLOS, Art. 192.

¹⁴⁷⁵ Provided by UNGA Resolutions, CBD COPs, FAO instruments, etc.

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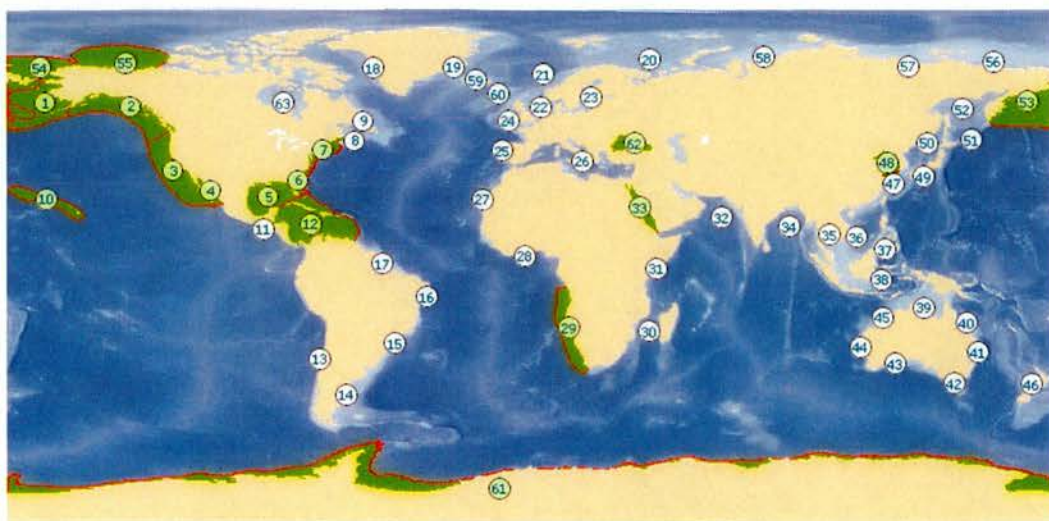
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ANNEXES

