A NEW INSTRUMENT FOR CHALLENGES FOR THE CONSERVATION AND SUSTAINABLE USE OF MARINE BIODIVERSITY BEYOND THE AREAS OF NATIONAL JURISDICTION AND ITS IMPLICATIONS FOR SOUTH ASIAN REGION

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Abstract

Oceans are the inherent heritage for all mankind and these oceans are playing a significant role in economic, social and environmental development in the world. We are depleting the marine resources in the oceans faster than nature can restore them. Diverse anthropogenic activities such as unsustainable fishing practices, land base pollution and invasive species infestation have created serious threats to the marine resources especially in areas beyond national jurisdiction. Therefore protecting the marine environment has become a significant challenge today for the world community. With this context, it is a timely need to overcome rapidly escalating challenges to the ocean's health.

This study examines the existing global and South Asian regional legal and institutional mechanisms applicable to the conservation and sustainable use of marine biodiversity in areas beyond national jurisdiction. In addition to South Asian regional initiatives, three other regional approaches are examined to identify the best practices that can be adopted to South Asian region.

Regional approach is the underpinning structure towards the universal multilateral approach of Internationally Legally Binding Instrument for the conservation and sustainable use of marine biodiversity in ABNJ. An analysis of the path by which to address the challenges for the conservation and sustainable use of marine biodiversity in ABNJ either through a regional response under the UNEP regional Seas Programme, a global response under the Internationally Legally Binding Instrument that is being negotiated at the UN or a combination of both will be discussed at the end of this study as the most applicable approach.

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LIST OF ACRONYMS

ABNJ	Areas beyond National Jurisdiction
SDG	Sustainable Development Goal
UNCLOS	United Nations Convention on the Law of the Sea
WORMS	World Register of Marine Species
UNEP	United Nations Environment Programme
IPCC	Inter-governmental Panel on Climate Change
EU	European Union
ITLOS	International Tribunal for the Law of the Sea
FSA	Fish Stocks Agreement
RFMO	Regional Fisheries Management Organization
CBD	Convention on Biological Diversity
BBNJ	Biodiversity in Areas beyond National Jurisdiction
ABMT	Area Based Management Tools
PSMA	Port State Measures Agreement
CITES	Convention on International Trade in Endangered Species of Wild Fauna And Flora
IMO	International Maritime Organization
SOLAS	International Convention for the Safety of Life at Seas
ECA	Emission Control Area
PSSA	Particularly Sensitive Sea Area
MGR	Marine Genetic Resources
EIA	Environmental Impact Assessment
UNICP	United Nations Informal Consultative Process
MPA	Marine Protected Area
IGC	Inter-Governmental Conference
ISA	International Sea bed Authority
CLCS	Commission on the Limits of the Continental Shelf
ILBI	Internationally Legally Binding Instrument
SAARC	South Asian Regional Cooperation

FAO	Food and Agricultural Organization
SEA	Strategic Environmental Assessment
SPA	Specially Protected Areas
SPAMI	Specially Protected Areas of Mediterranean Interests
CCAMLR	Convention on the Conservation of Antarctic Marine Living Resources
SACEP	South Asian Cooperative Environment Programme
SASAP	South Asian Seas Action Plan
SAS	South Asian Seas
MCBS	Marine and Coastal Biodiversity Strategy
NBSAP	National Biodiversity Strategies Action Plan
BOBLME	Bay of Bengal Large Marine Ecosystem
ICM	Integrated Coastal Management
IUCN	International Union for Conservation of Nature
CORDIO	Coral Reef Degradation in Indian Ocean
SIDA	Swedish International Development Agency
GCRMN	Global Coral Reef Monitoring Network
IOTC	Indian Ocean Tuna Commission
EEZ	Exclusive Economic Zone
ECA	Ecological Critical Area
UNESCO	United Nations Economic Social and Cultural Organization
BMSY	Biomass at or above Maximum Sustainably Yield
NEAFC	North East Atlantic Fisheries Commission
GFCM	General Fisheries Commission for the Mediterranean
CFP	Common Fisheries Policy

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INTRODUCTION

The oceans are the priceless common heritage for all states, including land-locked States. These oceans are full of diverse marine species and resources both living and non-living. Various kinds of marine living resources are found in the oceans which are beyond national jurisdiction of the countries. Such as the commercially valuable highly migratory tunas as well as tiny microorganisms, deep sea corals and sponges that hold the next discoveries for pharmaceuticals. However, the regulatory reach of the coastal State does not extend to areas beyond national jurisdiction, other than flag State jurisdiction. This has left vulnerable migratory species such as tuna, turtles and whales, which freely roam across these vast area due to the adverse impacts of human activities. Given that nearly two thirds of the oceans fall outside the jurisdiction of any country. The threats to the marine life in areas beyond national jurisdiction are serious concern today. Due to these human activities, the damages to the marine environment is increasing day by day. According to a report of the millennium ecosystem assessment, roughly 20% of the world's coral reefs were lost and an additional 20% degraded in the last several decades of the twentieth century.[1]

Marine areas beyond national jurisdiction (ABNJ), which consists of the high seas and the international seabed Area, [2] comprise nearly two-thirds of the global ocean. This vast global commons contains marine resources and biodiversity of immense ecological, socioeconomic, and cultural importance. The ocean nourishes life in the sea and on land, provides habitat that shelters not only commercial fisheries but also species of significant scientific, cultural and

[1] Ecosystems and Human Well-Being: Synthesis, A report of the Millennium Ecosystem Assessment (Washington DC, Island press, 2005) p.26

[2] UNCLOS art. 86 defines the "high seas" as "all parts of the sea that are not included in the exclusive economic zone, in the territorial sea or in the internal waters of a State, or in the archipelagic waters of an archipelagic State." The "Area" is defined in art. 1 as "The seabed and ocean floor, and subsoil thereof, beyond the limits of national jurisdiction"

spiritual value. The ocean also acts as an important carbon sink protecting the earth from the impacts of climate change.[3]Yet, as with waters closer to shore, the health, productivity and resilience of the marine environment beyond national jurisdiction is under mounting pressure from human activities and global environmental change. [4]

The cumulative effect of these mounting pressures is now undermining essential ecosystem functions, processes and services upon which all nations depend.[5] Decades of overfishing and destructive fishing practices, pollution including marine debris, nutrients, anthropogenic noise and chemicals stemming from land as well as sea sources now threaten marine species, habitats and ecosystems—the key components of biodiversity. The rising pressures of ocean warming, acidification and deoxygenation combine with these more direct causes of ocean degradation in often unpredictable ways. If not regulated wisely, deep seabed mining – an activity now under serious consideration – is likely to emerge as a significant new pressure.[6] The first UN Global Ocean Assessment cautioned that urgent, timely and integrated action is needed to address mounting pressures: "The greatest threat to the ocean comes from a failure to deal quickly with the manifold problems."[7]

With the globalization and rapid economic exploitation of resources in the oceans, challenges or serious impacts for the conservation and sustainable use of marine biodiversity have popped up. With the innovation of new technologies, marine resources have been subjected to the serious threat. World population is also growing in one hand. With this the need for supplying foods for the growing population is also an impact for the issue of conservation and sustainable use of marine biodiversity. Since this has become a serious threat to the whole world, the attention of the global

[3] Nilufer Oral, "Ocean Acidification: Falling Between the Legal Cracks of UNCLOS and the UNFCCC? 45 Ecology Law Quarterly (2018) 9-30.
[4] United Nations, 2016. Summary of the First Global Integrated Marine Assessment (accessed July 2018 at http://www.un.org/depts/los/global_reporting/WOA_RPROC/Summary.pdf).
[5] United Nations, 2016. Summary of the First Global Integrated Marine Assessment, pp. 32 – 35 (accessed July 2018 at http://www.un.org/depts/los/global_reporting/WOA_RPROC/Summary.pdf).
[6] Luc Cuyvers, Whitney Berry, Kristina M. Gjerde, Torsten Thiele, Caroline Wilhem, 2018. Deep seabed mining: a rising environmental challenge, IUCN and Gallif rey Foundation, Gland, Switzerland, 74 pp.; https://doi.org/10.2305/IUCN.CH.2018.16.en.
[7] United Nations, 2017. Technical Abstract of the First Global Integrated Marine Assessment on the Impacts of Climate Change and Related Changes in the Atmosphere on the Ocean, para. 56 (accessed July 2018 at http://www.un.org/depts/los/global_reporting/8th_adhoc_2017/OICC_Technical_Abstract.pdf).

community has also directed in this. Hence in 2015 the General Assembly adopted the important set of Sustainable Development Goals (SDG) to address these challenges. Among these sustainable development goals, the importance of the ocean and of marine biodiversity has also been highlighted under the Sustainable Development Goal 14,

Ocean is a great resource for South Asian Countries which provides employments, foods, avenues of trade and commerce. South Asian region is consisting with Afghanistan, Bangladesh, Bhutan, India, the Maldives, Nepal, Pakistan and Sri Lanka. Large scale of communities in these countries make their day today lives depending on this ocean. There are serious threats for the conservation and sustainable use of marine biodiversity beyond the areas of national jurisdiction due to many anthropogenic activities in South Asian region as well. As South Asian region, these countries have adopted their own regional legal and institutional mechanisms for addressing the challenges for the conservation and sustainable use of marine biodiversity apart from the global initiatives.

Under the customary international law, as codified under the 1982 United Nations Convention on the Law of the Sea (UNCLOS), States enjoy freedom of the high seas. However, these freedoms are subject to the conditions that have relevance to areas beyond national jurisdiction and the conservation and sustainable use of biological diversity. Part XII of the UNCLOS for the protection and preservation of the marine environment includes the general obligations for States to protect and preserve the marine environment, which would include areas beyond national jurisdiction.

In this context, the growing pressures and threats to the ocean commons from human activities resulted in the United Nations initiating a process for the possible development of an international legally binding instrument.

OBJECTIVE OF THE STUDY

Main objective

Study the global and South Asian regional legal and institutional initiatives for the conservation and sustainable use of marine biodiversity beyond the areas of national jurisdiction focusing on BBNJ process (past) and so far under negotiations to identify the need for multilateral regulatory framework and to find out why it is necessary to adopt a new implementing agreement under United Nations Convention on the Law of the Sea (UNCLOS).

Sub objectives

I. Learn about BBNJ process so far (working group, prep com and Inter-Governmental Conference)
II. Study how has the BBNJ process evolved up to September 2018 and the main elements and principle recommendations of the preparatory committee focussing on the contributions of South Asian regional countries in this BBNJ process.
III. Identify the challenges and impacts for the conservation and sustainable use of marine biodiversity in ABNJ
IV. To find out the available existing global legal and institutional mechanisms for addressing the challenges for the conservation and sustainable use of marine biodiversity in ABNJ and examine whether there are regional legal and institutional frame work applicable to marine biodiversity in ABNJ in South Asian region, that if applied in an effective manner could form the backbone of efforts to improve the protection and management of South Asian regional perspectives.
V. Identifying the gaps or limits of existing global and South Asian regional legal and institutional mechanisms in addressing the challenges for the conservation and sustainable use of marine biodiversity in ABNJ
VI. Identifying the significant challenges for developing countries like Sri Lanka and find out the implications of new internationally legally binding document in addressing the issue of marine biodiversity in ABNJ.

VII. To explore the possibility of adopting best practices and experiences from other regional approaches in the context of designing a new regulatory architecture for South Asian region.

VIII. Way forward for addressing these challenges for the conservation and sustainable use of marine biodiversity with new legally binding instrument for South Asian region and recommendations

In achieving the aforementioned key objective and sub objectives, this study has been designed to analytically examine the challenges and impacts for the conservation and sustainable use of marine biodiversity in areas beyond national jurisdiction through the study of the BBNJ process so far and the way of approach of existing global and South Asian regional legal and institutional initiatives for addressing these issues. Specially, United Nations Convention on the Law of the Sea (UNCLOS), its two implementing agreements and other international instruments and South Asian regional legal and institutional initiatives will be discussed. It is expected to address the current issues with relevant to overcome the challenges for the conservation and sustainable use of marine biodiversity in South Asian region and the gaps and areas need to be addressed and developed. The way of approach of these regional initiatives with the new internationally legally binding instrument due to be concluded in the coming years will also be analytically addressed as the better approach for the conservation and sustainable use of marine biodiversity .

The proposed research is structured in two parts. Part I will consists of two chapters which will by identifying challenges for the conservation and sustainable use of marine biodiversity beyond the areas of national jurisdiction and the existing global legal and institutional framework arrangements applicable to address the said challenges. In this part BBNJ process so far will be discussed as global integrated approach for the conservation and sustainable use of marine biodiversity beyond the areas of national jurisdiction.

Thereafter part II will be reviewed in two chapters, focusing on the South Asian regional approach. This part will explore the possibility to adopt the best practices from other regions in designing a new regulatory framework for South Asian region in achieving the conservation and sustainable

use of marine biodiversity beyond the areas of national jurisdiction with an analysis of the path by which to address these challenges either through a regional response under the regional seas programme of the United Nations Environmental Programme or a global response under new Internationally Legally Binding Instrument that is being negotiated at the UN or a combination. This part will examine the significant challenges for developing countries like Sri Lanka and the implication of new international legally binding instrument for addressing the issue and way forward with this new instrument.

METHODOLOGY

This study is a desk top study based on information abstracted from Government policy documents, scientific publications and grey literature reports, international treaties and agreements and web based information.

PART ONE

CHAPTER 1

Challenges and opportunities for the conservation and sustainable use of marine biodiversity in ABNJ and existing global legal and institutional framework for addressing the issue

This chapter aims to identify the challenges and opportunities for the conservation and sustainable use of marine biodiversity beyond the areas of national jurisdiction. Analytical explanation on the available global legal and institutional mechanisms for addressing the challenges for the marine conservation will be discussed under the following subsections.

SECTION A- The risks and opportunities for the conservation and sustainable use of marine biodiversity in ABNJ

Under this section, the importance of marine biodiversity and the threats or impacts for the conservation and sustainable use of marine biodiversity beyond the areas of national jurisdiction will be discussed through the following sub sections.

Marine Biodiversity

Marine biodiversity defines as "The variability among living organisms from all sources, including, inter alia (among other things), terrestrial, marine and other aquatic ecosystems and the ecological complexes of which they are part: this includes diversity within species between species and ecosystem."[8] Article 2 of the Convention on Biological diversity defines "the biodiversity 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 ecosystem.[9]

[8] Marinebio.org/oceans/conservation/biodiversity/
[9] Convention on Biological Diversity, Article 2

Most of the Earth's surface (65%-70%) is covered by deep sea water. Life in the deep sea is diverse and specialized with organisms living in constant darkness at high pressures and low temperatures.

Considering the unknown life in the deep sea ocean, "The first comprehensive checklist of how many marine species had been named was in the online database, the World Register of Marine Species (hereinafter WoRMS) says that it now contains 243,000 accepted species. Since its first analysis six years ago, the number of accepted species in WoRMS has grown by 4% and two phyla have been lost: Myxozoa are now placed within Cnidaria, and Echiura within Polychaeta. Changes in the number of species are due to the addition of previously omitted domains (Bacteria, Archaea, and Viruses), re-classification of species (as marine, freshwater and terrestrial), recognition of synonyms, and incremental amendments to many taxa. For example, over 1,000 species were added to each of the taxa Chlorophyta, Rhodophyta, Foraminifera, diatoms, Euglenozoa (protozoans), amphipod and copepod crustaceans, and fish WoRMS still awaits the addition of probably a few thousand species of parasitic nematodes, will inevitably be missing some recently described species, and will include some as yet unrecognised synonyms (multiple names for the same species). Thus, the 243,000-species inventory can be considered to contain 98% of described species. In using this as a baseline to consider how many species may exist, the sources of uncertainty that need to be considered are: significance of unrecognised synonyms; potential hyper-diversity of microbes, parasites, and deep sea species; and relationship of molecular (cryptic) diversity to new species".[10]

Marine biodiversity consists of four main components: namely genetic diversity, species diversity, ecosystem diversity and functional diversity."

- Genetic diversity- This refers to the genetic variation that occurs among members of the same species
- Species diversity – Variety of species or other taxonomic groups in an ecosystem is referred
- Ecosystem diversity – variety of biological communities found on earth with ecosystem diversity

[10] Marine Biodiversity, Biogeography, Deep-Sea Gradients, and Conservation, Mark J.Costello and Chhaya Chaudhary, Institute of Marine Science, University of Auckland, Auckland, 1142, New Zealand

- Functional diversity - variety of biological process functions or characteristics of a particular ecosystem

Areas beyond National Jurisdiction (ABNJ)

In terms of the customary International Law, the maritime areas within national jurisdiction are internal waters, the territorial sea, the contiguous zone, archipelagic waters, the exclusive economic zone and the continental shelf.[11] Accordingly, Areas beyond National Jurisdiction are the sea areas beyond the limits of coastal state sovereignty and jurisdiction. Marine areas beyond national jurisdiction (ABNJ), which comprise 64% of the oceans' surface (and 43% of the world's surface), essentially represent a global commons which contains ecosystems with rich marine resources and biodiversity of significant ecological, socioeconomic, and cultural importance.

The answer for the question of which areas are the beyond of national jurisdiction is indefinite. Because the boundaries of coastal state jurisdiction have not yet been fully determined worldwide in accordance with the requirements of United Nations Convention on the Law of the Sea. (Hereinafter referred as UNCLOS) and the customary International Law. However, not all of the states with adjacent coasts have agreed bilateral maritime boundaries with neighboring states in relation to their territorial seas, EEZs or continental shelves.[12] This is significantly because all states by virtue of international law enjoy sovereignty over continental shelf resources up to 200 nautical miles from the baseline.[13]

The Area, namely "the seabed and ocean floor and subsoil thereof, beyond the limits of national jurisdiction.[14]These areas – the high seas and the international seabed area - and their resources are subject to increasing impacts from ongoing anthropogenic activities (e.g. unsustainable and destructive fishing practices, illegal, unregulated and unreported fishing, maritime transport and associated noise, ship strikes, pollution, and transport of invasive species, mineral extraction), emerging threats from the burgeoning carbon economy (e.g. ocean fertilization and carbon

[11] UNCLOS, Articles 2,3,4,33,47,56,76
[12] J.I.Charney, R.W.Smith (eds), International Maritime Boundaries (The Hague:Martinus Nijhoff publishers, 2002) vol.IV)
[13] UNCLOS, Article 56
[14] UNCLOS, Article 1(1)

sequestration, offshore energy, aquaculture), global climate change, and their associated cumulative effects. These threats have serious implications for the health, productivity and resilience of the global oceans in ABNJ (Innis et al. 2016) - and by extension to society.[15]

Part VII of the Law of the Sea Convention is dedicated to the high seas. As per Article 86 of UNCLOS the high seas are defined as

"The provisions of this part apply to all parts of the sea that are not included in the exclusive economic zone, in the territorial sea or in the internal waters of a State, or in the archipelagic waters of an archipelagic State."[16]

The principle of the freedom of the high seas was established in the early nineteenth century.[17] This principle has two meanings.

First, the freedom of the high seas means that the high seas are free from national jurisdiction. In this regard, Article 89 of UNCLOS makes clear that: "No State may validly purport to subject any part of the high seas to its sovereignty",

Second, the freedom of the high seas means the freedom of activities there. This is a corollary of the fact that the high seas are free from the national jurisdiction of any State. Consequently, each and every State has an equal right to enjoy the freedom to use the high seas in conformity with international law.

After defining the high seas, the freedom of high seas is clearly sets out under the UNCLOS as described below. Article 87 under the UNCLOS provides for "Freedom of the high seas" making it clear that the high seas are open to all states, whether coastal or landlocked. It then describes six

[15] Ringbom H. and Henriksen, T. (2017). Governance Challenges, Gaps and Management Opportunities in Areas Beyond National Jurisdiction. Global Environment Facility – Scientific and Technical Advisory Panel, Washington, D.C.

[16] UNCLOS, Article 86

[17] J.L.Brely, The Law of Nations: An Introduction to the International Law of Peace, 6th edn (oxford, Clarendon Press, 1963), P.305; R.R.Churchill and A.V.Lowe, Law of the Sea, 3rd edn (Manchester University Press, 1999),p.205

specific freedoms namely; freedom of navigation, freedom of overflight, freedom of lay submarine cables and pipelines, freedom of construct artificial islands and other installations permitted under international law subject to part vi freedom of fishing, subject to the conditions laid down in section two[18] and freedom of scientific research subject to parts vi and xii. Part VI places limits on research activities on the continental shelf where it extends under the high seas. Part xii sets out general provisions and co-operative requirements concerning the conduct of marine scientific research. The only exception that the exercise of these rights would be restricted by international agreements which would be binding only on the states of which are party to them. Part xii of the convention sets out the general obligations in relation to the protection and preservation of the marine environment.

When examining the high seas,"Where a coastal State has established its EEZ, the landward limit of the high seas the seaward limit of the EEZ where the coastal State has not claimed its EEZ, the landward limit of the high seas is the seaward limit of the territorial sea. In this case, the seabed of the high seas is the continental shelf of the coastal State up to the limit fixed by the international law of the sea. The seabed and subsoil beyond the outer limits of the continental shelf area the Area, which is the common heritage of mankind. The superjacent waters above the Area are always the high seas where the continental shelf extends beyond the limit of 200 nautical miles, the superjacent waters and the airspace above those waters are the high seas under Article 78 of the UNCLOS".[19]

As observed by Dupuy and Vignes, "The absence of sovereignty on the high seas certainly does not mean that there is no authority over this area," and they go on to cite Fauchille: "Free from all territorial sovereignty, the sea cannot be free from all jurisdictional sovereignty.[20] If no state has sovereign rights over high seas, then who is responsible for the high seas? What are the rights and obligations that attach to the protection of the high seas and its resources? [21]

[18] UNCLOS Art.116-120
[19] The International Law of the Sea pg 155, Yoshfumi Tanaka
[20] Dupuy and Vignes, A Handbook on the New Law of the sea, 400.
[21] See Hanqin Xue, James Crawford and John Bell Transboundary Damage in International Law (Cambridge: Cambridge university Press, 2003), 189-266.

While UNCLOS has codified the customary freedoms of the high seas and there are also important rules of customary law that bring limits of the freedoms of the high seas. Two complimentary obligations namely obligation to no harm and the obligation to protect the marine environment are the main safeguard factors of protecting the high seas environment. "The former is rooted in the well-known customary International law rule *sic utere tuo ut alienum non laedas* (duty to not use one's property in a manner to cause, harm to that of another) identified in 1941 in famous Trail Smelter arbitral award between the United States and Canada[22].

The no harm principle was subsequently adopted in both the 1972 Stockholm Declaration (Principle 21)[23] and the 1992 Rio Declaration (Principle 2)[24] and also in Article 3 of the Convention on Biological Diversity[25].It can be clearly seen that these two concepts have been extended up to areas beyond national jurisdiction.

Part XII provides important obligations which apply to ABNJ Considering the article 192 of UNCLOS "States have the obligation to protect and preserve the marine environment."[26] It sets out the general obligation for protection and preservation of the marine environment. When taking into consideration the Article 194 of UNCLOS, no clear saying on the exact geographical limit to the scope of the marine environment. Therefore it implicitly covers the Areas beyond national Jurisdiction as well. According to Article 194 (2) excluded the territorial limits of the high seas.

Considering the above interpretations, the areas beyond the specific national geographic demarcations area called areas beyond national jurisdiction. This part is a common heritage for all mankind. This is not only a heritage for all mankind but also it creates a great responsibility for all mankind to conserve and sustainable use as well.

[22] Trail Smelter Arbitration United States of America/Canada) Final award, 11 March 1941, Reports of International Arbitral Awards, Vol.111,65.
[23] Declaration of the United Nations Conference on the Human Environment. UN.DOC.A/CONF/48/14/REV1.
[24] Declaration of the UN Conference on Environment and Development (Rio Declaration), UN DOC.A/CONF.151/26/Rev.1
[25] Article 3 of the Convention on Biological Diversity
[26] Article 192 of UNCLOS

Importance of the Marine biodiversity

This marine environment is full of diverse species. Among these species, there are specific species and functional groups of species that play a vital role in functioning of the important ecosystem process. If these types of species face to the threat of extinction, this will significantly influence on the whole ecosystem. The marine living and non-living resources are contributing in the primary and secondary production of the global food production. It is estimated that out of these productions, a half of primary production depend on the marine species. Without primary produces in surface water, the oceans would quickly run out of food. But without plank tonic and benthic organisms to facilitate nutrient cycling, the primary producers would quickly become nutrient limited.

Marine environment is playing a major role as a service provider. It provides the services and products including carbon capture, nutrient cycling, genetic resources improved resistance and resilience, natural harvest and recreation. Considering the services rendered by the marine ecosystem, the relationship between the mankind and the marine ecosystem can be comparable only to the relationship of tree and its bark and no any other comparison in this world. Generally, the areas of the oceans in which biodiversity and biological activity are concentrated include: hydrothermal vent systems associated with. Due to rapid development of the world, the most challenging part of the marine environment is the conservation and sustainable use of these marine resources.

Challenges and opportunities for the Conservation and sustainable use of marine biodiversity

There are many challenges and impacts for the conservation and sustainable use of marine biodiversity in areas beyond national jurisdiction due to many reasons. The risks, impacts and opportunities for the conservation and sustainable use of marine biodiversity will be discussed in the following sub sections.

Risks and Impacts for the conservation and sustainable use of marine biodiversity in ABNJ

The health of the world's oceans are rapidly declining with far-reaching implication for our entire planet and the livelihoods of millions of people around the world. In this era of globalization, both the economic exploitation of ocean resources and the resultant pressures on the marine environment have become intensified, along many dimensions. The economic activities and political factors that pose deeply serious challenges to the health of World Ocean.[27]Even if the globalization opened many ways for the positive development of the people and also at the same scenario it has contributed towards creating negative impacts for the whole world. Oceans are severely affected this harmful effects of the globalization. According to science article in 2008, over 40 percent of the world's oceans are already heavily affected by human impacts.[28]Air pollution, illegal fishing, melting ice caps and changing the temperature. Climate change seriously make threats to the marine environment. Warming of oceans, acidification, coral bleaching and rising sea levels directly affect to the fisheries. The Nellemannet al study published by United Nations Environmental Programme (UNEP) in early 2008 is among the first to examine the potential synergistic impacts of climate change with other current ocean stressors such as unsustainable fishing practices, land based pollution, invasive species infestations and coastal development. The study concludes that such synergistic impacts can lead to an unprecedented, dramatic and widespread collapse of marine ecosystems and fisheries within the next decades. At least three-quarters of the world's key fishing grounds may become seriously impacted as a result.[29]

"The problems that society faces with respect to the ocean resources, economic uses and regulatory regimes thus are intimately connected to the larger context of global environmental developments and crises. Both the causes and effects of these pressure- points in the historic patterns of oceans are intertwined, moreover, with the critical problems of climate change that are now a central

[27] Harry N.Scheiber, Economic Uses of the Oceans and the Impacts on Marine Environments: Past Trends and Challenges Ahead, pg. 65 Chapter 5 of "The World Ocean in Globalization, Climate change, Sustainable Fisheries, Biodiversity, Shipping, Regional Issues edited by Davor Vidas and Peter Johan Schei

[28] C.B.S.Halpern,S.Walbridge,K.A.Selkoe,C.V.Kappel,F.Micheli,C.D Agrosa,J.F.Bruno, K.S.Casey,C Ebert,H.E.Fox,R.Fujita,D.Heinemann,H.S.Lenihan,E.M.P.Madin, M.T.Perry,E.R.Selig, M.Spalding, R Steneck, R.Watson, "A Global Map of Human Impact on Marine Ecosystems", Science, Vol.319,2008,pp.948-952.

[29] C.Nellemann,S.Hain and J.Alder (eds), In Dead water:Merging of climate change with pollution, over-Harvest and Infestations in the world's Fishing Grounds (Arendal UNEP, 2008)

concern in scientific and policy discourses.[30]From the stand point of international law, the major thrust and problematique of ocean law including the ways they relates to the ordering of economic activities are reflected in a profound inter connectedness with the other distinctive legal subject areas of International Law. As indicated by Judge Tullio Treves, these areas include specifically, first and foremost international environmental Law but also international human rights law, international trade law, the law of international security including terrorism and migration by sea, and developments.[31]

Increasing number of marine species are considered threatened or endangered and it creates serious threats to the marine environment due to the below mentioned deceitful human interventions which are described in detail in the following sub sections.

i. Destructive fishing practices such as bottom trawling and illegal unregulated and unreported fishing (IUU)
ii. Pollution
iii. Bioprospecting and Biological pharmaceutical Industry
iv. Shipping
v. Marine scientific research
vi. Sea level rise
vii. Climate change

Unsustainable fisheries and Illegal, Unregulated and Unreported Fishing

Fisheries management is facing unprecedented challenges. Illegal, Unregulated and Unreported Fishing (hereafter IUU) is a main threat to the conservation and sustainable use of marine biodiversity beyond the areas of national jurisdiction. Many countries are lack of the necessary resources to carry out the recommendations made by international organizations such as Food and

[30] (V.Golitsyn, "Major challenges of Globalization for seas and oceans: Legal Aspects; in vidas (ed), Law, Technology and science for oceans in Globalization, pp.59-73, at pp.60-64,
[31] T.Treves, "The Development of the Law of the Sea since the adoption of the UN convention.

Agriculture Organization on how to reduce this practice. Illegal, Unregulated and Unreported fishing practise has become a serious impacts for making damages to the ecosystems. It abuses fish workers and undermines the credibility of regional fisheries management. IUU fishing is a short term economically beneficial trade. All states are privileged to fishing on the high seas. It is clearly seen that over exploitation of fishing can be in large scale in the areas beyond the national jurisdiction.

The superimposition of climate change on over-exploitation of resources is increasingly leading to unanticipated changes in marine ecosystems. Exploited fish species exhibit higher temporal variability than unexploited species.[32]In the mid-1970s stocks in the combined category of fully exploited, over exploited, recovering or depleted were estimated at 50 per cent, and by 2005 that figure had risen to 75%[33]. In the Atlantic and in the Southwest Pacific Bluefin tuna have been decimated because of under –regulation, deceitful fishing practices, evasion of regulations by dint of flagging practices and not least flagrant under-reporting of catches.[34]

Heavy fishing and depletion of individual targeted species heavily effect on ecosystem's support of the overall fish population. There has been extensive collateral damage to ocean ecosystems from the operations of the world's fishing fleets, including even artisanal fisheries, who continue to use dynamite in some developing countries. This seriously damage to the seabed and its bird populations and the coral reefs and other structures and living and nonliving marine resources.

High seas fish stocks are a valuable source of protein for human consumption. But there is an evidence of serious depletion in the larger pelagic species such as tunas and billfishes resulting in fishing for smaller species lower down the tropic levels.[35]Recent research suggest that at 450 ppm, corals and shellfish and perhaps even plankton may have problems in creating and maintaining their carbonate structures.[36]

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[32] (C.H.Hsieh, C.S.Reiss, J.R.Hunter, J.R.Beddington, R.M.May and G.Sugihara, "Fishing El-evaters Variability in the Abundance of Exploited Species; Nature, Vol.443,2006,pp.859-862

[33] Review of the State of World Marine Fishery Resources, FAO Fisheries Technical Paper No.457 (Rom:FAO,2005)

[34] Scheiber, Mengerink and Song, "Ocean Tuna Fisheries"

[35](D.Panly et al, "Fishing Down Marine Food Webs, Science, Vol.279,1998,pp.860,862-863)

[36] (O Hoegh-Guldberg et a1, "Coral Reefs under Rapid Climate Change and Ocean Acidification; Science, Vol.318,2007,pp.1737-1742

"Like other natural resources globally, marine resources have suffered a wide range of damaging effects from new application of evolving exploitative technologies".[37]The new technology used for deep sea fishing industry badly affects to the marine biodiversity. Serious threats to the marine environment are posed due to unsustainable fishing practices such as using the fishing nets and lines made of synthetic materials and other chemicals in fishing. Because these nets and lines may be laid over the wide areas of the ocean. Not only that but also the other serious threat to the marine environment is using bottom trawling gears as it seriously damage to the ocean floor. Marine scientific researches, bio-prospecting, deep seabed mining and environmental modification activities are the other activities for making serious harms and threats to the marine environment.

Pollution

Considering the serious threats and impacts for the conservation and sustainable use of marine biodiversity, pollution is the second major threat. Pollution from both marine and land base sources are making serious threats to the marine environment beyond the areas of national jurisdiction. The emission of agricultural fertilizers and pesticide chemicals effect to the destruction of living resources in marine environment. Transport and disposal of nuclear waste is also the other way of creating serious impact for the marine environment. "The broad range of issues have emerged as the results of nuclear testing in the past, the proposed burial at sea of nuclear waste (and prior dumping of spent factors, as in the Arctic by the navy of the former Soviet Union, the dangers posed by nuclear cargoes (and the responses to that danger in the form of multilateral bans on traffic and barriers to access to parts), and the poisoning or damaging of fishery resources, all are in play as policy issues. But with few well-accepted principles and rules as yet in the international arena of debate and diplomacy."[38]

[37] Harry N.Scheiber, Economic Uses of the Oceans and the Impacts on Marine Environments: Past Trends and Challenges Ahead, pg. 66 Chapter 5 of "The World Ocean in Globalization, Climate change, Sustainable Fisheries, Biodiversity, Shipping, Regional Issues edited by Davor Vidas and Peter Johan Schei

[38] (Caron and Scheiber (eds), The Oceans in the Nuclear Age, offers perspectives on these and other issues regarding nuclear energy and waste.

Bioprospecting and Biological pharmaceutical Industry

Bioprospecting and Biological pharmaceutical industry has also become a threat to the marine environment. The new trend is especially pharmaceutical companies are trying to develop high demanding pharmaceutical and variety of consumer and industrial products using marine species. For this, they need to collect these pharmaceutical materials from the marine environment such as coral reef areas. Valuable new resources in high seas areas; ocean hydrothermal vents with temperatures of 300-699 c containing gold and other valuable minerals with accompanying hyperthermophile and extremophile life forms crabs, bivalves, tube worms and shrimp like creatures, microbes which are considered bio-technologically and pharmaceutically important. Resources like cold seeps and huge frozen methane deposits have been identified with potentials for exploitation. This leads to the degradation of marine environment. Because when using the trawler or other gear to collect these resources, it destroys the physical structures and seriously harm to the ecosystem. Because these areas of high seas are not regulated under any law or no any state is to oblige to protect these resources. All are trying to get maximum use out of these resources beyond their national jurisdiction. All of these economic activities are making serious impacts or damages to the marine environment.

Shipping

Shipping industry is also a source of making serious impacts to the marine environment in areas beyond national jurisdiction. Intentional and accidental vessels are discharging oil and other hazardous substances, noise and ship strikes to the oceans. One researcher estimates that a cruise ship with 3000 passengers generates at sea each week eight tons of solid waste, 130 gallons of hazardous waste, million gallons of grey-water waste, 130 gallons of hazardous waste, over 200,000 gallons of sewage and a million gallons of grey-water waste. This indicates that how much of serious threats or impacts are being created by the shipping industry.

With regard to the environmental risks and impacts to the ecosystems and vulnerable species from operational discharges, accidental or intentional contamination, physical damage to marine habitats, and collisions with marine mammals are just some of the threats posed by shipping.

Likewise, noise pollution from shipping interrupts marine mammal's feeding and vocalisation, as they are impacted differently by varying noises, and this has even led to the abandonment of entire ocean areas by these populations.[39]

Marine Scientific Researches

Areas beyond national jurisdiction belongs to all states without any special reservations. So they can use this area for their navigation purposes as well as marine scientific research activities. Marine scientific research activities also adversely affect to the marine environment. Every state is using this common area of mankind. But none of them is obliging or committed to use these resources without damaging to the marine environment.

