Developing area-based management tools in areas beyond national jurisdiction: possible scenarios for the Western Indian Ocean

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Context of the report

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List of abbreviations

ABNJ	Areas Beyond National Jurisdiction
APEI	Areas of Particular Environmental Interest
APM	Associated Protective Measure
BPA	Benthic Protected Areas
CBD	Convention on Biological Diversity
CCAMLR	Convention for the Conservation of Antarctic Marine Living Resources
CORDIO	Coastal Oceans Research and Development in the Indian Ocean
CPPS	Permanent Commission for the South Pacific
DOALOS	Division of the Ocean Affairs and the Law of the Sea
EBSA	Ecologically or Biologically Significant Area
EEZ	Exclusive Economic Zone
GFCM	General Fisheries Commission of the Mediterranean
HSBFC	High Seas Bottom Fisheries Closure
ICCAT	International Commission for the Conservation of Atlantic Tunas
IMO	International Maritime Organisation
IOTC	Indian Ocean Tuna Commission
ISA	International Seabed Authority
MEPC	Marine Environment Protection Committee
MoU	Memorandum of Understanding
MPA	Marine Protected Area
NEAFC	North East Atlantic Fisheries Commission
NGO	Non-Governmental Organisation
PSSA	Particularly Sensitive Sea Area
RFMO	Regional Fisheries Management Organisation
SAI	Serious Adverse Impacts
SIODFA	Southern Indian Ocean Deep Sea Fishers Association
SIOFA	South Indian Ocean Fisheries Agreement
SPAMI	Specially Protected Area of Mediterranean Importance
UNCLOS	United Nations Convention on the Law of the Sea

UNCLOS IA	Implementing Agreement to the United Nations Convention on the Law of the Sea on the conservation and sustainable use of marine biodiversity in areas beyond national jurisdiction
UNEP	United Nations Environmental Programme
UNGA	United Nations General Assembly
VME	Vulnerable Marine Ecosystem
WIO	Western Indian Ocean
WIO-C	Consortium for the Conservation of Coastal and Marine Ecosystems in the Western Indian Ocean
WIO-CC	Western Indian Ocean Coastal Challenge
WIOMSA	Western Indian Ocean Marine Science Association

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1. INTRODUCTION

1.1 Background

Marine areas beyond national jurisdiction (ABNJ)[1] represent around half of the Planet's surface and host a significant portion of its biodiversity. These areas are under increasing pressure from intensifying human activities, with impacts including: overexploitation of living marine resources, especially fisheries (Bensch et al., 2009; Merrie et al., 2014); destruction of habitats (Pusceddu et al., 2014); effects of climate change and ocean acidification (Hoegh-guldberg, 2010; Riebesell and Gattuso, 2014); pollution of the marine environment (Ramirez-Llodra et al., 2011); and emergence of threats linked to deep-sea mining (Halfar and Fujita, 2007) and geo-engineering (Boyd, 2013; Lukacs, 2012). At the same time, exploitation of the rich genetic resources in ABNJ is increasing (Broggiato et al., 2014; Leary, 2011) and raises concerns, especially on equity issues (Broggiato, 2013).

In recent years, the international community has become increasingly aware of the growing threats to marine biodiversity in ABNJ. To address this issue, the United Nations General Assembly (UNGA) created an Ad-Hoc Open-ended Informal Working Group ("BBNJ Working Group"[2]) to discuss the conservation and sustainable use of marine biodiversity in ABNJ. Since the commencement of discussions in 2006, the focus has mainly been on weaknesses and gaps in the current international framework and whether these necessitate the adoption of a new instrument (Druel et al., 2013). In particular, States have discussed the possible adoption of an Implementing Agreement to the United Nations Convention on the Law of the Sea (UNCLOS) on the conservation and sustainable use of marine biodiversity in ABNJ (UNCLOS IA) (Druel and Gjerde, 2014). At the 2012 United Nations Conference on Sustainable Development ("Rio+20"), States agreed to decide by the end of the 69th session of the UNGA (i.e. by September 2015) whether or not to launch the negotiations for the conclusion of such a new global agreement[3]. At the ninth meeting of the BBNJ Working Group, held on 20-23 January 2015, States finally took the historic step of recommending to the UNGA that it open negotiations in 2016 for a legally-binding instrument under UNCLOS (Rochette et al., 2015). This recommendation must now be adopted by the UNGA by September 2015, if it is to meet the deadline set by States at Rio+20.

