Strengthening regional cooperation to support the implementation of Area-Based Management Tools including Marine Protected Areas for the conservation and sustainable use of marine biological diversity in the Southeast Asia region and the adjacent Areas Beyond National Jurisdiction

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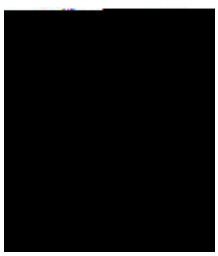

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Abstract

Over the course of the last 16 years, States have been negotiating an international legally binding instrument for the conservation and sustainable use of biological diversity in marine Areas Beyond National Jurisdiction (ABNJ). For the purposes of this thesis, this international legally binding instrument will be referred to as the ôBBNJ Agreement.ô One of the central questions faced by negotiators of the BBNJ Agreement is how to foster and strengthen cooperation in respect to the implementation of Area-Based Management Tools (ABMTs) including Marine Protected Areas (MPAs) in ABNJ. This research aims to strengthen regional cooperation to support the implementation of ABMTs including MPAs for the conservation of marine biodiversity in the Southeast Asia (SEA) region and the adjacent ABNJ.

Marine areas in the SEA region and adjacent ABNJ (the Indian Ocean and Western Central Pacific Ocean) contain a rich array of biodiversity which provide essential ecosystem services for local communities. These areas ar

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List of Acronyms

ABMT	Area-based Management Tools
ABNJ	Area Beyond National Jurisdiction
ACB	ASEAN Centre for Biodiversity
ACCOBAMS	Agreement on the Conservation of Cetaceans of the Black Sea, Mediterranea and contiguous Atlantic area
AEC	ASEAN Economic Community
AIS	Automatic Identification System
ALDFG	Abandoned, Lost or otherwise Discarded Fishing Gear
APEI	Area of Particular Environmental Interest
APSC	ASEAN Political-Security Community
ASCC	ASEAN Socio-Cultural Community
ASEAN	Association of South East Asian Nation
ATSEA	Arafura and Timor Sea-2 Program Phase 2 Project
AWGCME	ASEAN Working Group on Coastal and Marine Environment
AWNJ	Marine Areas Within National Jurisdiction
BBNJ	Marine Biodiversity in Areas Beyond National Jurisdiction
BWM	International Convention for the Control and Management of Ships' Ballast Wate and Sediments
CCAMLR	Commission for the Conservation of Antarctic Marine Living Resources
CBD	Convention on Biological Diversity
CBTMT	Capacity Building and the Transfer of Marine Technology
CCRF	Code of Conduct for Responsible Fisheries
CCSBT	Commission for the Conservation of Southern Bluefin Tuna
CCZ	Clarion-Clipperton Zone
CTI-CFF	Coral Triangle Initiative on Coral Reefs, Fisheries and Food Security
CHM	Clearing-House Mechanism
CITES	Convention on International Trade in Endangered Species of Wild Flora and F
CMS	Convention on the Conservation of Migratory Species of Wild Animals

EEZ	Exclusive Economic Zone
EIA	Environmental Impact Assessments
EU	European Union
FAD	Fish Aggregating Device
FAO	Food and Agriculture Organisation
FFA	The Pacific Islands Forum Fisheries Agency
G77	Group of 77
GFCM	

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Introduction

Background

The area beyond national jurisdiction and the threats

Marine areas beyond national jurisdiction (ABNJ)[1] cover about 60% of the worldôs ocean area.[2] These areas hold rich marine biodiversity that vary depending on depth, latitude, and oceanographic conditions[3] and they support human life on Earth by providing significant ecosystem services.[4] The water column of ABNJ to a depth of 200m is the habitat for significant ecosystems such as coral reefs and seaweeds, migratory species, as well as commercially important fish species.[5] The deep seabed environment with its unique and extreme conditions is estimated to host more species diversity than the water column.[6] These marine environments provide marine genetic resources which hold the potential to be useful for natural product applications such as pharmaceutical and health, cosmetic, sustainable energy, food, and bioremediation.[7]

Despite its importance, ABNJ face increasing threats caused by intensification to exploit resources and new areas in order to sustain human needs which has been accelerated by the

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[1] United Nations, *The Conservation and Sustainable Use of Marine Biological Diversity of Areas Beyond National Jurisdiction: The Technical Abstract of the First Global Integrated Marine Assessment* (2017) <https://www.un.org/depts/los/global_reporting/8th_adhoc_2017/Technical_Abstract_on_the_Conservation_and_Sustainable_Use_of_marine_Biological_Diversity_of_Areas_Beyond_National_Jurisd.pdf>. Under UNCLOS, ABNJ comprise the High Seas (see UNCLOS art 86) and the deep seabed Area (see UNCLOS art 1(1)).

[2] Kristina M Gjerde et al, ôProtecting Earthôs Last Conservation Frontier: Scientific, Management and Legal Priorities for MPAs beyond National Boundariesô (2016) 26 *Aquatic Conservation: Marine and Freshwater Ecosystems* 45; United Nations, ôThe Conservation and Sustainable Use of Marine Biological Diversity of Areas Beyond National Jurisdiction: The Technical Abstract of the First Global Integrated Marine Assessmentô (n 1); Blue Marine Foundation, *A Blue Vision for the High Seas* (2020) <https://www.bluemarinefoundation.com/wp-content/uploads/2020/01/Blue-Marine_High-Seas-Brochure_Low-Res.pdf>.

[3] United Nations, ôThe Conservation and Sustainable Use of Marine Biological Diversity of Areas Beyond National Jurisdiction: The Technical Abstract of the First Global Integrated Marine Assessmentô (n 1).

[4] AD Rogers et al, *The High Seas and Us Understanding the Value of High-Seas Ecosystems* (2016) <www.globaloceancommission.org>.

[5] United Nations, *The First Global Integrated Marine Assessment. World Ocean Assessment I by the Group of Experts of the Regular Process* (2016).

[6] United Nations, ôThe Conservation and Sustainable Use of Marine Biological Diversity of Areas Beyond National Jurisdiction: The Technical Abstract of the First Global Integrated Marine Assessmentô (n 1).

[7] Paul Py Oldham et al, *Valuing the Deep: Marine Genetic Resources in Areas Beyond National Jurisdiction* (2014) <https://www.researchgate.net/publication/273139809_Valuing_the_Deep_Marine_Genetic_Resources_in_Areas_B

principle, all economic and non-economic benefits derived from activities in the Area should be shared for the benefit of humankind[14].

Figure 1. Maritime zones under UNCLOS [15].

A Stateôs right to conduct activities in both the high seas and the Area comes with obligations to conserve and manage marine living resources and to protect and preserve the marine environment[16].

coordination and cooperation, existing gaps in mandate, lack of enforcement, the absence of an overarching framework and general principles to conserve and sustainably use marine biodiversity.[19] As the current governance mechanism does not provide comprehensive protection for marine biodiversity in ABNJ, it is necessary to develop new regulations for the conservation and sustainable use of marine biodiversity that are consistent with the Convention.[20]

Journey to conserve and sustainably use marine biodiversity in ABNJ

The formal discussions on the protection of marine biodiversity in ABNJ under the United Nations (UN) process started in 2004. The General Assembly (UNGA) through its resolution A/RES/59/24 decided to establish an Ad Hoc Open-ended Informal Working Group to study issues relating to the conservation and sustainable use of marine biological diversity in ABNJ.[21] In 2015, States reached a consensus through UNGA Resolution 69/252 which mandated the development of an international legally binding instrument under UNCLOS for the conservation and sustainable use of marine biological diversity of ABNJ.[22] This resolution also established a Preparatory Committee to discuss substantive elements of the draft text of the international legally binding instrument; and further provided that the negotiations shall address the topics in the package agreed upon during the working group meeting in 2011, namely marine genetic reso

areas, environmental impact assessments, and capacity building and the transfer of marine technology[23]

The process then continued in 2017, when the GA adopted resolution 72/249 that decided to convene an Intergovernmental Conference to elaborate the text of an international legally binding instrument under UNCLOS on the conservation and sustainable use of marine biological diversity of ABNJ, hereafter referred to as the BBNJ Agreement[24] Following the 2017 GA resolution, five intergovernmental conferences were convened from 2018-2022. Unfortunately, a BBNJ Agreement is yet to be adopted[25]

Area-

last decade (2010-2020) there has been exponential growth in the establishment of MPAs, but mostly within national jurisdiction, and this has failed to achieve the internationally agreed global target objective to protect biodiversity, mainly due to different levels of protection[29].

Moreover, regional initiatives have established MPAs in ABNJ including in the Mediterranean (Barcelona Convention), the Southern Ocean (the Convention on the Conservation of Antarctic Marine Living Resources (CCAMLR convention), the North-East Atlantic (the Convention for the Protection of the Marine Environment of the North-East Atlantic (OSPAR Convention), and the Sargasso Sea[30]. When it comes to ABMTs, these spatial management tools are currently established by sectoral and regional organizations in ABNJ, which focus only on particular objectives such as the protection from shipping impacts (International Maritime Organization (IMO)), protection of specific areas from deep seabed mining (International Seabed Authority

Sargasso Sea

economics in the coastal area.[40] A few studies have suggested that ABNJ in the Indian Ocean and Western Pacific Ocean should be among the marine regions to be prioritized for protection under the BBNJ Agreement.[41] Threats to the marine environment emphasize the urgency to ensure the conservation and sustainable use of marine biodiversity in SEA and adjacent ABNJ.