Sea level rise

"According to the Fourth Assessment Report (AR4) of the Inter-governmental panel on climate change (IPCC), released in 2007: "Warming of the climate system is unequivocal, as it is now evident from observations of increases in global average air and ocean temperatures widespread melting of snow and ice and rising global average sea level has risen since 1961 at an average rate of 1.8 [1.3 to 2.3] mm/yr. and since 1993 at 3.1 [2.4 to 3.8] mm/yr., with contributions from thermal expansion melting glaciers and ice caps and polar ice sheets.[40]

Climate Change

Climate change is a significant threat to the health of the ocean. The impacts of climate change have resulted in many adverse effects such as coral reef bleaching, ocean warming. These effects are impacting fish stocks and ocean acidification impacting marine life. The impacts of climate change add to the existing stresses on marine life from the existing significant exhaustion of marine resources and serious harm to environments owing to unsustainable exploitative methods with

[39] Rodgers, Woodall, Stewart, above n 37,17.
[40] (Inter- governmental Panel on Climate Change, Climate Change 2007: Synthesis Report. Summary for policy makers, p.2; see also Table spM.1 in at p.3.Available at (www.ipcc.ch/pdf/asssessment report/ar 4/syr/ar 4-syr-spm.pdf)

depletion of many forms of marine life-including developments that also threaten food security in the developing areas of the world"[41].

Opportunities for the Conservation and sustainable use of marine biodiversity in ABNJ

When addressing the challenges for the conservation and sustainable use of marine biodiversity in areas beyond national jurisdiction, it creates some opportunities for the countries within their national jurisdiction. For instances, when the issue of capacity building is addressed, the enhancement of the national capacity on the areas of marine biodiversity ultimately will be a benefit for the countries. In the same scenario transfer of marine technology, when this challenge is addressed, this transfer of technology will be equally benefitted for the states for their other national activities within their national jurisdiction. Even though the issues or the challenges for the conservation of marine resources of the areas beyond national jurisdiction are addressed, in the holistic approach it will be a benefit to all state parties within their national jurisdiction as well. Because holistically all advancements are supporting them to improve their domestic needs as well.

SECTION B - Existing global legal and institutional framework for addressing the challenges for the conservation and sustainable use of marine biodiversity in ABNJ

There are many global legal and institutional mechanisms for addressing the issue of challenges for the conservation and sustainable use of marine biodiversity beyond the areas of national jurisdiction. The way of approach for addressing the challenges for the marine biodiversity in ABNJ through these existing global legal and institutional mechanisms will be discussed in this section.

[41] J.B.C.Jackson et al; "Historical Overfishing and the recent Collapse of Coastal Ecosystem" Science, Vol.293, 27 July 2001, pp.629-637)

Legal framework under the United Nations Convention on the Law of Sea (UNCLOS)

Fundamental elements for the areas of the law of the sea and the matters related to the ocean governance are set out under the Law of the Sea Convention (hereinafter UNCLOS) which was adopted in 1982. Presently 168 states and the European Union (EU) are the parties to the UNCLOS. General framework for the ocean and their uses are established under the UNCLOS. Different maritime zones are introduced under the UNCLOS and it provides the governing principles and normative principles for the establishment of delimitation for the states. Various kind of rights and obligations of states within the different maritime zones are clearly regulated under the UNCLOS.

UNCLOS [42] which provides a sophisticated jurisdictional framework for the uses of the ocean and sets itself the impressive objective of settling all issues relating to the Law of the Sea.[43]. UNCLOS codifies a number of norms in customary international law and saw the progressive development of international law in several important respects including the provisions of a solid legal plinth for the promotion of the peaceful uses of the ocean, the equitable use of resources, as well as the protection of the marine environment.[44]Significantly, the convention advances an integrated approach to the management of human activities that impinge upon the ocean[45] as well as codifies the principle of the common heritage of mankind as it applies to the Area.[46]Although it does not directly refer to the marine biodiversity, it is commonly regarded as the fundamental document for establishing the legal framework for all activities in the ocean. Part XII of the 1982 UNCLOS marked the first comprehensive regime for the protection and preservation of the marine environment.[47] It clearly stipulates the general and specific obligations under the Part XII regarding the protection of the marine environment, including the adoption of 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.

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[42] 1833 UNTS3/21ILM 1261 (1982) (entered into force 16th November 1994)
[43] UNCLOS preamble recital 1. See Myron Nordquist, Satya Nandan and Shabtai Rosenne (eds) United Nations Convention on the Law of the Sea 1982. A commentary vols 1-6 (Brill 1986-2012) (the Virigina commentary)
[44] UNCLOS. Recital 4.
[45] Y.Tanaka, A Dual Approach to Ocean Governance: The cases of the zonal and integrated management in international law of the sea (Farnham: Ashgate, 2008), Passim.
[46] UNCLOS. Article 136
[47] Moira L.McConnell & Edgar Gold, The Modern Law of the Sea: Framework for the protection and preservation of the Marine Environment? 23. CASE W.RESERVE J.INTL L.83 (1991)

The principle of co-operation among states for the protection and preservation of the marine environment is one of the important development of modern international environmental law and the law of the sea.[48]UNCLOS obliges states to protect and preserve the marine environment, including through measures to protect rare or fragile ecosystems as well as the habitat of depleted, threatened or endangered species and other forms of marine life[49]. States are also to cooperate at global and regional levels to develop rules, regulations and guidelines to protect and preserve the marine environment, taking into account regional conditions[50].

As Article 137(2) sets out the Area and its resources are specifically declared to be the 'common heritage of mankind. "All rights of the resources in the Area are vested in mankind as a whole, on whose behalf the Authority shall act. These resources are not only be alienation. The minerals recovered from the Area, however, may only be alienated in accordance with this Part and the rules, regulations and procedures of the Authority.[51]So it is an individual as well as collective responsibility for all states to take all the necessary measures for the protection and preservation of the marine environment in areas beyond national jurisdiction. The International Seabed Authority, composed of states who are parties to UNCLOS, is given substantial authority to monitor, inspect and take measures to ensure compliance of operators engaged in seabed mining and related activities.

With regard to the responsibility to ensure compliance and liability for damage, UNCLOS clearly sets out that "States Parties shall have the responsibility to ensure that activities in the Area, whether carried out by States Parties, or state enterprises or natural or judicial persons which possess the nationality of States Parties or are effectively controlled by them or their nationals, shall be carried out in conformity with this part. The same responsibility applies to international organizations for activities in the Area carried out by such organizations."[52]

[48] See. David Freestone, Principle of modern Oceans Governance, 28 INTL J.MAR. L.385 (2008)

[49] UNCLOS Art.192, 194 (5)
[50] Ibid 197
[51] UNCLOS Article 137(2)
[52] Ibid 139(1)

The UNCLOS clearly stipulates that use of the Area exclusively for peaceful purposes. "The Area shall be open to use exclusively for peaceful purposes by all States, whether coastal or land-locked, without discrimination and without prejudice to the other provisions of this Part."[53]

The high seas and their resources are essentially accessible to any state that has the capability to exploit them, subject to the general obligations of all states to protect and preserve the marine environment and the duty to cooperate at global and regional levels to this end (under the articles of UNCLOS, Articles 192, 194(5) and 197). UNCLOS recognizes that some habitats and species are more sensitive or rare than others and calls upon states to include measures necessary to protect and preserve these habitats and species[54]. Article 143 of the UNCLOS can be introduced as very important initiative taken with regard to the conservation and sustainable use of marine biodiversity beyond the areas of national jurisdiction. "Marine scientific research in the Area shall be carried out exclusively for peaceful purposes and for the benefit of mankind as a whole, in accordance with Part XIII."[55]

States are also to cooperate at global and regional levels to develop rules, regulations and guidelines to protect and preserve the marine environment, taking into account regional conditions.[56]Under this provisions countries have adopted regional initiatives under UNEP (United Nations Environmental Programme) programme for the conservation and sustainable use of marine resources.

There are very significant provisions on transfer of technology under the UNCLOS. "To this end the Authority and States Parties shall cooperate in promoting the transfer of technology and scientific knowledge relating to the activities in the Areas enabling the Enterprise and all States Parties may benefit therefrom. In particular they shall initiate and promote:[57]Programmes for the transfer of technology to the Enterprise and to developing States with regard to activities in the

[53] Ibid 141
[54] UNCLOS Article 194(5)
[55] UNCLOS Article 143(2)
[56] Ibid 197
[57] Ibid 144(2)

Area, including, *inter alia,* facilitating the access of the Enterprise and of developing States to the relevant technology, under fair and reasonable terms and conditions.[58]

UNCLOS also recognizes a duty to cooperate in the conservation and management of high seas living resources, though it's more specific provisions focus primarily on fish (UNCLOS, Articles 117-119). As the responsibility for complying with and enforcing these obligations rests largely with the flag states and these provisions have been unevenly implemented in practice.

"States shall take all measures necessary to ensure that activities under their jurisdiction or control are so conducted as not to cause damage by pollution to other States and their environment, and that pollution arising from incidents or activities under their jurisdiction or control does not spread beyond the areas where they exercise sovereign rights in accordance with this convention."[59]

But Article 195 of UNCLOS does not set out any territorial restrictions. But it is limited to the specific act of taking measures and is not protective in the more general sense.

UNCLOS articulates a broad and generalized obligation for states to protect and preserve the marine environment under Article 192, which is also recognized as a rule of customary international law.[60]

All states have individual and collective obligations to protect the marine environment for the sake of the international community. "It is an obligation characterized by its Universal and non-reciprocal nature.[61]

All activities on the high seas are subject to certain conditions and more detailed regulations: at a minimum, the general obligation of states is to exercise the high seas freedom "with due regard for the interests of other States in their exercise of the freedom of the high seas" (UNCLOS, Article

[58] Ibid 144(2)(a)
[59] Article 194 (2) of UNCLOS
[60] Available (with commentaries) at http://legal.un.org/olc/texts/instruments/english/commentaries/9-6 2001.pdf
[61] (Jiefan Huang, "Aviation safety, ICAO an obligation Erga Onmas," Chinese Journal of International Law 8 (2009):63,72

87(2)). The doctrine of an obligation *erga omnes*, that a state need not show actual direct harm in order to hold another state responsible for a breach of an international law. "The *erga omnes* obligation to protect the environment is general in its character.[62] However, it has been applied expressly to the marine environment of the high seas by the seabed disputes chambers of International Tribunals for the Law of the Sea (ITLOS) in its Advisory opinion, responsibilities and obligations of states sponsoring persons and entities with respect to activities in the area (Request for Advisory Opinion submitted to the sea bed chamber) (case no.17).[63]The more general obligations for states to protect and preserve the marine environment elaborated in Part XII apply anywhere, including on the high seas. Another general understanding is stipulated under the Article 88 of the UNCLOS that the high seas shall be reserved for peaceful purposes.There is no established order of priority between the high seas freedoms (Churchill and Lowe 1999).

The high seas freedom "is exercised under the conditions laid down by this Convention and by other rules of international law "under the, Article 87(1)) of UNCLOS. The term 'freedom' does not refer to an absence of rules in the high seas, but rather to the free *access* by all states, whether land-locked or not, to these areas and to participation in activities on the oceans, subject to the applicable limitations and rules including subsequent developments in international law.

The key principle for the high seas is that the flag state - i.e. the state in which the vessel is flagged (merchant, fishing, research or other) - has *exclusive* jurisdiction over its vessels. It is therefore the flag state's unique responsibility to place rules on its ships and to ensure that these are complied with on the high seas. Other states or organizations do not have jurisdiction over ships in this area "save in exceptional cases expressly provided for in international treaties or in this Convention"[64]

The high seas is subject to the freedom of navigation and every state has the right to sail ships flying its flag on the high seas.[65] The convention sets out a list of duties that must be discharged by the flag state in exercising its jurisdiction in relation to vessels that are flying its flag on the

[62] Advisory Opinion on the Legality of the Threat or use of Nuclear Wepons,p.226 para 29
[63] (Responsibilities and obligations of states sponsoring persons and entities with respect to activities in the Area (Request for Advisory Opinion submitted to the sea bed Disputes chamber), 1st February 2011, para 180.
[64] UNCLOS Article 92(1)

[65] UNCLOS Article 90

high seas.[66]No coastal states or other states have particular rights or privileges over activities of ships or nationals of other states in the high seas, irrespective of the area's proximity to their coasts or otherwise. As opposed to the case of coastal state waters, there is no single state to manage, coordinate or administer the activities in the high seas. Legislative and enforcement jurisdiction is placed on the flag state of the ship in question, but flag state's jurisdiction and obligations vary depending on the activity in question and must be assessed on a case by case basis.

UNCLOS provides a general normative framework which is complemented by other instruments. Even if the all states have the rights for fishing on the high seas. This is conditioned by the observance of treaty obligations appertaining to states, as well as the rights duties and interests of coastal states set down by the convention. UNCLOS Article 63(2), 64-67 including most crucially the obligations on the conservation and management of the living resources of the high seas.[67]

Fishing activity on the high seas is subject to a great deal of regulations which augmented the convention including the 1995 Fish Stocks Agreement.[68] In addition many fisheries related instruments set out requirements in relation to the adoption of precautionary and ecosystem based approaches to fisheries management with a view to reducing the impacts of fishing activities on marine habitats and dependent ecosystems.[69]

Two implementing Agreements under the UNCLOS

Under this section the way of addressing the issue of challenges for the conservation and sustainable use of marine biodiversity beyond the areas of national jurisdiction under two implementing agreements under the UNCLOS will be analytically examined.

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[66] Ibid 94

[67] UNCLOS Article 117-119, See: K.Gjerde, "High seas fisheries management under the Convention on the Law of the Sea in R.Barnes, D.Freestone, D.ong (ed), The Law of the Sea-Progress and prospects (Oxford university press, 2006) 281.

[68] The United Nation Agreement for the Implementation of the provisions of the United Nations Convention on the Law of the Sea of 10th December 1995

[69] UNCLOS Article 92

1. Agreement relating to the implementation of part XI of UNCLOS- signed on 28th July 1994 and entered into force on 28th July 1996.

2. Agreement for the Implementation of the provisions of UNCLOS relating to the conservation and management of straddling fish stocks and highly migratory fish stocks- 1995 (signed on 04th August 1995 and entered into force on 11th December 2001-

The Fish Stocks Agreement (hereafter introduced as FSA) is one of the concrete outcomes of the 1992 Rio Conference on Environment and Development[70]. As stipulated under Article 3 of the Fish Stocks Agreement, this is applicable to straddling fish stocks and highly migratory fish stocks on the high seas. This agreement may have impacts for fisheries on the high seas in general, and also for fisheries in areas within national jurisdiction. This Fish Stocks agreement is called as a framework convention, stipulating the principles and norms to be implemented by state parties to Regional Fisheries Management Organization (RFMO), through their relevant jurisdiction or competence as coastal states, flag states and port states. There are some provisions which are directly applicable. For instance the right to fish on a regulated stock on the high seas is conditional on either membership or the relevant RFMO or on agreement to apply its conservation and management measures.[71]

To ensure the long-term conservation and sustainable use of these fish stocks through effective implementation of the relevant provisions of the Convention" is the objective of this agreement.[72]New principles of precautionary approach and protection of marine biodiversity were introduced under the FSA while creating the obligations under UNCLOS. The very important thing in this agreement is that it specifies the obligations of flag states and contributes to the development of regional schemes for enforcement providing the ecosystem approach. The main elements of the Fish Stocks Agreement will be discussed in following sub sections.

[70] Report of the United Nations Conference on Environment and Development A/CONF 151/26 (vol II) Agenda 21 paragraph 17.49 e.
[71] FSA Article 8 (4)

[72] FSA Article 2

New conservation and management principles (FSA, Articles 5-7):

Precautionary principle and ecosystem based approaches and the protection of marine biodiversity are included under these articles. Under Article 6 of FSAA and Annex II stipulates the obligation to apply the precautionary approach. "Protection of marine environments means broadening the scope of fisheries management, if necessary, to adopt measures to conserve other species living within the same ecosystem as those targeted by fishing activities. States are also expected to develop or adopt fishing gear technologies and practices which minimize impacts on non-target species, fish and non-fish (an eco-system approach). Linked with these principles is the need to strengthen the basis of the decision-making through collection and sharing of fishing catch and other data and the results of marine scientific research. States are required to assess the impacts of fishing – and other human activities – along with natural environmental conditions on target fish stocks and other species belonging to the same ecosystem. The question concerning the relationship between the sovereign rights of the coastal states and the freedom of fishing transboundary fish stocks has been addressed through a requirement of compatibility between conservation measures agreed upon for the high seas and those adopted by coastal states for the same stock[73]. The coastal states are required to take into account the agreed-upon measures for adjacent parts of the high seas. However, the agreed measures for the high seas must not undermine the effectiveness of coastal state measures. Furthermore, the biological unity of the stock is an important factor in ensuring compatibility.)"[74]

Strengthening of the role of RFMOs (FSA, Articles 8-14):

States shall cooperate either by becoming a member of the RFMO or by agreeing to apply its measures. [75] It is clear that the way or the type of cooperation is clearly specified under this article. Comparing with the UNCLOS, the way of cooperation is not clearly specified or defined. As per Article 8(4) of Fish Stocks Agreement, Only member states and states agreeing to apply its measures are entitled to access the fisheries regulated by the RFMO.

[73] Fish Stocks Agreement, Article 7(2)
[74] Governance Challenges, Gaps and Management opportunities in Areas Beyond National Jurisdiction –A STAP Information Paper by Henrik Ringbom and Tore Heriksen

[75] FSA Article 8(4)

Providing the RFMO with the entire competence in the regulations of high seas fishery is the objective of these articles. “Consequently, where there are no RFMOs to regulate the fishery for a straddling fish stock or a highly migratory fish stock on the high seas, both coastal state and the states fishing the stock on the high seas are required to establish one Membership in existing RFMOs is reserved for states with a ‘real interest in the fisheries concerned” [76]

Specifying the duties of the flag states (FSA, Articles 18-19)

The FSA is important because it specifies the duties of the flag state in exercising its jurisdiction, and consequently the scope of the due diligence duty described above. The flag state will control the fishing activities of its vessels on the high seas by using of licenses or authorizations (FSA, Article 18(3)). Consequently, fishing on the high seas is illegal under national law, unless the vessel has a permit. The flag state shall also establish other conditions necessary to comply with its obligations. Furthermore, the flag state shall ensure the timely recording and reporting of position and catches according to the provisions of the RFMO, as well as for monitoring, control and surveillance of the vessel. The flag state is also responsible for ensuring that its vessels comply with the measures adopted through the RFMO (FSA, Article 19). Their responsibilities include the duty to investigate violations of any of these measures and, if evidential requirements are satisfied, to initiate legal proceedings. The sanctions applied should be severe enough to ensure future compliance. Even if other states, members of RFMOs, and port states have a role in enforcing the measures of the RFMO, it is still the flag state (member or not) that has the main responsibility under FSA. This is underlined by the obligation only to authorize its vessels to fish on the high seas where a state is able to exercise its responsibilities as flag state (FSA, Article 18(2)). Despite this obligation, it is clear that some state parties and non-state parties lack the capacity fully to exercise their responsibilities.

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[76] FSA Article 8(5)

Legal framework under other global legal instruments

Convention on Biological Diversity

Besides from the United Nations Convention on Law of the Sea (UNCLOS) and its two implementing agreements, there are several other global international instruments for addressing the issues for the conservation and sustainable use of marine biodiversity. The Convention on Biological Diversity (hereinafter CBD)[77] provides an over-arching conservation framework and has become one of the most widely ratified of all environmental treaties with 196 parties. The conservation of biological diversity is a common concern of humankind.[78]There is an express obligation sets out by the CBD on states to conserve and to ensure the sustainable use of their biological diversity and its resources.[79] The Convention on Biological Diversity (CBD)[80], which was adopted in 1992, is a cornerstone of global efforts to conserve biodiversity on land and at sea, and in a comprehensive manner rather than through the protection of individual species.[81] Concerning the CBD, three main objectives can be seen namely (a) the conservation of biodiversity, (b) the sustainable use of its components and (c) the fair and equitable sharing of benefits arising from the utilization of genetic resources. [82]Preamble of the convention clearly sets out that the conservation and sustainable use of biological diversity for the benefit of present and future generations is the determination of the convention. Conservation and sustainable use of coastal and marine biological diversity have been addressed in the Convention on Biological Diversity fewer than three objectives namely access to genetic resources, issues relating to technology and handling of biotechnology. Very significant principles such as the sustainable use of its components and the fair and equitable sharing of the benefits arising from the utilization of genetic resources can be seen in this convention. “Whereas both within and beyond national

[77] Convention on Biological Diversity, 1760 UNTS 79. Entered into force 29 December 1993
[78] CBD Recital 3
[79] Ibid Recital 5
[80] The Convention on Biological Diversity, at www.cbd.int/conven-tion/text/

[81] See e.g.the definition of biological diversity in Article 2 as meaning “the variability among living organisms from all sources including, iner 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 ecosystem.
[82] CBD Article 1

jurisdiction, it applies to the process and activities carried out under its jurisdiction or control regardless of where their effects occur.[83]

Moreover, in Areas beyond National Jurisdiction (ABNJ), each contracting party is only obliged to cooperate with other parties for the conservation and sustainable use of biological diversity or through competent international organizations.[84] Accordingly, as stipulated in the CBD provisions apply restrictively in that activities carried out within a states' jurisdiction must not cause damage to the environment of other states or in ABNJ.[85]Other provisions within the CBD that mention areas beyond national jurisdiction are articles 3, 4, 5, 14(c), 14(d) and these provisions emphasizes not to cause damage to the environment of other states or areas beyond national jurisdiction.

CBD provides a strong normative basis for the following: the principle of sovereignty of states to exploit their natural resources, applying their own environmental policies;[86] cooperation among states and through international organizations in regard to matters of mutual interest in areas beyond national jurisdiction;[87] development of general measures for conservation and sustainable use;[88]Identification and monitoring of biological diversity;[89]establishment of in situ conservation measures such as the establishment of protected areas[90]and management strategies;[91]as well as the development of regulatory provisions for the protection of threatened species populations;[92]and ex-situ conservation measures of components of biological diversity.[93]

Accordingly, cooperation is very much important and as per article 5 of CBD, it requires all states parties to CBD:

[83] CBD Article 4
[84] CBD Article 5
[85] Ibid 4
[86] Ibid 4
[87] Ibid 5
[88] Ibid 6
[89] Ibid 7
[90] Ibid 8 (a)
[91] Ibid 8 (f)
[92] Ibid 8 (k)
[93] Ibid 9

"As far as possible and appropriate, cooperate with other contracting parties directly or where appropriate through competent international organizations in respect of areas beyond national jurisdiction and on other matters of mutual interest for the conservation and sustainable use of biological diversity".[94]

Concerning the scope of the convention, it clearly extends to areas beyond national jurisdiction. The CBD extends a spatial management approach to marine environmental protection, setting out a legal basis for the designation of sea areas as an ecologically or biologically significant marine areas (hereafter EBSA) on the basis of uniqueness of rarity, special importance for life history stages of species; importance for threatened, endangered or declining species and/or habitats; vulnerability, fragility, sensitivity, or slow recovery; biological productivity; biological diversity; and naturalness.[95]At a global level, 71 EBSA out of a total of 279 are located wholly or partially beyond national jurisdiction, comprising 21% of total surface area of marine areas beyond national jurisdiction.[96]This indicates that these areas may require enhanced management and conservation measures as marine resources. Accordingly, the declaration of an EBSA is a scientific and technical exercise that can inform the application of areas based management tools (ABMT) marine spatial planning and impact assessment both within and beyond national jurisdiction.[97]

CBD sets out the provisions for undertaking of environmental impact assessment as an up to date tool to avoid or minimize adverse effects from proposed projects on biological diversity, and calls for states to develop appropriate procedures and arrangements including the notification and initiation of actions to prevent or minimize grave danger or damage to biodiversity.[98]

This convention provides specific provisions to genetic resources under national jurisdiction in light of the sovereign rights that states have over these resources [99]and sharing of benefits arising from the commercial and other utilization of genetic resources should be in a fair and equitable

[94] Ibid 5
[95] Annex I, Decision IX/20, COP
[96] Third session of the BBNJ preparatory committee. March 26-April 7, 2017. Statement of CBD. Wednesday, March 29, 2017. Available at http://statemnets.unmeetings.org/media 2/14683376/-scbd-bbnj-29-Mar-2017-pdf
[97] Dunn,et.at (2014) "The Convention on Biological Diversity's Ecologically or Biologically significant Areas: origins, development and current status; Marine Policy, vol.49, 137-145
[98] CBD. Article 14
[99] Ibid. 15(1)

way.[100]Benefits deriving from actual use of genetic resources include participation in scientific research[101]and use of relevant technology.[102] Other elements of CBD are the sustainable use of components of biological diversity[103]access to and transfer of technology.[104]

FAO Agreement on Port State Measures (PSMA)

To Prevent, Deter ad Eliminate illegal, Unreported and Unregulated Fishing is the main objective of the FAO Agreement on Port State Measures.[105]When examining the provisions of this Agreement, to prevent, deter and eliminate Illegal, Unreported and Unregulated (hereafter IUU) fishing through the implementation of effective port state measures as well as to ensure the long-term conservation and sustainable use of living marine resources.[106] This is very significant global initiative. Because IUU fishing has become most vulnerable threat to the fishing industry as well as the marine environment at global and regional level. This clearly proves that "Indeed, there is a considerable body of evidence from the FAO which demonstrates that unsustainable fishing practices and IUU fishing in particular are the primary threats to biodiversity at global and regional level."[107]

This agreement applies to fishing activities conducted in marine areas that are illegal, unreported or unregulated and to fishing- related activities in support of such fishing.[108]Furthermore, the Agreement's personal scope encompasses port States and also vessels not entitled to fly its flag that are seeking entry to its ports or are in one of its ports.[109]Two exceptions were included in this Agreement, consequently, the Agreement's provisions are not applicable to vessels of a neighbouring State that are engaged in artisanal fishing for subsistence,[110]and container vessels

[100] Ibid 15(7)
[101] Ibid 15(6)
[102] Ibid 16(3) ,19(1) ,19(2), see also: Birine, Boyle, Redgwell, above n 25, 631.
[103] Ibid 10
[104] Ibid 16
[105] FAO Agreement on Port State Measures to Prevent, Deter and eliminate illegal, Unreported and Unregulated fishing. Entered into force on 5 June 2016
[106] Port State Measures Agreement. Article 2.
[107] FAO (2009) Report of the FAO/UNEP expert meeting on impacts of destructive fishing practices, unsustainable fishing and illegal, unreported and unregulated (IUU) fishing on marine biodiversity and habitats. Rome: FAO, 12
[108] PSMA. Article 3(3)
[109] Ibid. Article 3(1)
[110] Ibid. Article 3(1.a)

that are not carrying fish or, if carrying fish, only fish that have been previously landed.[111]Finally, the geographical scope of the Agreement is global being applicable to all ports.[112]

Cooperation of flag States with port States is crucial, given that flag States have the responsibility under international law for controlling the fishing activities of a vessel, no matter where the vessel operates.[113]As article 6 of the PSMA stipulates key requirements and processes regarding the entry, use and denial of ports. In this regard, port States must request specific information from a fishing vessel before granting entry to port, such as its flag State certificate of registry, and RFMO identification, among others.[114]There are specific guidelines on inspections and follow-up actions,[115]particularly, if it is established that a vessel is engaged in IUU fishing or prohibited fishing. For instance, if it is found that a vessel is engaged in IUU fishing in ABNJ, the port State should immediately report the matter to the flag State of the vessel and, where appropriate, the relevant coastal States and regional fisheries management organisation.[116]

The Convention on International Trade in Endangered Species of Wild Fauna and Flora (CITES)

Due to the loss of habitat and the increase of the exploitation, the species have faced threat of extinction. The objective of The Convention on International Trade in Endangered Species of Wild Fauna and Flora[117] (hereafter, CITES) to control the import and export of species and relate products.[118] As per recital 2 of the CITES describes the aims of the convention, "thereby recognizing the ever-growing value of wild flora and fauna from scientific, cultural, recreational and economic perspectives". CITES functions on the basis of an Appendix approach to conservation and the 182 States Parties to the Treaty must not allow trade (defined broadly to

[111] Ibid. Article 3(1.b)
[112] Ibid. Article 3(5)
[113] UNCLOS. Article 94.
[114] Detailed in Annex A of the PSMA
[115] PSMA. Part 4
[116] FAO (2001) International Plan of Action to Deter, Prevent and Eliminate illegal, Unreported and Unregulated Fishing. (IPOA IUU. Rome:FAO,16
[117] Convention on International Trade in Endangered Species of Wild Fauna and Flora.993 UNTS 243.Entered into force on 1 July, 1975. See commentary
[118] Birnie, Boyle, Redgwell, above n 25, 686.

include export, re-export, import and introduction from the sea)[119]of species included in the Appendices, except in accordance with the provisions of the Convention.[120]

Considering the provisions sets out under this Convention, the highest level of protection is payed to appendix I species threatened with extinction, which are or may be affected by trade, and strict regulations apply in order not to further endanger their survival.[121]Appendix II included species that may become threatened with extinction unless trade is subject to strict regulations.[122]Appendix III includes species which any party identifies as being subject to regulation within its jurisdiction and which it wants to restrict its exploitation but need the cooperation of other Parties in the control of trade.[123]

This convention stipulates descriptive provisions for trade in specimens included in Appendix I in exceptional circumstances:[124]including the prior grant and presentation of export,[125]import[126]or re-export[127]permits; as well as the introduction from the sea. "The transportation into a State of specimens of any species, which were taken in the marine environment not under the jurisdiction of any State" in other words ABNJ.[128]Likewise, for trade in specimens of species included in Appendix II, CITES regulates the prior grant and preservation of export,[129]import[130]and re-export[131]permits, as well as requiring introduction from the sea certificates.[132]The Convention has elaborative provisions in regards to species listed in Appendix III, addressing in particular their export,[133] import[134]and re-export[135]by means of a permit system.

[119] CITES. Article 1(c)
[120] Ibid. Article 2(4)
[121] Ibid. Article 2(1)
[122] Ibid. Article 2(2)
[123] Ibid. Article 2(3)
[124] Ibid. Article 3
[125] Ibid. Article 3(2)
[126] Ibid. Article 3(3)
[127] Ibid. Article 3(4)
[128] Ibid. Article 1(e)
[129] Ibid. Article 4(2),(3).
[130] Ibid. Article 4(4)
[131] Ibid. Article 4(5)
[132] Ibid. Article 4(6),(7).
[133] Ibid. Article 5(2)
[134] Ibid. Article 5(3)
[135] Ibid. Article 5(4)

Nagoya protocol

This protocol is very important legal instrument which stipulates the core obligations for its contracting parties for making necessary steps relating to access to genetic resources, benefit-sharing and compliance. Access to Genetic Resources and the Fair and Equitable sharing of benefits arising from their utilization to the Convention on Biological Diversity 2010. Conservation and sustainable use of marine biodiversity is the ultimate objective of this effort. The Nagoya Protocol on Access to Genetic Resources and the Fair and Equitable Sharing of Benefits Arising from their Utilization to the Convention on Biological Diversity entered into force in 2014.

Article 1 of the Nagoya Protocol sets out the objective of this protocol. "The objective of this protocol is the fair and equitable sharing of the benefits arising from the utilization of genetic resources, including by appropriate access to genetic resources and by appropriate transfer of relevant technologies, taking into account all rights over those resources and to technologies, and by appropriate funding, thereby contributing to the conservation of biological diversity and the sustainable use of its components."[136]

Third objective of the CBD, fair and equitable sharing of benefits from utilization genetic resource is implemented under the Nagoya protocol. Article 1 of the Nagoya protocol spells out this situation. It applies to genetic resources within the scope of CBD Article 15 and the benefits arising out of their utilization.[137]

Protocol describes the fair and equitable benefit sharing saying that "In accordance with article 15, paragraphs 3 and 7 of the convention, benefits arising from the utilization of genetic resources as well as subsequent applications and commercialization shall be shared in a fair and equitable way with the party providing such resources that is the country of origin of such resources or a party that has acquired the genetic resources in accordance with the convention. Such sharing shall be

[136] NAGOYA Protocol. Article 1
[137] NAGOYA Protocol. Article 3

upon mutually agree terms."[138]Under article 10 of the protocol clearly spells out the global multilateral benefit sharing mechanism.

Global institutional mechanisms

International Maritime Organization (IMO)

International Maritime Organization (hereinafter IMO) was established for achieving the goal of developing and maintaining a comprehensive regulatory framework for shipping including safety, environmental concerns, legal matters, technical cooperation, maritime security and the efficiency of shipping. This special Organization was established at the United Nations Maritime Conference in 1948[139]and is an intergovernmental organization with competence in regards to the regulation of international shipping and navigation for safety, vessel source pollution, and maritime security purposes in the Law of the Sea Convention.[140]Accordingly, the IMO has to play a vital role in the Law of the Sea and its progressive development. "Indeed, international navigation rights under UNCLOS were one of the most contentious elements negotiated at the Third United Nations Conference on the Law of the Sea.[141]

"The IMO has an obligation to establish international rules and standards to prevent, reduce and control vessel source of pollution to the marine environment.[142] As stated by the IMO during the first Inter-Governmental Conference held in September 2018, up to date IMO has established 19 Special Areas, 4 emission areas and 15 Particularly Sensitive Sea Areas under the regulatory framework of IMO.

[138] Ibid.Article 5.1
[139] McDonald (1948) "Toward a World Maritime Organization: A half-century of developments in ocean shipping, 'Department of State Bulletin, Vol.1.
[140] A.Chircop, 'The International Maritime Organization,' om D.Rothwell, A.oude Elferink, k. Scott, T.Stephens, the Oxford Handbook of the Law of the Sea (Oxford: OUP, 2015), 417. See also United Nations Division for Ocean Affairs and the Law of the Sea (1996) "Competent or relevant International Organizations under the United Nations Convention on the Law of the Sea", Law of the Sea Bulletin, Vol.31, 79-95.
[141] Ibid
[142] See Bernard Oxman, The Duty to Respect Generally Accepted International Standards,24 NY Univ.J.Int'l& Pol'y 109 (1991)

MARPOL Convention

International Maritime Organization (hereafter IMO) has developed MARPOL convention to readdress the regulations of maritime pollution. In this effort IMO has targeted to minimize the pollution of the oceans and seas, including dumping, oil and air pollution, preventing the marine environment by completely eliminating the pollution by oil and other harmful substances

First, MARPOL includes the notion of 'special areas'. All four Annexes that include discharge standards have a mechanism whereby areas or regions in the world can have more stringent standards for the discharge of oil, other hazardous substances, sewage and garbage of ships due to their oceanographically and ecological conditions and the concentration of traffic.[143] The same applies to air emission control areas (ECAs) which restrict emissions of Sulphur or nitrogen oxides in specific areas under Annex VI. These areas are normally large regional sea areas, which are defined in geographical terms and not on the basis of concerned maritime zones under UNCLOS.[144]

Secondly, the International Convention for the Safety of Life at Sea (SOLAS) Chapter V provides for so-called 'ships routing' measures which are mainly aimed at directing maritime traffic. Over the years, more measures to direct traffic have been added, including 'areas to be avoided' where traffic by certain types of ships may be completely prohibited. It is accepted that such measures can be adopted on purely environmental grounds. Routing measures, as well as ship reporting systems, are adopted by IMO based on the rules laid down in chapter V of SOLA.[145]

Thirdly, the IMO has introduced the concept of a 'particularly sensitive sea area' (PSSA). These areas have a specific need for protection through action by the IMO because of their recognized ecological, socio-economic, or scientific significance, and because of their vulnerability to damage

[143] See guidelines for establishing special areas IMO Resolution A.927(22), www.imo.org/blast/blastDataHelper.asp?data_id=24553 &filename=A927%2822%29.pdf
[144] E.g.in Annex I the special areas are the Baltic Sea, the Mediterara-nean sea, the Black Sea, the Red Sea, the "Gulfs" area, the Gulf of Aden, the Antarctic area, North West European Waters, the Oman area of the Arabian Sea and Southern South African waters, For an overview of IMO Special Areas and Emission Control Areas, see www.imo.org/en/OurWork/Environment/SpecialAreasUnderMAR-POL/Pages/Default.aspx
[145] See guidelines for state seeking to establish such measures, www.imo.org/en/OurWork/Safety/Navigation/Documents/1061.pdf

by international maritime activities.[146] These actions may cover a broader set of measures extending beyond discharge rules to also include routing measures, reporting requirements, traffic guidance, equipment standards, etc. Since PSSAs are non-binding guidelines, their jurisdictional status is not very strong, which means that each protective measure needs to have "an identified legal basis"[147].