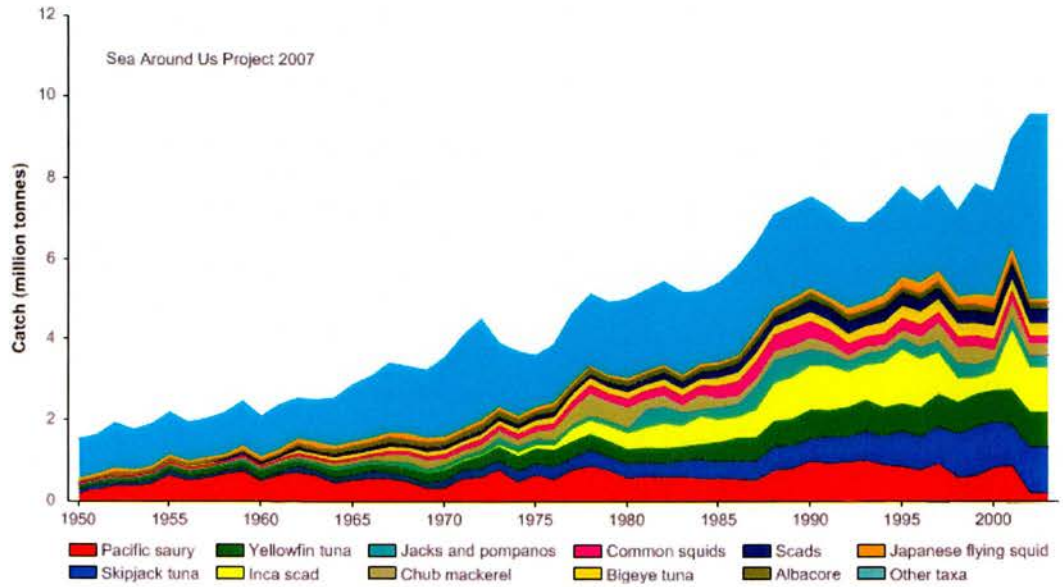
Annex I – Large Marine Ecosystems



- | | | | | |
|--|-------------------------|-------------------------------------|--|------------------------------------|
| 1 East Bering Sea | 14 Patagonian Shelf | 27 Canary Current | 40 Northeast Australian Shelf/Great Barrier Reef | 48 Yellow Sea |
| 2 Gulf of Alaska | 15 South Brazil Shelf | 28 Guinea Current | 41 East-Central Australian Shelf | 49 Kuroshio Current |
| 3 California Current | 16 East Brazil Shelf | 29 Benguela Current | 42 Southeast Australian Shelf | 50 Sea of Japan |
| 4 Gulf of California | 17 North Brazil Shelf | 30 Agulhas Current | 43 Southwest Australian Shelf | 51 Oyashio Current |
| 5 Gulf of Mexico | 18 West Greenland Shelf | 31 Somali Coastal Current | 44 West-Central Australian Shelf | 52 Sea of Okhotsk |
| 6 Southeast U.S. Continental Shelf | 19 East Greenland Shelf | 32 Arabian Sea | 45 Northwest Australian Shelf | 53 West Bering Sea |
| 7 Northeast U.S. Continental Shelf | 20 Barents Sea | 33 Red Sea | 46 New Zealand Shelf | 54 Chukchi Sea |
| 8 Scotian Shelf | 21 Norwegian Shelf | 34 Bay of Bengal | 47 East China Sea | 55 Beaufort Sea |
| 9 Newfoundland-Labrador Shelf | 22 North Sea | 35 Gulf of Thailand | | 56 East Siberian Sea |
| 10 Insular Pacific-Hawaiian | 23 Baltic Sea | 36 South China Sea | | 57 Laptev Sea |
| 11 Pacific Central-American Coastal | 24 Celtic-Biscay Shelf | 37 Sulu-Celebes Sea | | 58 Kara Sea |
| 12 Caribbean Sea | 25 Iberian Coastal Sea | 38 Indonesian Sea | | 59 Iceland Shelf |
| 13 Humboldt Current | 26 Mediterranean Sea | 39 North Australian Shelf | | 60 Faroe Plateau |
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| | | | | 64 Arctic Ocean |

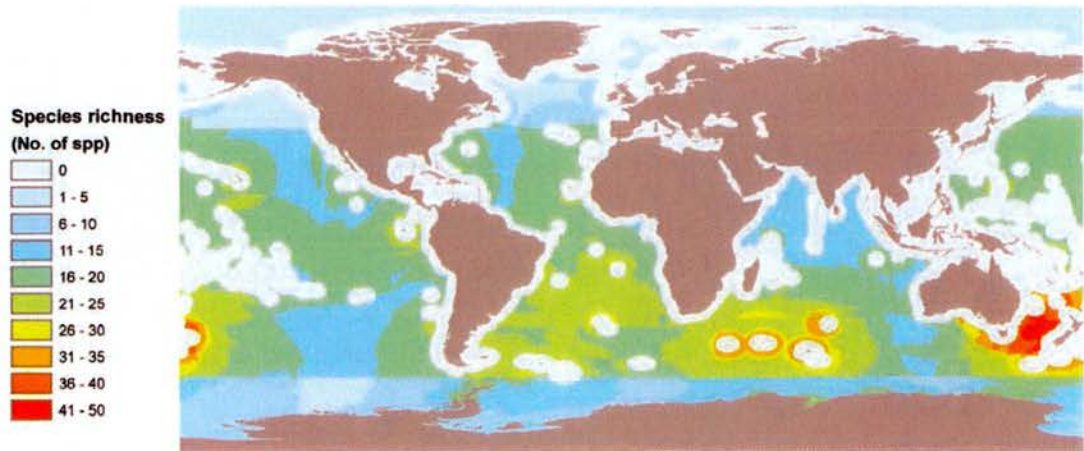
Excerpted from the UN Atlas of the Oceans. Online: <http://www.oceansatlas.org/html/lme/lme_.html> accessed 30 November 2006.