Current efforts of SEA States to conserve and sustainably manage marine biodiversity in the region and adjacent ABNJ largely consist of establishing MPAs. Regarding MPAs, countries in SEA

Research aim and objectives

This thesis aims to provide recommendations on ways forward to strengthen the existing regional cooperation to implement ABMTs including MPAs in the adjacent ABNJ of the SEA region. Towards this end, this research will address the following objectives:

1. To examine current practices carried out by global, regional, and sectoral organizations to

into several maritime zones where States have different rights and obligations in carrying out their activities within each maritime zone (see Figure 1). In the territorial sea, coastal state has full sovereignty extends to the water column, air space, as well as seabed and subsoil up to a 12 nautical miles (NM), while allowing for the right of innocent passage of other states.[55] Accordingly, coastal states have full sovereignty to exploit marine living resources in the territorial seas subject to national regulation and general obligation to protect and preserve the marine environment as provisioned in Part XII of UNCLOS.[56] Moving on to the exclusive economic zone (EEZ), coastal state enjoy sovereign rights to exploring and exploiting, conserving and managing living and non living resources of the water column.[57] This sovereign rights are bounded by obligation to ensure that there are conservation and management measures to maintain the living resources.[58] While on the seabed and subsoil i.e. continental shelf of EEZ,

an explicit

and COP 11 (Decision XI/17), CBD parties stressed that EBSA identification in ABNJ is a scientific process that did not entail any obligation to designate it as an MPA.[86] Thus, this condition emphasized that the CBD cannot be the forum for establishing MPAs in ABNJ as it depends on the state and international organizations to further select and adopt conservation and management measures as follow-up for EBSA identification.[87]

The Convention on the Conservation of Migratory Species of Wild Animals (CMS)

The Convention on the Conservation of Migratory Species of Wild Animals (CMS) is a multilateral environmental treaty under the United Nations for the conservation and sustainable use of species that migrate across marine areas both within and beyond national jurisdictions.[88] The CMS, otherwise known as Bonn Convention, entered into force in 1983 and currently has 130 parties.[89] The CMS is a framework convention that encourages international cooperation between states for research and taking measures 0.01 mprot ti-11(e,)-69(r)4(nd)] TJ ET Q q 0.00000912 0 61

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Range States are parties, and there is a lack of regulatory competence to apply binding conservation measures in ABNJ.[92]

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

CITES is an international agreement with 184 parties that aims to ensure international trade of wild flora and fauna does not threaten their existence in the wild.[93] The CITES approach to marine biodiversity conservation is through strict trade regulation on marine species. It categorize species into three appendices (Appendix I, II, and III) based on the level of protection required, and set up mechanisms and controls to ensure that all import, export, and introduction from the sea of such species are authorized by national entities through a licensing system.[94] With relates to marine, since COP 18 in 2019, 2382 marine species were listed in CITES appendix with most of them listed in Appendix II that predominantly sharks and rays, mollusk, and echinoderm species.[95] In relation to ABNJ, CITES recognized Appendix I or II species that were obtained in ABNJ as Introduction From the Sea (IFS), thus its transportation into states shall follow CITES regulation.[96] However, parties have found IFS implementation is challenging as only 147 records of IFS from nine parties

The Convention on the International Maritime Organization (IMO) was adopted in 1948 and entered into force in 1958. It aims to provide cooperation among governments in regulating all practices related to international shipping through the adoption of the highest standards on maritime safety, the efficiency of navigation, and prevention and control of marine pollution from ships[98] IMO contributions to protect marine biodiversity include setting up instruments and measures to prevent pollution from ships, restricting the dumping of waste and ballast water at sea, and designating specific areas that restrict or prohibit certain navigational freedoms.

Pollution prevention from ships is regulated through the International Convention for the Prevention of Pollution from Ships, 1973, as modified by the Protocol of 1978 relating thereto (MARPOL 73/78). The objective of MARPOL 73/78 is to eliminate intentional discharges and minimize the accidental discharge of pollution to the marine environment through regulating the design, construction, and equipment of ships as well as restricting the dumping of waste (including plastics) into the sea which is detailed in all its six annexes[99] MARPOL applies to all ships carrying its member flags and in both marine areas within and beyond national jurisdiction[100] In addition, the Convention on the Prevention of Marine Pollution by Dumping of Wastes and Other Matter (London Convention) and its Protocol aim to prevent pollution by regulating the dumping of waste and other hazardous materials that are harmful to human and marine life[101] Further, MARPOL 73/78 recognizes Special Areas (SA)[102] and Particularly Sensitive Sea Areas (PSSA)[103]

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[98] *Convention on the International Maritime Organization 1948*. Article 1

[99] *International Convention for the Prevention of Pollution from Ships (MARPOL) 1973*. MARPOL convention include six technical annexes namely: Annex I Regulations for the Prevention of Pollution by Oil (entered into force 2 October 1983); Annex II Regulations for the Control of Pollution by Noxious Liquid Substances in Bulk (entered into force 2 October 1983); Annex III Prevention of Pollution by Harmful Substances Carried by Sea in Packaged Form (entered into force 1 July 1992); Annex IV Prevention of Pollution by Sewage from Ships (entered into force 27 September 2003); Annex V Prevention of Pollution by Garbage from Ships (entered into force 31 December 1988) Annex VI Prevention of Air Pollution from Ships (entered into force 19 May 2005)

[100] Ibid.

[101] *Convention on the Prevention of Marine Pollution by Dumping of Wastes and Other Matters 1972*. The "Convention on the Prevention of Marine Pollution by Dumping of Wastes and Other Matter (London Convention) adopted in 1972", in 1996 the London Protocol was agreed to update the said convention and later entered into force in 2006.

[102] IMO, ôSpecial Areas under MARPOLô (2019) <https://www.imo.org/en/OurWork/Environment/Pages/Special-Areas-

REMP aims to support the ISA organs, contractors, and their sponsoring Parties with decision making processes that balance resource development with conservation through application measures such as area-based and other management tools.[118] The ISA Council adopted a REMP for the Clarion-Clipperton Zone (CCZ) in 2012 which includes ABNJ. This REMP designates a network of nine Areas of Particular Environmental Interest (APEI) that are forbidden for future mining activities in order to protect biodiversity and the integrity of the ecosystem functions of the CCZ region.[119]

Food and Agriculture Organisation (FAO)

The Food and Agriculture Organisation (FAO) is one of the United Nations's specialized agencies that aims to achieve food security. Through its Committee of Fisheries (COFI), the FAO has formulated several formal agreements and non-binding instruments to support the conservation of marine living resources and biodiversity in the high seas. In 1993, FAO members agreed 2012 s. FAOA

migratory, and high seas fish stocks.[124] It further encourages States not Party to the FAO 1993 Compliance Agreement to accept and adopt laws and regulations that are consistent with the Compliance Agreement.[125]

Moreover, in response to United Nations General Assembly (UNGA) Resolution 61/105, the FAO adopted International Guidelines for the Management of Deep-Sea Fisheries in the High Seas in 2008.[126] The Guidelines aim to assist States and RFMOs in adopting measures to prevent adverse impacts from deep-sea fisheries on vulnerable marine ecosystems, and groups of species, communities and habitats that may be vulnerable to fishing activities.[127] The measures include identifying and designating Vulnerable Marine Ecosystems (VMEs)

Moreover, the mandate of RFMOs in ABNJ is complex and varied, and they can be distinguished based on their legal competence in managing fisheries in general, and Tuna and tuna like species over a geographical extent.[133] Currently, there are 7 RFMOs and the Commission for the Conservation of Antarctic Marine Living Resources (CCAMLR) that manage fisheries in general within certain geographical areas as depicted in Figure 2, namely[134]:

1. The Commission for the Conservation of Antarctic Marine Living Resources (CCAMLR)[135]
2. The General Fisheries Commission for the Mediterranean (GFCM)
3. The North East Atlantic Fisheries Commission (NEAFC)
4. The North Pacific Fisheries Commission (NPFC)
5. The Northwest Atlantic Fisheries Organization (NAFO)
6. The South East Atlantic Fisheries Organization (SEAFO)
7. The South Indian Ocean Fisheries Agreement (SIOFA)
8. The South Pacific Regional Fisheries Management Organization (SPRFMO)

Most of these general RFMOs and CCAMLR cover all fish, mollusks, crustaceans, and other marine species within their area of competenc

2. The Indian Ocean Tuna Commission (IOTC)
3. The International Commission for the Conservation of Atlantic Tunas (ICCAT)
4. The Inter-American Tropical Tuna Commission (IATTC)
5. The Western and Central Pacific Fisheries Commission (WCPFC)

Due to overlapping spatial area and commonalities in tuna management challenges, in 2007 these 5 tuna RFMOs decided to cooperate and coordinate through Kobe Process to ensure improvement

Figure 3

release and reporting of incidental catch of oceanic whitetip sharks.[142] However, despite such measures, the assessment of fishery impacts on the majority of shark species as well as seabirds and sea turtles is either unknown or unreliable due to slow progress in the development of fishery impact studies for such species.[143]

RFMOs also play a role in protecting marine biodiversity and the marine environment through the adoption of measures concerning deep-sea fisheries, bottom trawling, as well as designating ABMT or MPA within their areas of competence. For deep-sea fisheries, the NEAFC for example has adopted conservation measures that prohibit fishing of deep-sea sharks, rays, and chimaeras from 2020 to 2023.[144] Similarly, the SIOFA, NEAFC, and the South Pacific Regional Fisheries Management Organisation (SPRFMO) have adopted conservation measures regarding bottom trawling. These conservation measures include the establishment of protected areas or closures to protect VMEs, the designation of bottom trawl management areas, as well as a requirement to cease bottom trawling activities if the fishing vessel encounters a potential VME.[145]

Regional Seas Organizations/Agreements

Regional organizations/agreements are a manifestation of Article 197 of UNCLOS which requires states to cooperate through competent organizations by taking into account regional characteristics. Following the establishment of the United Nations Environment Program (UNEP)

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[142] Indian Ocean Tuna Comission, ôCompendium of Active Conservation and Management Measures for the Indian Ocean Tuna Commissionô (17 December 2021). See Resolution 13/04, 13/05, 13/06. Available at <https://www.iotc.org/sites/default/files/documents/compliance/cmm/IOTC_Compendium_of_ACTIVE_CMMs_17_December_2021.pdf>.