CHAPTER 2

The limits of existing global legal and institutional mechanisms and the way forward for new approach

This chapter is targeted to cover the limits of existing global legal and institutional mechanisms in addressing the challenges for the conservation and sustainable use of marine biodiversity beyond the areas of national jurisdiction. The way of the BBNJ process evolved up to September 2018 and the role of new international legally binding instrument as multilateral regulatory framework under United Nations Convention on the Law of the Sea (UNCLOS) will be discussed in this chapter.

SECTION A - Gaps of global legal and institutional mechanisms in addressing the challenges for the conservation and sustainable use of marine biodiversity in ABNJ

The objective of this section is to discuss the existing gaps and limits of the available global legal and institutional mechanisms in addressing the challenges for the conservation and sustainable use of marine biodiversity beyond the areas of national jurisdiction. This will be analysed under the following subsections.

[146] See.www.imo.org/en/Our-Work/Environment/PSSAs/Pages/Default.aspx
[147] IMO Resolution A.982(24) Revised Guidelines for the Identification And Designation Of Particularly Sensitive Sea Areas, Paragraph 6

Gaps in UNCLOS

Even though the United Nations Convention on the Law of the Sea (hereafter UNCLOS) is called as the constitution for all activities in the oceans, but there are some gaps in achieving the objective of the conservation and sustainable use of marine biodiversity beyond the areas of national jurisdiction. Head of Norway delegation to the Law of the Sea Conference, Jens Evensen described in his analysis on the convention and Contemporary Ocean issues. He stated in 1983 as follows:

"The basic problems with which the law of the Sea Conference tried to cope were the impact of the revolutionary developments in science and technology and the influence of these forces in science and technology and the influence of these forces in international law…… of course, [modern-day] achievements in science and technology contain the promise of vast improvements and justified hopes for mankind in the future, if wisely applied. But inherent in this revolution are likewise enormous potential dangers such as the abuse of nuclear energy for military or peaceful purposes, the lurking threats of the effects of other weapons of mass destructions, the ecological problems connected with the industrial and military technology revolution, and the rampant consumption of the world's dwindling stock of non-renewable resources."[148]

There are still gaps and unfinished agendas for UNCLOS as a "constitution for the Oceans: especially in the regime covering areas beyond national jurisdiction.[149]UNCLOS makes no reference to Marine Genetic Resources (hereafter MGR), leaving an important gap in a growing area of activity with potentially great commercial and scientific value. In short, the lack of relevant definitions and the uncertainty of provisions of UNCLOS are the fundamental reasons for the difficulties in addressing the appropriate regime of MGRs in Areas beyond National Jurisdiction.[150] Having not a definite definition of MGRs in areas beyond national jurisdiction is one of the core area which is not payed much attention under the UNCLOS.

[148] J.Evensen, "The Effect of the Law of the Sea Conference upon the process of the Formation of International Law: Rapprochement between Competing Points of View', in R.B.Kruger and S.A.Riesen feld (eds), The Developing Order of the Oceans. Proceedings of the 18th Annual Conference of the Law of the sea institute) Honalulu, HI: The Law of the Sea Institute, University of Hawaii, 1984), p.25
[149] David Freestone, "The Final Frontier", 70-71; Lawson, Regulating Genetic Resources, 103.
[150] Petra Drankier et at, "Marine Genetic Resources in Area beyond National Jurisdiction: Access and Benefit Sharing," The International Journal of Marine and Coastal Law 27 (2012), 431-432

Considering the environmental provisions of UNCLOS, those provisions are based on a scientific findings of the marine environment during the 1970s. At that period, vessel source pollution and unsustainable fisheries were the major challenges to offshore living resources. "Almost four decades from advances in technology such as climate change effects were not anticipated and "most of the diverse and vulnerable deep sea ecosystems, such as hydrothermal vents, cold water corals and most seamounts were yet to be discovered.[151]It implies that there is a huge scientific gap in addressing the impacts of the adverse effects of anthropogenic activities on the marine ecosystem and also the functioning of the marine environment as well.

There is a clear obligation to protect and preserve the marine environment including rare or fragile ecosystems to conserve high seas living marine resources and to cooperate for these purposes.[152]But the implementation of these obligations is remained without implementation. Therefore it needs to be further elaborated and implemented effectively for the wellbeing of the all mankind. In relation to the regulation gaps of UNCLOS with regard to the conservation and sustainable use of marine biodiversity beyond the areas of national jurisdiction Kristina Gjerde[153]has identified gaps[154]and weaknesses of the regulations included in Part XII of UNCLOS relating to the conservation and sustainable use of marine biodiversity in areas beyond national jurisdiction. As per Gjerde's writing some of the weaknesses coming up include: the general duty to protect and preserve the marine environment under the convention has been inadequately implemented leaving ABNJ subject to increasing pressures, degradation and biodiversity loss.[155]

As Arthur Dean pointed out "we are faced with fact that the community of nations now embraces the entire world; he stated, Hence, he contended in the use, control and distribution of ocean resources, "the legitimate ambitions of the newer nations as well as the just requirements of the more established states must be recognized.[156]

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[151] N.C.Ban, et.at."systematic conservation planning: A better recipe for managing the High seas for biodiversity conservation and sustainable use, conservation Letter. January/February 2014, 7(1), 41-54.2
[152] UNCLOS. Articles, 117-119, 192, 194(5), 197
[153] K.Gjerde (2012) "Challenges to protecting the marine environment beyond national jurisdiction, "The International Journal of marine and coastal Law, vol.27 (4), 842, 843
[154] Ibid.842
[155] Ibid.844
[156] A.H.Dean, Achievements at the Law of the sea conference, in proceedings of the American society for International Law, 1955, p.186.

After the Law of the Sea Convention was came into force, serious impacts or threats for the conservation of marine environment were identified. But the question remained answering. Since the Law of the Sea Convention provide necessary solutions for overcoming these challenges or it appears as a framework agreement for sustainable regulation of economic activities on the ocean.

UNCLOS did not appear to provide the necessary tools and mechanisms to develop an effective system of area-based management (e.g. marine protected areas) in areas beyond national jurisdiction (ABNJ), which was a priority for those advocating protection of marine resources of the high seas.[157]One important gap in UNCLOS is its lack of specific provisions for marine protected areas. There is no any criteria or proper mechanism for the identification of Marine Protected Areas in high seas under the UNCLOS. Therefore it creates the need for a more detailed implementing instrument which addresses the issues of high seas through the area base management tools such as Marine Protected Areas.

The gaps in the legal regime for the high seas which were identified included the lack of clarity for a bio-prospecting regime applicable to marine genetic resources in ABNJ; the lack of clarity on the interaction between the regime of the high seas and the regime of the outer continental shelf; the lack of regulation for marine scientific research in the high seas under UNCLOS that would also include bio-prospecting; the legal relationship to military activities and to the laying of cables and pipelines; the lack of a regulatory regime for emerging and new activities, including co2 sequestration, floating installations, and deep sea tourism[158]and the lack of environmental impact assessment provisions and international standards regulating activities in the high seas.[159]It seems that there is a lack of clarity for a bio-prospecting regime applicable to marine genetic resources in ABNJ. Lack of regulations for marine scientific research in the high seas, lack of proper regulatory mechanism for emerging new activities such as CO2 sequestration and lack of

[157] Nilufer Oral, Freedom of the High Seas or Protection of the Marine Environment? A False Dichotomy, pg.333 chapter 11, Ocean Law Debates- The 50- Year Legacy and Emerging Issues for the Years Ahead by Harry N.Scheiber; Nilufer Oral and Moon-Sang Kwon
[158] Workshop on High Seas Governance for the 21st Century (Gland: IUCN, 2007) (Online) https://cmsdata.iucn.org/downloads/ iucn-workshop-co-chairs-summary-new-icun-format-pdf.
[159] Ibid.

Environmental Impact Assessment for activities in the ABNJ have been identified as the loopholes to be filled through a new way of approach.

More recent current threats concerning marine biodiversity in ABNJ such as access to genetic resources, species and ecosystem protection measures, response to climate change are not specifically addressed under the UNCLOS.

There is no specific duty under the UNCLOS for the conservation and sustainable use of marine biodiversity in areas beyond national jurisdiction. "Although there is no specific duty under UNCLOS to conserve and manage continental shelf resources, as seen previously, coastal states have a general obligation to protect the marine environment and to ensure the exploitation of natural resources pursuant to environmental policies".[160]

"The primary emphasis in UNCLOS on flag state enforcement of marine environmental laws in ABNJ, fails to address adequately the use of flags of convenience and the lack of capacity of flag states or indeed the political will to enforce international or regional obligations.[161]

UNCLOS part XII clearly sets out the environmental duties, including general obligations[162]and regarding the Marine Scientific Research (MGR) can be seen Part XIII of the UNCLOS. As per Kristina Gjerde, "no international requirements for EIA, prevention or minimization of adverse impacts or conflicts with other seabed activities, or ongoing monitoring of effects.[163]Unlike MSR relevant to mineral resources of the Area, MSR for other purposes is not subject to strict environmental standards for research on the legal continental shelf, coastal States may withhold their consent to MSR if it involves drilling, the use of explosives or the introduction of harmful

[160] UNCLOS. Article 192,194
[161] Gjerde, (2012) "Challenges to protecting the marine environment beyond national jurisdiction: The International Journal of Marine and Coastal Law Vol, 27(4),844.
[162] UNCLOS. Article 192, 194, 195, 196, 197, 204-206
[163] Kristina M.Gjerde et al.(2008). Regulatory and Governance Gaps in the International Regime for the conservation and sustainable use of marine Biodiversity in Areas beyond national jurisdiction,

substances[164] (i.e., potential for adverse impact), but no such provisions exist for non-mining related MSR in ABNJ.[165]

Although UNCLOS refers to the straddling and highly migratory stocks, there was no comprehensive agreement on how best to regulate these fish stocks during the course of the Third United Nations Conference on the Law of the Sea (UNCLOS III).[166]UNCLOS provides only a few broad principles for the management of the straddling and highly migratory fish stocks, as well as high seas fish stocks.[167]

Gaps of other global legal and institutional mechanisms

This part will focus on the gaps and weakness of global legal and institutional mechanisms in relation to the conservation and sustainable use of marine biodiversity in ABNJ.

Convention on Biological Diversity

Apart from the UNCLOS the other important global instrument for the conservation on biodiversity is the Convention on Biological Diversity (hereafter CBD). When analytically examine the provisions of the CBD, there are some limits and gaps in addressing the issue of marine biodiversity beyond the areas of national jurisdiction. As noted by Dr.Warner, one of the principal weaknesses in the normative framework is that there is no direct duty on the Contracting Parties to the CBD to conserve or sustainably use of marine biodiversity in Areas beyond national jurisdiction.[168]Article 3, 4, 5, 14(c) and 14 (d) of CBD focuses on the environment in ABNJ. But it is not clearly spelt out the marine biodiversity or marine environment.

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[164] UNCLOS. Article 246 5(b)
[165] Keistina M.Gjerde et al.(2008). Regulatory and Governance Gaps in the International Regime for the conservation and sustainable use of marine Biodiversity in Areas beyond national jurisdiction,

[166] D.Rothwell, J.Stephens, The International Law of the sea, 2 ed., (Oxford and Portland Oregon; Hart Publishing, 2016), 19
[167] UNCLOS. Articles 63, 64, Part VII
[168] D.Rothwell et.al.,Oxford Handbook of International Law (Oxford University Press, 2015) 757.

The Jakarta Mandate on Marine and Coastal Biological Diversity adopted under the CBD, encourages establishment of Marine Protected Areas as part of an eco-system approach to conserving marine biodiversity.[169]However, the CBD does not apply to components of biological diversity in areas that are outside the limits of national jurisdiction. Nevertheless, it does apply to process and activities carried out under national jurisdiction and control regardless of areas beyond national jurisdiction, the CBD calls on its contracting parties to cooperate directly or, where appropriate, through competent international organizations.[170]

International Maritime Organization (IMO) and MARPOL

The International Maritime Organization (hereafter IMO) adopts Particularly Sensitive Sea Areas (hereafter PSSA) on a case-by-case basis, and there are no strict rules stipulating the limits to size or jurisdictional areas. There seems to be nothing to prevent for PSSAs from covering vast ocean areas, including ABNJ (Roberts, Chircop, and Prior 2010). All that is needed is IMO agreement. However, the usefulness of the PSSA status has been questioned, as the decision itself is not legally binding and the measures in question could be directly and independently established under the IMO instruments (e.g. for ship routing, report-in, MARPOL special areas). Nevertheless, a PSSA designation may help raise seafarers' awareness of sensitive areas because it will appear on their charts. It may also encourage the adoption of new types of measures (e.g. noise requirements). However, a PSSA designation offers no additional jurisdictional powers of enforcement, which means that it would still mainly fall on flag states to ensure that rules are complied with on the high seas. Fifteen PSSAs had been established up to 2016, none of which extends to the high seas.[171]

Rules and regulations relating to the physical disturbances caused to marine life by ships (noise or collision) and also the emission of ballast water, biofouling and grey water from cruise ships have not yet been regulated by the IMO. "It should also be noted that modern environmental law

[169] Major Vierros, Sam Johnston and Dan Ogalla, "The Convention on Biological Diversity (CBD) and Marine Protected Areas on the High Seas," in Thiel and Koslow, Managing Risk, 169-174
[170] CBD. Article 3 &4; See Vierrros, Johnston and Ogalla, "The Convention on Biological Diversity; and Warner, "Marine Protected Areas," 158.
[171] Governance Challenges, Gaps and Management opportunities in Areas Beyond National Jurisdiction –A STAP Information Paper by Henrik Ringbom and Tore Heriksen

principles play a relatively limited role in the IMO's law-making. Indeed, in some cases the IMO's own principles for adopting new rules fit uneasily with such environmental principles. For example, it is a long-standing practice in the IMO that new rules are developed only on the basis of "a clear and well-documented demonstration of compelling need."[172] In this context, it is clear that there is a lack of applicability of new environmental principles such as precautionary principles, polluter pays principle and ecosystem based approach under the rules of IMO.

In general terms, the IMO rules for the prevention of pollution from ships are quite stringent, and operational vessel-source pollution would be a small problem if they were all actually complied with. However, there are considerable imperfections in implementation, even though MARPOL has, in the past decades, contributed to a significant decrease in pollution – accidental or deliberate – from international shipping.[173]

Substantive gaps still exist, either due to a lack of rules (for example, in the case of preventing ship strikes with cetaceans or noise requirements for ships) or a lack of the ratification of rules that have already been adopted (for example, ballast water management). In certain cases, such as the reduction of greenhouse gases, the matter is regulated and the rules are in force, but the material requirements are so weak that they are almost void of practical significance, at least in the short term.[174]

Convention on International Trade in Endangered Species of wild fauna and flora

"Some consider that it has limited practical success given the toleration of major exceptions which provide loopholes for illegal trade practical difficulties of enforcement."[175]Considering the marine biodiversity in ABNJ, there are no definite provisions for addressing the marine conservation in ABNJ under this CITES convention.

[172] IMO Resolution A.500(XII) (1981) and A.777(18) (1993).
[173] Ibid
[174] Governance Challenges, Gaps and Management opportunities in Areas Beyond National Jurisdiction –A STAP Information Paper by Henrik Ringbom and Tore Heriksen

[175] Birnie, Boyle, Redgwell, 688.

SECTION B- The Process of Biodiversity Beyond the areas of National Jurisdiction (BBNJ)

The process of BBNJ so far and the contribution of these BBNJ for the progressive development towards negotiation for an internationally legally binding instrument and its implications for South Asian region and way forward will be analyzed in this section under the below mentioned subsections.

Turning point of new regime for the conservation and sustainable use of marine biodiversity in ABNJ

Initially in 2002 Unite Nations Informal Consultative Process (hereafter UN ICP) started for discussing the protection of the marine environment. Thereafter in 2004, United Nations General Assembly established an ad hoc open ended informal working group to study the issues relating to the conservation and sustainable use of marine biodiversity beyond the areas of national jurisdiction. As per the General Assembly resolution 59/24 paragraph 73 dated 17th November 2004, Ad Hoc open-ended Informal Working Group was established to study the issues relating to the conservation and sustainable use of marine biodiversity beyond the areas of national jurisdiction. A major step forward was taken in 2004.[176]In 2004, as per resolution 59/24, paragraph 73, the Working Group was requested to

I. Survey the past and present activities of the United Nations and other relevant international organizations with regard to the conservation and sustainable use of marine biological diversity beyond the areas of national jurisdiction;
II. Examine the scientific, technical, economic, legal, environmental, socio-economic and other aspects of these issues;
III. Identify key issues and questions where more detailed background studies would facilitate consideration by states of these issues; and
IV. Indicate, where appropriate, possible options and approaches to promote international cooperation and coordination for the conservation and sustainable use of marine biodiversity beyond the areas of national jurisdiction.

[176] Established by UNGA Resolution A/59/24, 4 February 2005, para, 73, 74.

The first meeting of the working group was held in New York from 13th to 17th February 2006. State members of the United Nations, parties to the United Nations Convention on the Law of the sea and observers including global and regional intergovernmental organizations, organization and bodies of the United Nations system and non-governmental organizations attended in this first meeting of the working group.

Possible options and approaches to promote international cooperation and coordination for the conservation and sustainable use of marine biodiversity beyond the areas of national jurisdiction were discussed under the thematic areas namely, implementation of existing instruments, cooperation and coordination, integrated management approaches, Area-based management measures including representative networks of marine protected areas, marine scientific research, capacity building and transfer of marine technology and genetic resources.

Many delegations expressed that the establishment of the Working Group created a unique opportunity for the international community to study the issues relating to the conservation and sustainable use of marine biodiversity beyond the areas of national jurisdiction. They emphasized that marine biological diversity beyond the areas of national jurisdiction can be achieved through the integrated ocean management. During this first meeting of the Working Group, illegal, unreported and unregulated fishing and destructive fishing practices were identified as the greatest threats to the marine biodiversity beyond the areas of national jurisdiction by the delegations.

"Some delegations noted that existing mechanisms provided only sectoral governance structures and that there were no clear mechanisms or a set of policy approaches in place to foster cooperation and coordination in a way that could effectively tackle the marine ecosystems. Some delegations suggested that this gap could be addressed through the adoption of an implementing agreement to the United Nations Convention on the Law of the Sea."[177]

[177] 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

During their first working group, they discussed and exchanged the view on institutional coordination, the need for short term measures to address illegal, unregulated and unreported (IUU) fishing and destructive fishing practices, marine genetic resources (MGR), marine scientific research (MSR) on marine biodiversity, high seas, marine protected areas (MPA) and environmental impact assessment (EIA).

It is important fact that under this report the delegation discussed very important issue on the principle of the common heritage of the mankind. "In addition, a number of delegations stated that in accordance with their understanding of the principle of the common heritage of mankind, access to genetic resources in the deep seabed beyond the areas of national jurisdiction should be, in principle like the mineral resources in the area, subject to the sharing of benefits based on consideration of equity. To emphasize this point of view, they noted the symbiotic relationship that genetic resources had with non-living marine resources and other living resources in the surrounding water column. They contended that a regulatory mechanism, including the adoption of improved norms and or an implementing agreement to the convention, may become necessary to clarify such matters as the relationship between marine scientific resources and bioprospecting. A regulatory mechanism could also address the question of access to those resources and legal options for benefit sharing including."[178]

The importance of the widely using of environmental management tools and the use of environmental impact assessment in the management of marine resources beyond the areas of national jurisdiction were highlighted in this discussion. The importance of further studies on existing threats to the marine biological diversity and on available tools to address those threats both within and outside the scope of the current legal regime were emphasized in this.

During this first preparatory meeting, scientific, technical, economic, legal, environmental, socio-economic and other aspects of the conservation and sustainable use of marine biodiversity beyond the areas of national jurisdiction and the key issues and questions where more detailed back ground studies would facilitate consideration by states for the conservation and sustainable use of marine biological diversity beyond the areas of national jurisdiction were discussed.

[178] Ibid

The second meeting of the Ad Hoc Open-ended Informal Working Group of the General Assembly to study the issues relating to the conservation and sustainable use of marine biological diversity beyond the areas of national jurisdiction was held from 28th April to 02nd Mary 2008 at United Nations Headquarters in New York.

The Working Group was mandated by General Assembly resolution 61/223 of 20th December 2006, as reaffirmed by resolution 62/215 of 27th December 2007, to consider:

I. the environmental impacts of anthropogenic activities
II. on marine biological diversity beyond areas of national jurisdiction; coordination and cooperation among states, as well as
III. relevant intergovernmental organizations and bodies, for the conservation and management of marine biological diversity beyond areas of national jurisdiction; the role of area-based management tools;
IV. genetic resources beyond areas of national jurisdiction; and
V. whether there is a governance or regulatory gap, and if so,
VI. How it should be addressed.[179]

To acknowledge differences of opinion over legal interpretations and existence of regulatory and governance gaps and practical measures to conserve and protect the marine biodiversity beyond the areas of national jurisdiction were discussed in this meeting.

During this second working group meeting, a co-chairs draft joint statement was presented identifying issues for General Assembly to consider referring back to the working group focussing on areas beyond national jurisdiction for effective implementation and enforcement of existing agreements, strengthening of cooperation, development of an effective environmental Impact Assessment (EIA) tools for ocean management, development of area based management tools

[179] Summary of the second meeting of the Working Group on marine biodiversity beyond areas of national jurisdiction available at http://iisd.ca/oceans/marinebiodiv2/

(ABMT), practical measures to address the conservation and sustainable use of marine genetic resources and continued and enhanced marine scientific research.

It was agreed by consensus to the recommendations to the General Assembly on inter alia: including in the secretary General's report on oceans and the law of the sea information on EIAs undertaken for planned activities in beyond the areas of national jurisdiction recognizing the importance of further developing of scientific and technical guidance on the implementation of EIAs on planned activities in the areas beyond the national jurisdiction.

The third meeting of the Working Group was held from 1st to 05th February 2010. The Working Group further considered the relevant legal regime on marine genetic resources in areas beyond national jurisdiction in accordance with United Nations Convention on the Law of the Sea, with a view to making further progress on this issue. The Working Group *inter alia* considered the issues of marine protected areas and environmental impact assessment processes.

The importance of using the best available scientific information in the development of sound policy relating to the conservation and sustainable use of marine biological diversity beyond the areas of national jurisdiction was emphasized. The importance of developing capacity building programmes and workshops for sharing of skills were highlighted in this meeting. The other important thing emphasized by the working group is the cooperation and coordination for the effective implementation of relevant global and regional instruments relating to the conservation and sustainable use of marine biodiversity beyond the areas of national jurisdiction. The need for the cooperation and coordination for integrated ocean management and ecosystem approach and the development of technical guidance on the implementation of environmental impact assessment were also highlighted in this third Working Group meeting in 2010.

Fourth meeting of the Ad-Hoc Open ended Informal Working Group to study the issues relating to the conservation and sustainable use of marine biodiversity beyond the areas of national jurisdiction was held in June 2011. This year was the very significant year for the whole BBNJ process so far. "When the BBNJ Working Group recommended that a process be initiate by the General Assembly to identify the gaps in the international legal landscape and ways forward,

including the implementation of existing legal instruments, with the possible development of a new multilateral agreement under UNCLOS also presented as an option.[180]

During this fourth meeting of the Working Group, it was adopted by consensus presenting a set of recommendations to initiate a process on the legal framework for the conservation and sustainable use of marine biodiversity beyond the areas of national jurisdiction by identifying gaps and ways forward, including through the implementation of existing instruments and the possible development of a multilateral agreements under the UNCLOS.

This BBNJ Working Group further recommended that this process would address four substantive elements in an integrated manner as a "package", namely: (1) marine genetic resources (MGR) (2) Measures such as area-based management tools including MPAs; (3) environmental impact assessment; and (4) Capacity building and the transfer of marine technology (referred to below as the 2011 package).[181]

The need of addressing the four elements through an integrated approach was emphasized in this fourth meeting. "This resulted in the "2011 package Deal", whereby the BBNJ Working Group agreed to formally consider "the possible development of a multilateral agreement" under UNCLOS as part of a new process focussed on identifying gaps and findings and ways forward.[182]

The fifth meeting of the BBNJ Working Group was held from 7-11 May 2012. This Working Group focussed on: marine genetic resources, including questions on the sharing of benefits, measures such as area based management tools, including marine protected areas and environmental impact assessments; capacity building and the transfer of marine technology, the organization of intersessional workshops aimed at improving understanding of the issues and

[180] UN Doc A/66/119, Letter dated 30th June 2011 form the Co-Chairs of the Ad-Hoc Open-ended Informal Working Group to the President of the General Assembly, Annex para 1(a)
[181] Ibid Annex para 1 (b)
[182] UNGA, 2011, A/66/119, Letter dated 30 June 2011 from the Co-Chairs of the Ad Hoc Open-ended Informal Working Group to the President of the General Assembly regarding Recommendations 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 and Co-Chairs' summary of discussions. Annex, available online at:<htttps://documents-dds-ny.un.org/doc/UNDC/GEN/N11/397/64/PDF/N1139764.pdf?OpenElement>.

clarifying key questions as an input to the work of the Working Group; and the identification of gaps and ways forward, with a view to ensuring an effective legal framework for the conservation and sustainable use of marine biodiversity in areas beyond national jurisdiction.[183]After substantive debates and negotiations the Working Group recommended that "the General Assembly task is it to continue to consider all issues under its mandate as a package with a view to making progress on ways forward to fulfill its mandate. The Working Group also adopted term of reference for two intersessional workshops that are expected to improve understanding of issues before the Working Group and thus lead to a more informed and productive debate at its next meeting in the second half of 2013.[184]

Sixth meeting of the Working Group was called by the General Assembly in resolution 67/78 and was held in light of paragraph 162 of the 2012 UN conference on Sustainable Development (UNSCSD or Rio+ 20) outcome document "The Future We Want", which contains a commitment to address on an urgent basis, building on the work of the Working Group, the issue of BBNJ including by taking a decision on the development of an international instrument under the United Nations Convention on Law of the Sea (UNCLOS) before the end of the sixty ninth session of the UN General Assembly;[185] The main objective of the meeting was to identify the gaps and ways forward with a view to establish an effective legal framework for BBNJ. Delegates agreed by consensus to establish a preparatory process in the Working Group to fulfil the Rio+20 commitment by focusing on the scope, parameters and feasibility of an international instrument under UNCLOS.[186]The European Union pointed out the necessity for an implementing agreement. As per their statement, a specific instrument for the conservation and sustainable use of MGRs was emphasized.

Seventh meeting of the Working Group from 1st -4th April 2014 was the first of three meetings (April 2014, June 2014 and January 2015) convened by the UN General Assembly through its resolution 68/70 to discuss the scope, parameters and feasibility of a possible new international

[183] Earth negotiations bulletins online at http://wwwiisd.ca/oceans/marinebiodiv5/
[184] Ibid
[185] Earth negotiations bulletins online at http://wwwiisd.ca/oceans/marinebiodiv6/
[186] Ibid

instrument on BBNJ under the UN Convention on the Law of the Sea (UNCLOS).[187] G-77 and China expressed the feasibility of a new international agreement for the conservation and sustainable use of marine biodiversity in areas beyond national jurisdiction. They stated that "UNCLOS provides legal principles but not a specific legal regime for BBNJ and that in the face of lack of coordination and legitimacy of unilateral, sectoral and regional initiatives, there is a need for a specific binding legal framework in the form of an UNCLOS implementing agreement to be developed in coordination with legal structures established by UNCLOS and its existing implementing agreements. Scope and parameters of new instrument were discussed in this meeting.

Year 2015 was the year of ninth BBNJ Working Group meeting. It was convened from 20th -23rd January 2015. This meeting was expected to produce recommendations for a discussion to be taken at the sixty ninth session of the UN General Assembly on the development of a new international instrument on BBNJ under UNCLOS, as mandated by the 2012 UN Conference on Sustainable Development (Rio+20).[188]After informal negotiations, delegate reached consensus on recommendations for a decision to be taken at the sixty ninth session of the UN General Assembly to develop a new legally binding instrument on BBNJ under UNCLOS. BBNJ working group convened nine occasions between 2006 and 2015 and produced a series of reports relating to the conservation and sustainable use of marine biodiversity in ABNJ. Delegates also reached consensus on a negotiating process by establishing a preparatory meeting to make recommendations on elements of a draft text of a legally binding instrument to the General Assembly in 2017 and for the General Assembly to decide at its seventy second session whether to convene an intergovernmental conference to elaborate the text of the agreement.[189]

In 2017, Fourth session of the preparatory Committee was held from 10th -21st July. This was the last session scheduled by the UN General Assembly, as per Resolution 69/292. This was expected to finalize substantive recommendations on the elements of a draft text of an Internationally Legally binding Instrument due to be negotiated in the coming years.

[187] Earth negotiations bulletins online at http://wwwiisd.ca/oceans/marinebiodiv7/
[188] Earth negotiations bulletins online at http://wwwiisd.ca/oceans/marinebiodiv9/
[189] Ibid

The Intergovernmental Conference (hereafter IGC) on an International Legally Binding Instrument under the UN Convention on the Law of the Sea on the conservation and sustainable use of marine biodiversity of Areas beyond National Jurisdiction was held from 16th -18th April 2018. "In its resolution 72/249 of 24th December 2017, the General Assembly agreed to convene an Intergovernmental Conference, under the auspices of the United Nations to consider the recommendations of the Preparatory Committee (Prep Com), with a view to developing the instrument as soon as possible.[190]Several important decisions were taken at this organizational meeting such as election of a Conference President, establishment of the format for first session of the conference (IGC-1), rules of procedure, establishment of a bureau and a credentials committee and preparation of a document to guide discussions at this meeting.

During this first IGC, Delegates agreed to address 2011 package of elements namely; marine genetic resources including on the sharing of benefits, measures such as area-based management tools, including marine protected areas, environmental impact assessment and capacity building and the transfer of marine technology and cross cutting issues. Parties for the Conference had agreed to apply General Assembly's rules of procedure, mutatis mutandis to the IGC and agreed for the establishment of credentials committee to establish a bureau consists of president and 15 vice presidents, three members from each region serving in their national capacity to assist on procedural matters of the conference. Focusing on the four elements agreed in 2011 package with substantive discussions and preparation of a zero draft were the other important areas agreed at this IGC.

First Session of the Intergovernmental Conference on an International Legally Binding Instrument under the UN Convention on the Law of the Sea on the Conservation and sustainable use of marine biodiversity beyond the areas of national jurisdiction was held from 4-17th September 2018. Four informal Working Groups on the four elements of 2011 package presented their views and observations under the themes which were allocated them. Informal Working Group on Capacity Building and Technology Transfer (CB & TT) emphasized through their report that the importance of incorporating multiple CB & TT focused objectives or a simple objective linked to the International Legally Binding Instrument and the requirement for needs assessment to address

[190] Earth Negotiations Bulletin online :http/enb.iisd.org/oceans/bbnj/org-session/

regional characteristic and options on roles and modalities for monitoring and review. Area Based Management Tools (ABMT) Working Group highlighted the importance of the establishment of a coherent process for ABMT for all states parties, enhancing the coordination and cooperation among existing regional bodies, establishment of multipurpose marine protected areas. Informal Working Group of EIA (environmental Impact Assessment) viewed on the importance of conducting EIA for planned activities, options on modalities and degree of internationalization for decision making. The highlighted issues by the informal working group on Marine Genetic Resources (MGRs) were convergence on distinguishing fish used as a commodity and as genetic resources, options on including monetary benefits sharing and establishment of a trust fund or creating adaptable benefit sharing package and models taking into account the existing framework.

Taking into consideration the aforementioned progressive measures taken by the informal Working Groups, it is clear that this process seems forwarding progressively in achieving the aim of formation an integrated universal approach under UNCLOS for the conservation and sustainable use of marine biodiversity beyond the areas of national jurisdiction. Most delegates positively contributed in this meeting with their very initiative observations and views on the agreed four elements of 2011 package. The meeting was ended with the agreement among the delegates for the creation of text with treaty language by next Intergovernmental Conference due to be held in 2019 March.

Need for a new approach and way forward for overcoming the challenges for the conservation and sustainable use of marine biodiversity in ABNJ

As the current conservation measures have not been successful, the regulatory framework and institutional architecture for the protection and sustainable use of biodiversity in ABNJ (Areas beyond National Jurisdiction) remains disparate and in many respects unfit for this purpose.[191] Because of this lacuna, the need of codification of new legal provisions for the conservation and sustainable use of marine biodiversity beyond the areas of national jurisdiction has popped up under the BBNJ process so far.

[191] R.Warner :Conserving Marine Biodiversity in Areas Beyond National Jurisdiction: Co-evolution and interaction with the Law of the Sea in D.Rothwell A.Oude Elferink, K.Scott and T.Stephens, The Oxford Handbook of the Law of the Sea (Oxford:OUP, 2015), 752, 758

Negotiators for a new agreement under UNCLOS for the conservation and sustainable use of marine biodiversity in ABNJ are to strive to enhance biodiversity conservation and management through enhanced cooperation and coordination whilst not undermining existing legal and institutions mechanisms and their mandates. Achieving these aims will require a creative approach to establishing an integrated and cross-sectoral system of ocean governance at global, regional and national scales. As underscored by Mahon et al.(2015), successful interplay between different organisations requires that they operate in sync, based on a common purpose and a shared set of principles.[192]

The writings of the many authors on this new approach can be positively expressed their views on the new legally binding instrument to be concluded near future. "The proposed legally binding instrument for the conservation and sustainable use of biodiversity beyond national jurisdiction, the elements of which are being negotiated at the United Nations, will create an instrument that will protect an important part of the global commons and the common interests of the international community, and thereby fulfill part of the *obligation erga* omnes to protect and preserve the marine environment. The instrument should not be seen as a curtailment of freedoms of the high seas, but one that of the international community as a whole, in order to preserve the finite natural resources of the oceans."[193]

The ocean urgently requires protection and one clear way forward would be to establish a connected network of marine protected areas (MPAs). Yet states do not currently have a mechanism by which to create and manage such a network in Areas beyond National Jurisdiction. There are no legal obligation to carry out environmental impact assessments before undertaking activities in these areas. And there is currently no legal framework to regulate access to and exploitation of marine genetic resources. A robust international agreement and stronger regional governance framework are essential to ensure the conservation and sustainable use of biodiversity in the high seas. Starting of formal negotiations on a new international and legally binding

[192] Robin Mahon, Lucia Fanning, Kristina M. Gjerde, Oran Young, Michael Reid, Selicia Douglas, 2015. Trans boundary Waters Assessment Programme (TWAP) Assessment of Governance Arrangements for the Ocean. Volume 2: Areas Beyond National Jurisdiction. UNESCO-IOC, Paris, France. IOC Technical Series. 119. 91 pp.

[193] Nilufer Oral, "Ocean Debate", Chapter 11, Freedom of the High Seas or Protection of the Marine Environment? A False Dichotomy,

instrument to protect marine biodiversity in Areas beyond National Jurisdiction were launched by the United Nations General Assembly in Resolution 72/249 of 24 December 2017. This can be considered as the better approach for the positive outcome for achieving the goal of conservation of marine biodiversity in ABNJ.