Annex II – High Seas Fish Catches

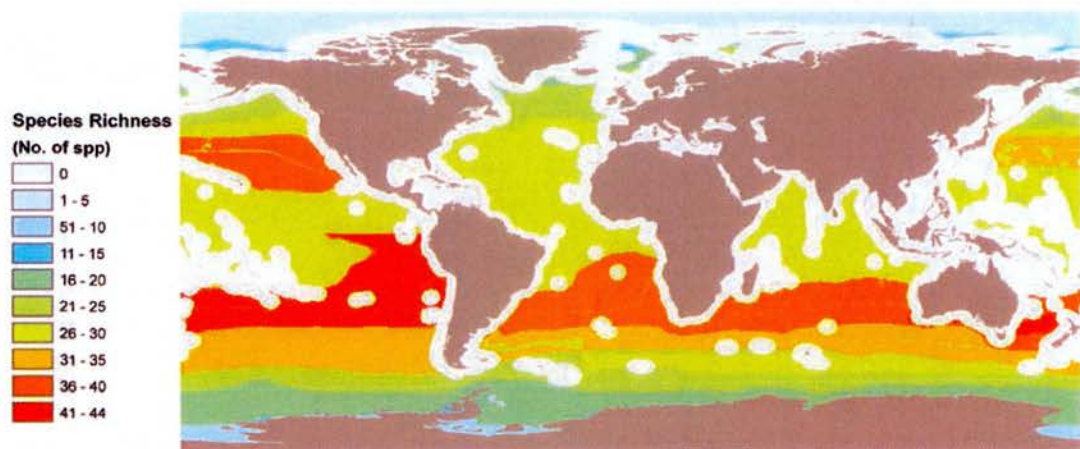


Global marine landings in the high seas (Extracted from Sea Around Us Project 2007).

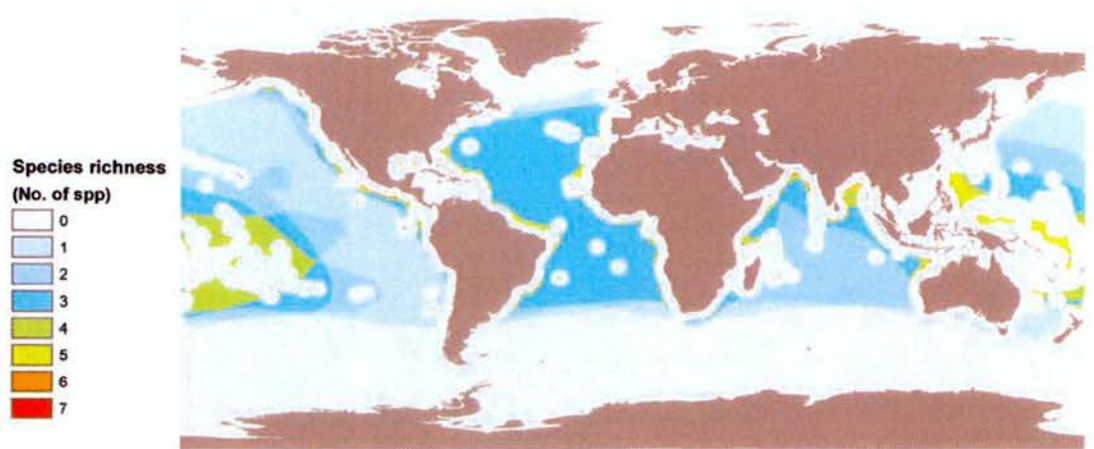
Annex III –Distribution of Seabirds, Marine Mammals and Reptiles on the High Seas



Distribution of pelagic seabirds (based on 115 species) on the high seas (extracted from Cheung et al 2005).