In parallel, some regional organisations have progressively extended their activities into ABNJ (Druel et al., 2012; Rochette et al., 2014). In particular, some Regional Seas programmes also developed specific initiatives to conserve marine biodiversity in ABNJ, particularly through the creation of Marine Protected Areas (MPAs) (Rochette et al., 2014). Moreover, Regional Fisheries Management Organisations (RFMOs) are required by UNGA

[1] According to the United Nations Convention on the Law of the Sea, ABNJ encompass the high seas and the Area. The high seas are "all parts of the sea that are not included in the exclusive economic zone, in the territorial sea or in the archipelagic waters of an archipelagic State" (Article 86). The Area is "the seabed and ocean floor and subsoil thereof, beyond the limits of national jurisdiction" (Article 1-1(1)).

[2] *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.

[3] UNGA Resolution A/66/288, The future we want, §162.

Resolutions 61/105 (2006) and 64/72 (2009) to take specific actions to regulate high seas bottom fisheries, including to close areas of the high seas to bottom fishing activities where there is likely to be significant adverse impacts to vulnerable marine ecosystems (VMEs) (Wright et al., 2014). To be efficient and comprehensive, these regional initiatives need to be coordinated among themselves (Rochette et al., 2014), but also with the various international organisations which have a mandate covering ABNJ (Ardron et al., 2014), especially the International Maritime Organisation (IMO) and the International Seabed Authority (ISA).

1.2 Governance of areas beyond national jurisdiction in the Western Indian Ocean

As highlighted by Galletti and Leroy (2015) there are many organisations, mechanisms and projects which are dedicated to the conservation and sustainable use of marine biodiversity in the Western Indian Ocean (WIO). These include, e.g., the Nairobi Convention for the protection, management and development of the marine and coastal environment of the Western Indian Ocean; Regional Fisheries Bodies such as the Indian Ocean Tuna Commission (IOCT) and the Southern Indian Ocean Fisheries Agreement (SIOFA); the Indian Ocean Commission; the Consortium for the Conservation of Coastal and Marine Ecosystems in the Western Indian Ocean (WIO-C); the Western Indian Coastal Challenge (WIO-CC); projects developed within the framework of the Western Indian Ocean Marine Science Association (WIOMSA) or the Coastal Oceans Research and Development in the Indian Ocean (CORDIO), etc. However, very few of these organisations, mechanisms and projects are currently addressing issues related to the conservation and sustainable use of marine biodiversity in ABNJ.

1.3 Objective of the report

This report aims to stimulate discussion on possible ways for WIO stakeholders to engage in the governance of ABNJ, particularly through area-based management tools. To this end, it identifies approaches developed in different regions of the world (Section 2) and highlights key issues to be discussed in the WIO for considering actions in ABNJ (Section 3).

2. APPROACHES FOR THE DEVELOPMENT OF AREA-BASED MANAGEMENT TOOLS IN ABNJ AT THE REGIONAL LEVEL

2.1. Approach based on regional organisations

2.1.1. Marine protected areas within Regional Seas programmes

The United Nations Conference on the Human Environment (Stockholm, 1972) led to the creation of the United Nations Environmental Programme (UNEP) "to serve as a focal point for environmental action and coordination within the United Nations system".[4] At its first session, UNEP made the oceans a priority action area,[5] and its Regional Seas programme (RSP) was then initiated in 1974. As of today, almost 150 States across 18 regions participate in this programme (Rochette and Chabason, 2011).