[143] Maria José Juan-Jordá et al, ôReport Card on Ecosystem-Based Fisheries Management in Tuna Regional Fisheries Management Organizationsô (2018) 19(2) *Fish and Fisheries* 321 <https://doi.org/10.1111/faf.12256>.

[144] The North-East Atlantic Fisheries Comission (NEAFC), ôCurrent Conservation and Management Measuresô (2022). See Rec 09,10,11 2020 on recommendations on conservation and management measure for Deep Sea Sharks, Rays, and Chimaeras in the NEAFC Regulatory Area from 2020 to 2023. Available at <https://www.neafc.org/managing_fisheries/measures/current>.

[145] the Southern Indian Ocean Fisheries Agreement (SIOFA), ôConservation and Management Measure for the Interim Management of Bottom Fishing in the Agreement Area (Interim Management of Bottom Fishing)ô (2020) <http://www.apsoi.org/sites/default/files/documents/cmm/CMM 2020_01_Interim Bottom Fishing Measures_0.pdf>; The North-East Atlantic Fisheries Comission (NEAFC), ôRecommendation 19:2014 on Area Management Measures for the Protection of Vulnerable Marine Ecosystems in the NEAFC Regulatory Area as Amended by Recommendation 09:2015, Recommendation 10:2018 and Recommendation 10:2021ô (2021) <https://www.neafc.org/system/files/Recommendation-19-2014-VME-protection-as-amended-by-Rec-09-2015-Rec-10-2018-Rec-10-2021.pdf>; The South Pacific Regional Fisheries Management Organization (SPRFMO), ôConservation and Management Measure for the Management of Bottom Fishing in the SPRFMO Convention Area ô (2022) <http://www.sprfmo.int/assets/Fisheries/Conservation-and-Management-Measures/2022-CMMs/CMM-03-2022-Bottom-Fishing-7Mar22.pdf>.

in 1972, the Regional Seas Program was initiated in 1974 and aimed to create action-oriented and comprehensive programs to address environmental problems to manage marine and coastal areas.[146] Currently there are 18 Regional Seas Program (RSP) with 143 participating states under UNEP which comprise five RSPs which are directly administered by UNEP, seven are managed by other organizations but under UNEP auspices, while the other four are independent organizations but still in coordination with UNEP.[147] Figure 4 shows distribution of RSPs and their coordination with UNEP.

Figure 4. Global coverage of Regional Seas Program [148]. Orange font denotes UNEP administered RSPs, grey denotes non-UNEP RSPs, and blue font denotes independent programmes/partners.

Most of the RSPs were first created with a mandate to address marine pollution in their respective regions, but some have expanded their mandates to cover marine biodiversity conservation.[149] RSPs mandates to

convention and protocol (legally binding) or action plan (non-legally binding).[150] However these mandates are mostly

Gaps in mandate and competence

Moreover, gaps in mandate or competence meaning that there is an absence of competent authority

Such objective

boundary, has specific conservation goals and objectives which include management plan to achieve the goals[184]

and Paris Convention in 1972 and 1974, respectively.[195] A Commission was then established to supervise and assess compliance on the implementation of the OSPAR Convention.[196] The establishment of North-East Atlantic high seas MPAs was motivated by the adoption of the 1998 Sintra Ministerial Statement which promoted the establishment of a network of marine protected areas. This was then followed by the OSPAR Recommendation 2003/3 in 2003 as amended by OSPAR Recommendation 2010/2 in 2010 that aimed to establish an ecologically coherent network of MPAs in the North-East Atlantic by 2016.[197] The 2003/3 recommendation mandated the OSPAR party to identify area in the North-East Atlantic ABNJ to be proposed as MPA within OSPAR Network of MPA.[198] Pursuant to MPA Network recommendation, OSPAR published several guidelines to assist parties in the development and management of MPAs which include an identification and selection guideline, MPA management guideline, guidance on developing ecologically coherent MPA network, as well as guidance to assess MPA management effectiveness.[199]

Since 2010, OSPAR has established MPAs that located beyond EEZs of its contracting parties namely the Wider Atlantic (OSPAR Region V) and the Arctic Waters (OSPAR Region IV).[200] As of 2021, there are 583 MPAs included in the OSPAR Network of MPAs covering 1,490,552 km^2 or 11 % of the OSPAR Maritime Area with 8 MPAs located in ABNJ.[201] The latest high seas MPA that was established is the North Atlantic Current and Evlanov Sea basin MPA that was designated

[195] OSPAR Comission, ‘About OSPAR’ (2022) <https://www.ospar.org/about>. There are 16 contracting parties of OSPAR which are Belgium, Denmark, Finland, France, Germany, Iceland, Ireland, Luxembourg, The Netherlands, Norway, Portugal, Spain, Sweden, Switzerland and United Kingdom, together with the European Union

[196] OSPAR, ‘Convention for the Protection of the Marine Environment of the North-East Atlantic (OSPAR Convention)’ (1992). See article 10 and 23 on comission and compliance, respectively. Available at <https://www.ospar.org/site/assets/files/1290/ospar_convention.pdf>.

[197] OSPAR Comission, ‘Marine Protected Areas’ (2022) <https://www.ospar.org/work-areas/bdc/marine-protected-areas>.

[198] OSPAR Commission, *OSPAR Recommendation 2003/3 on a Network of Marine Protected Areas as Amended by OSPAR Recommendation 2010/2 (Consolidated Text)* (2003).

[199] OSPAR Commission, ‘Guidance for the Development and Management of the OSPAR Network | OSPAR Commission’ (2022) <https://www.ospar.org/work-areas/bdc/marine-protected-areas/guidance-for-the-development-and-management-of-the-ospar-network>.

[200] OSPAR Commission, ‘MPAs in Areas beyond National Jurisdiction’ (2022) <https://www.ospar.org/work-areas/bdc/marine-protected-areas/mpas-in-areas-beyond-national-jurisdiction>.

through OSPAR Decision 2021/01.[202] Smith and Jabour documented one of the OSPAR challenges in implementing MPAs in ABNJ is related to the jurisdictional conflict of some areas of MPAs

Another challenge of OSPAR high seas MPAs is regarding limited competence to regulate human

management measures of the fisheries in its area of competence.[212] To support this measure, CCAMLR adopted two important documents, namely MPA Planning Domains that divides CAMLR convention area into 9 MPA planning domains[213], and Conservation Measure 91-04 which provide general framework to establish CCAMLR MPAs.[214] To date, CCAMLR achievement was to established two MPAs, namely The South Orkneys Islands MPA and The Ross Sea Region MPA. The South Orkney Islands Southern Shelf MPA was established in 2009 through Conservation Measure 91-03 (2009) to protect 94,000 km^2 of area that is important for penguin foraging ground.[215] In 2016, the Ross Sea Region MPA was established through Conservation Measure 91-05 (2016) and protects 2.09 million km^2 of imp

Accommodating fishing interests was apparent during the establishment process of the South Orkneys Island MPA and the Ross Sea MPA. In the case of South Orkneys Island MPA, fishing states demanded that the current krill fishing grounds and the future area for crab fishing be excluded from the proposed MPA.[221] As a result, the South Orkneys Island MPA fails to protect the biologically important area (i.e. area for penguin and seabirds foraging for krill) and several pelagic bioregions and geomorphic zones remain unprotected.[222] Similarly, the Ross Sea MPA was also colored by compromises to accommodate states fishing interests. The fishing interests were accommodated through allowing directed krill fishing in the Special Research and the Krill Research Zone, and directed toothfish fishing allowed only in the Special Research Zone.[223]

Furthermore, the Ross Sea MPA also suffered from area reduction (from proposed 2.27 to 1.55 million km^2) to give ways for fishing activities through removal of main fishing ground and the proposed spawning protection zone from the MPA despite its conservation value.[224] Further, there were also addition of fishing zones to the MPA as an attempt to placate several fishing states.[225] In addition, tradeoffs between conservation and fishing also occurred through opening of Patagonian toothfish fishing area outside of the MPA which used to be closed to maintain overall catch limits of such fish within the CAMLR convention area.[226] Another tradeoff is reducing the MPA timeframe from 50 to 35 years subject to periodic review.[227] As a result of favoring fishing interests, the Ross Sea MPA may not achieve its intended objective to comprehensively protect ecological structure and function, and it cannot be considered a MPA since it is limited by a short time frame thus not serving the long term conservation of natural

of high seas part in the sanctuary water[234]

Figure 6. Distribution of bottom fishing designated areas and VMEs closed areas. VMEs closed areas, bottom fishing areas, and other access regulated areas are represent in red, green, and light yellow colour, respectively. [250]

Challenges in ABMTs including MPAs implementation

As we can see from the previous sub-section discussion, MPAs establishment and implementation in ABNJ is currently carried out by several regional and sectoral organizations with various objectives and interests. Gjerde et al argue that the regional and sectoral approaches to establish MPA due to that there is no overarching global mechanism to establish MPAs in ABNJ.[251] Similarly, Frank argues that the non-existence of global mechanism because UNCLOS and CBD as prominent legal instruments in ocean governance and biodiversity conservation, respectively, do not specifically mandate a global framework to establish MPA.[252] The Convention only provides general duties

Likewise, CBD has limitation on its provision with regard to the conservation of marine

regional organization must cooperate with other competent sectoral organizations[261] In other words, establish cross-sectoral cooperation. However

effective management implementation.[269] De Santo argues that creating mechanism to ensure compliance and enforcement of ABMTs and MPAs in ABNJ is challenging due to following factors[270]:

1. impose additional tasks to already busy existing organizations;
2. issue of compromises to keep states engagement as in the case of RFMOs;
3. ensuring non-parties to adherence to conservation measures.