"The legally binding instrument, if successfully adopted and implemented, will fill an important legal gap for the conservation and sustainable use of marine biological diversity in areas beyond national jurisdiction."[194] In the face of adverse consequences of overexploitation of marine resources in the high seas and the adverse anthropogenic activities, the need of conserving the health of the oceans has become a debateable issue at global and regional level. With this special global attention for achieving the ultimate goal of effective conservation of the sustainable use of marine biodiversity in areas beyond national jurisdiction, so the BBNJ process began and continued so far adding significant progress to the field of the Law of the Sea relating to the conservation and sustainable use of marine biodiversity in ABNJ. It seems that this process popped up and developed progressively in filling the gaps and limits of existing legal and institutional framework in addressing the issues of conservation of marine biodiversity in ABNJ.

A further major breakthrough was achieved when the United Nations General Assembly decided in Resolution 69/292 to develop under UNCLOS an international legally binding instrument on the conservation and sustainable use of marine biodiversity in areas beyond national jurisdiction.[195] In moving the process forward, the fourth Prep Com in 2011 added very significant value to the process by introducing four key elements to be addressed as an integrated manner in this process.

Contribution of South Asian countries in the process of BBNJ

During the first preparatory committee meeting in 2006, Bangladesh delivered their statement emphasising the need of exploring possible mandatory regulations on Marine Scientific Research and bioprospecting. While Japan and United States emphasized the considering the existing legal mechanisms for addressing the issues of conservation and sustainable use of marine biodiversity

[194] Kristina M.Gjerde, "Ocean Debates", Chapter 12, Perspectives on a Developing Regime for Marine Biodiversity Conservation and Sustainable Use beyond National Jurisdiction,
[195] UNGA Resolution a/RES/69/292, 6 July 2015, para. 1

in Areas Beyond National Jurisdiction rather than discussing new instruments or amendments, these South Asian countries were very pessimistic at the outset of this process with the view of urgent need for a new instrument for addressing the issues of conservation and sustainable use of marine biodiversity in ABNJ without prejudice to the existing legal and institutional mechanisms.

South Asian countries presented their positions aligning with the ideas of Group/77 and China. This group was supportive for the continuation of the discussions towards concluding a new implementing agreement under UNCLOS. G77/China presented their view to eliminate the subsidiaries for fisheries which contributing to Illegal, Unregulated and Unreported fishing, Because IUU fishing is a serious threat to the marine biodiversity in ABNJ. Regarding Marine Genetic Resources, G77/China argued that "while the principle of the common heritage of mankind applies to all resources of the deep seabed, norms could be developed to implement access to and benefit-sharing from, genetic resources beyond areas of national jurisdiction. Emphasising the role of the International Seabed Authority an integrity of UNCLOS, the G77/China also called for consideration of new improved implementation mechanisms and options for institutional arrangements, including the ISA's existing capacity."[196]

Taking into consideration the position of India, "India recommended focusing on the legal regime for marine genetic resources in the high seas in the framework of UNCLOS."[197]

In 2008 at the second meeting of the Working Group G77/China raised their concerns on the coordination among sectors, agencies, parties and with the Convention on Biological Diversity. India's position was that "the general principles of marine scientific research contained in UNCLOS related to the benefit of mankind and that the non-recognition of research activities as a legal basis for claims should apply to bio-prospecting."[198]

[196] Earth Negotiations Bulletin online at http://www.iisd.ca/oceans/marinebiodiv1/
[197] Ibid
[198] Earth Negotiations Bulletin online at http://www.iisd.ca/oceans/marinebiodiv2/

During this second meeting of the Working Group G77/China commented on enhancing of climate research and monitoring. They focused on Intellectual Property Rights and capacity building as well.

During the third meeting of the Ad-Hoc-Open ended Informal working group, Sri Lanka stressed "the need for Marine Scientific Research to be conducted with the participation of developing countries."[199]They further stressed the importance of political will for the proper implementation of scientific data and transfer of marine technology.

Sri Lanka and India supported with the position of saying that "an UNCLOS implementation agreement provided it constitutes a package including the common heritage principle. Sri Lanka also noted the need for clear understanding of criteria for regional patenting of Marine Genetic Resources and derivatives, and the need for transparency in regional and national patenting processes of MGR."[200]

Fourth meeting of ad-hoc open ended informal working group marked the milestone year for the BBNJ process. G77/China viewed at this fourth meeting of the working group "the applicability of the common heritage principle to the biological resources of the seabed and ocean floor and subsoil thereof, beyond the limits of national jurisdiction. (the area); the relevance of the ISA for the protection of the marine environment and MSR; marine environment and MSR; the need for a discussion of IPR's related to MGRS; and the proposal to initiate a negotiation process addressing holistically the legal regime on conservation, sustainable use, benefit-sharing, capacity building and technology transfer."[201]

India positively commented for negotiating a new implementing agreement on Marine Genetic Resources. The need of scientific evidence for Marine Protected Areas was stressed by India. G77/China emphasized that the need for a legal regime based on equity and the common heritage principle applying to the biological resources of the Area; the relevance of ISA for the protection

[199] Earth Negotiations Bulletin online at http://www.iisd.ca/oceans/marinebiodiv3/

[200] Ibid.

[201] Earth Negotiations Bulletin online at http//www.iisd.ca/oceans/marinebio4/

of the marine environment and MSR; and the need for a discussion of IPRs related to MGRs and they expressed their willingness towards an integrated approach four key elements, as a package and proceed with negotiation process.

During the fifth meeting of the Working Group in 2012, Sri Lanka noted that "fishing activities can negative impact on MGRs and the existing framework is inadequate to address MGRs in the water column. She called for a workshops to identify areas covered by existing regimes and clarify the authority and competence of international bodies; including the seabed authority and CBD, and an address the ongoing debate over IPRs."[202]

The Maldives stated during the ninth meeting of the working group in 2015 regarding their keen attention and interest for negotiation on a new implementing agreement to become happening as soon as possible.

First Inter-Governmental Conference (hereafter referred as IGC 1) for new Internationally legally binding instrument was convened September 2018. Bangladesh being South Asian country delivered their statement focusing on capacity building and technology transfer in pursuant to their legal nature as follows. "Underscored clear mandatory and non-mandatory provisions in the ILBI; a network mechanism; and multi stakeholder partnerships."[203]

Maldives "favoured the inclusion of a broad and non-exhaustive list of modalities; a definition of CB&TT drawing from IOC guidelines, UNCLOS, the Nagoya protocol, ISA guidelines and mechanisms under the UN framework Convention on Climate Change."[204]

In discussing the way of adoption and compatibility of this new instrument, the Maldives further said that this new instrument should be set up without undermining the existing global and regional legal mechanisms for the conservation and sustainable use of marine biodiversity in areas beyond national jurisdiction. They said that, adjacent coastal states including indigenous communities with

[202] Earth Negotiation Bulletin online at http//www.iisd.ca/oceans/marinebio5/
[203] Earth Negotiations Bulletin online at http//enb.iisd.org/oceans/bbnj/igc1/
[204] Ibid.

traditional knowledge, local communities as well as relevant global and regional International Government Organizations should be consulted in determining the issues of compatibility. Their position was that Sharing of information regarding the plan of monitoring and evaluation of the activities of the areas beyond national jurisdiction and due respect for the rights of the coastal states need to be reflected in drafting new instrument.

During this IGC one, Sri Lanka stressed that this new instrument should not prejudice to the legitimate sovereign rights claimed by the states those who have already achieved their claims through Commission on the Limits of the Continental Shelf (CLCS) and who are already in pending for the decision of CLCS for their extended continental shelf submissions under article 76 of the UNCLOS in exploration and exploitation of marine resources.

The way forward with the introduction of four elements in 2011

At this juncture in 2011 meeting, The G-77/CHINA emphasized that: the common heritage principle applies to biological resources of the Area, based on General Assembly Resolution 27/49 (XXV) as part of customary international law; further studies on BBNJ should not be conceived as a precondition for the examination of issues related to conservation, sustainable use and benefit-sharing; the Working Group should address intellectual property rights (IPRs) relating to BBNJ; and the legal regime on conservation, sustainable use, benefit-sharing, capacity building and technology transfer should be addressed holistically by initiating a negotiation process.[205]The general statement delivered by the EU delegation is very important in this process forward towards the development of new instrument. The EU pointed out the gap in the current international legal and policy framework; called for a coordinated cross-sectoral approach taking into account cumulative impacts of human activities; stressed the need for an UNCLOS implementation agreement constituting a package to enable better application of existing tools such as MPAs and EIAs, and new ones such as access to and benefit sharing from MGR s..[206]

[205] Ibid.

[206] Ibid.

Mexico emphasized the need to establish an intergovernmental committee, proposing that its mandate include elaborating a comprehensive approach to MGRs, MPAs, capacity building, technology transfer, and EIA processes. The EU called for formalizing a process towards an implementation agreement including: general principles of conservation and management; a process for the global designation of MPAs; a global approach to EIA and SEA; ABS from MGRs; and review of implementation and capacity building. Japan, the Russian Federation, Iceland and the US opposed developing an implementation agreement, with the US considering the Working Group an adequate forum to continue discussions.[207]

Reviewing these statements delivered by the delegates, they have positively expressed their willingness to the formation of new internationally legally binding instrument according to the key element of marine genetic resources, including questions on the sharing of benefits, measures such as area-based management tools, including marine protected areas, and environmental impact assessments, capacity building and the transfer of marine technology.

From the year 2011 until the recent Intergovernmental Conference held in September 2018, the idea of forming "the possible development of a multilateral agreement" under UNCLOS was progressively developed. Considering the 2018 Intergovernmental Conference, it is a significant way forward towards creation of multilateral agreement with addressing a formal package of issues, including "in particular, together and as a whole. It is very important approach of finding the ways for addressing these issues by appointing informal working groups for these four elements during this IGC meeting.

During this IGC 1, four Informal Working Groups were appointed under the areas of: capacity building and technology transfer (CB&TT); area-based management tools (ABMTs); environmental impact assessments (EIAs); and marine genetic resources (MGRs), including questions on benefit-sharing. Under each of these areas which were allocated to the working Groups, they presented their report. In these reports they have addressed the challenges and possible way forward for addressing these issues in achieving the ultimate goal of marine

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207 Ibid.

biodiversity beyond the areas of national jurisdiction. Delegations positively expressed their intention of way forward for a new approach.

"The G-77/CHINA supported preparing a zero draft for ensuring more focused and substantive discussions, overcoming challenges and further elaborating on consensus areas, to be circulated prior to IGC-2 and to reflect a balanced legal text containing options when needed. The AFRICAN GROUP called for an ambitious text striking a balance between the elements of the package. MOROCCO highlighted the need to respect sovereign rights over exclusive economic zones, continental shelves, and extended continental shelves."[208]

Preparing an informal, comprehensive but not exhaustive, preliminary draft as a basis for negotiations, using the basic structure of the PrepCom4 report, with inputs from IGC-1 Informal Working Groups was suggested by Costa Rica.

Challenges for the Internationally Legally Binding Instrument due to be concluded

There are many challenges in achieving the goal of concluding an Internationally Legally Binding Instrument (hereafter ILBI). The way of restricting the anthropogenic activities in the areas beyond national jurisdiction (hereafter ABNJ) is a great challenge in this process. The method or mechanism for restricting or limiting the anthropogenic activities is not clear and no any definite agreement on this matters.

In this context, it is needed to cope up with the requirements and future challenges in addressing this issue. Clearly identification of types of modalities to be addressed and mechanism of monitoring are required. Ongoing skill building, regular review of needs, regional centres of excellence and spreading development from the local to the global scale as best practices relevant to the BBNJ deliberations. These are the very significant and prioritized issues to be found solutions for coming up with the new proposals to be negotiated in coming negotiations. It is very important to establish a proper coordination and cooperation among the scientists and policy makers. Because in the absence of either partner, it is impossible for effective implementation.

[208] Earth Negotiations Bulletin: http//enb.iisd.org/oceans/bbnj/igc1/

Codification of new legal provisions addressing the challenges for conservation and sustainable use of marine biodiversity in areas beyond national jurisdiction will be the positive outcomes for future negotiations.

Even if this new ILBI enforce many rules and regulations relating to the conservation and sustainable use of marine biodiversity in ABNJ, the enforcement mechanism of those rules and regulations is a serious concern among the states. Because there are many existing legal and institutional mechanisms for addressing the issues related to marine biodiversity in ABNJ. But the problem of these mechanisms are lacking of proper implementation, monitoring and compliance mechanisms. While the parties are compliance with the rules and regulations enforced under new ILBI, the non-parties to this legally binding document are not oblige to follow those rules and regulations. In this context the question of how to effectively enforce the rules and regulations agreed in this legally binding instrument remain unsolved.

Considering the Marine Protected Areas (hereafter MPA), the level of protected areas is also another challenge in this process. It is required clear and definite level for establishing marine protected areas among the states.

One of the key elements address under this new ILBI is environmental Impact Assessment (EIA). With the advancement of new technology and the development many threats have been posed to the marine environment. Therefore doing EIA before starting the development activities prevent the serious threats to the marine environment. But the way of doing EIAs is not clear and no any clear agreement in doing these EIAs with the states.

Inter-Governmental Conference (hereafter referred as IGC 1) was held in September 2018 with the participation of all state parties, non-state parties and other international non-governmental organizations. During this conference, European Union delivered very important views on this new approach for legally binding instrument. They emphasised the importance of cross sectoral coordination and cooperation among competent authorities in this process towards the new internationally legally binding instrument. They further stated that due regard has to be given to the rights and legitimate interests of the coastal states and this can be achieved through the consultative process.

PART TWO

South Asian and other regional approaches for the conservation and sustainable use of marine biodiversity in ABNJ

Part two of this thesis consists in two chapters. Chapter one will examine the marine resources and the diverse challenges and impacts for the conservation and sustainable use of marine biodiversity in areas beyond national jurisdiction in South Asian region. Other regional experiences in addressing the issues for the conservation and sustainable use of marine biodiversity in areas beyond national jurisdiction will be discussed in this first chapter. Three main regional approaches namely; OSPAR Convention, Barcelona Convention and Antarctic treaty experiences will be discussed under this part. Regional initiatives taken by South Asian region and gaps and limits of these initiatives will be analysed in the second chapter of this part. Lessons can be learnt from other regional experience of OSPAR Convention, Barcelona Convention and Antarctic treaty and way forward for better approach for the conservation and sustainable use of marine biodiversity in areas beyond national jurisdiction for South Asian countries and way forward with the implication of new Internationally Legally Binding Instrument will also be discussed in the second chapter of this second part.

CHAPTER 1

Overview of the South Asian Region and Other Regional approaches for the Conservation and sustainable use of marine biodiversity in ABNJ

This part will examine the brief overview of the South Asian regional marine resources and diverse challenging impacts and threats for the conservation and sustainable use of marine biodiversity in areas beyond national jurisdiction. OSPAR Convention, Barcelona Convention and Antarctic treaty will be discussed in this chapter as other regional experiences. Evaluation of how these regional approaches seek to promote the conservation and sustainable use of marine resources in Areas beyond national jurisdiction will be discussed in this chapter.

SECTION A - Marine resources in South Asian region

A brief overview of the South Asian region including available marine resources and the various types of impacts or threats for the South Asian region in achieving the conservation and sustainable use of marine environment will be discussed under the following subsections.

There are eight countries in the South Asian region including five coastal countries, Bangladesh, India, The Maldives, Pakistan and Sri Lanka and three landlocked countries namely Nepal, Bhutan and Afghanistan.

Figure 1: A map of south Asian region

Source:*https://www.worldatlas.com/img/areamap/continent/asia_map.gif*

The South Asian region is surrounded by the Indian Ocean together with the Bay of Bengal and the Arabian Sea. This region is very rich in marine biological diversity with different coastal ecosystems such as mangroves, coral reefs, seagrass, meadows, river deltas, intertidal zones and sand dunes.

South Asia is a home to approximately 14 per cent of the world‘s remaining mangrove habitat and has the highest percentage of threatened wetlands, of which 82 wetlands are in Bangladesh. The

region has attained significance due to enormity of resources and biodiversity vis-à-vis developmental activities in the region".[209]There are many marine resources in this region. Coastal communities of these countries are depending on the marine resources. Because marine resources has created the job opportunities and also food avenues for these coastal communities. Coral reefs, fish resources and marine genetic resources play a vital role in the economies of South Asian region.

Coral reefs

Over 6% of the world's coral reef area is situated in South Asian region. A study has identified the Northern Indian Ocean as one of the ten centers of coral biodiversity hotspots with high endemism. It is considered that the most extensive coral reef system with the extent of 8,929 km is the atolls of the Maldives Ridge. This is considered as the most extensive coral system in the Indian Ocean as well as the largest atoll system in the world. Coral reefs play a crucial role in fisheries and in protecting the coastline from wave action and erosion [210]with significant declines of corals and heavy damage to entire reefs.

Around Andaman Islands and Nicobar and Gulf of Manner in between India and Sri Lanka are the hotspots for corals. North-East coast of India, the entire coastline of Bangladesh and Pakistan are very famous for rapid growth of coral reef due to freshwater and sediments inputs from large rivers like Ganga, Indus, Krishna and Godavari. The major reef formations in India are restricted to the Gulf of Mannar, Palk bay, Gulf of Kutch, Andaman and Nicobar Islands and the Lakshadweep islands. While the Lakshadweep reefs are atolls, the others are all fringing reefs.[211]

South Asia is also a home for terrestrial and marine biodiversity. Among these countries, Sri Lanka is one of the most biological diverse countries in the world. Sri Lanka has many fringing coral

[209] "Handbook on National Environmental Legislation and Institution in the Maldives" pg.6 Under the UNEP/SACEP/NORAD publication series on Environmental Law and policy.
[210] UNISDR/UNDP (2012), Review Paper: Status of Coastal Marine Ecosystem Management in South Asia, Inputs of the South Asian Consultative Workshop on "Integration of Disaster Risk Reduction and Climate Change Adaptation into Biodiversity and Ecosystem Management of Coastal and Marine Areas in South Asia" held in New Delhi on 6 and 7 November 2012, New Delhi
[211] Coral reef of Indian: Review of their Extent, condition, Research available online at : www.fao.org/docrep/X5627E/x5627e06.htm

reefs and several offshore coral reefs in the Gulf of Mannar. In Pakistan, sparse coral growth can be found around Astola Islands and in the coastal waters of the Jiwani coast. Bangladesh has coral reefs only around St. Martin's Islands.[212]

As revealed by a study conducted in Andaman and Nichorbar islands of India indicated that the coral reef diversity in the region might increase up to 400 species. Coral reef is very important because it contributes to the economic activities of the countries. Coral reefs are the base for tourism and fishing industry.

Fishing Resources

Fisheries industry is a key source of income in rural livelihoods in South Asia. Fisheries industry immensely contributes to the economic development of the region. Coastal communities in South Asian countries are taking a significant proportion of the daily intake of protein from fish. Therefore the fisheries industry plays a major role in the food security sector. The World Bank's Bangladesh Country Environmental Analysis (CEA) reported that "the fisheries sector contributes about $ 1.5 billion (4% of Bangladesh's Gross Domestic Product) and the sea food export sector is the country's second largest source of foreign exchange.[213]It is reported that in the Maldives, fisheries sector contributed almost half of the Maldives merchandise export ($60 million annually).[214] This is a very significant contribution of the earning of country's foreign exchange. In Sri Lanka it is reported that Fisheries sector represents 2.4% of the Gross Domestic Product.

Fish stocks being valuable resource to the South Asian countries, this industry contributes to the economic growth of these countries through their earning of foreign exchange as well as creating employment opportunities for their people. It is estimated that "that four out of five rural citizens of Bangladesh (over 85 million people) are directly or indirectly depend on aquatic and marine resources. The fisheries sector provides direct employment about 9% of the country's labor force. Over a million people fish full-time and another 11 million are part-time fishes."[215]

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[212] Spalding et al.2001' Wilkinson, 2008; Rajasuriya et al, 2004; Rajasuriya et al, 1998.
[213] Annual review .JULY 2007-juUNE 2008 (fy08) by Topas Paul (lpaul@worldban.org) and Jane Nishida (jnishida @worldbank.org) of the South Asia Sustainable Development Sector Department.
[214] Ibid.
[215] Ibid.

Fisheries industry provides an important livelihood and employment opportunities to at least 3 million fishermen who operate primarily in coastal and inshore waters and to over 4 million people who are employed directly in marine capture fisheries.[216] (Table 1).

Table 1 : Employment data for fisheries in South Asia

Country (year)	**Number employed (in thousands)**
Bangladesh (2005)	1,095
India (2005)	905.9
The Maldives (2006)	8.388
Pakistan (2010)	1, 000
Sri Lanka (2006)	144
Total	**3,153**

Source: BOBLME, 2010; FAO, 2010

This clearly shows that many coastal communities in South Asian countries are depending on the fish industry. Tuna fish stock is very important source of livelihood for the Maldives, Sri Lanka, and India. Significant proportion of the daily intake of protein is provided through the fish. This *inter alia* contributes to the food security of the countries as well.

Marine Genetic resources

The areas beyond the national jurisdiction of South Asian region is also very rich in diverse marine genetic resources. Valuable new resources in high seas areas; ocean hydrothermal vents with temperatures of 300-699 c containing gold and other valuable minerals with accompanying hyperthermophile and extremophile life forms crabs, bivalves, tube worms and shrimp like creatures, microbes which are considered bio-technologically and pharmaceutically important. The immense and still vastly untapped value of marine genetic resources in the deep seabed and

[216]UNISDR/UNDP (2012), Review Paper: Status of Coastal Marine Ecosystem Management in South Asia, Inputs of the South Asian Consultative Workshop on "Integration of Disaster Risk Reduction and Climate Change Adaptation into Biodiversity and Ecosystem Management of Coastal and Marine Areas in South Asia" held in New Delhi on 6 and 7 November 2012, New Delhi.

the high seas for a range of industries including pharmaceuticals, food and beverages, Cosmetics, agriculture and industrial biotechnology. There is particular interest in marine species that live in extreme environment such as hydrothermal vents, cold seeps and submarine trenches.[217]

Marine bioprospecting in areas within and beyond national jurisdiction of South Asian region is taking place. There is a particular interest in marine species that live in "extreme environments, such as hydrothermal vents, seamounts, cold seeps and submarine trenches ('extremophiles'), which trigger organisms to adopt new biosynthetic pathways that generate interesting compounds. South Asian countries being developing countries they are not armed with new technological advancement as well as financial assistance for these bioprospecting activities in the areas beyond their national jurisdiction. Developed countries have capacity and the financial strength and they are reaping the benefits from the resources of these South Asian countries without sharing the benefits with them.

Impacts and threats for the conservation and sustainable use of marine biodiversity in South Asian region

The oceans are the priceless heritage for all mankind in this world. The ocean is one of the most valuable resource for developing countries like South Asian countries. They are mostly depending on the oceans for their economic avenues as well as food security aspects. So oceans are intertwined with the human lives. Oceans are subject to many activities done by the people. Considering the South Asian region, diverse threats to the conservation and sustainable use of marine environment are posed by many anthropogenic activities. Destructive fishing practices such as bottom trawling and illegal unregulated and unreported fishing (IUU), pollution, bioprospecting and biological pharmaceutical industry, shipping, marine scientific research and climate change are the impacts for the conservation of biological diversity in areas beyond national jurisdiction in South Asian region. Various types of diverse threats and impact for the conservation and sustainable use of marine biodiversity in areas beyond national jurisdiction in South Asian region will be discussed in this part.

[217] Research Papers, 79, Access to And Benefit-Sharing of marine genetic resources beyond national jurisdiction: Developing a new legally binding instrument, Carlos.M.Correa

Destructive Fishing practices and Unsustainable fisheries

South Asian region is facing numerous threats in the effort of the conservation and sustainable use of their marine biodiversity. Unsustainable fisheries and Illegal, Unreported and Unregulated Fishing (hereafter IUU) is one of the major threat face by South Asian regional countries in achieving the aim of the conservation of marine environment. Destructive fishing practices destroy the marine habitats. "In the Indian Ocean, between 26% and 33% of stocks are being fished at biologically unsustainable level.[218]

Using the unregulated fishing practices like bottom trawling destroy the marine environment and it badly affects to the living and non-living resources in the high seas. This practice of bottom trawling is used mostly in IUU fishing and overfishing. Overexploitation is a continuous threat to the fisheries carried out in the South Asian region. This practice of overfishing contributed to the unsustainable fisheries in the region. Bottom trawling also stirs up sediment that may be poisonous, at times creating muddy water that gives aquatic species a difficult time surviving.[219]The other destructive fishing practices are using of dynamite and propeller chopping for harvesting the fish in the areas beyond national jurisdiction in South Asian region. It is an industrial technique that using huge nets weighed down with weighty ballast that get dragged down the sea bed, collecting and squashing everything that is on the way, from fish to aquatic plants. A lot of species together with the ones that at a risk of extinction get caught accidentally and when returned to the sea, they are normally dead. Such collateral damage also referred to as discards can go up to 80% or 90%.[220] IUU fishing is a major concern for these South Asian countries. Because they are lack of the necessary resources to carry out the recommendations made by international organizations, such as the Food and Agriculture Organization (FAO) on how to cease this practice. Lack of adequate management of fisheries and excess of fishing capacity have led to escalating growth of IUU in the region. Especially there are many loop holes in fisheries laws in this South Asian countries. It is noted that the low level of participation can be seen among South Asian countries in compliance with the internationally legally binding agreements to combat IUU fishing

[218] Food and Agriculture Organization of the UN, "The State of World Fisheries and Aquaculture," http://www.fao.org/3/19540eN/;9540en.pdf.
[219] Various Methods and Causes of Illegal Fishing: online: https://www.conserve-energy-future.com/methods-causes-illegal-fishing-.php
[220] Ibid.

It is estimated that 6% of fish stocks are fully exploited, overexploited or depleted in the South Asian region. Stocks of southern Bluefin tuna are categorized as "depleted". In Indian Ocean Emperors, Indian mackerels and Bigeye Tuna fully exploited to overexploit. Overexploitation is a significant impact for the conservation and sustainable use of marine biodiversity in ABNJ for the Indian Ocean countries.

Nevertheless, some achievements in addressing this problem can be seen among the several South Asian countries. They have enacted some rules, regulations and some policies to prevent and deter IUU fishing and it will be discussed further in detail in the later part of this study.

Pollution

Pollution from both marine and land-based sources are the next major threat to the conservation and sustainable use of marine biodiversity beyond the areas of national jurisdiction in South Asian region.

Land base pollution contributed in many ways to the pollution of marine environment in the areas beyond national jurisdiction of South Asian countries. Many industries release untreated or partially treated wastewater and toxic substances to the inland water ways like rivers and lakes. Not only from the industries but also agricultural lands are running off various kind of fertilizer and agro chemicals to these inland water resources. Finally all these water ways are flowing to the ocean. When these kind of wastewater with many chemicals and agricultural run-off are polluting the ocean and there is no any limitations or restrictions for keeping this water separately. This polluted water get mixed with the ocean and it is spreading towards the high seas as well. Finally this directly affects to the living and non-living resources in the high seas.

The other way of pollution is the emission of ballast water from the ships. When the ships release their ballast water to the ocean, this ballast water pollutes this area of emission and it spreads till the high seas with the harmful effects to the marine environment. The areas of high seas in the Indian ocean is getting contaminated with waste oil from fishing boats, ships, coastal service stations and oil spills.

Marine debris poses a serious risk to the quality of the marine environment in the South Asian region. Marine debris clear the path for the degradation of the marine environment in this region similar to other regions. Especially plastic pollution worldwide, an estimated 8 million tones of plastic enters the ocean each year.[221]The majority of which originates from land and is transported through rivers. Recent research has revealed that 90% of this plastic debris comes from just ten rivers, eight of which are in Asia and two in Africa.[222]As a result it is estimated that there are about 60,000 tons of plastic floating in the Indian Ocean, the second highest after the North Pacific.[223] Most of this man made solid materials does not decompose in seawater and just sit on the ocean floor in many years. These destructive marine litter damage and destroy marine life. Specially coral reefs and fish are getting damaged through this marine debris. As discussed the above, the South Asian countries are massively contributing to the marine pollution though the marine litter. Marine environment in this region has been severely damaged and the various kind of species have severely damaged and face to the threat of extinction due to this man made serious threat of marine debris.

Degradation of coral reef

Over 6% of the world's coral reef areas is found in South Asia and it adds precious value for their marine environment both economically and socially. This precious resource of coral reef in the South Asian region are at risk of rapidly degradation due to numerous anthropogenic activities such as destructive fishing practices such as using dynamite and bottom trawling.

The other factor for this coral degradation is the climate change. When the temperature goes up, it affects to the increasing of the sea surface temperature as well. This situation badly affects to the destroying of the coral reef. New research done by the University of Exeter shows that "increased surface ocean temperatures during the strong 2016 El Nino led to a major coral die-off event in

[221] JR Jambeck et al, "Plastic waste inputs from land into the ocean" 2015 science, http://www.iswa.org/fileadmin/user_uploald/calander-____2011_03_AMERICAN/science-2015-Jambeck-708-712
[222] Schmidt et.al, "export of plastic Debris by Rivers into the Sea", 2017, Environmental Science & Technology, http:///www.ncbi.nim.nin.gov/pubmed/29019247
[223] Eriksen M, Lebreton LCM, Carson HS,et al."Plastic Pollution in the World's Ocean: More than 5 trillion plastic pieces weighing over 250,000 tones Afloat at Sea". Dam HG,ed.PLos ONE.2014; 9(12):e 111913.doi:10.1371/journal.pone.0111913.

the Maldives."[224] The major threat of this coral die-off is the huge decrease in the growth rate of the reefs. Coral reefs are extremely sensitive to temperature change. They are also hugely important as incubators and habitat for thousands of marine species and vital to the livelihoods of half-a-billion people around the world with barely one degree Celsius (1.8 degrees Fahrenheit) of manmade warming so far, corals have been devastated by rapidly warming waters that cause them to turn white.[225]

Coral reefs in the Indian Ocean were severely damaged from the tsunami incident happened in 2004. Most of the South Asian countries were affected by this tsunami situation. The degree of damage to the corals which were located in the direct path of the tsunami and how the direction of travel and energy of the wave was influenced by the bottom topography of the area a determined the force with which the wave struck various coral reef habitats.[226]

Exploration and exploitation of mineral resources in the Area

Both direct and indirect threats to the conservation of marine biodiversity are posed by the exploration and exploitation of mineral resources in the area. Mining activities in the sea bed areas creates harmful effects to the marine ecosystem. Exploration activities are done in the South Asian region as well and this activity has harmful impacts to the marine environment.

Climate change and ocean acidification

Climate change is one of the key factors for marine ecosystem degradation. Vast emission of Carbon dioxide is absorbed by the ocean. The vast carbon sink is the ocean. "Oceans have played a critical role in shielding Earth from some of the more serious impacts of climate change by absorbing approximately 30 percent of emitted anthropogenic carbon dioxide. However, this has resulted in an approximate 26 percent increase in acidity of oceans since the industrial

[224] Impacts of mass coral dies-off available online at : https://phys.org/news/2017-02-impacts-mass-coral-die-off-Indian.html
[225] Climate-ravaged coral recover available online at :https://phys.org//news/2017-01-climate-ravaged-corals-poorly-html#nRIv
[226] Coral Reef Degradation in the Indian Ocean –Status Report 2005; David Souter & Olof LINDEN

period."[227]This situation is leading to the acidification and increasing of the temperature of atmosphere. The final outcome is the ocean warming and deoxygenation. Deoxygenation, acidification and warming create severe threats to the marine environment and marine ecosystem. Current estimation about carbon sequestration by oceans indicate that approximately 25 percent become bound into the seas and oceans.[228] Specially, if carbon dioxide emission continuously increase, warming of tropical oceans may prevent coral reef growth.

According to the fifth Inter-governmental Panel on Climate Change (hereinafter IPCC) Assessment Report, marine organisms are at risk from progressively lower oxygen levels and higher rates of ocean acidification that are exacerbated by higher ocean temperatures. The report underlines that coral reefs and polar ecosystems are highly vulnerable.[229]This is a common threat for all regions. South Asian region being the paradise for coral reefs will be severely get affected by this climate change situation.

The other threat posed by the climate change is the high emission of carbon dioxide. Decrease in oxygen means deoxygenation affects to the loss of habitats. Oceans being the vast sink of carbon, oceans absorb carbon dioxide in seawater (H2 CO3), lowering the water's PH level and making it more acidic. This situation creates the habitat loss for the species in the deep sea water. The increasingly adverse impacts of climate change (including ocean acidification), overfishing and marine pollution are jeopardizing recent gains in protecting portions of the world's oceans."[230]

Many countries in South Asian region is full of rain forests. These forests are playing very important role in the Climate change. Trees are absorbing CO2 which is adversely affect to the environment and emit Oxygen for keeping the environment healthy. Due to commercial purposes, people are destroying this valuable resource of Forests. Deforestation is one of the key issue in South Asian countries which lead to many environmental issues. Because this deforestation affects

[227] Prof. Nilufer Oral, y: Ocean Acidification: Falling Between the Legal Cracks of UNCLOS and the UNFCCC? , Ecology Law Quarterly
[228] C.Heinze, et. Al., (2015) "The ocean carbon sink-impacts, vulnerabilities and challenges," Earth Sys. Dynam., Vol.6, 327.
[229] IPCC Fifth Report, supra note 5, at 13.
[230] UN Secretary-General, Progress towards the sustainable Development Goals, 18, UN Doc.E/2017/66 (May 11, 2017).

in many ways in direct and indirect way to the impact of climate change. Oceans have played a critical role in regulating the impacts of climate change.[231] The worst threats stem from total habitat loss due to climate change. The Inter-governmental Panel on Climate Change (hereinafter IPCC) confirms that the effects of sea level rise are already affecting coastal ecosystems such as coral reefs, mangroves and salt marshes.[232]The oceans play a significant role in absorbing the carbon and excess heating posed by diverse anthropogenic activities as aforementioned. Without oceans absorbing excess heat and providing a sink for carbon emissions, the level of climate change would be much more than it is today.[233]

SECTION B - Other regional marine conservation and management approaches in ABNJ

The objective of this part is to examine the other regional experiences in relation to the conservation and sustainable use of marine biodiversity in ABNJ. The initiatives taken by three main regional approaches namely OSPAR Convention, Barcelona Convention and Antarctic treaty will be discussed under this part.

OSPAR Convention

OSPAR is a regional agreement for the protection of the marine environment of the North-East-Atlantic. OSPAR Convention is considered as a very significant step forward towards the establishment of marine protected areas beyond national jurisdiction. It is testified that "A very significant achievement towards the establishment of marine protected areas beyond national jurisdiction comes from the action taken under the convention for the Protection of the Marine Environment of the North-East Atlantic (Paris, 1992; so-called OSPAR Convention).[234]

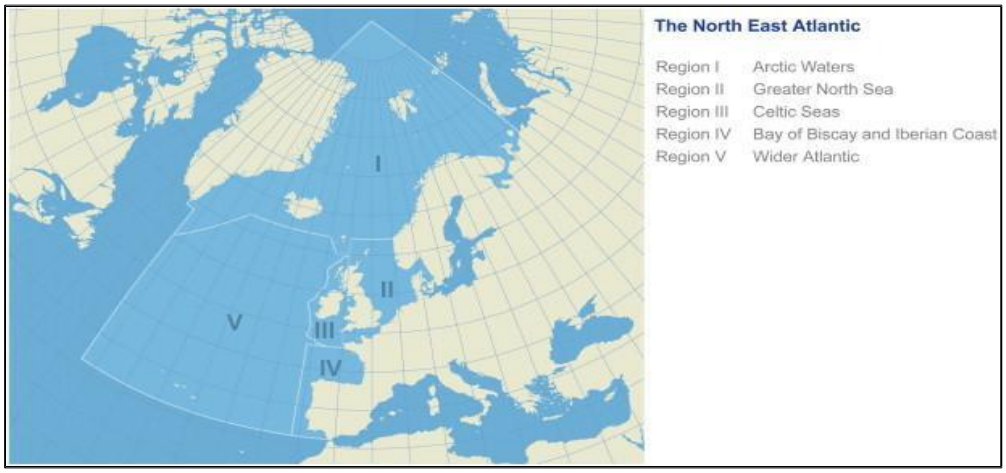
In terms of the article 1(a) of the OSPAR convention, the geographical areas of the OSPAR lies north of 36^0 north latitude and between 42^0 west longitude and 51^0 east longitude in the Atlantic Ocean inclusive of high seas and beyond 200 Nautical Miles seabed area.