Some Regional Seas have progressively extended their activities to ABNJ. As of today, four areas are covered by a Regional Sea with a specific mandate in ABNJ: the Mediterranean through the Barcelona Convention,[6] the Southern Ocean through the Convention for the Conservation of Antarctic Marine Living Resources (CCAMLR),[7] the North-East Atlantic through the OSPAR Convention[8] and the South Pacific through the Nouméa Convention.[9]

Three Regional Seas have already developed specific actions in ABNJ, through the creation of Marine Protected Areas (MPAs). In the Mediterranean, the Pelagos Sanctuary for marine mammals was created in 1999 by France, Italy and Monaco (see 2.2.1). The Pelagos Sanctuary was recognised as a Specially Protected Area of Mediterranean Importance (SPAMI) in 2001 (Scovazzi, 2011)[10]. This Sanctuary incorporates the territorial waters of these three States, but also ABNJ.[11] In the Southern Ocean, CCAMLR endorsed in 2009 a roadmap established by its Scientific Committee in order to fulfil the international requirements to establish a coherent and representative network of MPAs by 2012. The same year, CCAMLR adopted its first MPA on the South Orkney Islands continental shelf.[12] In

[4] UNGA, Resolution 2997 (XXVII), 15 December 1972.
[5] UNEP, Report of the governing council on the work on its second session, 11-22 March 1974, United Nations, New York, Decision 8(II).
[6] Convention for the Protection of the Marine Environment and the Coastal Region of the Mediterranean, 1995.
[7] Convention on the Conservation of Antarctic Marine Living Resources, 1980.
[8] Convention for the Protection of the Marine Environment of the North-East Atlantic, 1992.
[9] Convention for the Protection of the Natural Resources and Environment of the South Pacific Region, 1986.
[10] UNEP/MAP. Report of the twelfth ordinary meeting of the Contracting Parties to the Convention for the protection of the Mediterranean Sea against pollution and its protocols, Monaco, 14-17 November, 2001,UNEP(DEC)/MED IG.13/8, 30 December 2001, Annex IV.
[11] The situation of the Mediterranean Sea is particular in that there is no point located at a distance of more than 200 nautical miles from the closest land or island. Therefore, "any waters beyond the limits of national jurisdiction (high seas) would disappear if all the coastal States decided to establish their own exclusive economic zones (EEZ)" (Scovazzi, 2011). Despite an increasing phenomenon of jurisdictionalisation, this is not the case so far: there is still ABNJ in the Mediterranean Sea because some States did not declare EEZ, because others declared Ecological Protection Zones or Fisheries Protection Zones, and because there are "grey zones" where States' declarations overlap (UICN 2010).
[12] CM 91-03 (2009), Protection of the South Orkney Islands Southern Shelf, §1.

the North East Atlantic, Contracting Parties to the OSPAR Convention established in 2010 a network of 6 MPAs in ABNJ (O'Leary et al., 2012).[13] OSPAR agreed a seventh MPA in 2012 (Freestone et al., 2014).[14]

Initiatives conducted in these three regions have inspired other Regional Seas programmes to expand into ABNJ. In the South Pacific, the Permanent Commission for the South Pacific (CPPS) adopted in 2012 the Galapagos Declaration, in which signatories committed to promote a coordinated action "regarding their interests on living and non-living resources in marine areas beyond national jurisdiction".[15] More recently, Contracting Parties to the Abidjan Convention for Cooperation in the Protection, Management and Development of the Marine and Coastal Environment of the Atlantic Coast of the West, Central and Southern Africa Region agreed in 2014 "to set up a working group to study all aspects of the conservation and sustainable use of marine biological diversity beyond areas of national jurisdiction within the framework of the Abidjan Convention".[16]

These regionally-led initiatives in ABNJ are of interest for a number of reasons. Such initiatives make it possible to advance governance of ABNJ while the international process to establish an UNCLOS IA is on-going. They also help to raise awareness of the importance of conserving marine biodiversity in ABNJ, and can lead to the development of scientific knowledge and management tools. However, such initiatives suffer from important limitations. In particular, regional initiatives are only binding for Contracting Parties to the regional organisation: there is no mechanism for the creation of internationally-recognised legally-binding MPAs. Moreover, since Regional Seas have no mandate for the regulation of many activities – e.g. fishing, navigation, seabed mining – cooperation and coordination with relevant global and regional organisations is needed.