These challenges urged the need to create a new overarching mechanism under the new BBNJ agreement to ensure compliance and enforcement. In addition, recent technology development in surveillance that combines Vessel Monitoring System (VMS), Automatic Identification System (AIS), satellite imagery, and automation or machine learning may be beneficial for monitoring and enforcing MPAs in ABNJ.[271]

Chapter 2. Opportunity to conserve marine biological diversity in areas beyond national jurisdiction

The previous chapter has provided understanding on issues of the current global and regional cooperation on ABMTs including MPAs in ABNJ which prompted the urgency on BBNJ Agreement. Subsequently, this chapter discusses developments of the BBNJ agreement. It will first discuss the background and process of the BBNJ agreement and implications to the existing cooperation on conservation and sustainable use of marine biodiversity in ABNJ. This will be followed by discussion on the BBNJ agreement draft text that related to international cooperation on ABMTs including MPAs. It also will identify

as not undermining existing instrument and conservation efforts[282], and management types of MPA i.e. from strict protection to multi-use, and protection time duration[283]. At the 3rd PrepCom, the Chair achieved a breakthrough on institutional aspect of the ILBI and relationships with existing instrument through proposing ñglobal,ò ñhybridò and ñregionalò models during the discussions on ABMTs including MPAs[284]. In 2017 at the final session, PrepCom produced a document that contains two sections: Section A includes list of non-exclusive elements that most delegations have convergence, and Section B highlights issues where there are divergence views[285]. For example, on measures such as ABMTs including MPAs in Section A there are convergence on topics such as: objectives, relationship with relevant instruments, frameworks and bodies, as well as identification criteria[286]. While topic that need further discussion in Section B is on institutional set up to enhance cooperation without undermining existing legal instrument and mandates of regional and sectoral bodies[287].

The Intergovernmental Conference

Considering the PrepCom recommendation, on 24 December 2017 UNGA adopted resolution 72/249 to convene an Intergovernmental Conference (IGC) in four sessions from 2018-2020 to elaborate the text of BBNJ agreement[288]. The IGC was preceded with organizational meeting from 16 to 18 April 2018 which elected Rena Lee as the President of the IGC.[289] At the first IGC in 2018 delegates discussed lists of substantive views on package elements as well as cross cutting

[282] Elisa Moq 0.0e* EAge 6

issues.[290] State delegations started to articulating their views on the treaty based text prepared by the President and begin to identify solutions and seeks compromise during the IGC 2.[291] At IGC 3 in 2019, the President presented the draft text of BBNJ agreement which contains 12 parts and 70 articles that address four elements of the 2011 negotiation package, include one annex on types of capacity building and transfer of marine technology.[292] As part of the IGC 4 preparation, delegations requested the IGC President to prepare a revised draft text that taken into account comments and textual proposal made by delegations during IGC 3.[293]

The IGC 4 was held from 7 to 18 March 2022 after two years of postponement due to COVID-19 global pandemic situation in accordance with the UNGA decision 75/570 and 74/573.[294] The fourth session of IGC was lauded as the most productive with unprecedented progress where delegations submitted textual proposals and drafted consensus text between regional groups for similar text proposal.[295] However, delegations could not conclude the agreement in IGC 4[296], and

[290] Elisa Morgera et al, *Summary of the 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 of Areas Beyond National Jurisdiction: 4-17 September 2018* (20 September 201886(o)-5(n)-5( )-

in accordance to GA decision 76/564 the fifth session of the IGC was held from 15-26 August 2022[297]

In IGC 5 delegates negotiated the further revised draft text of BBNJ agreement which comprises of 12 parts, 70 articles, and 2 annexes.[298] Despite efforts to finding common grounds to compromise in some provisions, delegates were run out of time to conclude the BBNJ agreement in IGC 5.[299]

existing instrument.[303] BBNJ institutional arrangement was firstly introduced by the PrepCom Chair at the 3rd meeting who deliberated three different approaches on BBNJ institutional arrangement, namely global, hybrid, and regional models.[304] However, as pointed out by Clark, the models was not universally understood and have been interpreted differently by States during the PrepCom discussion.[305] In addition, the further revised draft text of BBNJ agreement does not specifically formulated to make States choose between the three models, but instead includes options on form and forpom and fo of4(e)ional aTJ ET Q q BT /s 0 G [(dra)2/70 7(4 BT /s a.42 Tm

The COP is proposed to be the decision making body whose tasks would include adopt rules of procedures (article 48(3)), adopt decision related to implementation of the BBNJ agreement (article 48(5 a)), establish cooperation and coordination with and among relevant framework and global, regional, and sectoral bodies (article 48(5 c)), as well as promote transparency in decision making process (article 48 bis(3))[310] This proposed provision gives COP a role as global decision making body with power and functions to implement the work of BBNJ agreement[311] With this, as proposed in article 19 and 19 bis, COP can take decisions related to measures ABMTs including MPAs[312] Implication of this current proposal is existing global, regional, and sectoral organisations are expected to gives input and advice which would be considered during the decision making process in COP[313] In addition, relevant organisations are also expected to adopt measures and guidance developed under the BBNJ agreement within their competence, and a reporting their application of measures through CHM[314]

Moreover, further revised draft text of BBNJ agreement provision STB core function is to provide scientific and technical advice through for example, provide preliminary review and assess upon ABMT including MPA proposal[315] The STB also provisioned to perform functions that have been assigned or determined by COP, for example to monitor, review, and assess effectiveness of measures on ABMTs including MPAs implementation[316]. While the Secretariat provisioned to perform supporting roles to the implementation of the BBNJ agreement which include among others administrative and logistical support, circulate information, facilitate cooperation and coordination, and manage CHM[317] Furthermore, the CHM duties are include to provide access and disseminate information on the establishment and implementation of ABMTs including MPAs, provide links to relevant global, regional, and sectoral CHM, and facilitate international

[310] Ibid. Article 48 (3), (5 a and c), and 48bis

[311] Clark (n 303). Article 11 (8), 19 (1), 38 (1bis), and 51(4).

[312] United Nations General Assembly, ó A/CONF.232/2022/5. Further Revised Dr

enhance and develop capacity building of developing countries to implement such agreement.[329] Among States in the SEA region, Indonesia, the Philippines, and Singapore are notably more active than other states in asserting their views during BBNJ discussion and negotiation process.

As archipelagic countries, Indonesia and the Philippines are consistent to push recognition and consideration for special characteristics of such countries. They are of the view that designation and implementation of ABMTs and MPAs should not place additional burden to developing countries and archipelagic states.[330] For Indonesia, its archipelagic waters and the surroundings ABNJ are interlinked and connected, thus views the BBNJ agreement will provides opportunities to obtain monetary and non-monetary benefits from conservation and sustainable use of marine biodiversity.[331] Furthermore, both Indonesia and the Philippines called for the BBNJ agreement should not prejudice the rights and obligations of coastal states, especially on ECS, and adjacent coastal states should be consulted during the deliberation of proposal to establish ABMTs

of Marine Biological Diversity of Areas Beyond National Jurisdictionô (7 September 2018) <https://www.g77.org/statement/getstatement.php?id=180910c>.

[329] The Group of 77/China, ôThe Group of 77 and Chinaôs Written Submission to the Preparatory Committee Established by the General Assembly Resolution 69/292ô (5 December 2016) <https://www.un.org/depts/los/biodiversity/prepcom_files/rolling_comp/Group_of_77_and_China.pdf>.

[330]

assessment as provisioned in article 12(3). Accordingly, adjacent coastal states and relevant regional and sectoral bodies will be invited to submit inputs on the proposal regarding among others scientific information and existing adopted or additional measures on the proposed or adjacent area within its competencies[342].

Steps on establishing ABMTs including MPs among

COP plays role on oversight and review of such MPAs.[347] Moreover, in the latter scenario, existing global, regional, and sectoral bodies are expected to have consultation and arrangements with parties or other organisations, and to coordinate on implementing ABMT including MPA measures. Further, article 20 provisions duty to Parties who are members of relevant global, regional, and sectoral organisations to promote and adopt measures and support the implementation of the COP decision and recommendations on measures such as ABMTs including MPAs.[348] Further, relevant global, regional, and sectoral bodies shall/may be invited to report the implementation of measures they have established under their competence (article 21(5)).[349]

[347] Ibid.