[231] Explaining Ocean Warming: Causes, Scale, Effects and consequences (18) (D.Laffoley & J.M.Baxter eds, 2016)
[232] Review Paper: Status of Coastal and Marine Ecosystem Management in South Asia
[233] Explaining Ocean Warming: Causes, Scale, Effects and consequences (18) (D.Laffoley & J.M.Baxter eds, 2016)
[234] See Ribero, The "Rainbow": The First National Marine Protected Area proposed under the High Seas, in International Journal of Marine and Coastal Law, 2010, p.183.

OSPAR was established in 1992 with an aim to achieve the cooperation in the protection of the marine environment of the North-East-Atlantic. There are fifteen State parties including the European Union for this convention namely: Belgium, Denmark, Finland, France, Germany, Iceland, Ireland, Luxembourg, The Netherlands, Norway, Portugal, Spain, Sweden, Switzerland and United Kingdom. The Contracting Parties are required " 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."[235]For this purposes they must adopt programmes and measures as well as harmonize their national policies and strategies.[236]

The areas covered under OSPAR Convention include areas beyond the national jurisdiction of the Contracting Parties. Very significant feature of the OSPAR Convention is that it provides guiding principles for conducting of Contracting Parties, such as this treaty Contracting Parties must apply the precautionary principle, the ecosystem approach, the polluter pays principle, the best available techniques and environmental practice in decision making and in their management programmes.[237]

Figure 2:OSPAR Convention area



Source: http://www.ospar.org

[235] OSPAR Convention, Article 2.1(a)
[236] Ibid. Article 2.1 (b)
[237] OSPAR Convention, Article 2.2. Also; J.Coreley, (2016) "OSPAR and the collective arrangement ;)

Concerning the institutional mechanism of OSPAR Convention, in particular the convention provides a legal basis for the establishment of a commission which is made up of representatives of each of the Contracting Parties.[238]They are required to meet at regular intervals and at any time to respond to special circumstances[239]on an operational basis the OSPAR Commission executes the decisions taken by the Contracting Parties, and works towards the harmonization of policies, programmes and measures for the protection of the marine environment.[240]

Additionally and in line with international best practice, OSPAR is serviced by a secretariat;[241]five main committees namely; Hazardous substances and Eutrophication committee, Offshore Industry Committee, Radioactive substances Committee, Biodiversity Committee and Environmental Impact of Human Activities Committee[242] and working groups.[243]Furthermore, observers[244]are allowed to participate in the commission's meetings.[245]

The decisions relating to the North-East Atlantic Environment Strategy taken by the OSPAR commission which meets every year are legally binding on the Contracting Parties.

OSPAR Convention is supplemented by five annexes:

Annex I - Prevention and elimination of pollution from land-based sources
Annex II – Prevention and elimination of pollution by dumping or incineration
Annex III - Prevention and elimination of pollution from offshore sources
Annex IV – Assessment of the quality of the marine environment.
Annex V – Protection and conservation of the ecosystems and biological diversity of the maritime area

[238] OSPAR Convention. Article 10.1
[239] Ibid. Article 10.1
[240] Ibid. Article 10
[241] Ibid. Article 12
[242] OSPAR Commission (2017). OSPAR Organization. Available at: http://www.ospar.org/organization
[243] OSPAR Commission. Agreement 2013-02 Rules of procedure, rule 27-35.
[244] OSPAR Commission, above n.56, annex 2.
[245] OSPAR Convention. Article 11

The fifth one relating to the protection and conservation of the Ecosystem and Biological diversity of the maritime area was included in 1998. In terms of adversely affected maritime areas, it is a commitment of the parties of annex v to take appropriate measures to protect and conserve the ecosystems and biological diversity of the maritime area and to restore.

Very significant duty is given to the commission "to develop means, consistent with international law, for instituting protective, conservation, restorative or precautionary measures related to specific areas or sites or relate to specific species or habitats.[246]

Marine Protected Areas (MPA) in ABNJ as area based management tools under OSPAR

OSPAR Commission has adopted the guidelines for the identification and selection of marine protected areas (hereinafter referred as MPA) in the OSPAR maritime area during their 2003 meeting. OSPAR Commission adopted recommendations 2003/3 on a network of marine protected areas with the purpose of "to establish the OSPAR Network of marine protected areas and to ensure that by 2010 it is an ecologically coherent network of well-managed marine protected areas which will

(a) Protect, conserve and restore species, habitats and ecological processes which have been adversely affected by human activities;
(b) Prevent degradation of and damage to species, habitats and ecological processes, following the precautionary principle
(c) Protect and conserve areas that best represented the range of species, habitats and ecological processes in the maritime area."[247]

Recommendations of 2003/3 was amended in 2010 extending further initiatives to make strong the network of marine protected areas in North-East Atlantic. Section 3 of the recommendation 2003/3 was amended under the OSPAR Recommendation 2010/2 on amending Recommendation 2003/3 on a network of Marine Protected Areas as follows. It is recommended to the parties that they should

[246] OSPAR Convention Annex V Article.3,para 1,b,ii
[247] Tullio Scovazzzi, Marine Protected areas in waters beyond national jurisdiction. P. 232.

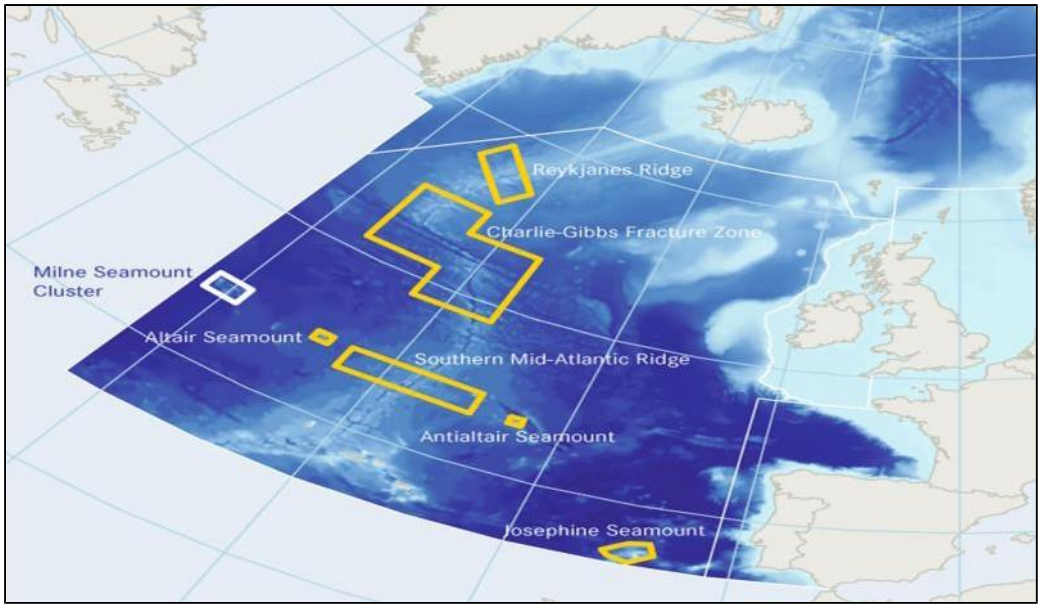
" (c) Contribute, as practicable, to assessments of area beyond national jurisdiction in the North-East Atlantic which may justify selection as an OSPAR maritime protected areas under the criteria set out in the identification and selection guidelines; and

(d) Propose to the OSPAR Commission the areas beyond national jurisdiction that should be selected by the OSPAR Commission as components of the OSPAR network of marine protected areas."[248]

Relating to the establishment of the OSPAR network of Marine Protected Areas in the North-East-Atlantic under the renewed recommendation 2003/3-Recommendations, 2010/2 on amending Recommendation 2003/3 on a network of marine protected areas were successful. By the end of 2016, the network of marine protected areas within OSPAR comprises 423 sites.[249]From which 413 MPAs are under national waters of Contracting Parties and 07 MPAs are located beyond national jurisdiction, with different jurisdictional and management regimes namely; Charlie-Gibbs South MPA, Milne Seamount Complex MPA, Mid-Atlantic Ridge North of the Azores High Seas MPA, Altair Seamount High Seas MPA, Antilatair High Seas MPA, Josephine Seamount complex high seas MPA and the OSPAR commission meeting in 2012 (25-29 June 2012: Bonn Geneva) Contracting Parties further agreed to add seventh one of Charlie-Gibbs North High Seas MPA.[250]

[248] OSPAR Recommendation 2010/2 on amending recommendation 2003/3 on a network of marine protected areas. Article 2.5 (c) and (d)
[249] OSPAR Commission (2014) Status Report on the OSPAR Network of marine protected areas. London: OSPAR, 7.
[250] OSPAR_2016_MPA_report

Figure 3: OSPAR Marine Protected Areas in ABNJ



Source: http://www.ospar.org

In designating of MPAs in ABNJ, OSPAR is considering the number of factors under the provisions of OSPAR convention. "The identification of a site to be proposed as a MPA should meet ecological criteria including threatened or declining species and habitats, important species and habitats, ecological significant high natural biological diversity and sensitivity.[251]Additionally, practical aspects such as size, potential for success of management measures, scientific value among others should be taken into consideration[252] and the designation of MPA on ABNJ requires the collective agreement of the contracting parties.[253]

Additionally practical aspects such as size, potential for success of management measures, scientific value, among others should be taken in consideration.[254]On the decision making process, a concrete proposal to establish a protected area needs to be considered in detail by all Contracting Parties[255] and the designation of MPA on ABNJ requires their collective agreement.[256]

[251] OSPAR commission. Recommendation 2003/17. Guidelines for the Identification and selection of MPAs in the OSPAR maritime Area, Appendix 1.1
[252] Ibid. Appendix II
[253] OSPAR Convention. Article 13
[254] Ibid Appendix II
[255] OSPAR Commission 54, 51
[256] OSPAR Convention. Article 13

In the process of management of OSPAR MPAs "Contracting Parties are required to develop a management plan and determine appropriate measures following OSPAR guidelines.[257]Annex V of the OSPAR convention sets out the legal basis for the establishment of a network of marine protected areas within the OSPAR framework which targets to protect, conserve and restore species, habitats and ecological process.[258]

MPAs under OSPAR "areas for which protective, conservative, restorative or precautionary measures have been instituted for the purpose of protecting and conserving species, habitats, ecosystems or ecological processes of the marine environment.[259] The OSPAR Commission had adopted some recommendations[260] as well as accountability measures to guide OSPAR Contracting Parties regarding the management of these areas. Among these guidance contracting parties are requested to develop many implementing plans for MPAs, evaluation tools, Annual reporting requirement from states to OSPAR Commission regarding the measures taken to implement the recommendations and the application of international, regional and national legislations to assist with the implementation of management measures.

Not only that but also OSPAR has developed several tools as well.

- Biogeographical classification
- Guidelines for identification and selection of Marine Protected Areas (MPA) (including criteria)
- Guidance on ecological coherence and MPA management

During the North-East Atlantic Environmental summit Ministerial Meeting of the OSPAR Commission in 2010, Contracting Parties agreed to

- Responded to major threats, including continued loss of biodiversity, climate change and ocean acidification
- Committed to join forces to achieve Good Environmental status by 2020

[257] OSPAR Commission. Agreement 2003/18. Guidelines for the management of MPAs in the OSPAR maritime area, Appendix I, 54.
[258] OSPAR commission Recommendations 2003/3 amended by Recommendation 2010/2, para.2.1.
[259] OSPAR Commission. 2011 Status Report on OSPAR Network of MPA.pg 33
[260] Recommendations 2003-17, Guidelines for the Identification and selection of MPAs in the OSPAR maritime Area.

- Agreed a new strategy that included targets of a "coherent network by 2012 and a "well-managed network by 2016
- Found the political will to take forward an initial OSPAR network of Marine Protected Area (MPAs) in Areas Beyond National Jurisdiction (ABNJ)- awareness raising, information sharing, building marine science new developments are the purpose and scope of this.

Environmental Impact Assessment (EIA) and Strategic Environmental Assessment (SEA)

Environmental Impact Assessment (hereinafter referred as EIA) is one of the four key elements agreed under the discussions at the BBNJ negotiation process. Considering the OSPAR's initiatives regarding this EIA process, "the OSPAR Convention requires Contracting Parties to undertake two obligations in relation to EIA".[261] Two obligations relating to the EIA process are "To undertake and publish at regular intervals joint assessments of the quality status of the marine environment and development in the maritime area or for regions or sub-regions therein is the first obligation and second is to include in such assessments both an evaluation of the effectiveness of the measures taken and planned for the protection the marine environment and the identification of priorities for action."[262]

Annex IV of the OSPAR Convention clearly stipulates the descriptive rules and regulations on conducting of EIA with the respective duties of the Contracting Parties and the OSPAR Commission. EIA process can be considered as the core of the risk assessment approach adopted by OSPAR. This models the application of precautionary approach. "OSPAR requested all scientists working in the deep seas and high seas of the OSPAR maritime area to adhere when planning and carrying out their research."[263]

[261] OSPAR Convention. Article 6
[262] Ibid. Article 6 (a) and 6 (b)
[263] OSPAR Commission. Agreement

Guiding Principles and approaches

The OSPAR has evolved with four key principles namely; the precautionary principle, the ecosystem approach, the polluter pays principle, the best available techniques and the best environmental practice.[264] Specially, OSPAR Contracting Parties have a duty[265]to implement an integrated ecosystem approach when adopting conservation and management measures. In line with this approach OSPAR Commission has developed a list of threatened and/or declining species and habitats and has agreed specific actions to improve the status of vulnerable species and habitats.[266]

Barcelona convention

Regarding the conservation and sustainable use of marine biodiversity in Areas beyond National Jurisdiction (hereafter referred as ABNJ), Barcelona is one of the other regional experience under the Convention for the Protection of the Mediterranean Sea against Pollution (hereafter Barcelona convention in 1976. Mediterranean action plan was the first UNEP initiative to be developed under the regional seas programme with the ultimate objective of protection of the marine environment through a regional approach. After nearly two decades, considering the developments and the limits of the Mediterranean Action Plan was renamed as Mediterranean Action Plan phase II. This was amended and renamed as the Convention for the protection of the marine environment and the coastal region of the Mediterranean in 1995.

Institutional Framework and its functions under the Barcelona convention

Preventing and controlling of marine pollution by ensuring the sustainable management of natural marine and coastal resources through the regional cooperation is the objective of the Barcelona Convention. “Realizing fully the need for close cooperation among the states and international organizations concerned in a coordinated and comprehensive regional approach for the protection and enhancement of the marine environment in the Mediterranean sea area.”[267] The Barcelona

[264] OSPAR Convention. Article 2.2
[265] Ibid. Annex Article 3, para.1.b(iv)
[266] OSPAR Commission Agreement 2008-6
[267] Preamble of the Convention for the Protection of the Marine Environment and the Coastal Region of the Mediterranean

Convention for the Protection of the Marine Environment and Coastal Region of the Mediterranean, and its seven protocols, known as the Barcelona Convention System.[268]

There are 22 parties for Barcelona Convention including 21 Mediterranean littoral countries and the European Union: Albania, Algeria, Bosnia and Herzegovina, Croatia, Cyprus, European Union, Egypt, France, Greece, Israel, Italy, Lebanon, Libya, Malta, Monaco, Montego, Morocco, Slovenia, Spain, Syria, Tunisia and Turkey.[269] Despite difficulties among these contracting States for determination and delimitation of coastal zones and maritime boundaries they have agreed to be members of the Barcelona Convention.

The preamble of the Barcelona Convention sets out that "Contracting Parties are full aware of their responsibility to preserve and sustainably develop the resources of the Mediterranean Sea[270]and acknowledge the need for close cooperation in a coordinated regional approach for the protection of the marine environment.[271]Barcelona Convention covers the maritime waters of the Mediterranean Sea irrespective of the legal status of the waters both within and beyond national jurisdiction.[272]Article 1 of this convention clearly sets out its geographical scope of application as "For the purpose of the convention, the Mediterranean sea area shall mean the maritime waters of the Mediterranean Sea proper, including its gulfs and seas, bounded to the West by the meridian passing through Cape Spartel lighthouse, at the entrance of the Straits of Gibraltar, and to the east by the southern limit, of the straits of the Dardanelles between Memetic and Kokkali lighthouse."[273]

[268] On the concept of the BCS see E.Raftopoulos, The Barcelona Convention and Protocols-The Mediterranean Action Plan Regime (London: Simmonds & Hill, 1993)
[269] Available at :http://web.unep.org/unep map/
[270] Preamble of the Barcelona Convention
[271] Ibid. Article 6
[272] Ibid. Article 1.
[273] Ibid. Article 1.

Figure 4: Status of Ratification of the Barcelona Convention and its Protocols

Source: http://www.grida.no/resources/5911

The obligations for the elimination of pollution of the Mediterranean sea area and taking appropriate measures for the protection of the marine environment,[274]ensure sustainable management of marine and coastal resources[275] as well as to protect the marine environment and coastal zones[276] are assigned to the Contracting parties under the Barcelona Convention. The applicable principles include: precautionary principle, polluter pays principle and best available techniques and the best environmental practices and promote the application of access to and transfer of environmentally sound technologies[277]. As per article 7 of the Barcelona Convention calls for parties to take appropriate measures to prevent and combat pollution resulting from the exploration and exploitation of the continental shelf, the seabed and its subsoil within the Mediterranean area.

Further elaborated obligations for the Contracting parties is stipulated as "The Contracting Parties shall identify or jointly, take all appropriate measures to protect and preserve biological diversity,

[274] Ibid. Article 4(1)
[275] Ibid. Article 4(3)
[276] Ibid. Article 4(3.e)
[277] Ibid. Article 4(4.b)

rare or fragile ecosystems, as well as species of wild fauna and flora which are rare, depleted, threatened or endangered and their habitats, in the area to which this convention applies."[278]

The Barcelona Convention is a framework treaty implemented by seven protocols.[279]These supplemented seven protocols approaching various aspects of the conservation of the Mediterranean.[280]These protocols are the areas relating to the prevention of pollution, protected areas and marine conservation, hazardous wastes, integrated coastal zone management and offshore mining. The application of the specially protected areas SPA) and Biological Diversity (BD) protocols are very important among these protocols.

Barcelona convention and its protocols have created an institutional framework to direct the work of the Contracting Parties and to guide implementation of the regulatory and policy framework. Meeting of parties, the Bureau, the coordination unit, the Mediterranean Commission on sustainable Development and six regional activity centers are the bodies established under this convention. Taking into consideration this set up establishing a scientific committee, regional coordination units, focal points, monitoring unit, decision making body can be considered as a best practice for South Asian region.

Marine Protected Areas under the Barcelona Convention

As emphasized by the United Nations Environmental Programme (UNEP) "The establishment of MPAs is a key element of marine environmental protection linked to the most advanced concepts of environmental policy such as sustainable development, precautionary approach, integrated coastal zone management, marine spatial planning, and ecosystem approach and transboundary cooperation.[281]

[278] Ibid. Article 10.
[279] Rothwell, A.Oude Elferin Scott, Stephens, the Oxford Handbook of the Law of the Sea (Oxford: OVP, 2015), 617.
[280] Regional Seas Programmes Covering Areas beyond National Jurisdiction, 2018 Glob. Envtl.L.Ann. 5 (2018)
[281] UNEP-MAP-RAC/SPA. 2011. Note on the establishment of MPAs in ABNJ. By Scovazzi, T.Ed.RAC/SPA, Tunis:47 pp. pg.13.

In this context and as described above, Protocol of Specially Protected Areas and Biological Diversity in the Mediterranean is one of the strategic mechanism under the Barcelona Convention.

The Protocol Concerning Specifically Protected Areas and Biological Diversity in the Mediterranean (SPA and Biodiversity Protocol) is very important in conservation and sustainable use of marine biodiversity in Areas beyond National Jurisdiction. It sets out the general obligation of the Contracting Parties to "identify and monitor the effects of activities which have or are likely to have significant adverse impacts on the biological diversity in the Mediterranean Sea."[282]

In addition, parties must "take the necessary measures to protect and manage areas of particular natural or cultural value by establishing specifically protected areas (SPAs); as well as to protect threatened or endangered species and adopt strategies and programme for the conservation of biological diversity.[283]Criteria for listing as Specially Protected Areas of Mediterranean Interests (SPAMI list) is provided under the protocol. The SPAMI list may include sites which "are of importance of conserving the components of biological diversity in the Mediterranean; contain ecosystems specific to the Mediterranean area or the habitats of endangered species are of special interests at the scientific, aesthetic, cultural or educational levels."[284]

There is an obligation of State Parties towards the existence of SPAMI list under their domestic law. "The existence of the SPAMI list does not exclude the rights of each party to create and manage protected areas which are not intended to be listed as SPAMIs but nevertheless deserve to be protected under its domestic legislation".[285] SPAMIs may be established in the marine and coastal zones subject to the sovereignty or jurisdiction of the parties or in zoned partly or wholly on the high seas. Detailed procedures for their establishment are provided in the protocol.[286]

[282] SPA and Biodiversity Protocol.Art.3(5)
[283] SPA/BD Protocol. Article 3
[284] Ibid. Article 8, para 2.
[285] Tullio Scovazzi, Marine Protected Areas on the High Seas: Some Legal and Policy Considerations, 19 Int'l J. Marine & Coastal L.1 (2004)
[286] Ibid. Article. 9

Procedure for the establishment and listing of SPAMIs is clearly stated in the protocol of SPA and BD. “proposal for inclusion in this may be submitted; by the party concerned, if the area is situated in a zone already delimited over which it exercises sovereignty or jurisdiction;[287]by two or more neighboring parties concerned if the area is situated, partly or wholly, on the high sea;[288]by the neighboring parties concerned in areas where the limits of national sovereignty or jurisdiction have not been defined.”[289] Then this proposal submitted to the national focal points and to the regional activity centers and after their review, then transmitted to the secretariat parties by consensus will take the decision whether include or not the high seas MPA on the SPAMIs list and decide on the most applicable management measures.

Pelagos Sanctuary for Mediterranean Marine mammals

There are 32 sites included in the SPAMIs list. The pelagos sanctuary for marine mammals is one of the important Specially Protected Area for Mediterranean Important under the list of above mentioned 32 sites as this MPA encompasses the Areas beyond national jurisdiction. “Sanctuary for marine mammals was established under the agreement signed in Rome in 1999 by France, Italy and Monaco for the protection of marine mammals which live in it.”[290]This area consists of high level of human pressure due to locations of cities, commercial and military ports and industrial areas around this special area.

[287] SPA and Biodiversity Protocol. Article 9(2)(a)
[288] Ibid. Article 9(2)(b)
[289] Ibid. Article 9(2)©
[290] http://www.sanctuaire-pelagos.org/en/home/66-ang/ais/uncategorised/254-presentation-of-the-pelagos

Figure 5 Area of Sanctuary for Mediterranean Marine mammals

Source: Cetacean alliance. http://www.cetaceanalliance.org/cons_Pelagos.htm

The Sanctuary Agreement is the first treaty ever concluded with the specific objective of establishing a sanctuary for marine mammals. These waters are the habitat of different cetacean.[291]This treaty was entered into force on 21st February 2002. This sanctuary for Mediterranean mammals is very unique due to its geographical set up, "It is a site managed by three different authorities and includes coastal areas and international waters that form a large ecosystem of major scientific, socio-economic, cultural and educational interests."[292]

Parties for the Sanctuary Agreement adopted measures to ensure the conservation of these species and its habitats under this provisions are stipulated under the agreement. "The parties to the sanctuary Agreement undertake to adopt measures to ensure a favorable[293] state of conservation for every species of marine mammal and to protect them and their habitat from negative impact, both direct and indirect." In terms of article 7(a) of the Sanctuary Agreement says that "they prohibit in the sanctuary any deliberate "taking" (defined as "hunting, catching, killing or harassing

[291] For more information refer to the Cetacean Alliance. The Pelagos Sanctuary. online: http://www.cetaceanalliance.org/cons pelagos.htm
[292] Ibidem
[293] Sanctuary Agreement. Article 4

of marine mammals, as well as the attempting of such action or disturbance of mammals, non-lethal catches may be authorized in urgent situations or for in situ scientific research purpose.

It is very important that under this system they have set up good monitoring and evaluation mechanism through their regular meetings. "The parties will hold regular meetings to ensure the application of and follow-up to the sanctuary Agreement"[294]Through this types of regular meetings they encouraged the research programmes both national and international level. This contributed for raising the public awareness and other users of the sea.

Though Barcelona Convention set an exemplary role model for other regions in achieving the target of conservation and sustainable use of marine biodiversity in areas beyond national jurisdiction, this convention also has to face diverse challenges in moving forward their journey towards achieving of conservation of marine resources in ABNJ. This is one of the main challenge face by Barcelona Convention. Establishing MPAs in ABNJ is a common challenge for not only Mediterranean region but also for all regions. As United Nations Environmental Programme (UNEP) highlighted this issue "insufficient legal regime, a confusion of competences and fragmentation or overlapping of responsibilities between different authorities, lack of effective scientific monitoring or enforcement measures and lack of sufficient economic resources to achieve the protection measures, limited experience of the people administering the MPA."[295]

If the parties can sign an additional treaty for the establishment of MPAs on the high seas, this will lead to reinforce the development of the MPA network in the Mediterranean and creating large MPAs in open seas under the Barcelona.

[294] Ibid. Article 12 paragraph 1.
[295] UNEP-MAP-RAC/SPA, 2011. Note on establishment of MPAs in ABNJ. By.Scovazzi, J.Ed.RAC/SPA, Junis:47 pp. pg.40

CCAMLR Experience (Convention on the Conservation of Antarctic Marine Living Resources)

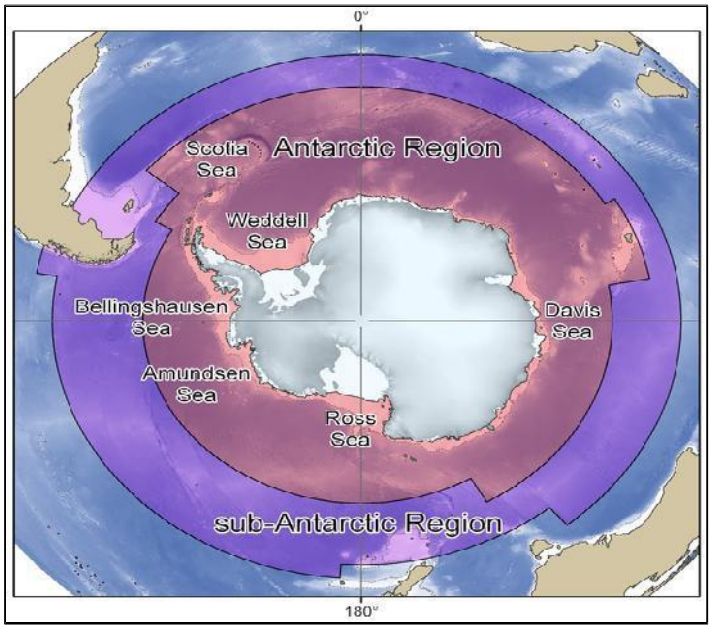
Another significant regional mechanism which applies to the Antarctic Marine Living Resources will be discussed in this part. The aim of this part is to examine the legal and institutional mechanism and measures taken by this CCAMLR mechanism to address the issues of conservation and sustainable use of marine resources in Areas beyond national jurisdiction.

The Convention on the Conservation of Antarctic Marine Living Resources (CCMLR) has been established for the conservation and management of marine resources in the Antarctic. The CCMLR Convention is an integral part of the Antarctic treaty system. Antarctic Treaty was signed in Washington by twelve countries.[296]Before going to in detail of CCMLR, it is important to examine the Antarctic treaty system. With an aim to ensure the use of Antarctic for peaceful purposes, international scientific cooperation and continuance of international harmony in relation to human use of Antarctica, the Antarctic treaty was signed by these twelve countries. Currently there are 53 parties to the treaty, 29 of which including all 12 original signatories to the treaty. Only 29 countries are in the decision making process. These 29 countries are the "Consultative Parties".[297]

Taking into consideration of the geographical scope of Antarctic Treaty, "this Treaty is extensive and it applies to the area south of 60° South Latitude, including all ice shelves. Significantly, the Treaty does not affect the rights of any State under international law with regard to the high seas within that area."[298]

[296] Argentina, Poland, Australia, Union of South Africa, Belgium, Chile, Union of Soviet Socialist Republics France, United Kingdom of Great Britain and Northern Ireland, New Zealand, Japan, Norway and the United States of America
[297] For more information: https://www.nti.org/learn/treaties-and-regimes/antarctic-treaty/
[298] Antarctic Treaty. Article 6

Figure 6: Antarctic Region



Source: http://www.plosone.org/article/info%3Adoi%2F10.1371%2Fjournal.pone.0011683#s2

Establishing the inspection system that apply to research stations, installations and equipment located in the Antarctic is the other important scheme under this treaty. Designated observers by the parties are enjoying full freedom of access to all areas of Antarctica at any time provided that to limit to the jurisdiction of the contracting parties. Representatives of the contracting parties are meeting regularly to share information, discuss and consult on the topics of common interests to Antarctica, prepare recommendations for their governments with regard to the facilitation and cooperation on scientific research.

Antarctic Treaty is complemented by the **protocol on environmental protection**. Under this protocol on environmental protection, the parties are committed to the conservation of the Antarctic environment and its ecosystems. Very significant environmental principles have been set up under this protocol as described below.

- Activities shall be planned and conducted to avoid adverse effect on climate; air or water quality; changes in the terrestrial, glacial or marine environment and detrimental changes in the distribution and abundance of species,

- Activities shall be planned and conducted to all prior assessment of possible impacts on the Antarctic environment.
- Scientific research should consider the scope of the activity (area, duration and intensity); cumulative impacts; capacity to monitor key environmental parameters; capacity to respond to accident.
- Activities undertaken in the Antarctic treaty could be modified, suspended or cancelled if they result in or threaten to result in impacts upon the Antarctic environment."[299]

The very significant feature can be seen in this protocol is that, it has facilitated for the parties to cooperate in planning scientific, technical and educational programmes, exchange the information and assist in preparing of environmental impact assessments. As per article 11 of the protocol, the committee for environmental protection has been established with the representation of each contracting party. Main objective of this committee is to provide advice and formulate recommendations to the parties in the implementation of the protocol, for example in the application of the environmental impact assessment procedures; the operation of the Antarctic Protected Area System; inspection procedures,[300]and sharing and evaluation of information. Cooperation among Contracting Parties is very important. Because when the cooperation is among the parties, it is easy to implement the relevant activities in achieving the conservation and sustainable use of marine biodiversity in ABNJ.

Since both these Antarctic treaty and protocol are legally binding, parties are required to adopt domestic rules and regulations and enforcement measures to give effect to the treaty provisions. During the annual meetings of the parties they have to present their annual progress and also the measures which were have taken by them so far to the rest of the parties and to the committee.

The Protocol is supplemented by several annexes namely; Annex I: Environmental impact assessment; Annex II: Conservation of Antarctic fauna and flora, Annex III: Waste disposal and waste management, Annex IV: Preventing of marine pollution, Annex V: Area protection and management, Annex VI: Liability arising from environmental emergencies.

[299] Protocol on environmental protection. Article 3
[300] Ibid. Article 14

In this study, it is expected to discuss Annex I: Environmental Impact Assessments, Annex II; Conservation of Antarctic fauna and flora and Annex V; Area Protection and management due to the relevance for this study of the conservation and sustainable use of marine resources.

Annex I sets out the provisions for the environmental Impact assessment. In terms of article 22(1) of the protocol on environmental protection, if the activities have less than a minor or transitory impact, it is required to do an initial environmental impact assessment. The need for comprehensive environmental evaluation is done "if an initial environmental evaluation indicate or if it is otherwise determined that a proposed activity is likely to have more than or transitory impact, a comprehensive environmental evaluation shall be prepared."[301]Many descriptive information is included in this comprehensive environmental impact assessment for instance, the purpose, location, duration and intensity, cumulative impact of the proposed activity.

Under Annex II, Contracting Parties are requested to submit descriptive data on permission related to the protection of native fauna and flora. List of Specially Protected Species, the prohibition for the introduction of non-native species and the exchange of information have been addressed under annex II.

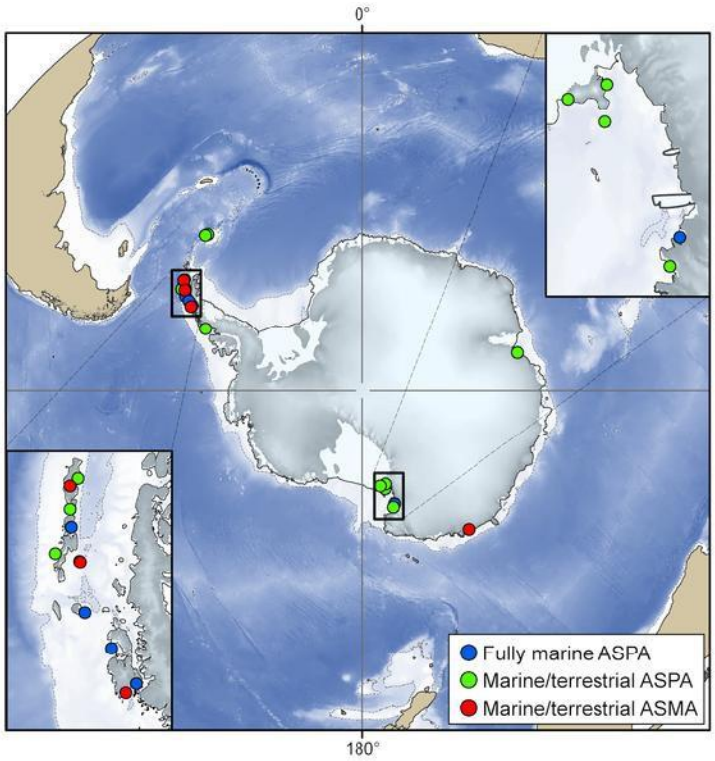
This is complemented by Annex V. A framework for the spatial management of protected areas is stipulated under this annex. Antarctic Specially Protected Areas and the Antarctic Specially Managed Areas have been established as per with the management plan. As per article 3 of the Annex V to the protocol sets out the criteria for the creation of Antarctic Specially Protected Areas.

- Areas kept inviolate from human interference
- Areas of outstanding aesthetic and wilderness value
- Representative example of major territorial glacial, aquatic and marine ecosystems
- Areas with important or unusual assemblages of species.

[301] Ibid. Article 3(1)

"Antarctic Specially Managed Area may include areas where activities pose risks or cumulative environmental impacts on sites or monuments of recognized historic value.[302]

Figure 7 Marine Conservation Areas in the Antarctic.



Source: Griffiths HJ (2010) Antarctic Marine Biodiversity[303]

The designation of an Antarctic Specially Protected Area or an Antarctic Specially Managed Area has to have the prior approval of CCAMLR.[304]Any party, the committee, the scientific committee for Antarctic Research or CCAMLAR commission may propose the designation of either types of areas by presenting a management plan to the Antarctic Treaty Consultative Meeting.