To address this challenge, the OSPAR Commission has developed and proposed a "Collective Arrangement between competent authorities on the management of selected areas in ABNJ in the North-East Atlantic", that is underpinned by a set of more formal Memoranda of Understanding (MoUs) with the relevant sectoral management organisations (Johnson, 2013; Matz-Lück and Fuchs, 2014). Although not a legally binding instrument, the Collective Arrangement seeks to foster commitment to cooperate and to coordinate information exchange in the development and implementation of appropriate measures for the conservation and management of certain areas that would be selected by the different organisations. So far the OSPAR Commission and the North East Atlantic Fisheries Commission (NEAFC) have endorsed the Collective Arrangement. Although interesting and promising in many ways, it is "time- and labour- intensive, particularly in the global bodies, IMO and ISA, to move such an idea forward, with organisations' different levels of technical

[13] OSPAR Decisions 2010/1-6; OSPAR Recommendations 2010/12-17.

[14] OSPAR Commission, 2012 Status Report on the OSPAR Network of Marine Protected Areas (2013), <www.ospar.org/documents/dbase/publications/p00618/p00618_2012_mpa_status%20report.pdf>

[15] Commitment to Galapagos for the XXI Century, Permanent Commission for the South Pacific, VIII Meeting of Ministers of Foreign Affairs, Puerto Ayora, Galápagos, Ecuador, 17 August 2012.

[16] Decision CP 11/10.

scrutiny and sometimes complex and mutually incompatible annual meeting cycles" (Freestone et al., 2014).

Key points

Four Regional Seas programmes currently have a mandate covering ABNJ and three have already established MPAs.

These regional initiatives make it possible to: advance ABNJ governance while the UNCLOS IA negotiations are ongoing; raise awareness around the importance of conserving marine biodiversity in ABNJ; and develop scientific knowledge and management tools.

Regionally-led MPAs in ABNJ are only binding on Contracting Parties to regional organisations or on other States or bodies on a voluntary basis.

Cooperation and coordination with other competent international and regional organisations is a major issue. Experience from OSPAR shows that it requires a strong investment (human and financial) from the Secretariat to enter into collaboration with other institutions.

2.1.2 High seas bottom fisheries closures established by Regional Fisheries Management Organisations

Fishing is one of the greatest threats to marine biodiversity in ABNJ. Bottom fishing in particular causes significant impacts on deep-sea ecosystems (Pusceddu et al., 2014), damaging or destroying long-lived species, reducing the complexity of the seabed, and decreasing species diversity and faunal biomass (Althaus et al., 2009; Reed, John et al., 2005; Watling and Norse, 1998). Bottom trawling is generally considered to be the most destructive method as it involves dragging heavy fishing gear across the seabed, but harm can result from all bottom-contact fishing methods (FAO, 2008).

The management of fisheries has long been the subject of intensive debate, though in recent years deep-sea fisheries in ABNJ have been a particular focus at the UNGA and other forums.[17] In 2004, the UNGA called for urgent action and to consider on a case-by-case basis the interim prohibition of destructive fishing practices in ABNJ until appropriate conservation and management measures had been adopted.[18] In 2006, the UNGA adopted a more detailed resolution to ensure the long-term sustainability of deep-sea fish stocks that required specific measures to protect vulnerable marine ecosystems (VMEs) from the

[17] For example, the issue has also been raised at meetings of the Conference of the Parties to the Convention on Biological Diversity (CBD), beginning in 2004 at CBD COP-7. In 2010, COP-10 adopted Decision X/29 that called on States and RFMOs to comply with the relevant international instruments (paragraph 54).