[348] United Nations General Assembly, A/CONF.232/2022/5. Further Revised Draft Text of an Agreement under the United Nations Convention on the Law of the Sea on the Conservation and Sustainable Use of Marine Biological Diversity of Areas beyond National Jurisdiction Note by the Presidentô (n 298). Article 20 (4).

[349] Ibid. Article 21 (5).

Part 2. Future endeavors in cooperation to conserve and sustainably use marine biological diversity in the Southeast Asia region and adjacent ABNJ

The objective of Part 2 of this thesis is to provide an overview of the condition and threats to marine biological diversity in the Southeast Asia region and adjacent ABNJ. This will necessarily entail reviewing existing efforts to protect biological diversity within this region and undertaking an examination of gaps in regional cooperation to implement ABMTs including MPA in this part of the world.

Chapter 3. Regional significance and efforts to conserve

(*Chelonia mydas*), hawksbill (*Eretmochelys imbricata*), olive ridley (*Lepidochelys oliviacea*), loggerhead (*Caretta caretta*) and flatback (*Natator depressus*).[364] In respect to elasmobranchii species, there are at least 196 sharks, 160 rays/skates, and 7 chimeras species that have been recorded in SEA water.[365]

Besides fisheries, the deep-sea of the Indian Ocean and western Pacific Ocean hold rich biodiversity. Studies suggest that the Indian Ocean has unique biodiversity features that are associated with the extreme environments of the deep-sea including hydrothermal vents, submarine volcanoes, and cold seeps.[366] Likewise, expeditions conducted during 2014-2017 at seamounts in the western Pacific Ocean, discovered new genera and species of corals, sponges, Polychaete, and Crustacean.[367] Selig et al suggest that the ABNJ of the Indian Ocean and western Pacific Ocean be included as priority areas for conservation due to characteristics of high richness, range rarity, and relatively high or low levels of human impact, however these regions are less researched.[368] Similarly, the biogeographic provinces with the highest number of hydrothermal vents are situated in the southern hemisphere such as the Indian Ocean. Unfortunately, deep-sea research surveys have not been conducted in these areas to the same extent as the northern hemisphere.[369] In addition, the deep-sea with its rich biodiversity provides marine genetic resources that hold the potential for the development of new commercial products in pharmaceutical, cosmetic, and food, as well as new solutions for sustainable energy and bioremediation.[370] This potency triggers research for marine genetic resources in ABNJ, which is concentrated in limited locations such as the East Pacific Rise and Atlantic Mid-Ocean Ridge.[371]

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[364] Zulkifli Talib et al, ôManaging Sea Turtles in Southeast Asia: Hatcheries and Tagging Activitiesô (2003) 27.

[365] Ahmad Bin Ali et al, ôBiodiversity and Habitat Preferences of Living Sharks in the Southeast Asian Regionô (2018) 24(2) *Indonesian Fisheries Research Journal* 133; W Wanchana, A Ahmad and S Putsa, ôRecording Sharks and Rays Statistics from Southeast Asia at Species Levelô (2016) 14(1) *Fish for the People* 2.

[366] Thomas Wilke et al, ôEditorial: Benthic Biodiversity of the Indian Oceanô (2022) 9 *Frontiers in Marine Science* | *www.frontiersin.org*

Separated but connected water

Although separated by jurisdictional boundaries, the waters within the SEA region (which include the territorial seas, archipelagic waters, and EEZs of a number of States) and the adjacent ABNJ are connected and interlinked through ecological connectivity. Ecological connectivity is a complex natural process that allows dispersal of marine life across time, populations, communities, and ecosystems.[372] According to Popova et.al, there are two types of ecological connectivity:

(1) Passive/circulation connectivity through the ocean currents, and
(2) Active/migratory connectivity by active swimming.[373]

With passive/circulation connectivity, the ocean currents allow transport of marine organisms during their lifespan as larvae in planktonic stages from one area where they were spawned, to other areas where they will complete their life stages.[374] An example of passive/circulation connectivity can be seen in the studies that reveal ecological connectivity through long distance larval movement of coral and associated reef fish that traverse between the EEZs of different countries in the Coral Triangle and the Caribbean region.[375] Moreover, fish stocks juvenile that travels across countries boundaries and the high seas also indicates interdependency between neighboring countries and surrounding high seas areas.[376] Besides fish larvae and juveniles, ocean currents also transport and disperse marine pollution such as marine debris, oil, and radioactive matter that can impact marine biodiversity both in ABNJ and marine areas within national jurisdiction.[377]

[372] Popova, E. et al. (2019) Ecological connectivity and its implications for the Southern Ocean ecosystem. *Journal of Marine Systems* 191, 11–26. https://doi.org/10.1016/j.jmarsys.2018.11.007

in the Design of Marine Protected Areas. *Frontiers in Marine Science* 4, 93. https://doi.org/10.3389/fmars.2017.00093

[373] Popova, E. et al. (2019) Ecological connectivity and its implications for the Southern Ocean ecosystem. *Journal of Marine Systems* 191, 11–26. https://doi.org/10.1016/j.jmarsys.2018.11.007

[374] Popova, E. et al. (2019) Ecological connectivity and its implications for the Southern Ocean ecosystem. *Journal of Marine Systems* 191, 11–26. https://doi.org/10.1016/j.jmarsys.2018.11.007

[375] Popova, E. et al. (2019) Ecological connectivity and its implications for the Southern Ocean ecosystem. *Journal of Marine Systems* 191, 11–26. https://doi.org/10.1016/j.jmarsys.2018.11.007

[376] Popova, E. et al. (2019) Ecological connectivity and its implications for the Southern Ocean ecosystem. *Journal of Marine Systems* 191, 11–26. https://doi.org/10.1016/j.jmarsys.2018.11.007

[377] Popova, E. et al. (2019) Ecological connectivity and its implications for the Southern Ocean ecosystem. *Journal of Marine Systems* 191, 11–26. https://doi.org/10.1016/j.jmarsys.2018.11.007

On the other hand, active/migratory connectivity is an active movement of marine species from breeding to feeding grounds during their lifecycle stages.[378] The tuna and sea turtle migratory movement and distribution between the high seas and the territorial and EEZ waters of coastal states provides the best example of active/migratory connectivity. A number of studies have

overexploitation and overfishing.[384] In 2019, assessed stocks in the Western Central Pacific, the Eastern Indian, and the Western Indian Oceans were fished within biologically sustainable levels at a figure of 76.9%, 65.3%, and 62.5%, respectively.[385] However, limited data availability makes the stock assessment in these ocean basins challenging and there is a high degree of uncertainty.[386] Within waters of the SEA region, fishing activities are conducted in the high seas and inside the EEZs of coastal States.[387] Small and artisanal fishers that operate in the coastal waters dominate the fishing fleets and contribute enormously to the fishing productivity in the Southeast Asia region.[388] Within the EEZs of SEA countries, stock status of several commercially pelagic species such as oceanic tuna (e.g. bluefin and yellow tail tuna), neritic tuna (e.g. kawakawa and long tail tuna), tuna-like species (e.g. indo-pacific mackerel) are overfished and overexploited, while status of stocks on demersal fishes, reef fishes and crustaceans require management intervention.[389] Given the potential overfishing status of fisheries within the EEZs of coastal States, SEA countries will look to the opportunity to fish outside their respective EEZ and to the adjacent high seas.[390]

Moreover, fishing can have direct impact on non-target species including endangered, threatened, and protective species. The use of fishing gear both in the water column and the bottom of the ocean can catch species that are not intentionally targeted. This is generally referred to as "bycatch".[391] Risk assessment analysis on bycatch vulnerabilities in the Indian Ocean shows that many species groups such as sea turtles, manta rays, oceanic, pelagic, and shallow shelf sharks, as well as whales are highly vulnerable to tuna fishing gears namely, purse seines, longlines, and drift gill nets.[392] This was further reinforced in the 2012 report that reported bycatch at 14% or 32,700 tonnes of total tuna longline catch in IOTC.[393] Likewise, it is estimated that from 2010 to 2018

[384] FAO, *The State of the World Fisheries and Aquaculture 2010* (2010) <https://www.fao.org/3/i1820e/i1820e.pdf>.

[385] FAO, *The State of World Fisheries and Aquaculture 2022* (n 9).

[386] Ibid.