In this designation process, more descriptive information about the proposed area has to be included in the management plan. Specially the importance and the need of the special protection

[302] Annex V: Area Protection and management, Article 4.
[303] Griffiths HJ (2010). Antarctic Marine Biodiversity. PLoS ONE. (on line) http://www.plosone.org/article/info%3Adoi%2F10.1371%2Fjournal.pone.0011683#s2
[304] Ibid. Article 6.

or management, maps, objectives, area, identification of zones within activities are to be prohibited and other supportive documents. For the designation as an Antarctic Specially Protected area, descriptive and clear description is needed of the conditions under which permit may be granted; and if it is going to be designated as and Antarctic Specially Protected area, it is necessary to establish code of conduct which is applicable to such area. In this context, the management plan proposal has to be analyzed by the committee for environmental protection, the scientific committee on Antarctic research and the CCAMLR commission. Discussion for the approval of the plan is the next step which is undertaken by the parties. The prior approval of the CCAMLR is required for designating as an Antarctic Specially protected or an Antarctic Specially managed area."[305]

CCAMLR legal and institutional framework.

Legal and institutional mechanism of CCAMLR and its way of approaching towards the issues of marine conservation and area based management tools including marine protected areas will be discussed under this part.

It is significant fact that to point out the Southern Ocean has been severely harvested since the 19th century. The scope of activities have been identified by the CCAMLR Commission in the following way.

"By 1825, some population of seal were hunted close to extinction and sealers began hunting elephants, seals and some species of penguins for their oil. Whaling in this area began in 1904 and all seven species of whales found in the Southern ocean were extensively exploited. Antarctic finfish, crabs, squid and krill a key stone component of the Antarctic ecosystem, have also been exploited at various levels since the early 1960s.[306]

Due to this serious situation, as per the Antarctic Treaty Consultative Meeting Recommendation IX-2 (London, 1977) requested to Antarctic Treaty parties to establish a mechanism or

[305] Annex V: Area protection and management. Article 6.
[306] Commission for the Conservation of Antarctic Marine Living Resources. Online: http://www.ccamlr.org/en/organisation/history

management regime for the conservation and sustainable use of marine resources. This was the initiative step for establishing CCAMLR.

In examining the origin of CCAMLR, in 1977 Antarctic Treaty Parties were encouraged to contribute to scientific research on Antarctic marine living resources, observe interim guidelines on their conservation and hold consultations to set up a definitive conservation regime for these resources."[307]With this initiative formal consultation was stated in 1978 and concluded with the adoption of CCAMLR Convention at the conference on the conservation of Antarctic Marine Living Resource in Canberra Australia in 1980 with the aim of conserving Antarctic Marine Living Resource. Article 11.3 of CCAMLR Convention is clearly stated the objectives of this convention as follows.

i. Prevention of decrease in the size of any harvested population to level below those which ensure its stable recruitment.
ii. Maintenance of the ecological relationships between harvested, dependent and related populations of Antarctic marine living resources and the restoration of depleted population.
iii. Prevention of changes or minimization of the risk of changes in the marine ecosystems which are not potentially reversible.

Decisions on substantive matters are taken by consensus.[308]Each Contracting Parties can contribute to the work of the Commission.

This facilitate research and comprehensive studies of Antarctic marine living resources, compile data on the status and changes in species, populations and factors affecting the distribution, abundance and productivity of harvested or relate species and formulate, adopt and revise conservation measures on the basis of the best available scientific evidence.[309]

[307] Regional Seas Programmes covering Areas Beyond National Jurisdiction, 2018 Glob. Envtl.L.Ann.5 (2018)
[308] CCAML Convention. Article XII
[309] Commission for the Conservation of Antarctic Marine Living Resource (online: http://www.ccamlr.org/en/organization/history

Scientific Committee consist of scientific and technical representatives of the parties is the consultative body to the commission establishing of criteria and methods on conservation measures, assessing the status of the populations of marine resources, evaluating the impacts of harvesting on marine resources, presenting reports and recommendations to the commission are the functions of this committee.

Marine Conservation

CCAMLR convention has clearly recognized the importance of the sustainable use of marine resources as an integral part of marine conservation. The range of conservation measures are provided under article 9 of the convention as follows.

- Open and closed seasons for harvesting
- Quantity of any species which may be harvested
- Protected species
- Opening and closing of areas scientific study or conservation
- Regional based on the distribution of population of species.

These measures need to be adopted and published by the commission. Then these measures become binding 180 days later. If any member is not agreeing with this, they can reject with reasonable justification within 90 days of publication and it should be notified to the commission.

Establishment of Area Based Management Tools (ABMTs) including Marine Protected Areas (MPA)

Establishing Marine Protected Areas is the other important management tool in the Antarctic area. One of CCAMLR Commission's goals is to develop a representative and comprehensive network of MPAs, including pelagic regions, rare features, VMEs and biological features[310]. As per annex V of the Protocol on Environmental Protection and the creation of MPAs, it is required the prior approval of CCAMLR Commission for establishing MPAs. There are two proposals for establishing MPAs submitted to CCAMLR Commission. "The first one supported by Australia,

[310] L.L.Douglass, D.Beaver,J.Turner and R.Nicoll. An identification of areas with the high seas of the Southern Ocean that would contribute to a representative system of MPAs.

France and the European Union which seeks to designate a cluster of seven marine protected areas in East Antarctica.[311]

The second one is the Rose Sea Region. United States and New Zealand have submitted this proposal.

"-The no-take General Protection Zone including the Ross Sea shelf and slope and the Balleny islands

-The boundary of a special research zone

- The spawning protection zone in the North West to provide representative protection for seamount and other habitats".[312]

The identification of Ross Sea MPA is very significant due to its ecological value and scientific importance to the world community. These are the core elements of this Ross Sea project. There were many arguments on establishing Ross Sea MPA. As pointed out by the scientists, "it provides a chance to investigate the sorts of phenomena and other factors that once structured marine ecosystems elsewhere but which can now usually be investigated only indirectly.[313]

Creation of Ross Sea MPA faced many challenges in achieving consensus for decision making in this process. "The conservation of the natural ecological structure, dynamics and function throughout the Ross Sea, the protection of known rare or vulnerable benthic habitats.[314]"The protection of large-scale ecosystem process responsible for the productivity and functional integrity of the ecosystem.[315]

However in October 2016 the Commission for the Conservation of Marine Living Resources (CCAMLR) reached consensus on a New Zealand/United States proposal to establish a large-scale marine protected area in the Ross Sea region off Antarctic.[316]This covers 1.55 million square

[311] Australian Government, A proposal for a representative system MPAs in the East Antarctic's online : http://www.antarctica.gov.au/law-treaty/ccamlr/marine-protected- areas

[312] New Zealand foreign affairs and trade. Ross Sea Region MPA. (online: http://www.mfat.gov.nz/ross-sea-mpa/tabs/proposal.php

[313] Osterblom et al., 2007 and Christensen and Richardson, 2008

[314] CCAMLR, Conservation measures 91-05- (2016) para.3

[315] Ibid. Annex 91-05/B.para-1(V).

[316] http://www.mfat.govt.nz/ross-sea-mpa/tabs/proposal.php

kilometers of which 1.12 million square kilometers, or 72% is fully protected (no fishing is permitted). As per the records, this is the largest marine protected area and major contribution towards conservation of marine environment.

To achieve specific protection and scientific objectives, the other management measure taken by CCAMLR maritime area is the measures taken with regard to protect vulnerable marine ecosystems, including seamounts, hydrothermal vents, cold water corals and sponge fields.

Fisheries Management under CCAMLR

The convention establishes regulations on fishing efforts, harvesting methods, fishing gears[317]and other relevant measures recommended by the consultative meeting.[318]It is very significant initiative taken by CCAMLR regarding Illegal, Unregulated and Unreported (IUU) fishing is that it reflects a number of global initiatives like FAO agreement on IUU fishing and FAO compliance Agreement for fishing vessels on the high seas.

Under the Conservation measures 10-07 (2009)[319]

- The commission identifies the non-contracting parties whose vessels are engaged in IUU fishing activities and establish a list (NCP-IUU vessel List)
- When a presumed IUU fishing non-contracting party vessel enters a port of a contracting party, it shall be inspected and not be allowed to land or transship any fish species subject to CCAMLR.
- Information about IUU fishing activities, (sightings or denial of port access, landing or transshipment, result of inspections) have to be distributed to the Executive secretary, contracting parties and the flag state of the vessel.[320]

[317] Article IX CCAMLR Convention
[318] Ibid
[319] CCAMLR Commission conservation measure 10-07 (2009)-scheme to promote compliance by non-contracting party vessels with CCAMLR Conservation measure. (online): http://www.ccamlr.org/sites/drupal.ccamlr.org/files//10-07.pdf
[320] Ibid

CHAPTER TWO

South Asian regional initiatives and the way forward towards achieving the conservation and sustainable use of marine biodiversity in ABNJ

South Asian Regional legal and institutional framework applicable to marine conservation and sustainable use of marine resources will be discussed in this chapter. The gaps and limits of the existing framework and the lessons can be leant from the other regional approaches of OSPAR, Barcelona and Antarctic treaty which already discussed in the above parts of this study will be analyzed. The way forward towards the new approach of Internationally Legally Binding Instrument through the regional initiatives and the implications of ILBI for South Asian countries will be examined in this chapter.

SECTION A - South Asian regional initiatives for the conservation and sustainable use of marine biodiversity and the limits and gaps of existing mechanisms in relation to ABNJ

This part will examine the legal and institutional framework relating to the conservation and sustainable use of marine resources in South Asian region. There are several initiatives taken by the South Asian region for addressing the issues of marine conservation. The way of approach of these initiatives for addressing the issue of conservation and sustainable use of marine biodiversity beyond the areas of national jurisdiction and the limits or gaps of this existing mechanisms will be reviewed in the following sub sections.

The South Asia Cooperative Environment Programme (SACEP)

The South Asia Cooperative Environment Programme (hereafter SACEP) is an intergovernmental organization which was established by the governments of the South Asian countries. Sri Lanka, India, Nepal, Pakistan, Bangladesh, Maldives, Bhutan and Afghanistan are the members of this SACEP. This organization was established in 1982 with the objective of promoting the efforts of conservation, management and enhancement of the environment in the region. SACEP also acts as the secretariat for the South Asian seas programme, which comes under the purview of United

Nations Environmental Programme's (UNEP) regional seas programme.[321] The governing structure of SACEP is consists of governing council, consultative committee, national focal points and the secretariat based in Colombo Sri Lanka.

SACEP has started several projects to enhance cooperation and improve the national capacity to s address the environmental issues. Conservation and sustainable use of biodiversity, ecosystems conservation and management, raising awareness among the members, enhancing capacity and strengthen the institutional capacity are the main focus areas of SACEP.

Many programmes for creating a forum among public and private sector partners to share their experience in developing industrial, agricultural project of preparation of handbooks of National Environmental legislations and institutions in South Asia were conducted by SACEP. National Task Force consisting with the environmental law experts from each South Asian countries was created with the assistance of their respective governments. SACEP in Sri Lanka organized the meetings of the National Task Force members for the preparation of common framework for national reports on environmental legislation. "Enforcement of national and legislation and compliance with international obligations under multilateral environmental agreements are focused on. The objective of the project was not merely to describe legislation and institutions in the South Asian region, but also to assess their effectiveness in application as tools for environmental management. Thus, each publication focuses on environmental governance particularly the implementation of legislation."[322]Through this programme public and private sector of South Asian countries were able to share their best practices and creating a network among various sectors namely, Industrial/Agricultural, Research centers who are involving with environmental related areas of concerns who are involving with environmental related areas of concerns.

With the joint assistance of SACEP and IMO new project was initiated to assist the region in developing a 'South Asian Regional Oil Spill Contingency Plan'. Bangladesh, India and Sri Lanka

[321] Available at online: https://www.icriforum.org/about-icri/members-networks/south-asia-co-operative-environment-programme-sacep
[322] Handbook on National Environmental Legislation and Institutions in the Maldives. Pg.(iii)

have already conveyed their concurrence and Pakistan and Maldives are expected to follow. "The Contingency Plan would establish a mechanism for mutual assistance, under which competent national authorities of the participating countries will coordinate and integrate their response to marine pollution incidents either affecting or likely to affect the territorial sea, coasts and related interests of one or more of these countries, or to incidents surpassing the available response capacity of each of these countries alone."[323]Development of a marine and coastal biodiversity strategy for the South Asian seas region was prepared in parallel with the national biodiversity strategies and action plans. The aim of this strategy is to support five marine countries of South Asia to achieve Aichi Biodiversity targets relevant to the marine biodiversity.[324]

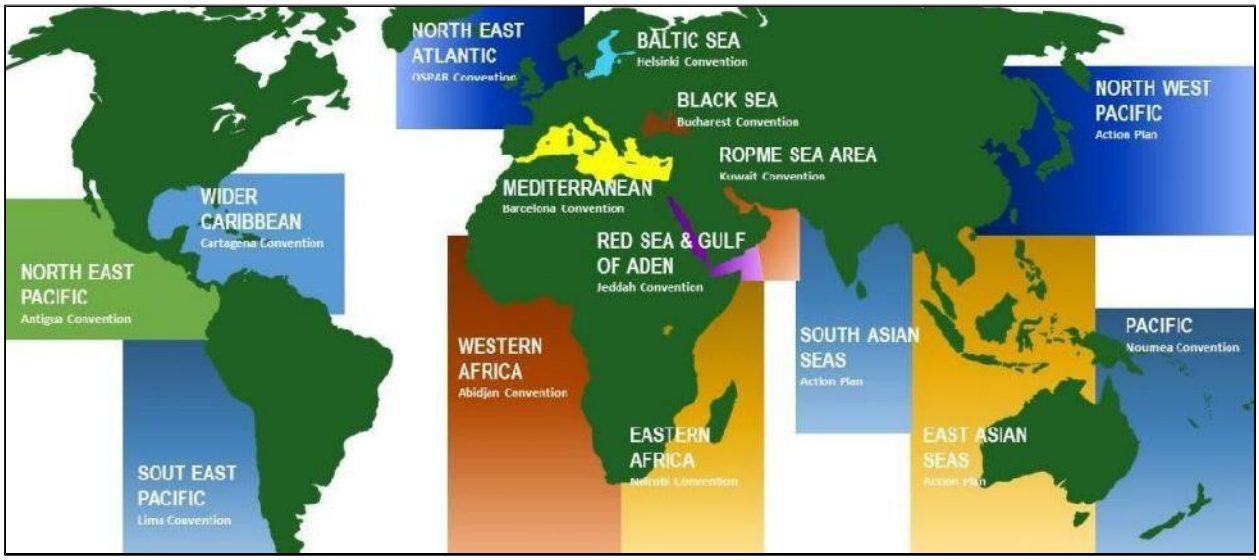
Considering the programmes and activities carried under SACEP, it is clear that SACEP has focused mainly on the environmental concerns in general and not specifically addressed the issues for the conservation and sustainable use of marine biodiversity in areas beyond national jurisdiction.

South Asian Regional Seas Programme and the South Asian Seas Action Plan (SASAP)

The South Asian region is consists of eight States, Sri Lanka, India, Bangladesh, Afghanistan, Maldives, Nepal, Pakistan and Bhutan. For achieving social, economic and environmental cooperation among the aforementioned countries, they have established South Asian Association for Regional Cooperation (SAARC) in 1985 with the involvement of heads of states. Achieving active and mutual cooperation in the areas of economic, social, cultural, technical and scientific fields are the common goal of establishing this regional association.

[323] BOBLMEP/National Report Sri Lanka. Pg.74.
[324] SACEP/Post 2015 South Asia Development Agenda

Figure 8: Areas of regional seas



Source: Assessment document of land-based inputs of micro plastics in the marine environment - OSPAR Commission 2017

South Asian Seas region consists of Bay of Bengal and the Arabian Sea in the Northern Indian Ocean, seas bordering Bangladesh, India, Maldives, Pakistan and Sri Lanka. Due to significant influence upon land based pollution, two land locked countries of the region, Bhutan and Nepal were included in South Asian Seas region recently.

The South Asian Seas Action Plan (SASAP)

The South Asian Seas Action Plan (hereinafter SASAP) was introduced under the United Nations Environmental (UNEP) regional seas programme. It was adopted in 1995 by five South Asian countries namely Bangladesh, India, Maldives, Pakistan and Sri Lanka. Protecting and managing the marine environment and related coastal ecosystem of South Asian Seas (SAS) region is the goal of this project.

"The overall objective of the South Asian Seas Action Plan (SASAP) is to protect and manage the marine environment and related coastal ecosystems of the region in an environmentally sound and sustainable manner' (UNEP 2003, p.25). The specific objectives are:

- Establish and enhance 'consultations and technical co-operation among states within the region';
- Highlight the 'economic and social importance of the resources of the marine and coastal environment';
- Establish 'a regional co-operative network of activities concerning subjects/projects of mutual interest for the whole region' (UNEP 2003, p. 25).[325]

To achieve the above objectives, the priority areas need to be developed under this regional seas programme as identified through South Asian Seas Action Plan (hereafter SASAP). Integrated Coastal zone Management, Development and implementation of National and regional oil spill contingency plan, Human Resources Development through strengthening regional centers of excellence and protection of the marine and coastal environment from land based activities are the key specific areas focused under the SASAP. However, it does not include ABNJ as its scope of application remains within the national jurisdiction of its member States.

Marine and Coastal Biodiversity Strategy (MCBS) for South Asian Seas Region

The ecosystem of the South Asian region is degrading day by day due to many deceitful activities such as overexploitation of coastal areas, unplanned development, increasing of population, overexploitation of resources. South Asian Seas Action plan which was adopted in 1995 under the umbrella of United Nations Environmental regional Seas Programme is the very important initiative taken by the South Asian region with an aim to conserve and sustainable manage the marine environment and related coastal ecosystems of the South Asian Seas region.

[325] Available online at : https://www.sdpi.org/sde/paper_details.php?event_id=519&paper_id=554

Under this spirit of dedication and commitment towards the cooperation for sustainable development of the region , Regional Marine and Coastal Biodiversity Strategy (hereinafter referred as MCBS) for the South Asian region was created. "The aim of the MCBS is to address the issues threatening marine biodiversity, by supporting the achievement of the Aichi Biodiversity Targets in marine and coastal habitats through the strengthening implementation of and coherence of actions under National Biodiversity Strategies and Action Plans (NBSAP) for 2011-2020 period."[326]

This initiative was approved by the South Asian Seas (SAS) inter-ministerial meeting in 2013. Regional Targets and Action Plans for the SAS region have been identified under this. Formation a framework for coordination and cooperation among countries' National Biodiversity Strategic Action Plans for the achievements of Aichi biodiversity targets[327] relating to the coastal and marine concerns to the region. This strategy is expected to use as a framework for coordination and collaboration of the diverse initiatives taking place in the SAS region. This is still in the process of finalizing not yet implemented in the region of South Asia. The final draft of this strategy has been circulated among the members and consultative workshop was held on 12th -13th September 2018 for finalization of the report prior to its adoption at the 6th Inter Agency Meeting of SACEP.

The first step of the strategy development process was the assessment of gaps and needs or gap analysis to assess the appropriate way for approaching the proposed strategy in achieving the Aichi targets done by the desk review. As per the first draft of this Marine and Coastal Biodiversity Strategy for the South Asian region, there are six thematic areas for achieving the Aichi biodiversity targets relating to the coastal and marine concerns to the South Asian region.

(i) Ensuring Ecosystem services and wellbeing (Aichi targets 5,10,14 and 15)
(ii) Prevention of species Extinct (Aichi target 12)
(iii) Control of Alien Invasive species (Aichi target 9)
(iv) Sustainable Fisheries and Aquaculture (Aichi target 6 and 7)

[326] First Order Draft-Marine and Coastal Biodiversity Strategy for the South Asian Seas Region:
[327] The Aichi Biodiversity Targets are 20 goals that were incorporated in the Convention on Biological Diversity (CBD- Strategic plan for Biodiversity 2011-2020, for providing a framework for action by all stakeholders to preserve biodiversity and enhance its benefits for the people. Find more here: http://www.cbd.int/sp/targets/

(v) Prevention on Marine Pollution (Aichi target 8)

(vi) Effective and Equitable Governance of Marine and Coastal Protected Areas (Aichi target 11)

Under this six thematic areas, first draft of the MCBS which consists of regional targets, implementation and monitoring framework and coordination and cooperation was formed. The ultimate objective of this strategy is to promote an ecosystem approach for conserving the marine and coastal biodiversity and enhancing the inter-agency coordination for economic activities. This is a framework coordination and collaboration among different initiatives taking place in the South Asian Seas region.

There are three key sections under this Strategic plan.

Part I – A common vision for the marine and coastal biodiversity of the SAS region. But this does not include ABNJ. This part sets out the overview or introduction of this regional strategy.

Part II – Marine and Coastal Biodiversity in South Asian Seas; Status; Trends and Threats. Many threats to the marine environment are posed by the anthropogenic activities. Unsustainable and destructive fishing practices, pollution, unplanned development activities, agricultural emissions, invasive alien species are the serious threats to the marine and coastal biodiversity in the region. Many initiatives were taken by the region due to many challenges for the conservation and sustainable use of marine biodiversity still remained unsolved.

Part III – The Way forward. Framework for action in addressing the Aichi targets within the context of the South Asian seas region. South Asian Seas vision statement for 2020 and beyond clearly spells out that [328]

Under the regional targets of ensuring ecosystem service and wellbeing several activities have been identified by this strategy for prevention of species of extinction, sustainable fisheries and

[328] Colombo Workshop outcome, 2014

aquaculture, prevention of marine pollution, effective and equitable governance of marine and coastal protected areas by 2020.

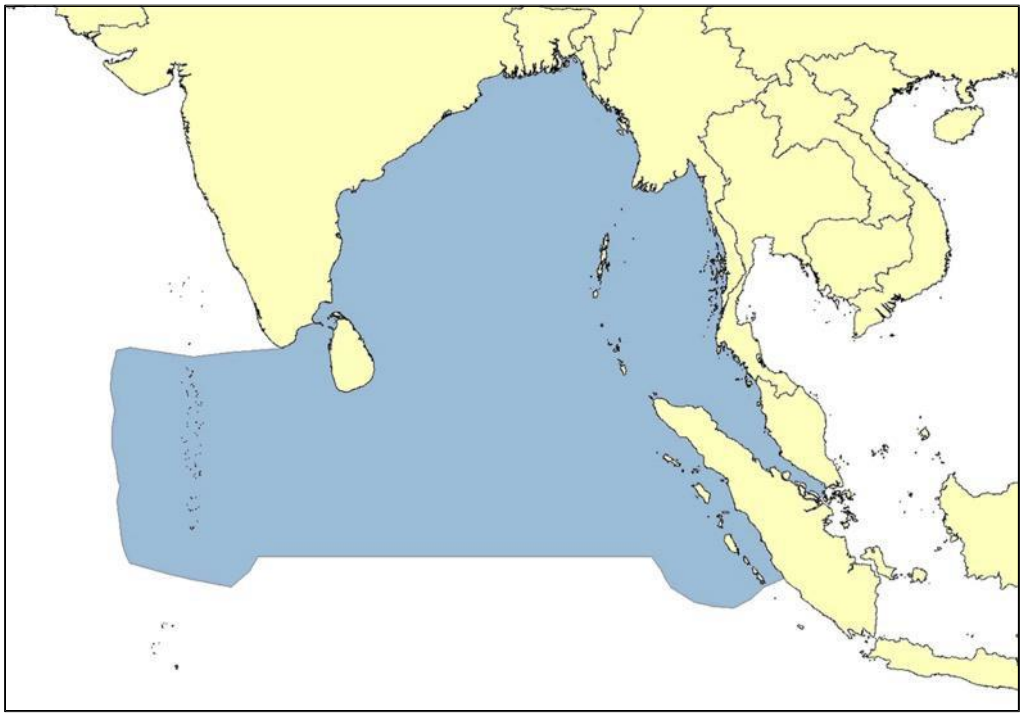
This strategy can be considered as a very significant initiative taken by SAS programme. If this process would move progressively forward many of the achievements can be seen in the South Asian Seas region in near future. However, it seems that this strategy does not include marine conservation and sustainable efforts in ABNJ and its scope is limited within the national jurisdiction of the member countries.

Bay of Bengal Large Marine Ecosystem (BOBLME)

There are eight members for this project namely, Bangladesh, India, Indonesia, Malaysia, Maldives, Myanmar, Sri Lanka, and Thailand. These South Asian and East Asian countries are committed in collaborating through the Bay of Bengal Large Marine Ecosystem (BOBLME) Project to achieve the objective of ensuring the better lives for their coastal populations by improving regional management of the Bay of Bengal environment and its fisheries

Bay of Bengal area is very rich in marine resources including both living and non-living. Therefore many people in the area of Bay of Bengal are making their lives using the coastal and marine resources. Overexploitation and habitat degradation are serious threats to this areas due to increasing of population and highly use of marine resources. With the aim of addressing the issues face by coastal community of Bay of Bengal programme was implemented.

Figure 9: Map of the BOBLME



Source: https://www.boblme.org/

Under this BOBLME project, it created a regional forum for scientists from the region to collaborate and for them to interact with policy makers. This helps the countries for the cooperation and coordination among the members. BOBLME is targeted to expand the knowledge and understanding of the ecological, human and governance dimension of the Bay of Bengal through its workshops and resources. "The project has increased awareness of transboundary issues and strengthened the capacity of participating countries to implement the strategic action programme which will address the major issues facing the health of the Bay of Bengal and its fisheries."[329]

[329] Progress & Achievements April 2014. Online at https://www.boblme.org

There are five components of this project.

(i) Strategic Action Programme- Ensuring the long-term institutional and financial sustainability of the Bay of Bengal Large Marine Ecosystem (hereinafter referred as BOBLME) is the objective of this strategic action programme.

(ii) Coastal/Marine Natural Resources Management and sustainable use – setting up a common regional and sub-regional approach for addressing the issues of health and status of BOBLME

(iii) Improved Understanding and Predictability of the BOBLME environment- Exchanging of information among global and global environmental monitoring programme for enhancing the BOBLME ecological functions and process.

(iv) Maintenance of Ecosystem Health and Management of pollution- setting up agreed set of environmental indicators for assessing the health of the BOBLME

(v) Project Management, monitoring and Evaluation and knowledge management

There were several key issues identified to be solved through this programme namely "Overexploitation of living resources, critical habitat degradation, land-based sources pollution and the status of these critical habitats, post-tsunami and their ability to support livelihoods in the future."[330]

The objective of the project is setting up a Strategic Action Programme (SAP) to preserve the health of the ecosystem and manage the living resources of the Bay of Bengal in sustainable manner to improve the food security and livelihood security of the region's coastal population.

There is a BOBLME regional fisheries management advisory committee, technical working groups comprising fisheries and environmental officers of BOBLME countries formed and Operational as follows.

[330] Available at online: https://www.boblme.org/project_overview.html

- Fisheries Statistics working Group
- Hilsa Assessment working group
- Shark working group
- Ecosystem Indicators working group
- Pollution working group

They have organized regional workshops on the best practices with the collaboration of FAO enabling to ensure the sustainable fisheries.

As per the BOBLME's progress report of the year 2014, it has contributed to the "development of an Integrated Coastal Management (hereinafter referred as ICM) framework for Puducherry, India, national consultation process implemented on fisheries, critical habitats and pollution relating to the finalization of the Transboundary Diagnostic Analysis, national review of policy instruments implemented for fisheries, environment and ICM, Development national Marine Protected Area (MPA) framework in Bangladesh, mainstreaming ocean research for ocean and resource management in India."[331]

It was a great achievement in 2014 that BOBLME project was able to do a status review and assessments such as transboundary Diagnostic Analysis to identify the major issues affecting the Bay of Bengal, Hilsa shad status review in Bangladesh, review the collection and management of fisheries statistics, development of ecosystem indicators for the Bay of Bengal, sub-regional reviews of ICM best practices for South Asian and South East Asian review of national fisheries, environmental and ICM policies, review of the status of MPA in the Bay of Bengal, review of critical habitats including mangroves, coral reefs and seagrass, assessment of transboundary fishing.

"The Transboundary Diagnostic Analysis for the Bay of Bengal programme in 2012 provided the scientific basis for the development of a Strategic Action Programme. This sets out a Strategy for eight countries to collectively deals with transboundary water-related environmental issues. Furthermore, it will guide the second phase of the BOBLME project, helping to realize the vision

[331] BOBLME_progress_Achievemnets_April_2014-2.pdf.

for a healthy ecosystem and sustainable use of marine living resources for the benefit of the countries and people of the Bay of Bengal Large Marine Ecosystem."[332]

Diverse of activities to enhance the capacity of government officers, scientists, NGO personnel were conducted under this programme such as Ecosystem Approach to fisheries management training courses, stock assessment training, awareness raising programe and training on resource conservation in the Gulf of Manner, training of fisheries data collection and storage in Sri Lanka, capacity enhancement on the development of ecosystem indicators, training on collection and analysis of genetic materials.

It is clear that this project has initiated many programmes with the cooperation of other international organizations namely, Food and Agricultural Organization (FAO), International Union for Conservation of Natures (IUCN), United Nations environmental Programme (UNEP). With the assistance of these organizations, this programme was able to do capacity development programmes on ocean governance, marine protected areas, on sampling and assessment of mangroves, coral reef and seagrass, code of conduct for responsible fisheries.

Through the following of this BOBLME programme, member countries were expected to meet their obligations towards international conventions as follows.

"Convention on Biological Diversity Goals Target 6- Applying ecosystem based approach
Convention on Biological Diversity Goals Target 8- Reducing pollution
Convention on Biological Diversity Goals Targets 11- Marine Protected Areas
FAO committee on Fisheries goals: implementing the code of conduct for responsible fisheries and developing national plans of action
Indian Ocean Tuna Commission Resolution 10/05; Technical capacity development in fisheries statistics and assessment.
Millennium Development Goals 7: Integrating the principle of sustainable development
UN Convention on the Law of the Sea Article 143: Marine Scientific research
UN Fish Stocks Agreement Article 7: Compatibility of management measures

[332] Ibid report

UN Fish Stocks Agreement Article 8: Cooperation for conservation and management UN General Assembly on Regular Process (60/30) for global assessment of the state."[333]

Through the various projects, BOBLME targeted to help the member states to meet their commitment to international obligations. The LME concept revolves around an ecosystem-based approach to the management of living marine resources and their environment.[334]BOBLME has also used this ecosystem based approach for the fishery resources in the region. This BOBLME project is an important model for cooperation in the region that could be applied to ABNJ as well. Because it is expected to create cooperation among the member countries for the completion of international obligations towards the conservation and sustainable use of marine resources as earlier mentioned through several programmes. When there is a regional approach towards achieving the international obligations in achieving the conservation and sustainable use of marine biodiversity, it is easy for establishing the compliance mechanism for enhancing the cooperation towards the target of achieving the conservation in the areas beyond national jurisdiction as well.

Coral Reef Degradation in Indian Ocean (CORDIO) project

CORDIO is an operational programme under International Coral Reef Initiative[335]. This progamme was started in early 1999 as a response to the coral reef degradation in the Indian Ocean. Because it is a serious problem encountered by the South Asian countries due to serious threats to the coral reef in Indian Ocean. A large percentage of coral reefs killed due to the elevated sea surface temperature during 1998 often between 3-5 degree above normal in the Indian Ocean. CORDIO project is supported by SIDA (Sweden International Development Cooperation Agency), The Government of Finland, The Dutch Trust Fund of the World Bank and International Union for Conservation of Nature (IUCN).

Due to this serious threats to the coral reef in the region, the coral reef degradation in the Indian Ocean (hereafter CORDIO) was established with the objective of investigating the prospects for

[333] BOBLME_progress_Achievemnets_April_2014-2.pdf.

[334] BOBLME (2011) Status of Marine Protected Areas and Fish Refugia in the Bay of Bengal Large Marine Ecosystem. BOBLME-2011-Ecology-10

[335] www.cordio.org

restoration of the reefs as well as providing alternative livelihoods for dependents of coral reefs. Specially this focuses on the ecological and socio-economic effects of the mass coral mortality and the degradation of the coral reefs. This was funded by the World Bank Swedish International Development Agency (SIDA) Sweden and two other Swedish agencies. There are eleven countries around the Indian Ocean active in CORDIO[336], which is coordinated through sub-regional offices in Colombo, Sri Lanka (South Asia), Mombasa, Kenya (East Africa) and Victoria, Seychelles (Indian Ocean Islands)

The objectives of CORDIO are:

a. To determine the biophysical impacts of the bleaching and mortality of corals, and the long term prospects for recovery.

b. To determine the socio-economic impacts of the coral reef degradation, and investigate options for mitigating these through management and development of alternative livelihoods.

c. To determine the prospects for restoration and rehabilitation of reefs to accelerate the ecological and economic recovery."[337]

Coral reefs are most valuable marine resources for South Asian region and it adds more value to the marine biodiversity. The objective of this project is to obtain data regarding the ecological and socio-economic consequences of the mortality of corals, particularly focusing on vulnerable groups of the coastal human population.[338]A progressive development in coral reef conservation and management in the South Asian region was the "establishment of Global Coral Reef Monitoring Network (GCRMN) in South Asia in July 1997 by the International Coral Reef Initiative (ICRI). Facilitating for monitoring, training, networking and management of coral reef

[336] Coral Reef Degradation in the Indian Ocean Status Report 2002: Olof Linden David Souter, Dan Withelmsson & David Oburu
[337] BOBLMEP/National Report Sri Lanka. Pg. 69
[338] Coral Reef Degradation in the Indian Ocean: Status Report 2002: Olof Linden, David Souter, Dan Withelmsson & David Oburu

in South Asia through the regional coordinators are the very important measures taken by GCRMN. In this context, the information on the extent and the rate of coral reef degradation in Indian Ocean is shared under this project and it facilitates in the region for monitoring the coral reef resources in South Asian region. This leads to the better management and sustainable use of coral reef. This programme does not explicitly speak about the areas beyond national jurisdiction. But the coral reef resources have been shattered not only within the national jurisdiction of countries but also it extends to the areas beyond national jurisdiction of the countries in the South Asian region. Therefore there is a possibility for extending the applicability of using these initiatives for the conservation and sustainable use of coral reef situated in the areas beyond national jurisdiction of South Asian region through the aforementioned initiatives taken under the CORDIO project.

Indian Ocean Tuna Commission (IOTC)

The Indian Ocean Tuna Commission (hereinafter referred as IOTC) is an intergovernmental organization mandated to manage tuna and tuna-like species in the Indian Ocean and adjacent seas.[339] It was established by the Agreement for the Establishment of the Indian Ocean Tuna Commission in 1996 (hereinafter referred to as the Agreement). The IOTC is administered by the Food and Agricultural Organization (hereinafter referred as FAO) to promote cooperation among the Contracting Parties and cooperating non-contracting parties of the IOTC with a view to ensuring, through appropriate management, the conservation and optimum utilization of stocks covered by the Agreement for the Establishment of the Indian Ocean Tuna Commission and to encourage the sustainable development of such stocks.[340]It is clear that promoting the conservation and sustainable utilization of tuna stocks in the Indian Ocean is part of the objectives of the IOTC. The countries of South Asian region namely, India, the Maldives, Pakistan and Sri Lanka are members of this Commission.

IOTC is one of the five tuna RFMO networks responsible for the management of the world's tuna stocks. IOTC is open to Indian Ocean coastal States and the countries who are fishing for tuna in

[339] Available at online: www.iotc.org/
[340] Ibid

the Indian Ocean. Currently 31 States are party to the Commission. IOTC is governed by the Commission, which consists of all its members. It is required to adopt conservation and management measures by a two-third majority for become binding on members of the commission. Scientific committee, a compliance Committee and a standing committee on administration and finance are assisting in the work of the commission. IOTC is mandated for the management of tuna and tuna-like species. Tuna and tuna like species are considered as highly migratory fish stocks. Because these tuna and tuna like species move freely in the ocean without limiting to special area. No any boundary or limitations for them to move. Straddling stocks occur both inside the Exclusive Economic Zone (EEZ) and on the high seas.[341] Considering the mandate of the IOTC, its scope extends to manage tuna and tuna like species in the Indian Ocean and adjacent seas. That implicitly cover the areas beyond national jurisdiction as well.