[18] United Nations General Assembly, Resolution 59/25 (2004), Sustainable fisheries, including through the 1995 Agreement for the Implementation of the Provisions of the United Nations Convention on the Law of the Sea of 10 December 1982 relating to the Conservation and Management of Straddling Fish Stocks and Highly Migratory Fish Stocks, and related instruments.

serious adverse impacts (SAIs) of bottom fisheries in ABNJ.[19] The Resolution called on RFMOs to take specific actions to regulate high seas bottom fisheries, including to close areas of the high seas to bottom fishing activities where there is likely to be significant adverse impacts to VMEs. Over 30 such closures are now in place (Wright et al., 2014).[20]

Assessments conducted by civil society, the scientific community and the UNGA have highlighted that implementation gaps remain, and despite increased engagement with these issues, a number of RFMOs are not yet fully implementing the UNGA resolutions to protect high seas biodiversity in the deep ocean (Wright et al. 2014; DSCC 2011; Weaver et al. 2011; Rogers & Gianni 2010).

Key points

RFMOs can respond to global calls to protect ecosystems, but their response to date has been weaker than is necessary to protect marine biodiversity in ABNJ.

While some positive outcomes provide examples of good practice, much remains to be done if the full intent of the UNGA resolutions is to be realised.

2.2. Coalition-based approach

2.2.1. The Pelagos Sanctuary

In 1999, France, Italy and Monaco established the Pelagos Sanctuary for Mediterranean Marine Mammals to protect the eight resident cetacean species in the area.[21] The Sanctuary incorporates the territorial waters of these three States, but also ABNJ. Entered into force in 2002, the Agreement seeks to coordinate initiatives to protect cetaceans and their habitats from all sources of disturbance, including pollution, noise, accidental capture and injury, and disruption.[22] In 2001, the Sanctuary was recognised as a SPAMI by the Parties to the Protocol concerning specially protected areas and biological diversity in the Mediterranean, adopted

[19] United Nations General Assembly. Resolution 61/105 (2006), Sustainable fisheries, including through the 1995 Agreement for the Implementation of the Provisions of the United Nations Convention on the Law of the Sea of 10 December 1982 relating to the Conservation and Management of Straddling Fish Stocks and Highly Migratory Fish Stocks, and related instruments.

[20] Following a review of progress, the UNGA adopted another resolution in 2009, which recalled the importance of resolution 61/105 and further called upon States to "(…) to implement the 2008 International Guidelines for the Management of Deep-sea Fisheries in the High Seas of the Food and Agriculture Organization of the United Nations in order to sustainably manage fish stocks and protect vulnerable marine ecosystems (…)": United Nations General Assembly. Resolution 64/72 (2008), Sustainable fisheries, including through the 1995 Agreement for the Implementation of the Provisions of the United Nations Convention on the Law of the Sea of 10 December 1982 relating to the Conservation and Management of Straddling Fish Stocks and Highly Migratory Fish Stocks, and related instruments.

[21] Agreement concerning the creation of a marine mammal sanctuary in the Mediterranean, adopted in Rome, Italy, 25 November 1999.

[22] See <http://www.sanctuaire-pelagos.org/en/about-us/presentation>

within the framework of the Barcelona Convention.[23] This means that all Contracting Parties to this Protocol must abide by the regulations adopted for the Sanctuary.

A joint management plan of the Sanctuary was approved in 2004 and additional steps have been taken to ensure the protection of marine mammals in the area. The General Fisheries Commission of the Mediterranean (GFCM) has closed the Sanctuary to fishing with towed dredges and bottom trawlnets.[24] The Italian Navy has refrained from conducting naval exercises in the area, and the Italian Ministry of the Environment discontinued discharge of certain wastes in Sanctuary waters. A few shipping companies have also accepted to use the REPCET system to avoid collisions with cetaceans[25], and the founding States are discussing the opportunity to seeking recognition as a Particularly Sensitive Sea Area (PSSA – see below) (Mangos and André, 2008; Mayol et al., 2013). Concerns are however regularly expressed on the management and conservation tools developed in the Sanctuary (Notarbartolo-di-Sciara et al., 2008).

Key points

The Pelagos Sanctuary serves as an example of an incremental approach in which some States first establish a spatial protective measure though a multilateral agreement outside a competent organisation, later seeking formal endorsement e.g. through a Regional Seas programme. It also demonstrates that an initiative from a limited number of States can be decisive.