[387]

well as human health, and interfere with marine activities and use.[400] Anthropogenic activities that cause marine pollution include maritime transportation, offshore oil and gas installations, and land or marine based plastic pollution. Marine spaces in the Southeast Asia region, the Indian Ocean, and the Western Central Pacific Ocean have a strategic position in terms of maritime transport. Due to its geographical location, the Indian Ocean facilitates one of the worldôs largest trade routes by volume and links the economies in the Northern Atlantic and the Asia-Pacific.[401] Specifically, Selat Malacca in the SEA region serves as an important sea

Threats from deep-sea mining activity

Regarding todeepsea mining in the Area, currently there are 1 exploration contract on polymetallic nodules and 4 exploration contracts for polymetallic sulphides in the Indian Ocean.[414] While in the northwest PPPPPPP0 BT5(c)319.04 T,3/F1 13/F1 Indi1(a)4(n)-39F1 ontra41(ts)-42(F

Deep-sea mining activities involve removing materials such as polymetallic nodules, cobalt-rich manganese crusts, and polymetallic sulphides from the seabed. It will likely alter deep-sea ecosystems and habitats through the removal of cobalt crusts and polymetallic nodules from the abyss, increased temperature and noise, anthropogenic light, sediment plumes, and extraction of gas hydrates operations.[418] As exploitation activities are yet to take place, the exact impact on marine biodiversity and the ecosystem recovery rate are currently unknown. However, studies suggest that removal of materials from seabed ecosystems could alter species distribution, stop ecosystem functioning and create sediment plumes which may degrade the marine environment at the relevant mining site as well as areas located 200 km away.[419]

Urgency to cooperate in managing marine biodiversity in SEA region and adjacent ABNJ

Marine areas in SEA are rich in marine biodiversity, and ecologically connected through larval and fish species and other marine biota that move and migrate through the EEZs of each country in SEA and adjacent ABNJ. The region is currently exposed to threats from anthropogenic activities such as fisheries, maritime transport, and deep-sea mining. Impacts arise from such activities can be widely distributed within the region to adjacent ABNJ or vice versa through ocean currents. Dispersal of marine life and pollutants indicates strong connectivity between ABNJ and adjacent coastal statedidjacadjace9t(n)-93a90(stats9 g 48(s12 0lT Q q 7241(the 6799(e)-5(c)4(osys

the region.[424] With regards to ABMT including MPA measures, UNCLOS only provides a general framework for the conservation and management of marine resources. UNCLOS does provide a general obligation for its parties to protect the marine environment including rare and fragile ecosystems, and habitats of endangered and threatened species.[425] Similarly, UNFSA does not provide measures for ABMTs including MPAs. However, the review conference of UNFSA in 2006 recognized MPAs as important management measures for fisheries and encouraged States and RFMOs to implement such measures.[426] This was followed by several RFMOs implementing VMEs and fisheries closures as part of an ecosystem approach to fisheries management.

[424] Tim Stephen, ôThe United Nations Convention on the Law of the Sea in South East Asia Smooth Sailing or Stormy Seas?ô in Donald R Rothwell and David Letts (eds), *and Security Challenges* (Taylor & Francis Group, 2019) <https://ebookcentral.proquest.com/lib/uow/reader.action?docID=5831719>.

[425] *United Nations Convention on the Law of the Sea* (n 13). Article 192 and 194 (5).

[426] United Nations Secretary General (n 245), para 139

On the other hand, the 1994 Implementing Agreement through its governing body the ISA has provisioned specific measures related to ABMTs to minimize impact of seabed mining to marine biodiversity in the Area. These sectoral ABMTs are known as APEI and preservation reference zones and they are to specified in the REMP document.[442] Currently there are exploration contracts granted by the ISA for polymetallic nodules, polymetallic sulphides, and cobalt ferromanganese crusts in the Indian Ocean and in Pacific Ocean,[443] however REMPs for these contracts are still being prepared.[444]

The IMO Convention and MARPOL 73/78 also introduced sectoral ABMTs to protect the marine environment from pollution from shipping activities, namely PSSA.[445]

MOU on the conservation of migratory sharks[452], and a MOU on the Conservation and Management of Marine Turtles and their Habitats of the Indian Ocean and South East Asia.[453] However both MOUs are implemented within national jurisdiction or through flag state jurisdiction and do not mandate the establishment of ABMT or MPA as measures. Lastly, nations

located or migrate in and out of the Indian Ocean.[458] In addition to species target, the IOTC also performs data collection for non-target, associated and dependent species that are affected by tuna fishing operations, including marine turtles, marine mammals, seabirds, sharks, and bycatch species.[459]

The IOTC aims to ensure optimum utilization of stocks covered by the agreement through appropriate conservation and management measures.[460] In achieving this objective, the IOTC through its governing body, the Commission, adopted conservation and management measures (CMMs) that are based on scientific advice provided by the Scientific Committee.[461] The CMMs are adopted as resolutions and have legally binding effect on members. The Commission also adopts recommendations that can be implemented voluntarily by members.[462]

from 2011-2014.[466] However due to little effect on fish stocks such closures was superseded by another measure to allocate quota and improve the artisanal tuna fisheries reporting system.[467]

The Western Central Pacific Fisheries Commission

Commission as the governing body taking into account scientific and technical advice from its subsidiary bodies, namely the Science, and the Technical and Compliance Committee.[472]

In managing the fish stocks the WCPFC adopts CMMs that are binding on all members and are to be applied using the principles specifically mandated in the WCPF Convention text.[473] To this end, the WCPFC applies the precautionary approach to protect marine biodiversity, and adopts measures to minimize bycatch and impacts on target species, as well as to collect data on target/non-target species. For example, the WCPFC adopts binding measures to prevent bycatch to seabirds, sea turtles, sharks and cetaceans and to minimize marine pollution from fishing vessels.[474] In relation to ABMTs, the WCPFC has adopted measures on Fisheries Aggregating Device (any man-made device that capable to aggregating fish) closures and prohibition for purse seine fishery in high seas pocket, transshipment ban in eastern high seas pocket area, as well as time-area closure in high seas pocket area.[475]

Regional Seas Program of East Asian Seas

The Regional Seas Program of East Asian Seas is a UNEP admQ q Tf 1 4(gional)-59(S)-3(e)-5(a

Association of South East Asian Nations (ASEAN) and related bodies

The Association of South East Asian Nations (ASEAN) is a prominent intergovernmental cooperation in the Southeast Asia region. It was established in 1967 and currently has ten member states namely, Brunei, Cambodia, Indonesia, Laos, Malaysia, Myanmar, Philippines, Singapore, Thailand and Vietnam. In 2008, SEA States renewed their political commitment in the region through the adoption of a legally binding ASEAN Charter which established the ASEAN Coordinating Council that coordinates the three pillars of the ASEAN community: (1) ASEAN Socio-Cultural Community (ASCC) Council; (2) ASEAN Economic Community (AEC) Council; and (3) ASEAN Political-Security Community (APSC) Council.[485] ASEAN has a complicated institutional structure with extensive layers, interrelated working groups and technical bodies to implement its cooperation work.

Under the ASEAN umbrella there is also the Southeast Asia Fisheries Development Centre (SEAFDEC), a technical advisory body mandated to develop and manage rational utilization of fisheries and marine resources in the national waters of the region through research, information and technology transfer and dissemination activities.[489]

With regards to MPA, states in the SEA region have designated in aggregate approximately 229,534 km^2 of their territorial waters as MPAs. However, this number only cover 2% of the states territorial marine area.[490] Additionally, there is only one transboundary MPA in the region, namely Turtle Island Heritage Protected Area (TIHPA) which was established in 1996 through a Memorandum of Understanding between Malaysia and the Philippines.[491] The TIHPA aims to protect the last major nesting grounds for green turtles situated adjacent to the international treaty limits which separate the Philippines and Malaysia in the southern Sulu Sea near Sabah, Malaysia.[492]

The Coral Triangle Initiative on Coral Reefs, Fisheries and Food Security

The Coral Triangle Initiative on Coral Reefs, Fisheries and Food Security (CTI-CFF) is a multilateral partnership between six countries (Indonesia, Malaysia, Papua New Guinea, Philippines, Solomon Islands and Timor-Leste) in the Coral Triangle region. The CTI-CFF was established through a non-legally binding CTI Leaders Declaration in 2009 in Manado and it focuses on managing marine resources while taking into account climate change impacts.[493] This was followed up in 2011 with the establishment of a CTI-CFF Regional Secretariat. In 2017 the CTI-CFF was recognized as a UN regional organization.[494] Notably, the CTI-CFF is the only

[489] The Southeast Asian Fisheries Development Centre (SEAFDEC), ôAbout SEAFDECô <http://www.seafdec.org/about/>.

[490] The ASEAN Centre for Biodiversity (ACB), ôASEAN Biodiversity Outlook 2ô (n 39).

[491] Evangeline Miclat and Enrique Nunez, ôThe Philippinesï Sabah Turtle Islands Heritage Protected Area (TIHPA)ô [2016] *Marine Transboundary Conservation and Protected Areas* 144 <https://www-taylorfrancis-com.ezproxy.uow.edu.au/chapters/edit/10.4324/9781315722610/philippines-sabah-turtle-islands-heritage-protected-area-tihpa-evangeline-miclat-enriquenunez>.

[492] Ibid.

[493] Fisheries and Food Security (CTI-CFF) The Coral Triangle Initiative on Coral Reefs, ôThe Coral Triangle Initiative Leadersô Declaration on Coral Reefs, Fisheries and Food Security ô (2009) <https://www.coraltriangleinitiative.org/sites/default/files/resources/Leader Declaration coral triangle initiative_0.pdf>.