Article II defines a broad area of competence of the Commission as "… the Indian Ocean (defined for the purpose of this Agreement as being FAO statistical areas 51 and 57 as shown on the map set out in Annex A to this Agreement) and adjacent seas, north of the Antarctic Convergence, insofar as it is necessary to cover such seas for the purpose of conserving and managing stocks that migrate into or out of the Indian Ocean." Furthermore, membership to the Commission is open to the coastal States, States of vessels fishing in the Area for stocks covered under the Agreement and the European Union.[342] Article IV (a) (iii) specifically provides membership to "regional economic integration organizations of which any State referred to in subparagraphs (i), or (ii) above is a member and to which that State has transferred competence over matters within the purview of this Agreement.

As per article V of IOTC, the objective of IOTC Agreement states that "The commission shall promote cooperation among its members with a view to ensuring, through appropriate management, the conservation and optimum utilization of stocks covered by this Agreement and encouraging sustainable development of fisheries based on such stocks."[343]

[341] Available online at : www.un.org/Depts/los/consultative_process/documents/6_meltzer.pdf
[342] IOTC Article (IV) (a) (iii)

[343] IOTC Article. V

In general, IOTC is a relatively well structured functioning organization for the management of straddling and highly migratory fish stocks, in parallel with the related provisions set out by the other international mechanism on the management of straddling fish stocks. In this context, IOTC has taken into consideration the relevant provisions of United Nations Convention on the Law of the Sea (UNCLOS), United Nations Fish Stocks Agreement (UNFSA), Code of conduct and the guidelines for the implementation of the precautionary approach by the Food and Agriculture Organization. This situation is clearly shown in the Resolution 12/01 on the implementation of the precautionary approach of the IOTC. As per this resolution 12/0, it emphasized that the scope of the resolution as follows. Article 5, paragraph c of UNCLOS relating to the conservation and management of straddling fish stocks and highly migratory fish stocks, article 6 and annex II of UNFSA regarding the implementation of the precautionary approach, article 7.5 of the FAO code of conduct relating to the implementation of precautionary approach.[344]

Taking into consideration all of these international rules and regulations relating to the management and conservation of straddling fish stocks, IOTC has established guiding principles for proper management of straddling fish stocks under the purview of the commission. It is clearly stated in the paragraph 1 of article IX of the IOTC agreement as follows.

"To apply the precautionary approach in accordance with relevant internationally agreed standards, in particular with the guidelines set forth in the UNFSA and to ensure the sustainable utilization of fisheries resources as set forth in Article V of the IOTC Agreement.[345]

In applying the precautionary approach, IOTC has adopted measures as per the advice of IOTC scientific committee. "Stock-specific reference points, relative to fishing mortality and biomass, and associated harvest control rules, that is management action to be taken as the reference points for stocks safety are approached.[346]IOTC has considered on the guiding principles like precautionary approach in its implementation measures in conservation of marine resources.

[344] Available online at : www.iotc.org/cmm/resoultion -1201-implementation procedures-approach
[345] IOTC, article ix, para 1(1)
[346] Ibid. article ix, para 1(1) (a)

Initiatives taken at the domestic level by the South Asian Countries towards the conservation and sustainable use of marine biodiversity

Considering these regional initiatives taken by South Asian countries. Every country in South Asian region has developed several policies and conservation plans for the conservation and sustainable use of marine biodiversity within their respective national jurisdiction including establishing marine protected areas. Bangladesh has established Ecological Critical Area (ECA) which is declared under the Environmental Conservation Act of 1995. ECA are typically declared in areas that have suffered from intense ecological destruction. Bangladesh has established four marine reserves under Ecosystem Critical Areas (ECA).[347] India has declared Sundarbans, Chilika, Bhitaranika, and Gulf of Manner as Critically Vulnerable Coastal Areas under the Coastal Regulation Zone Notification in 2011.[348] Baa Atoll of Maldives was declared as a United Nations Economic Social and Cultural Organization (UNESCO) biosphere reserve.[349] Not only that but also the Maldives has declared six new Baa Atoll areas under the law while the already protected two areas were extended.[350] Sri Lanka has established six marine protected areas.[351] These all marine protected area in Sri Lanka are located within the country's national jurisdiction and not extending up to Areas beyond national jurisdiction. Currently, the major legislation used in Sri Lanka for declaring protected areas is the Fauna and Flora protection Ordinance which is mainly targets the protection of terrestrial biodiversity.[352] As pointed by the researchers, at present the declaration and management of MPAs is carried out without adequate consideration of the ecology, socio economic realities or long-term management sustainability.[353]Therefore it is needed to establish criteria for creating marine protected areas with the special attention on the marine conservation beyond the areas of national jurisdiction of Sri Lanka with the cooperation of other countries in the South Asian region. Under the Bay of Bengal Large Marine Ecosystem Programme two sites from Sri Lanka namely, Trincomalee Bay and Pigeon Island and the Gulf of Manner

[347] BOBLME-2015-Book-02.pdf
[348] Coastal Regulation Zone Notifications available online at : https://www.business-standard.com
[349] Available online at : https://www.environment.gov.mv/…/20130507-pub-maldives-as-a-biosphere-reserve-implementationn
[350]Available online at : https://www.Maldives.net.mv/1207/six-marine-areas-in-baa-atoll-declared-as-protected/
[351] Available online at : https://www.researchgate.net/publication/5916310_Marine_protected_areas_in_Sri_Lanka_A_review
[352] Ibid.
[353] Ibid.

cluster (Palk Bay- Manner Islands- Adams Bridge-Dhanuskodi-Rameshwaram have been identified as "High Regional Priority Areas" within the central Indian Ocean.[354]

In 2017 Sri Lanka adopted an amendment to the Fisheries and Aquatic Resources Act banning bottom-trawling fishing in its waters. This significant step forward ensures that the Sri Lanka being an island state has the proper legal framework put in place to take necessary action to protect its marine resources and marine environment.[355] This can be considered as Sri Lanka's obligation towards the United Nations Convention on the Law of the Sea as well as the Port State measures agreement for preventing Illegal, Unreported and Unregulated fishing practices through their domestic legal system. This is important mover for Sri Lanka in addressing Indian fishing in the Palk Strait. Palk Strait lies between the Indian State of Tamil Nadu and the Northern Province of Sri Lanka. This is limited to the national jurisdiction of Sri Lanka. It is not extended up to areas beyond national jurisdiction of Sri Lanka. As per the amendment Act no.11 of 2017 to the Fisheries and aquatic resources act, the enforcement authority of this act is the Department of Fisheries and aquatic resources in Sri Lanka. Fisheries officers can litigate against this violators at primary courts (magistrate court) in Sri Lanka. This does not mention about the engaging of bottom trawling in the ABNJ areas by the other countries in the region. It is required to be filled this gap by addressing the issue of bottom trawling ban extending up to ABNJ.

The other important initiative taken by Sri Lanka is the establishment of the high seas fishing operations regulations. High Seas Fishing Operations Regulation No.01 of 2014 was made by the Minister of Fisheries and Aquatic resources in Sri Lanka.[356] As per these regulations "no person shall engage in any fishing operations specified in the schedule I hereto in the high seas except under the authority of a valid license granted by the Director General.[357]Schedule I clearly prescribes the types of fishing operations prohibited in the high seas. It includes destructive fishing methods such as trolling fishing methods and gillnet fishing methods. Through these high seas fishing regulations, Sri Lanka has taken measures to address the sustainable use of marine resource

[354] BOBLMEP/National Report Sri Lanka
[355] Can International Litigation Solve the India-Sri Lanka fishing dispute: Natalie Klein: Article published on 19th July 2017 Daily Newspaper in Sri Lanka
[356] Available online at : https:www.ecolex.org/…/legislation/high-seas-fishing-operations-regulation-no-1-of 2014
[357] High Seas Fishing Operation Regulation. Article 2

in the areas beyond its national jurisdiction. This is a progressive step forward taken by Sri Lanka in addressing the challenges for the conservation and sustainable use of marine biodiversity in high seas which includes ABNJ.

Gaps and Weaknesses of existing South Asian regional legal and institutional mechanism in addressing the marine conservation

South Asian region has taken several initiatives for the conservation and sustainable use of marine biodiversity. It seems that in the face of many challenges for achieving this objective of conservation and sustainable use of marine biodiversity, this regional initiatives are not strong enough to address these concerns. Because there are many significant gaps and weaknesses of existing legal and institutional mechanisms relating to the marine conservation in South Asian region. This part will describe the gaps and weaknesses of existing legal and institutional mechanisms in South Asian region.

South Asian Seas Programme and the South Asian Action Plan (SASAP)

In 2005 report published by UNEP emphasized that "the priority issues for South Asian Seas region as: sewage; litter; solid waste (industrial and municipal); agricultural chemicals; oil hydrocarbons; and physical alteration and destruction of habitats".[358]Though the South Asian Seas regional seas programme took diverse efforts through the SASAP, many challenges for the conservation and sustainable use of marine resources are escalating day by day and in particular to the ABNJ.

Though the South Asian Seas Programme is considered as a regional initiative taken by the South Asian region for the conservation and sustainable use of marine environment, all countries of the South Asian region and Bay of Bengal are not included in this programme. Myanmar, Western coast of Thailand, Western peninsular, Malaysia and minor parts of Indonesia are not members of the South Asian Seas regional programme[359]."When United Nations Environmental Programme

[358] Online: http://www.fao.org/fi/boblme/website/prospectus.htm.
[359] R.S.Gupta et al, "State of the Marine Environment in the South Asian Seas Region" (UNEP 1990) p.1.

(UNEP) publish a report on the state of the marine environment in the South Asian Seas region in 1990, it included Myanmar (then Burma), Western coast of Thailand and Malaysia in the South Asian Seas region, but these three countries did not participate in the South Asian Seas programme."[360]Therefore it is required to be report periodically on the status of the parties and its new improvement.

South Asian regional seas programme was not initiated under the umbrella of South Asian Regional Cooperation (hereafter SAARC). SAARC was established for the regional cooperation in many aspect of economic, social and also environmental cooperation as earlier mentioned. Due to leaving behind this spirit, SASP was implemented under the separate agenda. Therefore getting the attention of the heads of the governments is difficult and a challenge. Therefore South Asian region is facing many challenges in the conservation and sustainable use of marine biodiversity due to high density of population and weak environmental management.

The other significant weakness is that the focal point of the states for this South Asian Seas Programme is the Ministry of Environment of the respective governments. But in the process of BBNJ, ministries of foreign affairs in the region are involving. For instance, Sri Lanka is represented by Ministry of Foreign Affairs and the Attorney Generals Department for BBNJ negotiations. But these two institutions have not participated in the process of regional seas programme. Therefore it is difficult to properly implement the programmes under this regional seas programme due to proper cooperation and coordination among the institutions. Therefore due consideration with the coordination of relevant agencies involve in the matter of ocean policy need to be given for the proper implementation of South Asian Seas regional programme, Hence, South Asian Seas programme has failed to come up with a legally binding regional convention for proper implementation of SASAP.

Indian Ocean Tuna Commission (IOTC)

The Indian Ocean Tuna Commission Agreement is outdated as it does not take account of modern principles for fisheries management. As discussed the above section on IOTC, it has established

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[360] Ibid.

guiding rules and regulations for the management of straddling fish stocks. In this context, IOTC has used precautionary approach in their guiding principles. But there are some other modern principles for fisheries management such as an-ecosystem based approach and polluter-pays principle. The absence of modern environmental concepts of polluter pays principle and an-ecosystem based approach for fisheries management are considered to be major weaknesses.

As mentioned in the above, IOTC is mandated to managed tuna and tuna-like species in the Indian Ocean and adjacent seas for the conservation and optimum utilization of the stocks for long term sustainability. When considering the question of whether IOTC was able to reach its mandate, there are some gaps can be seen in managing the tuna and tuna like species in the Indian Ocean as well as adjacent seas. "For yellowfin tuna, conservation measures thus far adopted by the commission have not prevented the stock from being overfished and stock biomass may now be below the Biomass at or above Maximum Sustainable Yield (BMSY)."[361]This seems that IOTC was not able to reach to its objective of conservation and optimum utilization of the stocks for long term sustainability. Because tuna and tuna likes species are being overfished in the areas covered under IOTC.

Overfishing and fully exploitation leads to the unsustainable use of marine resources. Not only yellow fin tuna but also the stocks of swordfish faced the worst fate. "The stocks of swordfish in the south-western Indian Ocean and of bigeye tuna throughout the Indian Ocean appear to be at least fully exploited and fishing pressure in near maximum sustainable yield (MSY)."[362]The other challenge is not having enough quantitative information on the stock status available.

Considering the above situations, it is clear that IOTC should take necessary measures to set up a strong enough policy on fishing capacity. Then this policy will be able to prevent or eliminate excess fishing capacity. Proper mechanism for collecting and sharing of data need to be established within the scope of IOTC.

[361] Available online at : www.un.org/depts/los/nippon/unnff_programme..../alum_tokyo_panjarat.pdf

[362] Ibid.

Bay of Bengal Large Marine Ecosystem Programme (BOBLME)

Taking into consideration the initiatives taken by the Bay of Bengal Large Marine Ecosystem (hereinafter BOBLME), there are some weakness and gaps. Among these challenges, heavily exploited fishery resources in coastal area, competition from other sectors and insufficient institutionalization of the ecosystem approach to fisheries in national fisheries governance frameworks.[363]

While much of the BOBLME lies within the exclusive economic zones of the contracting parties, a significant proportion is on the high seas and not subject to any national jurisdiction.[364] But it is not clearly defined or has not taken any management measures such as establishing of marine protected areas directly applicable to the areas beyond national jurisdiction under the BOBLME programme.

Considering the implementation of guiding principles such as ecosystem based approach through the programmes of BOBLME, emerging ecosystem-based framework (eg: ecosystem approach to fisheries or ecosystem-based management) are not formally implemented, but some elements (eg: habitat protection) are present in countries like India and Bangladesh which both protect critical mangrove habitat in order to improve local fisheries (the Sundarbans).[365]

In the context of marine conservation, the monitoring and evaluation mechanism is very important in the implementation of Marine Protected Areas as areas management tool for the conservation and sustainable use of marine biodiversity. Proper implementation can be put in place when the systematic monitoring system is available. Systematic MPA monitoring and evaluation are uncommon. Information about coral reefs in the region is collected on a periodic basis by organizations such as CORDIO, but such information is not systematically linked to MPAs.[366] But it seems that proper mechanism of monitoring is not in place under this BOBLME project. The other important gap in this project is not having a proper scientific data management system. A

[363] Available online at : https://www.boblme.org
[364] BOBLME (2011) Status of Marine Protected Areas And Fish Refugia in the Bay of Bengal Large Marine Ecosystem. BOBLME-2011-Ecology-10
[365] Ibid.

[366] Ibid.

region BOBLME scientific data management system is lacking. The collection and diffusion of relevant information is inconsistent within or beyond national jurisdiction.[367]The most significant tool for the proper implementation of management measures for the conservation and sustainable use of marine biodiversity is the updated scientifically advanced data management system. It helps to create a bridge between scientists and policy makers towards the achievement of marine conservation through the science-policy interface

Challenges for South Asian region in conservation of marine biodiversity in ABNJ

There is no exact definite unique government institutions or departments which are mandated to implement the ocean policies and law of the sea areas. Different ministries are engaging with the same issues. For instance in Sri Lanka there are several government institutions existing for implementing the ocean policy and environmental concerns. Ministry of Fisheries and Aquatic Resources, Ministry of Environment, Ministry of Foreign Affairs, Department of Coast Guard are implementing many programmes for the implementation of ocean policies and marine environmental policies. Lacking of an unique representation for the issues concern to the ocean policies and Law of the Sea matters is the other inherent weakness among the South Asian region. For instance, In Sri Lanka Ministry of Foreign Affairs and Attorney General's Department are representing BBNJ negotiation process. But when referring to the regional initiatives in South Asian region, there is no representation from these two institutes. Separate institutions such as Ministry of Fisheries and Aquatic resources is representing in the programmes conducted under the South Asian regional Seas programme. In this context, the representation of county's real position is a challenging part. Different institutions are involving with the same issues and concerns. Considering other countries in the region this situation can be seen in Bangladesh as well. The primary government agency concerned with the declarations and management of marine protected areas is the Department of Environment (DoE), which operates under the Ministry of Environment and Forest (MoEF). The DoE has the authority to declare ecologically critical areas (ECA) if it deems an area under threat. The Forest Department is responsible for declaring national parks and sanctuaries, while the Fisheries Department is responsible for identification and

[367] Ibid.

declaration of MPA, in other forms (such as hilsa-closed seasons and fisheries sanctuaries).[368] This seems that the power relating to the marine conservation and ocean policies is vested in different agencies. Duties and responsibilities of each of these institutions are overlapped and duplicated. No any exact focal point is not available to be responsible for the concerns of ocean policies and Law of the Sea matter. It poses many problems among the institutions as well as overlapping the responsibilities. Different entities are engaging in the same concerns and cooperation and coordination among these entities are not existing among them. In this scenario, it is difficult in making decisions and will create the confusion.

Capacity building in the field of marine scientific research and the development and transfer of marine technology through bilateral, regional and multilateral programmes are key aspects of UNCLOS.[369]Regrettably, the implementation of the relevant provisions in UNCLOS remains largely unsatisfactory from a practical perspective and creates a serious challenge for developing states in implementing the convention and deriving economic and environmental benefits from offshore resources.[370] South Asian countries being developing countries are facing many challenges in addressing the issue for conservation and sustainable use of marine biodiversity in areas beyond national jurisdiction. Lack of capacity and skills among the officials who are involving with the issues relating to the ocean policy and Law of the Sea area and having not financial assistance for the capacity building are the key challenges for them. During the process of BBNJ, South Asian countries have raised this issue and they were very keen on this issue. at the first Inter-Governmental Conference held in September 2018, Sri Lanka has stressed that the need for capacity building as well as the challenges for that. Financial assistance has become a serious threat to the conservation and sustainable use of marine biodiversity in ABNJ. It would be useful to develop a mechanism to involve multiple stake holders including the public and private sector and the international organizations with a view to establish a global multilateral fund to support regional scientific and technological capacity building projects related to conservation.[371]

[368] BOBLME (2011) Status of Marine Protected Areas and Fish Refugia in the Bay of Bengal Large Marine Ecosystem. BOBLME-2011-Ecology-10
[369] UNCLOS Part XIII, XIV
[370] See Tanaka The International Law of the Sea (n 3) 370-75
[371] Earth Negotiations Bulletin Online : http://enb.iisd.org/oceans/bbnj/igc1/

SECTION B - Lessons from other regions for South Asian region and way forward

How can the best practices and experiences of other three regional initiatives can be taken as a mode for designing a framework for South Asian countries in conservation and sustainable use of marine resources in Areas Beyond National jurisdiction will be analyzed in this part. Best practices under the specific areas relating to the conservation of marine biodiversity in areas beyond national jurisdiction available in the regional approaches of OSPAR, Barcelona Convention and Antarctic treaty will be examined and will be discussed. The way of approach under these experiences can be adopted in a future South Asian regional initiative for the conservation and sustainable use of marine biodiversity in areas beyond national jurisdiction and an analysis of the path by which to address these challenges either through a regional response under the UNEP Regional Seas Programme, or a global response under the ILBI that is being negotiated at the UN or a combination of both will also be discussed in this part.

OSPAR regional experiences and best practices for South Asian Region

OSPAR was the first regional organization which contributed for the protection of marine biodiversity in Areas beyond National Jurisdiction (hereafter ABNJ) and still exists as a global champion in designating Marine Protected Areas (MPAs) on the high seas. OSPAR has established many good practices in conservation and sustainable use of marine biodiversity in areas beyond national jurisdiction under diverse areas. It is expected to set out the well-established good practices by OSPAR under the different areas which the South Asian countries can be taken into consideration in developing their framework under the following subsections.

Regional approach for the Conservation of ecosystem and biological diversity

Annex V on the protection and conservation of the ecosystems and biological diversity in the OSPAR maritime area covers non-polluting human activities that can adversely affected the seas.[372]Article 5 of Annex V details four criteria for identifying human activities.[373]

[372] OSPAR Convention Annex V
[373] Ibid Annex Appendix 3

- The extent, intensity and duration of the human activity under consideration
- Actual and potential adverse effects of the human activity on specific species, communities and habitats
- Actual and potential adverse effects of the human activity on specific ecological process
- Irreversibility or durability of these effects.

These criteria could be applied under other regional treaties. If the contracting parties of South Asian region adopted to the regional seas treaties, they could guide decision makers in any future set up relevant to South Asian regional initiatives with a view to regulating diverse happenings in the Indian Ocean. With the blessings of the appropriate political will, a similar framework could be replicated in the form of regional treaty to the South Asian region as well.

Very significant other factor in the OSPAR approach to regional environmental protection is the inclusion of observers in discussions such as civil society organizations and international agencies. Some OSPAR observers are International Maritime Organization (IMO), International Seabed Authority (ISA), IOC, ICES, NEAFC, NRDC and WWF among others.[374]This is a good approach. Because it legalize regional arrangements, enhance co-ordination and implementation of policies with the international bodies.

Establishment of Area Based Management Tools (ABMTs) including Marine Protected Areas (MPAs) in Areas beyond National Jurisdiction (ABNJ)

The OSPAR practice of the adoption of guidelines on identification and selection of sites to be proposed as a Marine Protected Area (MPA), the set of criteria to be accomplished, the establishment of a procedure to designate MPAs and guidelines on management measures and plans for MPAs.

OSPAR has developed several tools such as

[374] For further information on the intergovernmental and non-governmental observers list see: http://www.ospar.org/organization/observers

- Biogeographical classification
- Guidelines for identification and selection of MPAs (including criteria)
- Guidance on ecological coherence and MPA management

During the North-East Atlantic Environmental summit Ministerial Meeting of the OSPAR commission in 2010, the state parties have agreed for the following initiatives to be implemented.

- Respond to major threats, including continued loss of biodiversity, climate change and ocean acidification
- Committed to join forces to achieve good environmental status by 2020
- Agreed a new strategy that includes targets of a "coherent network by 2012 and a "well-managed network by 2016.
- Found the political will to take forward an initial OSPAR network of MPAs in ABNJ-purpose and scope of this is to do awareness raising, information sharing and marine science new development.

Good practices of gathering the regional partners and discuss on these matters concerning to the raising the awareness, sharing of information on biodiversity and impacts, encourage research, monitoring, mitigation new developments and promote of third parties can be seen among the OSPAR experience.

They have drafted collective arrangements-joint principles (Madeira process) such as

-Ecosystem approach
- Obligation to protect and preserve the marine environment as in the law of the Sea Convention (Article 192)
-Precautionary principle
- Sustainable use of natural resources
- Use of best available scientific advice
- Application of Environmental Impact Assessment (EIA)
- Polluter pays principle
- Public availability of information

Environmental Impact Assessment (EIA) and Strategic Environmental Assessment (SEA)

In consideration in the design of an impact assessment scheme "The OSPAR Convention requires Contracting Parties to undertake two obligations in relation to Environmental Impact Assessment.[375]

Firstly, to undertake and publish at regular intervals joint assessments of the quality status of the marine environment and development in the maritime area or for regions or sub-regions therein. Secondly, to include in such assessment both an evaluation of the effectively the measures taken and planned for the protection of the marine environment and the identification of priorities for action. Annex IV of the Convention sets out detailed rules on the conduct of Environmental Impact Assessment including the respective duties of Contracting Parties and the OSPAR Commission. "Collaboration with other international bodies is at the heart of the OSPAR approach to Environmental Impact Assessment (EIA) and Strategic Environmental Assessment (SEA).[376]

OSPAR requires EIA to be undertaken pursuant to the code of conduct for responsible marine research in the deep seas and high seas of the OSPAR maritime areas.[377]

Information and experiences in strengthening regional cooperation , best practices were exchanged on the areas of marine pollution management, the procedures in the London Protocol, management of offshore oil and gas activities and establishment and management of MPAs. 2015 was their second meeting which OSPAR advised through experts from its offshore industry committed and the secretariat.

With a view to build partnerships, strengthen cooperation and given that both secretariats have an interests in the protection and conservation of the marine environment.[378]

[375] OSPAR Convention. Article 6
[376] OSPAR Commission Agreement 2008/1. Code of Conduct for Responsible Marine Research in the Deep-Seas and High Seas of the OSPAR Maritime Area, paragraph 22.
[377] Ibid
[378] MoU between OSPAR secretariat and Abidjan Secretariat, Recital 3.

Obligation of undertaking EIA and the establishment of the code of conduct for responsible marine research in the deep-seas and high seas of the OSPAR maritime area is a best practice.

Capacity Building and Technology Transfer

Capacity Building in regional practice within United Nations Environmental Programme (UNEP's) Regional Seas Programme, OSPAR has worked together with the Abidjan Convention.[379] Cooperation between both frameworks by sharing knowledge and experiences on the implementation of the ecosystem approach has been a relevant tool.[380]

Coordination and Cooperation with international bodies

The OSPAR Commission has adopted a collaborative approach that entails cooperation and coordination with other competent international authorities by way of entering into Memorandum of Understandings and formal and informal consultative meetings. For instances Memorandum of Understanding between The North-East Atlantic Fisheries Commission (NEAFC) and the OSPAR Commission,[381]Memorandum of Understanding between the International Commission for the Conservation of Atlantic Tunas, the North Atlantic Salmon Conservation Organization and OSPAR Commission. 2013.[382]

Memorandum of Understanding (MoU) concluded between OSPAR NEAFC[383] which provides that both regional bodies have complementary competences for fisheries management and environmental protection in the North-East Atlantic including ABNJ. Also under the MoU, both

[379] Abidjan Convention for cooperation in the protection and development of the marine and coastal environment of the West and Central African Region. 1316 UNTS 205. Entered into force 5 August 1984.
[380] OSPAR Commission (2017) International Cooperation. Available at :http://www.ospar.org/international-cooperation/Abidjan-Convention
[381] Available Online at :http:www.ospar.org/site/assets/files/1357/mou_neafc_ospar.pdf
[382] Available Online at: http:www.ospar.org/site/assets/files/1357/hasco_mou.pdf.
[383] MoU between NEAFC and OSPAR Commission, NEAFC and OSPAR Commission (2015) the process of forming a cooperative mechanism between NEAFC and OSPAR London: OSPAR

bodies recognized their joint interests in conserving the marine resources[384]and agree to promote mutual cooperation through the free flow of information.[385]

Coordination and cooperation arrangements adopted by OSPAR with other international bodies as described the above are relevant and need to be taken into consideration in designing of future management framework for the South Asian region.

OSPAR has entered into several other MoUs except from management of marine living resources. In terms of Shipping, OSPAR has an agreement for cooperation with the International Maritime Organization.[386]This practice can be adopted by South Asian regional seas programme as well which could develop provisions along similar line of coordination through the conclusion of MoU or an agreement with International Maritime Organization (IMO) aiming at strengthening good environmental practices on maritime transportation in South Asian Region for enhancing institutional capabilities and designating of special areas such as Particularly Sensitive Sea Areas (PSSA).

With regard to the diverse activities happening in the Areas beyond National Jurisdiction in the North-East Atlantic, OSPAR has initiated a collective arrangements which provides the basis of cooperation and coordination between competent international organizations. This is another best example for South Asian region. Adopting these kind of arrangements with relevant international organizations. It creates an opportunity to reflect their common interest of both organizations on the protection of the marine environment.

[384] Ibid. para 1
[385] Ibid. para.1-a
[386] Agreement of cooperation between the International Maritime Organization and the OSPAR Commission for the protection of the marine environment in the North East Atlantic. Available at :http://www.ospar.org/site/assets/files/1357/imo_online_letter_30_nov_1999_and_attachments_from_imo.pdf

Modern International Environmental Law principles and approaches

OSPAR framework is compatible with the international best practices such as

- Precautionary Principle
- The ecosystem approach
- The polluter pays principle
- The best available techniques and the best environmental practice.[387]

OSPAR has developed these four key principles in their regional framework for the conservation and sustainable use of marine biodiversity in areas beyond national jurisdiction. Reforming the South Asian regional seas programme using these kind of modern environmental principles and approaches will be useful in achieving the goal of conservation and sustainable use of marine biodiversity in areas beyond national jurisdiction.

Dispute settlement Mechanism in ABNJ under OSPAR

OSPAR has developed a sophisticated regime for dispute settlement which accords very much with part XV of UNCLOS.[388]As per OSPAR framework, "Contracting Parties, at first instance are compelled to settle dispute by means of inquiry or conciliation within the commission.[389]Arbitration[390]is another option that is open to parties to resolve their disputes and various steps have been developed under the convention concerning the constitution of an arbitral tribunal for this purpose.[391]Any such tribunal is obliged to determine disputes on the basis of international law and OSPAR convention provisions more specifically.[392]Any Contracting Party that has a legal interest or may be affected by the specific matter under dispute has the possibility

[387] OSPAR Convention. Article 2.2
[388] OSPAR Convention, Article 32.
[389] Ibid. Article 32(1)
[390] Ibid. Article 32(3) to (10)
[391] Ibid. Article 32(3.a),(4)
[392] Ibid. Article 32 (6.a)

to intervene in the process having obtained the consent of the tribunal.[393]Finally, the award of the arbitral tribunal is final and binding upon the parties to the dispute.[394]

This is a very good best practice for within the new BBNJ Agreement as well as a very good model for the South Asian Region.

Monitoring and Reporting

"The establishment of informed decision making processes are key elements within the OSPAR framework is so far as it provides for access to information."[395]And the monitoring the quality of the marine environment.[396]

As per Article 22 of OSPAR Convention, within OSPAR parties have the duty to report to the commission on the regulatory measures taken for the implementation of the convention as well as the effectiveness of such provisions and the challenges encountered in this regard.

Other Best practices under OSPAR

OSPRA is treaty based and its application of a comprehensive regulatory framework at a regional levels for the conservation of marine biodiversity through the adoption of legally binding decisions, recommendations and agreement which are applied and enforced by Contracting Parties.

Tools applied by OSPAR including the establishment of a coherent network of marine protected areas including MPAs in ABNJ and adoption of scientific, policy and regulatory guidelines.

The obligation of publishing joint assessments on the quality status of the marine environment, evaluations on the effectiveness of conservation measures and the identification of priorities for action are very progressive initiatives of OSPAR.

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[393] Ibid. Article 32(9)
[394] Ibid. Article 32 (10.a)
[395] OSPAR Convention. Article 9
[396] Ibid. Article 6. Annex IV

OSPAR has best practices that could be applied in South Asian regional approach as well and it has four coherent and interrelated objectives could be taken as models for any region.

i. The prevention and elimination of pollution
ii. The protection of the maritime area against the adverse effects of human activities
iii. The safeguarding of human health and the conservation of marine ecosystems
iv. When practicable, the restoration of marine areas.

OSPAR treaty provides good institutional structure and decision making procedure at a regional level. It creates an opportunity for states to share information and the burden of environmental monitoring and coordination their actions relating to the conservation of marine resources in ABNJ.

Barcelona regional experiences and best practices for South Asian Region

Fishery Management

The implementation of the ecosystem approach to the fisheries like OSPAR practice is a good approach to the South Asian region for their fishing industry from Barcelona.

Considering the fisheries management under this Barcelona Convention, General Fisheries Commission for the Mediterranean (hereinafter GFCM) is the Regional Fisheries Organization in the Mediterranean. Under the Agreement for the establishment of the General Fisheries Commission for the Mediterranean, this commission was established including European Union there are twenty three contracting parties to this commission.

The GFCM, in coordination with other Regional Fisheries Organizations aims to successfully manage fisheries at regional level. It has the authority to adopt binding recommendations for

fisheries conservation and management in its convention area.[397]This GFCM is implemented through a commission; a secretariat, a committee on Aquaculture, a scientific Advisory Committee, a compliance Committee and a committee on Administrative and Finance. On specific matters, the commission could establish temporary and special committee for that to report.

Under this structure, the commission seeks to promote the conservation and sustainable management of marine resources through inter alia, regulation of fishing methods and gears, minimum landing sizes, the establishment of closed fishing seasons and areas, the regulation of catch and fishing effort[398]among others. Memorandum of Understanding (hereafter MoU) between the Regional Activity Center for specially protected Areas and the Food and Agriculture Organization (FAO) on the cooperation on fisheries and biodiversity preservation in the Mediterranean region is very significant initiative of this institution. Developing the participation of both organizations in the implementation of the ecosystem approach to fisheries in the Mediterranean region and identification of marine sensitive ecosystems are the objectives of this MoU. Both OSPAR and Barcelona target to apply this ecosystem based management approach and this is a best practice for South Asian region as well.

Common Fisheries Policy (CFP)[399] is the other important tool in the fisheries management. Ensuring exploitation of living aquatic resources that provides sustainable economic, environmental and social conditions, applying the precautionary and the eco-system based approach to fisheries management in a similar trend than the OSPAR is the objective of this policy. "The CFP establishes measures concerning conservation, management and exploitation of aquatic resources, control and enforcement: limitation of the environmental impact fishing: organization among others."[400]

Limiting fishing efforts, zone and or periods in which fishing activities are prohibited or restricted, adopting recovery plans, adopting management plans to maintain stocks within safe biological

[397] Mediterranean, Black Sea and connecting waters, General Fisheries Commission for the Mediterranean. Online :http//www.gfcm.org/gfcm/about/en-org-Geo coverage
[398] General Fisheries Commission for the Mediterranean online: http//www.gfcm.org/gfcm/about/en
[399] Council Regulation (EC) No 2371/2002 of 20 December 2002, online: http://eur lex.europa.eu/Lex Uri Serve/Lex Uri serve.do? Uri=O J:L:2002:358:0059:0080:EN:PDF
[400] Article 1, Council Regulation No.2371/2002.

limits, measures regarding the structure of fishing gears, limiting catches, establishing targets for the sustainable exploitation of stocks[401]are the CFP established some measures which can be set as an example in fisheries management in South Asian region.

Establishing of 8 Regional Advisory Councils[402] with an aim to improve the formulation and implementation of fisheries management measures is another important institutional mechanism established under CFP. These councils consist with General Assembly and an Executive Committee. For these councils representatives are selected from the fisheries sectors and other interests groups affected by the Common Fisheries Policy.[403]

Regional Advisory Council is a good initiative for improving the formulation and implementation of fisheries management measures. Because in this process, they are considering the experiences of stakeholders relating to the fishing industry. For instance, fishing industry, ship owners, small-scale fisherman, and woman network. The other important thing in the stakeholders of fishing industry is that it is requested to participate in the formulation of fisheries regulations under the ecosystem based approach and the precautionary principle approach.

Ocean acidification

In terms of ocean acidification and climate change, through implementing the project of Regional Activity Center for Specially Protected Areas of the Barcelona Convention and the Mediterranean Sea acidification, various species affected to climate change and three iconic ecosystems were identified.

Establishing the Mediterranean Reference User Group for the promotion and exchange information to the end users audience in the Mediterranean region is a best practice for South Asian region as with the participation of stakeholders to disseminate information among the people and stakeholders among different sectors.

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[401] Article 4, Council Regulation No.2371/2002.
[402] Council Decision No.585/2004, July, 19th of 2004. Establishing Regional Advisory Councils under the common Fisheries Policy. Online: http:/eur-lex.europa.eu/LexUriServ/LexUriserv.do?Uri=OJ:L:2004:256:0017:0022:EN:PDF
[403] Ibid. Article 52 (Common Fisheries Policy)

Establishment of MPAs in ABNJ

Pelagos Marine sanctuary for marine mammals is the only MPA located in the high seas in the Mediterranean. This was established under an agreement signed between France, Italy and Monaco in 1999. “This special area is consists in high levels of human pressure. Therefore the Contracting Parties have agreed under the Barcelona to take necessary measures to ensure the conservation of these species and its habitat. The criteria for creating this MPA can be used as a best practices.