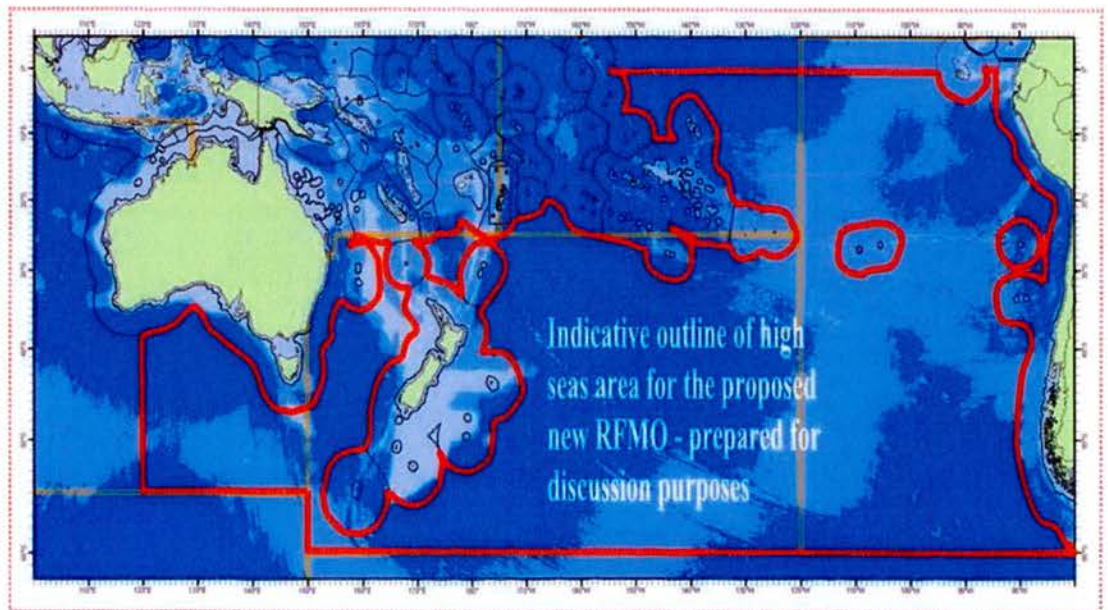


Distribution of marine mammals (based on 100 species) on the high seas (extracted from Cheung et al 2005).



Distribution of turtles (based on 7 species) and sea snake (based on 1 specie) on the high seas (extracted from Cheung et al 2005).

Annex IV – Proposed Regulatory Area for the South Pacific Regional Fisheries Management Organisation



Map of the proposed regulatory area of SPRFMO (extracted from SPRFMO website).
<http://www.southpacificfmo.org/area/proposed-coverage-of-rfmo/>

Annex V – Dispute Settlement and/or Related Provisions in Regional Fisheries Agreements

Convention	Date	Entry into Force	Amendments	Dispute Settlement and Related Provisions
CCAMLR	20.05.1980	07.04.1982	No	<p>Article XXV</p> <p>1. If any dispute arises between two or more of the Contracting Parties concerning the interpretation or application of this Convention, those Contracting Parties shall consult among themselves with a view to having the dispute resolved by negotiation, inquiry, mediation, conciliation, arbitration, judicial settlement or other peaceful means of their own choice.</p> <p>2. Any dispute of this character not so resolved shall, with the consent in each case of all Parties to the dispute, be referred for settlement to the International Court of Justice or to arbitration; but failure to reach agreement on reference to the International Court or to arbitration shall not absolve Parties to the dispute from the responsibility of continuing to seek to resolve it by any of the various peaceful means referred to in paragraph 1 above.</p> <p>3. In cases where the dispute is referred to arbitration, the arbitral tribunal shall be constituted as provided in the Annex to this Convention.</p>