[494] Fisheries and Food Security (CTI-CFF) Regional Secretariat The Coral Triangle Initiative on Coral Reefs, ôThe Agreement on the Establishment of the Regional Secretariat Of The Coral Triangle Initiative On Coral Reefs, Fisheries And Food Securityô (2016) <https://www.coraltriangleinitiative.org/sites/default/files/resources/The Agreement on The Establishment of RS CTI-CFF_Newest_2017_compressed.pdf>.

the Coral Triangle Atlas (an online GIS based website to monitor MPA achievement within the CT region).[500]

Chapter 4. Analysis of limitations and gaps in existing regional cooperation for conservation and management of marine biological diversity in the Southeast Asia region and adjacent ABNJ

The following part of this chapter analyzes the limitations and gaps of existing regional bodies as well as their future relationship or cooperation with the BBNJ agreement to implement ABMTs including MPAs. Section A will first provide a gap analysis on the current mandate and institutional setting of existing regional bodies that might support or hinder ABMTs including MPA implementation. This is followed by Section B that discusses on lessons learned from other

legally binding frameworks. Nevertheless, all of these organizations are focused on the sustainable management of marine resources and biodiversity. The main aim of COBSEA is to protect the marine environment from land-based pollution impacts.[508] ASEAN through the ACB and SEAFDEC puts an emphasis on marine biodiversity and fisheries,[509] and the CTI-CFF tries to

report of the IOTC and WCPFC also encouraged RFMOs to address incomplete fisheries management coverage and consider general biodiversity protection.[514]

On the other hand, the COBSEA, ASEAN, and CTI

regional/sectoral expertise and identify potential challenges on measures implementation.[526] Such consultation can also address concern on potential undermine of regional organisations.[527] Moreover, ABMTs including MPA proposals may have different implications for States in the SEA region particularly adjacent coastal states to ABNJ such as Indonesia, Malaysia, Philippines, and Timor Leste. For these adjacent states where there is ecological connectivity between adjacent ABNJ and areas within national jurisdiction, there should be a compatibility between measures adopted in ABMTs or MPAs in ABNJ with measures adopted in areas within national jurisdiction.[528] Most importantly, designation of ABMTs or MPAs in ABNJ should take into account the socio-economic interests of communities in adjacent areas within national jurisdiction.[529] The further revised draft text of BBNJ agreement provides for adjacent coastal states shall be invited by the Secretariat to submit views on MPAs proposal in ABNJ.[530] SEA States such as Indonesia, the Philippines and Singapore has consistently supported the insertion of a consultation clause for adjacent coastal States in the draft text during BBNJ negotiations.[531] Nevertheless, the consultation process proposed in the draft text requires scientific and technical capacity from regional organizations or States in the study area.

Under the mandates of the IOTC and the WCPFC, both are required to take into account scientific information in respect to conservation and management measures, and they have established scientific committees to support this requirement.[532] In addition, the IOTC established a Working Party on Ecosystems and Bycatch,[533] while most of the science on ecosystems for the WCPFC are

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[526] Andrew Friedman, ó Beyond ñNot Underminingò: Possibilities for Global Cooperation to Improve Environmental Protection in Areas beyond National Jurisdictionô (2019) 76(2) *ICES Journal of Marine Science* 452.

[527] Ibid.

[528] Popova et al (n 37).

[529] Ibid.

[530] United Nations General Assembly, óA/CONF.232/2022/5. Further Revised Draft Text of an Agreement under the United Nations Convention on the Law of the Sea on the Conservation and Sustainable Use of Marine Biological Diversity of Areas beyond National Jurisdiction Note by the Presidentô (n 298). Article 18(2a).

[531] See section 2.2.2.1

[532] The Indian Ocean Tuna Commission (IOTC), ó The Agreement for the Establishment of the Indian Ocean Tuna Commissionô (n 516). See article V (2c) and XII(1 & 4). The Western and Central Pacific Fisheries Commission (WCPFC), ó Convention on the Conservation and Management of Highly Migratory Fish Stocks in the Western and Central Pacific Oceanô (n 531). See article 5(a), XI, and XII.

[533]

supported by the Secretariat of the Pacific Community-Ocean Fisheries Program.[534] However, it has been argued that scientific committees/bodies in RFMOs like the IOTC and the WCPFC have limited capacity and authority to assess and coordinate all research on fisheries impacts to ecosystems, thus hindering comprehensive implementation of ecosystem based fisheries management.[535]

Similarly, the ASEAN, COBSEA, and CTI-CFF that operate within EEZ waters in the SEA region are to also consider scientific advice in implementing their work programs,[536] although have variations for scientific institutional design. The ASEAN have established committees and institutions to provide scientific advice in developing common policy and guidelines for management of marine biodiversity and fisheries within the SEA, namely: ASEAN Sub Committee on Marine Science and Technology[537], SEAFDEC[538], and ACB[539]. While the COBSEA and the CTI-CFF does not have a dedicated body to perform scientific advice, but most science and assessment activities are conducted through projects or cooperation with other institutions.[540] In general, the SEA region has limited capacity in science and research to support

[534] The Western Central Pacific Fisheries Commission (WCPFC), 'WCPFC SPC-OFP Revised Memorandum of Understanding | WCPFC' (2019) <https://www.wcpfc.int/doc/wcpfc-spc-ofp-revised-memorandum-understanding>. Secretariat of the Pacific Community-Ocean Fisheries Program provides scientific assessment on ecology and bycatch to the WCPFC.

[535] Juan-Jordá et al (n 143).

[536] ASEAN (n 547) See para 10; The United Nations Environment Program (UNEP) (n 498) See section II; The Coral Triangle Initiative on Coral Reefs, 'The Coral Triangle Initiative Leaders' Declaration on Coral Reefs, Fisheries and Food Security' (n 556) See RPOA Guiding Principles #2

[537] The ASEAN Secretariat, 'Sub-Committee on Marine Science and Technology (SCMSAT)' *ASTNET* <https://astnet.asean.org/sub-committee-on-marine-science-and-technology-scmsat/>.

[538] The Southeast Asian Fisheries Development Centre (SEAFDEC) (n 488). SEAFDEC provides research and scientific advice on fisheries management for ASEAN member states.

[539] The ASEAN Centre for Biodiversity (ACB), *About ACB | ACB | ASEAN Centre for Biodiversity* (n 488). The ACB manages ASEAN Clearing House Mechanism that provides platform for information exchange on biodiversity conservation and management within the SEA region.

[540] The Coordinating Body on the Seas of East Asia (COBSEA), 'Governance, Resource Mobilization and Partnerships' <https://www.unep.org/cobsea/what-we-do/governance-resource-mobilization-and-partnerships>.

policy and action on marine biodiversity conservation and fisheries management.[541] Nevertheless, the SEA States have participated in the Ecologically and Biologically Significant Marine Areas (EBSAs) regional workshops in East Asian Seas[542], North Indian Ocean[543], and Southern Indian Ocean[544] which describe EBSAs in the Indian Ocean (Olive Ridley Sea Turtle Migratory Corridor in the Bay of Bengal, Upwelling Zone of the Sumatra-Java Coast, and Central Indian Ocean Basin) and Western Central Pacific Ocean (Kyushu Palau Ridge).

Decision making, implementation, and monitoring and review

Proposed provisions in the further revised draft text of BBNJ agreement indicate roles for the COP, States Parties, and relevant global, regional, and sectoral organizations in decision making, implementation, and monitoring and review of ABMTs including MPA measures.

Applying those proposed provisions to the SEA region and adjacent ABNJ, it is apparent that the IOTC and WCPFC would have a central role in supporting the implementation of ABMTs including MPAs since they are the only organisations that have mandate in ABNJ. As pointed out by Gjerde et al., regional organizations will play an important role in the effective implementation of the BBNJ Agreement, provided there is a mechanism to improve cooperation and coordination with and among regional organizations.[545] This has been recognized in numerous proposed provisions in the further revised draft text agreement especially article 48(5c) which states the COP shall promote cooperation and coordination with and among relevant global, sectoral, and regional

[541] Julian Clifton, ócomment Science, Funding and Participation: Key Issues for Marine Protected Area Networks and the Coral Triangle Initiativeô (2009) 36(2) *Environmental Conservation* 91 <https://doi.org/10.1017/S0376892909990075>; The Southeast Asian Fisheries Development Center (SEAFDEC) (n 34); The ASEAN Centre for Biodiversity (ACB), óASEAN Biodiversity Outlook 2ô (n 39); STIMSON (n 399).

[542] The United Nations Convention on Biological Diversity (UNCBD), *UNEP/CBD/EBSA/WS/2015/3/4. Report of the Regional Workshop to Facilitate the Description of Ecologically or Biologically Significant Marine Areas in the Seas of East Asia* (2016).

[543] The United Nations Convention on Biological Diversity (UNCBD), *UNEP/CBD/EBSA/WS/2015/1/4. Report Of the North Indian Ocean Regional Workshop to Facilitate the Description of Ecologically or Biologically Significant Marine Areas* (16 March 2016).

[544] The United Nations Convention on Biological Diversity (UNCBD), *UNEP/CBD/RW/EBSA/SIO/1/4. Report of the Southern Indian Ocean Regional Workshop to Facilitate the Description of Ecologically or Biologically Significant Marine Areas* (26 June 2013) <https://www.cbd.int/doc/meetings/mar/ebsasio-01/official/ebsasio-01-04-en.pdf>.