2.2.2.The Sargasso Sea Alliance

In the Sargasso Sea, there is no Regional Seas programme and no broad-based RFMO covers the region.[26] The only land in this area is Bermuda,[27] a British overseas territory. Despite lacking a defined regional governance framework, there have nonetheless been concerted efforts to establish area-based management tools in the area.

The Sargasso Sea Alliance, a partnership between the Government of Bermuda, non-governmental organisations (NGOs), scientists and private donors, was launched in 2011. It aimed to establish a management regime, use existing instruments to secure protection of the Sargasso Sea, and act as an example of what can and cannot be delivered through

[23] UNEP/MAP, Report of the twelfth ordinary meeting of the Contracting Parties to the Convention for the protection of the Mediterranean Sea against pollution and its protocols, Monaco; 14-17 November, 2001,UNEP(DEC)/MED IG.13/8, 30 December2001, Annex IV.

[24] REC-GFCM/30/2006/3. There are no particular regulations for pelagic fishing.

[25] See <http://www.repcet.com/docs/SE_2014_01_03_Pres-REPCET_en.pdf>

[26] The International Commission for the Conservation of Atlantic Tunas (ICCAT) is the only competent RFMO in the region: its area of competence covers a much greater area than the Sargasso Sea alone, and it is only responsible for the conservation of tunas and tuna-like species. The NAFO regulatory are may overlap very slightly with Sargasso Sea, but this is insignificant.

[27] Interestingly, Bermuda is also engaged in the establishment of a proposed marine reserve that will encompass much of its EEZ. See <www.bermudabluehalo.org>

existing institutions in ABNJ (Freestone et al., 2014).[28] In March 2014, the Hamilton Declaration on Collaboration for the Conservation of the Sargasso Sea was adopted and signed by Bermuda, Azores, Monaco, the United Kingdom (UK) and the United States.[29] The Hamilton Declaration is a non-binding agreement to collaborate to pursue conservation measures through existing regional and international organisations. It creates new institutional arrangements, including regular meetings of the signatories, the establishment of a Secretariat, and the creation of a scientific advisory body, i.e. the Sargasso Sea Commission. The Declaration also considers funding modalities and establishment of a financial mechanism, including a trust. According to the Declaration, the Commission will develop proposals for submission to competent regional and international bodies.

Bermuda, with the support of the Alliance, has already submitted information regarding the Sargasso Sea for its potential designation as an Ecologically or Biologically Significant Area (EBSA) under the Convention on Biological Diversity (CBD).[30] A range of additional actions for advancing the conservation of this region is currently being considered by the Commission. These options include: recognition of the Sargasso Sea as a UNESCO World Heritage Site (Abdulla et al., 2013); regulation of tuna fishing activities that may have adverse impacts on the marine environment through the International Commission for the Conservation of Atlantic Tunas (ICCAT);[31] regulation of navigation through IMO, possibly through the designation of a PSSA with associated protective measures;[32] coordination and cooperation with ISA with respect to mining activities; and initiation of coordination and cooperation with relevant actors (Morrison and Freestone, 2014).[33]

Key points

Initiatives for the governance of ABNJ are possible in the absence of a competent regional authority.

The Sargasso Sea experience also shows that initiatives to conserve and sustainably manage marine biodiversity in ABNJ can come from a coalition of stakeholders, including NGOs.

Cooperation and coordination with competent international and regional organisations however remains an important challenge.

[28] Sargasso Sea Alliance website: <http://www.sargassoalliance.org/about-the-alliance>

[29] Five international and regional organisations also participated as Observers: OSPAR; ISA; the Inter-American Convention for the Conservation of Atlantic Sea Turtles, the CMS; and IUCN.

[30] Decision Adopted by the Conference of the Parties to the Convention on Biological Diversity at its Eleventh Meeting, XI/17. Marine and Coastal Biodiversity: Ecologically or Biologically Significant Marine Areas, UNEP/CBD/COP/DEC/XI/17, p.23, item 13.