Cooperation and coordination

As per Article 7 of Barcelona Convention, it calls upon parties to take appropriate measures to prevent and combat pollution resulting from the exploration and exploitation of the continental shelf, the seabed and its subsoil with the Mediterranean areas. If South Asian regional parties can reach to an agreement under the South Asian regional seas programme, then they can incorporate this type of provision to this putative agreement.

Lessons from Antarctic system to South Asian Region

Fisheries Management

“Contracting Parties are called upon to provide statistical and biological data to the commission and to the scientific Committee.”[404]As per CCAMLR Convention article XXIV, CCAMLR has developed a scheme of international scientific observation which is one of the most important source of scientific information and fundamental for assessing the impact of fisheries on the Antarctic system.

[404] CCAMLR Convention. Article XX.

The development of the scientific observational manual by the CCAMLR secretariat and scientific committee aims to assist contracting parties in planning observation programmes and recording data.[405]

As per conservation measure 91-01 (2004), the other significant feature can be adopted is the CCAMLR Ecosystem Monitoring Programme (CEMP), which has developed a relevant database to provide and facilitate information of the effects of fishing on dependent species as well as to detect and record significant changes in critical component of the marine ecosystems. This is a very good best practice with relevant to the fishing vessel operation observations.

"Contracting Parties to CCAMLR are not allowed to authorize vessels flying their flag to participate in bottom fishing activities."[406]In this context, we can see that by preventing bottom fishing activities has established and implemented precautionary and ecosystem approach by CCAMLR for their fisheries management. Application of these kind of new environmental principles leads in achieving the marine conservation in ABNJ. South Asian countries are also facing many challenges in their fishing industry. Specially IUU fishing, unsustainable fishing practices like bottom trawling have created serious issues in conservation of marine resources in ABNJ in South Asian region. If this kind of new environmental norms can be applied in fisheries industry, South Asian region can reach to the sustainable fisheries industry as well as marine conservation in ABNJ.

Environmental Impact Assessment (EIA)

Best practices with relevant to Environmental Impact Assessment (hereafter EIA) regulations can be seen in the protocol on Environmental Protection to the Antarctic Treaty and its annex I.[407]"The environmental impacts of proposed activities are considered before the beginning of an activity within appropriate national procedure."[408]As per Article 8 of Madrid protocol, the EIA regulations

[405] CCAMLR, CCAMLR scheme of International Scientific Observation. Available at http://www.ccamlr.org/en/science/ccamlr.scheme-international -scientific-observation-5150
[406] CCAMLR. Conservation Measures 22-06 (2015). See also: CCAMLR. Conservation Measure 22-09 (2012)
[407] Madrid Protocol. Annex I Environmental Impact Assessment (EIA Annex)
[408] Ibid. Annex I: Article 1.

are applicable to activities related to scientific research programme, tourism and of the governmental and non-governmental activities.

Annex I sets out the procedure of an initial Environmental Evaluation.[409]Details on an initial evaluation include the description of the proposed activities, purpose, location, duration and intensity, well alternative to the proposed activity and the considerations of cumulative impact are stipulated under this.

Adoption of the revised guidelines for environmental impact assessment in Antarctic in 2016. These guidelines aim to assist proponents of activities, facilitate cooperation and coordination in EIAs for joint activities as well as to provide advice to operators among other objectives.[410]

Strengthening and Building capacities

CCAMLR specifically calls for the contribution to capacity building of developing member countries through financial assistance and training programmes as well as to strengthen their effective participation in the scientific committee."[411]

Cooperation and Coordination

It is very important feature of the Antarctic treaty is the coordination and cooperation arrangement. As per Antarctic Treaty. Article 9(1) is clearly stated that the exchange of information and facilitation of cooperation on scientific research between contracting parties, rights of inspection, analysis the reports from the observers among other matters.

CCAMLR commission seeks to cooperate with contracting parties on the conservation measures for stocks and associated species in marine areas adjacent to the convention," area.[412]

[409] Madrid Protocol Annex I. Article 2. D
[410] Antarctic Treaty. Resolution 1 (2016), 3
[411] CCAMLR. Resolution 31/XXVIII (2009). Para.4
[412] CCAMLR Convention. Article II.

Other best practices

CCAML has established many conservation measures which can be adopted to other regions as well. Such as new environmental normative policies ecosystem based management approach and precautionary principles.

Restricting of fishing gears, creating of marine protected areas, development of area-based management tools, development of list-based system for the conservation of vulnerable species and habitats. As per the provisions of the Protection on Environmental Protection to the Antarctic Treaty and its Annex I, creation an obligation to undertake EIA and following guidelines for Environmental Impact Assessment in Antarctica are the other best practices can be replicated in South Asian regional seas programme as well.

The way of working with other multilateral and regional organizations is also a key feature can be seen in this treaty. Cooperation and coordination is their approach to the multilateral and regional bodies for taking necessary measures in relation to the conservation and sustainable use of marine biodiversity in Areas beyond National Jurisdiction under the Antarctic system.

Financial assistance, training programmes, effective participation in the scientific committee, workshops are the CCAMLR contribution for enhancing capacity among their developing member countries.

Concerning these three regional best practices, it is evident that OSPAR, Barcelona and the Antarctic Treaty System including CCAMLR have set many examples and good practices which can be carefully considered in designing a new regulatory and governance arrangements for South Asian region.

CONCLUSION

There are many existing legal and regulatory frameworks for addressing the challenges for the marine biodiversity in Areas beyond National Jurisdiction at global and regional level. When analyzing these mechanisms, significant gaps and weaknesses can be seen in these legal and regulatory mechanisms at global and regional level as discussed in the previous parts of this study. Even if there are many regional approaches for the conservation and sustainable use of marine biodiversity in areas beyond national jurisdiction, the holistic universal approach for the all world community will create a common platform for common initiatives collectively for overcoming the challenges for the conservation and sustainable use of marine biodiversity in ABNJ. "The proposed legally binding instrument for the conservation and sustainable use of biodiversity beyond national jurisdiction, the elements of which are being negotiated at the United Nations, will create an instrument that will protect an important part of the global commons and the common interest of the international community, and thereby fulfill part of the *obligation erga omnes* to protect and preserve the marine environment. The instrument should not be seen as a curtailment of freedoms of the high seas, but one that balances the individual interests of states with that of the collective interests of the International community as a whole, in order to preserve the finite natural resources of the oceans."[413] In this context, New Internationally Legally Binding Instrument due to be concluded in the coming years is a very significant step forward for the conservation and sustainable use of marine biodiversity in Areas Beyond National Jurisdiction for the whole world community. It is very important fact that setting up an appropriate and effective cross-sectoral coordination under this new instrument. Then it will be a key element of this new instrument and must take into consideration the views of all stakeholder groups. It is important to consider the serious environmental threat including noise pollution in this new instrument.

The concerns and views of the participants to this BBNJ process should take into consideration in accommodating and finalizing an integrated approach for new legally binding instrument. Introduction of a new compliance mechanism under this Internationally Legally Binding Instrument is important. Setting up a compliance mechanism through the States, Non-

[413] Nilufer Oral, Freedom of the High Seas or Protection of the Marine Environment? A False Dichotomy, pg.86, Chapter 11,Ocean Law Debates- The 50-Year Legacy and Emerging Issues for the Years Ahead edited by Harry N.Scheiber, Nilufer Oral, and Moon-Sang Kwon

Governmental Organizations and existing regional organizations can be suggested as a forward step to this new instrument. They can report on issues of non-compliance in the Areas beyond National Jurisdiction. Effective enforcement of this new mechanism under the new internationally legally binding instrument will reduce the damages to the seabed activities happening in the Areas beyond National Jurisdiction.

RECOMMENDATIONS AND WAY FORWARD FOR ACHIEVING THE CONSERVATION AND SUSTAINABLE USE OF MARINE BIODIVERSITY IN ABNJ

Regional initiatives have been at the forefront of adopting robust and effective universal holistic integrated approach towards achieving the goal of marine conservation in ABNJ. In analyzing the regional legal and institutional framework applicable to marine conservation and sustainable use in South Asian region, it is clear that the need for effective framework applicable to ABNJ which could form the backbone of effort to improve the conservation and management of South Asian marine biodiversity has popped up. Because this regional initiatives are laying the foundation for universal multilateral approach enabling the whole world community can succeed the challenges for the conservation and sustainable use of marine biodiversity in ABNJ through. Considering this situation, "It is fervently hoped that all of humanity will soon recognize the need for a more comprehensive, integrated and coherent approach to managing our rapidly changing ocean, and will offer their support for a robust agreement that can best serve our common interest in a healthy and productive Planet Ocean."[414]In this context, world community is relying on a new internationally legally binding Instrument (hereafter ILBI) due to be concluded in coming years will be able to fill the gaps and inherent weaknesses of existing global, regional, legal and institutional mechanisms in relation to the challenges for the conservation and sustainable use of marine biodiversity in ABNJ.

Existing mechanisms therefore need to be strengthened as a priority and new regional initiatives with best practices need to be adopted therewith. It is important to adopt a convention for the South

[414] Kristina M.Gjerde, Perspectives on a Developing Regime for Marine Biodiversity Conservation and Sustainable Use beyond National Jurisdiction,pg.380, chapter 12, Ocean Law Debates- The 50-Year Legacy and Emerging Issues for the Years Ahead edited by Harry N.Scheiber, Nilufer Oral, and Moon-Sang Kwon

Asian regional seas programme reflecting the emerging international environmental norms of precautionary principle, principle of preventive action, no-harm principle and principle of common but differentiated responsibility, prior environmental impact Assessment, establishment of environmental standards, polluter pays principle. Through the adoption of convention, it creates a legally binding nature on the South Asian region for the conservation and sustainable use of marine biodiversity and finally this regional initiative will contribute to the effectively implementation of new ILBI.

A South Asian Regional Research Center for marine and coastal area management need to be established. South Asian Trust Fund for coastal and marine environment need to be initiated. It is a great challenge for South Asian countries to conduct researches relating to the marine resources due to lack of facilities and financial assistance. Especially the high seas of this region is full of diverse marine genetic resources. But those resources are undiscovered by the region due to lack of technological and research capacities available with them. In this context, establishing a South Asian Regional Research Center will facilitate for them to overcome their challenges in achieving their goal of conservation and sustainable use of marine resources in areas beyond national jurisdiction.

Creating SAARC regional code of conduct for deep sea science will be important for the countries in region in conducting deep sea activities along with the conservation of the marine environment. It is needed to establish a focal point for each country in the region to properly coordinate this specific area of marine conservation in ABNJ. This focal point committee needs to be consisted in group of scientists and marine biologist and legal experts who are dealing with the ocean policy and Law of the Sea area. This effort of proper focal point will be able to make recommendations for their governments for the successful BBNJ negotiations which emanate the South Asian countries empirical situation and their actual needs properly.

As OSPAR commission does, it is good to bringing together relevant competent authorities who are involving with ocean related matters like IMO, ISA and FAO and discuss the marine conservation related matters. It is important to create a formal Memorandum of Understanding (MoUs) and informal dialogues with these special agencies.

It is needed to strengthen the marine scientific research and collaboration arrangements to enhance the capacity, data collection and exchange, monitoring and evaluation programmes among the members of the South Asian region. Collection of data is very important for better assessment of the state of marine environment and in strengthening the work of science in policy decision making. This effort of South Asian regional marine scientific and collaboration arrangements can be aligned with the initiatives introduced under new ILBI.

Developing a road map for the effective implementation of existing South Asian regional Seas initiatives for the conservation and sustainable use of marine biodiversity in Areas beyond National Jurisdiction will create a proper regional cooperation among the South Asian region. This regional cooperation will lead to develop the spirit of good will and cooperation among the global community at BBNJ process for new ILBI for achieving the success of marine conservation in ABNJ.

South Asian countries should take remedies to fill the gaps of existing regional mechanisms with realigning to meet the standards of the current best practices of other regions as reflected previous parts of this study. In this regard, the UNEP has a vital and much more active role in instigating the necessary actions to improve the governance framework in South Asian regional seas programme. Especially it is very important to include all South Asian countries into the South Asian regional seas programme. UNEP could organize workshops in the SAARC region with the participation of legal experts, SAARC policy makers and government representatives to exchange views and begin to develop the necessary discussions for initiating the legal process. Together with regional experts UNEP could engage in regular training, information exchange and legal capacity building for the enhancement of capacity in South Asian region which would help them to effectively participate in the process of BBNJ towards the unique multilateral approach for the whole world community.

The key International Maritime Organization (IMO) convention for the protection of the marine environment against vessel source pollution is the MARPOL 73/78 and its six annexes. Particularly Sensitive Sea Areas (PSSA) and Associated Protective Measured (APM) as developed by the IMO has emerged as one of the strongest tools to protect the marine environment from the

risks of shipping activities. As discussed in the above parts, none of South Asian countries are not committed to this international convention's obligation. It is important for South Asian countries to take necessary measures to be parties to this international obligation.

Establishing a permeant SAARC regional Legal Advisory Group which could be responsible for conducting developments and advise for the SAARC region on what actions may be needed such as reviewing of the existing regional legal framework or adaptation of new instruments as per the new principles outlined in the new legally binding Instrument due to be concluded. The function could also include providing the necessary legal support to ensure the harmonized or regional obligations in the SAARC region. The legal Advisory Group should consist of independent experts ideally would provide legal views free from potential governments pressures and the governmental experts would be in a position to communicate the work of the Legal Advisory Group to the relevant decision making authorities in each government of the South Asian region.

Marine Protected Areas (MPA) are one of the most important area base management tool for the conservation of marine resources. MPAs in Areas beyond national jurisdiction in the South Asian Seas region need to be established and create a network of marine protected areas among the member countries under the specific guidelines and designation criteria. It is important to consider the Areas beyond National Jurisdiction and adopt regional approaches for managing shared resources, Transboundary and High seas Mas. For instance the Chagos-Maldivian and Lakshadweep archipelago, seasonal marshes, mudflat and brackish water lagoons of Runa of Kutch Gulf of Manner and Palk Bay, Sundarbans mangroves need to be considered in this process.

In the absence of robust regional structure, there is no competent regional body with a mandate to adopt common rules on the conservation and sustainable use of marine biodiversity or on the monitoring of the environmental activities and assessment activities in the South Asian region. Therefore, strengthening the existing South Asian regional mechanisms by adopting the best practices from other regions as explained earlier would be the better approach or the underpinning structure for the universal approach for the conservation and sustainable use of marine biodiversity in ABNJ. The combination of developed South Asian regional mechanism under the UNEP regional seas programe and the global response under the Internationally Legally Binding

Instrument that is being negotiated at the UN will facilitate for the peaceful uses of the oceans, the sustainable utilization of marine resources and ultimately will be able to achieve the holistic and integrated approach to the conservation and sustainable use of marine biodiversity in ABNJ for the sake of whole world for today, tomorrow and forever.

References

United Nations Convention on the Law of the Sea of 10th December 1982. (On line): www.un.org/Depts/los/convention_agreements/texts/unclos/unclos_e.pdf

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. New York, 4 August 1995. (On line): http://treaties.un.org/doc/Publication/MTDSG/Volume%20II/Chapter%20XXI/XXI-7.en.pdf

Ecosystems and Human Well-Being: Synthesis, A report of the Millennium Ecosystem Assessment (Washington DC, Island press, 2005) p.26

United Nations, 2016. Summary of the First Global Integrated Marine Assessment (accessed July 2018 online at: http://www.un.org/depts/los/global_reporting/WOA_RPROC/Summary.pdf).

Luc Cuyvers, Whitney Berry, Kristina M. Gjerde, Torsten Thiele, Caroline Wilhem, 2018. Deep seabed mining:

A rising environmental challenge, IUCN and Gallif rey Foundation, Gland, Switzerland, 74 pp. (Online): https://doi.org/10.2305/IUCN.CH.2018.16.en.

United Nations, 2017. Technical Abstract of the First Global Integrated Marine Assessment on the Impacts of Climate Change and Related Changes in the Atmosphere on the Ocean, para. 56 (accessed July 2018 (Online) : http://www.un.org/depts/los/global_reporting/8th_adhoc_2017/OICC_Technical_Abstract.pdf).

Convention on Biological Diversity. (Online): https://www.cbd.int/doc/legal/cbd-en.pdf

Marine Biodiversity, Biogeography, Deep-Sea Gradients, and Conservation, Mark J.Costello and Chhaya Chaudhary, Institute of Marine Science, University of Auckland, Auckland, 1142, New Zealand

J.I.Charney, R.W.Smith (eds), International Maritime Boundaries (The Hague:Martinus Nijhoff publishers, 2002) vol.IV)

Ringbom H. and Henriksen, T. (2017). Governance Challenges, Gaps and Management Opportunities in Areas Beyond National Jurisdiction. Global Environment Facility – Scientific and Technical Advisory Panel, Washington, D.C.

J.L.Brely, The Law of Nations: An Introduction to the International Law of Peace, 6th edition (oxford, Clarendon Press, 1963), P.305; R.R.Churchill and A.V.Lowe, Law of the Sea, 3rd edition (Manchester University Press, 1999), p.205

The International Law of the Sea pg 155, Yoshfumi Tanaka

Dupuy and Vignes, A Handbook on the New Law of the sea, pp.400.
See Hanqin Xue, James Crawford and John Bell Transboundary Damage in International Law (Cambridge: Cambridge university Press, 2003), 189-266.

Trail Smelter Arbitration (United States of America/Canada) Final award, 11 March 1941, Reports of International Arbitral Awards, Vol.111, 65.

Declaration of the United Nations Conference on the Human Environment. A/CONF.48/14/Rev.1 Chapter I - an element of the body of UN Documents for earth

Declaration of the UN Conference on Environment and Development (Rio Declaration), UN DOC.A/CONF.151/26/Rev.1

C.B.S.Halpern,S.Walbridge,K.A.Selkoe,C.V.Kappel,F.Micheli,C.D Agrosa,J.F.Bruno, K.S.Casey,C Ebert,H.E.Fox,R.Fujita,D.Heinemann,H.S.Lenihan,E.M.P.Madin, M.T.Perry,E.R.Selig, M.Spalding, R Steneck, R.Watson, "A Global Map of Human Impact on Marine Ecosystems", Science, Vol.319,2008,pp.948-952.

C.Nellemann,S.Hain and J.Alder (eds), In Dead water: Merging of climate change with pollution, over-Harvest and Infestations in the world's Fishing Grounds (Arendal UNEP, 2008)

(V.Golitsyn, "Major challenges of Globalization for seas and oceans: Legal Aspects; in vides (ed), Law, Technology and science for oceans in Globalization, pp.59-73, at pp.60-64,

T. Treves, "The Development of the Law of the Sea since the adoption of the UN convention.

C.H.Hsieh, C.S.Reiss, J.R.Hunter, J.R.Beddington, R.M.May and G.Sugihara, "Fishing Elevators Variability in the Abundance of Exploited Species; Nature, Vol.443, 2006, pp.859-862

Review of the State of World Marine Fishery Resources, FAO Fisheries Technical Paper No.457 (Rom: FAO, 2005)

Scheiber, Mengerink and Song, "Ocean Tuna Fisheries"

D.Panly et al, "Fishing Down Marine Food Webs, Science, Vol.279, 1998, pp.860, 862-863)

O Hoegh-Guldberg et a1, "Coral Reefs under Rapid Climate Change and Ocean Acidification; Science, Vol.318, 2007, pp.1737-1742

Caron and Scheiber (eds), The Oceans in the Nuclear Age, offers perspectives on these and other issues regarding nuclear energy and waste.

Inter-governmental Panel on Climate Change, Climate Change 2007: Synthesis Report. Summary for policy makers, p.2; see also Table spM.1 in at p.3.Available at (www.ipcc.ch/pdf/asssessment report/ar 4/syr/ar 4-syr-spm.pdf)

J.B.C.Jackson et al; "Historical Overfishing and the recent Collapse of Coastal Ecosystem" Science, Vol.293, 27 July 2001, pp.629-637)

See Myron Nordquist, Satya Nandan and Shabtai Rosenne (eds) United Nations Convention on the Law of the Sea 1982. A commentary vols 1-6 (Brill 1986-2012) (the Virigina commentary)

Y.Tanaka, A Dual Approach to Ocean Governance: The cases of the zonal and integrated management in international law of the sea (Farnham: Ashgate, 2008), Passim.

Moira McConnell & Edgar Gold, The Modern Law of the Sea: Framework for the protection and preservation of the Marine Environment? 23. CASE W.RESERVE J.INTL L.83 (1991)

See. David Freestone, Principle of modern Oceans Governance, 28 INTL J.MAR. L.385 (2008)

Jiefan Huang, "Aviation safety, ICAO an obligation Erga Onmas," Chinese Journal of International Law 8 (2009):63,72

Responsibilities and obligations of states sponsoring persons and entities with respect to the activities in the Area (Request for Advisory Opinion submitted to the sea bed Disputes chamber), 1st February 2011, para 180.

See: K.Gjerde, "High seas fisheries management under the Convention on the Law of the Sea in R.Barnes, D.Freestone, D.ong (ed), The Law of the Sea-Progress and prospects (Oxford university press, 2006) 281.

Report of the United Nations Conference on Environment and Development A/CONF 151/26 (vol II) Agenda 21 paragraph 17.49 e.

Third session of the BBNJ preparatory committee. March 26-April 7, 2017. Statement of CBD. Wednesday, March 29, 2017. Available at http://statemnets.unmeetings.org/media 2/14683376/-scbd-bbnj-29-Mar-2017-pdf

Dunn, et.at (2014) "The Convention on Biological Diversity's ecologically or biologically significant Areas: origins, development and current status; Marine Policy, vol.49, 137-145

Agreement on Port State Measures (PSMA). (Online) : www.fao.org/port-state-measures/en/

FAO (2009) Report of the FAO/UNEP expert meeting on impacts of destructive fishing practices, unsustainable fishing and illegal, unreported and unregulated (IUU) fishing on marine biodiversity and habitats. Rome: FAO, 12

FAO (2001) International Plan of Action to Deter, Prevent and Eliminate illegal, Unreported and Unregulated Fishing. (IPOA IUU. Rome: FAO, 16

Convention on International Trade in Endangered Species of Wild Fauna and Flora.993 UNTS 243.Entered into force on 1 July, 1975. (Online) : https://www.cites.org/eng/disc/text.php

McDonald (1948) “Toward a World Maritime Organization: A half-century of developments in ocean shipping, ‘Department of State Bulletin, Vol.1.

A.Chircop, ‘The International Maritime Organization,’ om D.Rothwell, A.oude Elferink, k. Scott, T.Stephens, the Oxford Handbook of the Law of the Sea (Oxford: OUP, 2015), 417.

See Bernard Oxman, the Duty to Respect Generally Accepted International Standards, 24 NY Univ.J.Int’l& Pol’y 109 (1991)

Guidelines for establishing special areas IMO Resolution A.927 (22), www.imo.org/blast/blastDataHelper.asp?data_id=24553 &filename=A927%2822%29.pdf

IMO Resolution A.982(24) Revised Guidelines for the Identification And Designation Of Particularly Sensitive Sea Areas, Paragraph 6

J.Evensen, “The Effect of the Law of the Sea Conference upon the process of the Formation of International Law: Rapprochement between Competing Points of View’, in R.B.Kruger and S.A.Riesen feld (eds), The Developing Order of the Oceans. Proceedings of the 18th Annual Conference of the Law of the sea institute) Honolulu, HI: The Law of the Sea Institute, University of Hawaii, 1984), p.25

David Freestone, “The Final Frontier”, 70-71; Lawson, Regulating Genetic Resources, 103.

Petra Drankier et at, “Marine Genetic Resources in Area beyond National Jurisdiction: Access and Benefit Sharing,” The International Journal of Marine and Coastal Law 27 (2012), 431-432

N.C.Ban, et.at.”Systematic conservation planning: A better recipe for managing the High seas for biodiversity conservation and sustainable use, conservation Letter. January/February 2014, 7(1), 41-54.2

K.Gjerde (2012) “Challenges to protecting the marine environment beyond national jurisdiction, “The International Journal of marine and coastal Law, vol.27 (4), 842, 843

A.H.Dean, Achievements at the Law of the sea conference, in proceedings of the American society for International Law, 1955, p.186.

Kristina M.Gjerde et al.(2008). Regulatory and Governance Gaps in the International Regime for the conservation and sustainable use of marine Biodiversity in Areas beyond national jurisdiction,

D.Rothwell, J.Stephens, The International Law of the sea, 2 ed., (Oxford and Portland Oregon; Hart Publishing, 2016), 19

D.Rothwell et.al.,Oxford Handbook of International Law (Oxford University Press, 2015) 757.

Major Vierros, Sam Johnston and Dan Ogalla, “The Convention on Biological Diversity (CBD) and Marine Protected Areas on the High Seas,” in Thiel and Koslow, Managing Risk, 169-174

Summary of the second meeting of the Working Group on marine biodiversity beyond areas of national jurisdiction available Online at http://iisd.ca/oceans/marinebiodiv2/

Earth negotiations bulletins online at http://wwwiisd.ca/oceans/marinebiodiv5/

Earth negotiations bulletins online at http://wwwiisd.ca/oceans/marinebiodiv6/

Earth negotiations bulletins online at http://wwwiisd.ca/oceans/marinebiodiv7/

Earth negotiations bulletins online at http://wwwiisd.ca/oceans/marinebiodiv9/

Earth Negotiations Bulletin: http://enb.iisd.org/oceans/bbnj/igc1/

R.Warner: Conserving Marine Biodiversity in Areas Beyond National Jurisdiction: Co-evolution and interaction with the Law of the Sea in D.Rothwell A.Oude Elferink, K.Scott and T.Stephens, The Oxford Handbook of the Law of the Sea (Oxford:OUP, 2015), 752, 758

Robin Mahon, Lucia Fanning, Kristina M. Gjerde, Oran Young, Michael Reid, Selicia Douglas, 2015. Trans boundary Waters Assessment Programme (TWAP) Assessment of Governance Arrangements for the Ocean. Volume 2: Areas beyond National Jurisdiction. UNESCO-IOC, Paris, France. IOC Technical Series. 119. 91 pp.

Nilufer Oral, “Ocean Debate”, Chapter 11, Freedom of the High Seas or Protection of the Marine Environment? A False Dichotomy,

Kristina M.Gjerde, “Ocean Debates”, Chapter 12, Perspectives on a Developing Regime for Marine Biodiversity Conservation and Sustainable Use beyond National Jurisdiction,

“Handbook on National Environmental Legislation and Institution in the Maldives” pg.6 Under the UNEP/SACEP/NORAD publication series on Environmental Law and policy.

Explaining Ocean Warming: Causes, Scale, Effects and consequences (18) (D.Laffoley & J.M.Baxter eds, 2016)

Review Paper: Status of Coastal and Marine Ecosystem Management in South Asia

Explaining Ocean Warming: Causes, Scale, Effects and consequences (18) (D.Laffoley & J.M.Baxter eds, 2016)

Review Paper: Status of Coastal Marine Environment in South Asia

Spalding et al.2001' Wilkinson, 2008; Rajasuriya et al, 2004; Rajasuriya et al, 1998.

Annual review .JULY 2007-juUNE 2008 (fy08) by Topas Paul (lpaul@worldban.org) and Jane Nishida

(jnishida @worldbank.org) of the South Asia Sustainable Development Sector Department.

UNISDR/UNDP (2012). Review Paper – Status of Coastal and Marine Ecosystem Management in South Asia. Inputs of the South Asian Consultative Workshop on " Integration of Disaster Risk Reduction and Climate Change Adaptation into Biodiversity and Ecosystem Management of Coastal and Marine Areas in South Asia" held in New Delhi on 6 and 7 March 2012. New Delhi: UNDP.

Research Papers, 79, Access to And Benefit-Sharing of marine genetic resources beyond national jurisdiction: Developing a new legally binding instrument, Carlos.M.Correa

Food and Agriculture Organization of the UN, "The State of World Fisheries and Aquaculture," http://www.fao.org/3/19540eN/;9540en.pdf.

Various Methods and Causes of Illegal Fishing available online at : https://www.conserve-energy-future.com/methods-causes-illegal-fishing-

JR Jambeck et al, "Plastic waste inputs from land into the ocean" 2015 science, available online at: http://www.iswa.org/fileadmin/user_uploald/calander- 2011_03_AMERICAN/science-2015-Jambeck-708-712

Schmidt et.al, "export of plastic Debris by Rivers into the Sea", 2017, Environmental Science & Technology, http:///www.ncbi.nim.nin.gov/pubmed/29019247

Eriksen M, Lebreton LCM, Carson HS,et al."Plastic Pollution in the World's Ocean: More than 5 trillion plastic pieces weighing over 250,000 tones Afloat at Sea". Dam HG,ed.PLos ONE.2014; 9(12):e 111913.doi:10.1371/journal.pone.0111913.

Prof. Nilufer Oral: Ocean Acidification: Falling Between the Legal Cracks of UNCLOS and the UNFCCC? , Ecology Law Quarterly

Tanaka. The International Law of the Sea (n3) 370-75

C.Heinze, et. Al., (2015) "The ocean carbon sink-impacts, vulnerabilities and challenges," Earth Sys. Dynam., Vol.6, 327.

Inter-Governmental Panel on Climate Change, Fifth Report, supra note 5, at 13.

UN Secretary-General, Progress towards the sustainable Development Goals, 18, UN Doc. E/2017/66 (May 11, 2017).

See Ribero, The "Rainbow": The First National Marine Protected Area proposed under the High Seas, in International Journal of Marine and Coastal Law, 2010, p.183.

OSPAR Commission (2017). OSPAR Organization. Available at: http://www.ospar.org/organization

OSPAR Commission. Agreement 2013-02 Rules of procedure, rule 27-35.

Tullio Scovazzzi. Marine Protected areas in waters beyond national jurisdiction. P. 232.

OSPAR Recommendation 2010/2 on amending recommendation 2003/3 on a network of marine protected areas.

OSPAR Commission (2014) Status Report on the OSPAR Network of marine protected areas. London: OSPAR, 7.

OSPAR commission. Recommendation 2003/17. Guidelines for the Identification and selection of MPAs in the OSPAR maritime Area, Appendix 1

OSPAR Commission. Agreement 2003/18. Guidelines for the management of MPAs in the OSPAR maritime area, Appendix I, 54.

OSPAR commission Recommendations 2003/3 amended by Recommendation 2010/2,

OSPAR Commission. 2011 Status Report on OSPAR Network of MPA.pg 33

Recommendations 2003-17, Guidelines for the Identification and selection of MPAs in the OSPAR maritime Area.

E.Raftopoulos, The Barcelona Convention and Protocols-The Mediterranean Action Plan Regime (London: Simmonds & Hill, 1993)

Rothwell, A.Oude Elferin Scott, Stephens, the Oxford Handbook of the Law of the Sea (Oxford: OVP, 2015), 617.

Regional Seas Programmes Covering Areas beyond National Jurisdiction, 2018 Glob. Envtl.L.Ann. 5 (2018)

UNEP-MAP-RAC/SPA. 2011. Note on the establishment of MPAs in ABNJ. By Scovazzi, T.Ed.RAC/SPA, Tunis:47 pp. pg.13.

Tullio Scovazzi, Marine Protected Areas on the High Seas: Some Legal and Policy Considerations, 19 Int'l J. Marine & Coastal L.1 (2004)

Cetacean Alliance. The Pelagos Sanctuary. Online : http://www.cetaceanalliance.org/cons Pelagos.htm

UNEP-MAP-RAC/SPA, 2011. Note on establishment of MPAs in ABNJ. By.Scovazzi, J.Ed.RAC/SPA, Junis:47 pp. pg.40

Griffiths HJ (2010). Antarctic Marine Biodiversity. PLoS ONE. (On line) http://www.plosone.org/article/info%3Adoi%2F10.1371%2Fjournal.pone.0011683#s2

Commission for the Conservation of Antarctic Marine Living Resources. History.Online: http://www.ccamlr.org/en/organisation/history

Regional Seas Programmes covering Areas beyond National Jurisdiction, 2018 Glob. Envtl.L.Ann.5 (2018)

Commission for the Conservation of Antarctic Marine Living Resource. Relationship to the Antarctic Treaty System. (online) : http://www.ccamlr.org/en/organization/history

L.L.Douglass, D.Beaver,J.Turner and R.Nicoll. An identification of areas with the high seas of the Southern Ocean that would contribute to a representative system of MPAs.

Australian Government, A proposal for a representative system MPAs in the East Antarctic's online : http://www.antarctica.gov.au/law-treaty/ccamlr/marine-protected- areas

New Zealand foreign affairs and trade. Ross Sea Region Marine Protected Area. (Online: http://www.mfat.gov.nz/ross-sea-mpa/tabs/proposal.php

CCAMLR Commission conservation measure 10-07 (2009)-scheme to promote compliance by non-contracting party vessels with CCAMLR Conservation measure. (online): http://www.ccamlr.org/sites/drupal.ccamlr.org/files//10-07.pdf

Handbook on National Environmental Legislation and Institutions in the Maldives.

Bay of Bengal Large Marine Ecosystem Project/National Report Sri Lanka. Pg.74.

South Asian Cooperative Environmental Programme/Post 2015 South Asia Development Agenda

First Order Draft-Marine and Coastal Biodiversity Strategy for the South Asian Seas Region:

CBD.The Aichi Biodiversity Targets (online) http://www.cbd.int/sp/targets/

Progress & Achievements of BOBLME project, April 2014. Online : https://www.boblme.org/project_overview.html

Coral Reef Degradation in the Indian Ocean Status Report 2002: Olof Linden David Souter, Dan Withelmsson & David Oburu

Coastal Regulation Zone Notifications available online at : https://www.business-standard.com

Can International Litigation Solve the India-Sri Lanka fishing dispute: Natalie Klein: Article published on 19th July 2017 Daily Newspaper in Sri Lanka

R.S.Gupta et al, "State of the Marine Environment in the South Asian Seas Region" (UNEP 1990) p.1.

Harry N.Scheiber, Nilufer Oral, and Moon-Kwon, Ocean Law Debates- The 50-Year Legacy and Emerging Issues for the Years Ahead

Davor Vidas and Peter Johan Schei, The World Ocean in Globalization –Climate Change, Sustainable Fisheries, Biodiversity, Shipping, Regional Issues

"Indian Ocean Tuna Commission Cost and Benefit of the Indian Ocean Tuna Commission (IOTC) with and outside of the Food and Agricultural Organization (FAO) Report prepared by: Prof Glenn Hurry

OSPAR Commission Agreement 2008/1. Code of Conduct for Responsible Marine Research in the Deep-Seas and High Seas of the OSPAR Maritime Area, paragraph 22.

Memorandum of Understanding between OSPAR secretariat and Abidjan Secretariat, Recital 3.

Abidjan Convention for cooperation in the protection and development of the marine and coastal environment of the West and Central African Region. 1316 UNTS 205. Entered into force 5 August 1984. Online :http://www.ospar.org/international-cooperation/Abidjan- Convention

Mediterranean, Black Sea and connecting waters, General Fisheries Commission for the Mediterranean. Online: http://www.gfcm.org/gfcm/about/en#org-Geo Coverage

General Fisheries Commission for the Mediterranean about GFCM online: http://www.gfcm.org/gfcm/about/en#org-Geo Coverage

Council Regulation (EC) No 2371/2002 of 20 December 2002, online: http://eur lex.europa.eu/Lex Uri Serve/Lex Uri serve.do? Uri=O J:L:2002:358:0059:0080:EN:PDF

CCAMLR, CCAMLR scheme of International Scientific Observation. Available Online at http://www.ccamlr.org/en/science/ccamlr.scheme-international -scientific-observation-5150

CCAMLR. Conservation Measures 22-06 (2015). See also: CCAMLR. Conservation Measure 22-09 (2012)