[545] K Gjerde et al, *Conservation and Sustainable Use of Marine Biodiversity in Areas Beyond National Jurisdiction: Options for Underpinning a Strong Global BBNJ Agreement through Regional and Sectoral Governance* (2018) <www.prog-ocean.org/our-work/strong-high-seas/>.

organisations.[546] Several scholars argue that one of the mechanisms to promote cooperation is

with MPA measures (article 20(1)), or promote the adoption of such measures within regional/sectoral organizations of which they are members (article 20(4)). This could be conducted through utilizing regional organizations such as ASEAN. Although the programmes of these organizations are limited to areas within national jursdiction, improving member States implementation on such programmes could support ABMTs including MPAs measures in ABNJ. For example, ASEAN through SEAFDEC are implementing regional initiatives to support sustainable fisheries management which include: the ASEAN Guidelines for Preventing the Entry of IUU Fish and Fishery Products into the Supply Chain, implementing Port States Measure Agreement in the SEA region, and Regional Plan of Action to Promote Responsible Fishing Practices including Combating Illegal, Unreported and Unregulated Fishing in the Region (RPOA-IUU),[552] Strengthening implementation of these initiatives by the SEA States could ensure that fishing vessels flying their flags in the high seas act consistently with MPA measures that are established in the Indian Ocean or the Western Central Pacific Ocean.

Other discussion regarding

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sources (article 3).[561] Later in 1998 through the OSPAR Ministerial Meeting in Sintra, Annex V on the Protection and Conservation of the Ecosystems and Biological Diversity of the Maritime Area was adopted.[562] Although Annex V does not specifically mention MPAs, the 1998 Sintra Ministerial Statement provides more clarity on establishing MPA networks and it was listed as one of the strategies to conserve marine biodiversity in the OSPAR maritime area.[563] Therefore, Annex V provides a legal basis for OSPAR to establish MPAs in its maritime area.

Annex V sets out further obligation for parties, commission duties, and mandate limitations related to the protection and conservation of marine biodiversity. Article 2 of Annex V requires parties to take necessary measures and to cooperate to protect and conserve ecosystems and biodiversity.[564] Article 3 of Annex V lays out OSPAR commission duties that include collecting information on

ABNJ.[568] Among the guidelines are Recommendation 2003/3 which recommends parties: to identify MPAs in ABNJ (section 3.1); and to develop a management plan and identify suitable measures to be implemented that may lie within the competence of relevant organizations or frameworks (section 3.2).[569] These non-binding guidelines are viewed by Maltz and Fuchs as OSPARôs approach to addressing its mandate limitations and providing binding management measures on certain activities in MPAs in ABNJ.[570]

Clearly, OSPAR is expanding the scope of its mandate from pollution prevention to marine biodiversity conservation through the establishment of MPA networks. OSPAR also acknowledges its limited competence to regulate activities in MPA in ABNJ (e.g. fish) and has addressed this issue through the adoption of binding recommendations which encourage parties to work with organizations that have competence in such activities. The OSPAR example could provide an incentive for other regional organizations in the study area to expand their mandate to establish MPAs in ABNJ. Regional organizations in the study area may combine binding and non-binding approaches to overcome the limitations of their respective mandates to designate and manage MPAs in ABNJ. For example, utilizing Article 19bis(1) of BBNJ further revised draft text agreement, ASEAN through non-binding decisions may encourage its member states to support the establishment of ABMTs or MPAs in the Indian Ocean or the Western Central Pacific Ocean. Further, following Article 20(1) of the further revised draft text of BBNJ agreement, ASEAN through binding decisions in relation to ABNJ.

subsequently transformed into a Collective Arrangement to accommodate wider involvement of institutions that are competent to manage human activities in ABNJ i.e. the IMO and ISA.[578]

The Collective Arrangement serves as a multilateral forum for dialogue and exchange of information which aims to foster cross-sectoral cooperation and coordination between competent organizations. Notable result of the collective agreement is management of fishing activities in OSPAR MPAs that overlap with NEAFC bottom fishing closures areas[579], thus filling the gap in OSPAR mandate to manage fishing activities. However, to date neither the IMO and ISA are adopting the collective agreement which resulting in not all management measures can be implemented in OSPAR high seas MPAs.[580]

Lessons learnt from the OSPAR experience that can be useful for regional organizations in the study area is regional organizations need to initiate communication and raise awareness on the MPA measures to other competent organizations in ABNJ. This can be done through MoUs with relevant organizations. MoUs allow the presence of each representative in regular meetings between the two organizations, thus increasing understanding on each organizations work and interests. Although a MoU is not legally binding, it can be upgraded into a formal agreement between competent organizations. Formal agreement may facilitate joint activities such as data and information collection, management of fishing activities, and developing standards and procedures for human activities that can support and complement measures on ABMTs including MPAs. Further, a formal agreement can fill the competency gap of a regional organization in managing MPAs in ABNJ. Further revised draft text of the BBNJ agreement provides roles for COP (OMCIDDDDDDDDDDDDDDD tijas a 9-tz30 0 1 7-tz30p(c)4rtie aashin4(s)-20(in)-21(ABNJ.)-19(Th

to ensure protection of the Pelagos Sanctuary. For instance, GFCM forbid towed dredges and bottom trawl nets fishing in the sanctuary, and shipping companies encouraged usage of the real time plotting of cetaceans (REPCET) system to avoid collisions.[600] In addition, the permanent secretariat was established in 2006 with aims to ensure that the Pelagos agreementôs objectives and resolutions were being implemented, and facilitate coordination between parties, agreement bodies, and local municipalities that surround the sanctuary.[601]

The Pelagos Sanctuary provides valuable lessons on scaling up initiatives on marine mammal protection by three countries to be widely recognized by other states in the region. France, Italy, and Monaco were leveraging their membership in SPA/BD and ACCOBAMs instruments to advance regional recognition of the Pelagos Sanctuary in such instruments. It showcased leadership and political will from the three countries in promoting cooperation with other regional and international organizations to ensure conservation and protection of cetaceans in the Pelagos Sanctuary.

coast between Marseille in France and La Spezia in Italy; UNEP/MAP: Mediterranean Action Plan developed as a result ofthe 1975 Barcelona Convention, under the framework of the United Nations Environment Program

[600] Wright, Rochette and Druel (n 30).

[601] The Pelagos Sanctuary Secretariat, ôPermanent Secretariatô <https://www.sanctuaire-pelagos.org/en/about-us/permanent-secretariat>.

Recommendations and conclusions

Recommendations to strengthen regional cooperation to support ABMTs including MPAs implementation in Southeast Asia and adjacent ABNJ

The foregoing analysis has highlighted challenges faced by regional organizations in the study area and lessons learned from other regions in implementing MPAs in ABNJ. Accordingly, this section will provide suggestions to strengthen regional organizations in the study area to support implementation of measures on ABMTs including MPAs.

Overcoming mandate and competence gaps

As discussed above, regional organizations in the study area have varied and limited mandates in ABNJ. The IOTC and WCPFC have mandates in ABNJ but its competence only relate to regulating tuna and other migratory species fisheries, respectively. While East Asian Seas RSP, ASEAN, and CTI-CFF mandates are only applied for AWNJ. There are two options to overcome this mandate gap. The first option is to expand the mandate and competence of these organizations to cover ABNJ and ecosystem based management. In recent years there has been calls to expand the mandates and competences of regional organizations to cover activities in ABNJ. The UN Environmental Assembly resolution in 2016 encouraged parties of the regional seas convention to consider possibilities of increasing coverage of RSP to ABNJ according to international law.[602] Similarly, the UNFSA review conference in 2016 also called RFMOs to expand species and geographic coverage gap.[603] This was also acknowledged in the 2nd performance review report of the IOTC and WCPFC that asked both RFMOs to extend their mandates to adopt more conservation biodiversity protection measures.[604] Expanding the mandates would make regional organizations

expertise to the government instructed to conduct analysis. For example partnership between the Global Fishing Watch with Indonesia in 2017 on analysis of Indonesian Vessel Monitoring System (VMS) data for improvement in fisheries enforcement.[616] These new developments in ocean monitoring technology can be useful to monitor and review ABMTs including MPAs measures implementation in the SEA region and adjacent ABNJs. Therefore, the BBNJ Agreement should provide means to ensure there is capacity building and technology transfer for developing countries to enable them to better conserve marine biodiversity in ABNJ and their adjacent EEZs.

Start to design comprehensive network of MPAs and ABMTs

ABNJ. Efforts to address such issues are ongoing through the negotiation of a global framework to establish and implement measures on ABMTs including MPAs under the BBNJ agreement.

To this end, this thesis has reviewed the BBNJ agreement text in particular on ABMTs including MPAs, and identified possible relation and future cooperation between BBNJ agreement organs and existing relevant international, regional, and sectoral bodies in implementing MPAs in ABNJ. Such review are proven useful when applied in the Southeast Asia regional context with a view to build a cooperation scenario between existing regional organizations and BBNJ institutions for the implementation of measures on ABMTs including MPAs.

Certainly, assessment of marine areas in the SEA region and adjacent ABNJ i.e. Indian Ocean and Western Central Pacific Ocean showed that these areas contain rich biodiversity features which provide livelihoods for residing communities in the SEA region. It indicates that there are ecological connectivity and interdependency between these areas, and they are under increasing anthropogenic threats. Therefore, cooperation and coherence in marine biodiversity conservation and management among states in these regions are necessary. Accordingly, this research observed that through participation in global, sectoral, and regional instruments/bodies, most States in the SEA region show commitment and political will to manage marine biodiversity in the SEA region and adjacent ABNJ. Such organizations are observed to have relevant measures or policies on ABMTs including MPAs.

Part of this thesis also have highlighted limitations of mandates and competencies of selected regional organizations namely, IOTC, WCPFC, COBSEA, ASEAN, and CTI-CFF to implement ABMTs including MPAs under the BBNJ. d d (e)4(e0000912(rve)7(d)-9( )] TJ ET Q q 0.00000912 0 61

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