CCSBT	10.05.1993	20.05.1994	No	<p>Article 16</p> <p>1. If any dispute arises between two or more of the Parties concerning the interpretation or implementation of this Convention, those Parties shall consult among themselves with a view to having the dispute resolved by negotiation, inquiry, mediation, conciliation, arbitration, judicial settlement or other peaceful means of their own choice.</p> <p>2. Any dispute of this character not so resolved shall, with the consent in each case of all parties to the dispute, be referred for settlement to the International Court of Justice or to arbitration; but failure to reach agreement on reference to the International Court of Justice or to arbitration shall not absolve parties to the dispute from the responsibility of continuing to seek to resolve it by any of the various peaceful means referred to in paragraph 1 above.</p> <p>3. In cases where the dispute is referred to arbitration, the arbitral tribunal shall be constituted as provided in the Annex to this Convention. The Annex forms an integral part of this Convention.</p>
IATTC	31.05.1949	03.05.1950	-11.06.1999 -To be replaced by the 2003 Antigua Convention	<p>No clauses on dispute settlement. However, worth noting the following provision: Article IV Nothing in this Convention shall be construed to modify any existing treaty or convention with regard to the fisheries of the eastern Pacific Ocean previously concluded by a High Contracting Party, nor to preclude a High Contracting Party from entering into treaties or conventions with other States regarding these fisheries, the terms of which are not incompatible with the present Convention.</p>
ICCAT	14.05.1966	21.03.1969	1984, 1992	No provisions
IWC	02.12.1946	10.11.1948	1956	No provisions
NAFO	24.10.1978	01.01.1979	1980, 1987, 1996, 2007	No provisions in the original convention. 2007 Amendment includes dispute settlement provisions to the Convention. Not yet in force.

(which has yet to
come into force)
2004 and 2006

NEAFC

18.11.1980

17.03.1982

Article 18 *bis* (as amended in 2004)

1. Contracting Parties shall co-operate in order to prevent disputes referred to in paragraph 2 and 3.
2. If any dispute arises between two or more Contracting Parties concerning the interpretation or application of the Convention, those Contracting Parties shall expeditiously seek to resolve the dispute by consultation, negotiation, inquiry, mediation, conciliation, arbitration, judicial settlement or other peaceful means of their own choice.
3. Where a dispute concerns the application of the Convention or the interpretation or application of a recommendation adopted by the Commission, the parties to the dispute may refer the dispute to an *ad hoc* panel constituted in accordance with rules of procedure adopted by the Commission. The panel shall at the earliest possible opportunity confer with the Contracting Parties concerned and shall endeavour to resolve the dispute expeditiously.
4. Where the parties to a dispute have agreed to refer the dispute to the *ad hoc* panel procedure, they may agree at the same time to apply provisionally the relevant recommendation adopted by the Commission until the panel finalizes its work or the dispute is resolved by the parties to the dispute, whichever occurs first. Pending the settlement of a dispute in accordance with paragraph 5, the parties to the dispute shall apply provisionally any measure described by the panel. That provisional application shall cease when the parties to the dispute agree on arrangements of equivalent effect, when a judicial body to which the dispute has been referred in accordance with paragraph 5 has taken a provisional or definitive decision or, in any case, at the date of expiration of the recommendation of the Commission at issue.
5. Where a dispute is not resolved by recourse to the means set out in

paragraphs 2 and 3, one of the parties to the dispute may refer the dispute to compulsory procedures entailing binding decisions. Such procedures shall be governed *mutatis mutandis* by the provisions relating to the settlement of disputes set out in Part XV of the United Nations Convention on the Law of the Sea of 10 December 1982 (1982 UN Convention) or, where the dispute concerns one or more straddling stocks, by the provisions set out in Part VIII of 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 of 4 August 1995 (1995 Agreement). The relevant parts of the 1982 UN Convention and the 1995 Agreement shall apply whether or not the parties to the dispute are also Parties to these instruments.

6. A panel or judicial body to which any dispute has been referred under this Article shall apply, as appropriate, the relevant provisions of the Convention, of the 1982 UN Convention, of the 1995 Agreement, and other rules of international law compatible with the said instruments, as well as recommendations of the Commission which are applicable to the parties of the dispute, with a view to ensuring the conservation and optimum utilisation of the fish stocks concerned.

Preamble:

RECOGNISING THE RELEVANT PROVISIONS of the United Nations Convention on the Law of the Sea of 10 December 1982; 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, 1995; and taking into account the FAO Agreement to Promote Compliance with International Conservation and Management Measures by Fishing Vessels on the High Seas, 1993 and the FAO Code of Conduct for Responsible Fisheries, 1995;

SEAFO

20.04.2001

30.04. 2003

No

ARTICLE 24. DISPUTE SETTLEMENT

1. The Contracting Parties shall cooperate in order to prevent disputes.
2. If any dispute arises between two or more Contracting Parties concerning the interpretation or implementation of this Convention, those Contracting Parties shall consult among themselves with a view to resolving the dispute, or to having the dispute resolved by negotiation, inquiry, mediation, conciliation, arbitration, judicial settlement or other peaceful means of their own choice.
3. In cases where a dispute between two or more Contracting Parties is of a technical nature, and the Contracting Parties are unable to resolve the dispute among themselves, they may refer the dispute to an ad hoc expert panel established in accordance with procedures adopted by the Commission at its first meeting. The panel shall confer with the Contracting Parties concerned and shall endeavor to resolve the dispute expeditiously without recourse to binding procedures for the settlement of disputes.
4. Where a dispute is not referred for settlement within a reasonable time of the consultations referred to in paragraph 2, or where a dispute is not resolved by recourse to other means referred to in this article within a reasonable time, such dispute shall, at the request of any party to the dispute, be submitted for binding decision in accordance with procedures for the settlement of disputes provided in Part XV of the 1982 Convention or, where the dispute concerns one or more straddling stocks, by provisions set out in Part VIII of the 1995 Agreement. The relevant part of the 1982 Convention and the 1995 Agreement shall apply whether or not the parties to the dispute are also Parties to these instruments.
5. A court, tribunal or panel to which any dispute has been submitted under this article shall apply the relevant provisions of this Convention,

of the 1982 Convention, of the 1995 Agreement, as well as generally accepted standards for the conservation and management of living marine resources and other rules of international law, compatible with the 1982 Convention and the 1995 Agreement, with a view to ensuring the conservation of the fish stocks concerned.

ARTICLE 30. RELATION TO OTHER AGREEMENTS

This Convention shall not alter the rights and obligations of Contracting Parties which arise from the 1982 Convention and other agreements compatible with the 1982 Convention and which do not affect the enjoyment by other Contracting Parties of their rights or the performance of their obligations under this Convention.

WCPFC

05.09.00

19.06.2004

No

Preamble:

Recalling the relevant provisions of the United Nations Convention on the Law of the Sea of 10 December 1982 and 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,

Recognizing that, under the 1982 Convention and the Agreement, coastal States and States fishing in the region shall cooperate with a view to ensuring conservation and promoting the objective of optimum utilization of highly migratory fish stocks throughout their range,

Article 2

Objective

The objective of this Convention is to ensure, through effective management, the long-term conservation and sustainable use of highly

migratory fish stocks in the western and central Pacific Ocean in accordance with the 1982 Convention and the Agreement.

Article 4

Relationship between this Convention and the 1982 Convention

Nothing in this Convention shall prejudice the rights, jurisdiction and duties of States under the 1982 Convention and the Agreement. This Convention shall be interpreted and applied in the context of and in a manner consistent with the 1982 Convention and the Agreement.

PART IX

PEACEFUL SETTLEMENT OF DISPUTES

Article 31

Procedures for the settlement of disputes

The provisions relating to the settlement of disputes set out in Part VIII of the Agreement apply, *mutatis mutandis*, to any dispute between members of the Commission, whether or not they are also Parties to the Agreement.