[31] The UK is a member of ICCAT.

[32] Again this would have to be carried out in conjunction with the UK as Bermuda is not a member of IMO.

[33] Through a collective arrangement or agreement, either based on the OSPAR model or an international Declaration or Agreement modelled on the 1999 Titanic Agreement.

2.3. Approach based on area-based management measures adopted by international sectoral organisations

2.3.1. Particularly Sensitive Sea Areas

The International Maritime Organization (IMO) is the United Nations specialised agency with responsibility for the safety and security of shipping and the prevention of marine pollution by ships. The IMO provides the framework for governments to cooperate on the adoption of minimum standards for shipping activities. In addition to global regulations, IMO member States can also designate areas where particular regulations apply to protect the marine environment from the environmental impacts of navigation and marine pollution. Such areas are called Particularly Sensitive Sea Areas (PSSAs) (Roberts et al., 2010).

The Revised Guidelines for the Identification and Designation of Particularly Sensitive Areas define a PSSA as an area that requires special protection due to its significance for recognized ecological, socio-economic or scientific reasons and which may be vulnerable to damage by international shipping activities.[34] To be successful, a proposal must fulfil three criteria: (i) the area must meet at least one of the criteria listed by the Guidelines; (ii) the area must be vulnerable to damage by international shipping activities; (iii) there must be measures that can be adopted by IMO to provide protection to the area from these specifically identified international shipping activities (the so-called "associated protective measures" – APMs).

The designation of a sea area as a PSSA is made by a non-legally binding resolution from the IMO Marine Environment Protection Committee (MEPC). Therefore, the interest of a PSSA lies largely in the APMs which will govern the area. These APMs include: (i) the designation of Special Areas under Annexes I-V of the MARPOL Convention, where discharges from ships are more strictly controlled or prohibited (e.g. oil, chemical wastes, sewage, and garbage, or atmospheric emissions);[35] (ii) a SOx-emission control area;[36] (iii) application of special discharge restrictions to vessels operating in a PSSA; (iv) adoption of ships routeing and reporting systems near/in the area;[37] (v) declaration of the proposed PSSA as an 'area to be avoided' by ships; (vi) compulsory pilotage schemes; and (vii) vessel traffic management systems. The IMO may also pursue the development and adoption of other measures, provided they have an identified legal basis.

[34] Contained in IMO resolutions Resolution A.927(22)47 and A.982(24). Resolution A.982(24) revokes annex 2 of resolution A.927(22): IMO Assembly, Resolution A.982(24) adopted on 1 December 2005. Revised guidelines for the identification and designation of particularly sensitive sea areas. A 24/ Res.982, 6 February 2006. PSSA Proposal Review Form approved by MEPC 55/23,10 October 2006.

[35] International Convention for the Prevention of Pollution from Ships (MARPOL 73/78). For example, eight Special Areas under Annex V on garbage discharges have been adopted, two include high seas areas (the Mediterranean and the Antarctic). See <http://www.imo.org/Environment/mainframe.asp?topic_id=760>.

[36] Under MARPOL VI.

[37] The adoption of routeing measures should take into account the IMO General Provisions on Ships' Routeing (Resolution A.572(14)), as amended. For an example, see the Ships' Routeing Associated Protective Measures (APMs) for the Galapagos Archipelago PSSA (Resolution A.976(24)).

The criteria refer to the identification of PSSAs both within and beyond the limits of the territorial sea,[38] thereby including the possibility that a PSSA could be identified in ABNJ. Though no PSSAs are currently designated in ABNJ, the Western European Waters PSSA[39] originally covered some ABNJ as the UK and Ireland had not yet explicitly declared an Exclusive Economic Zone (EEZ) at the time of its adoption. The UN Division of the Ocean Affairs and the Law of the Sea (DOALOS) saw no issue with this as the PSSA covered areas within State jurisdiction and the area met the vulnerability criteria.[40]

To date, 14 PSSAs have been designated.[41] Most PSSAs were already under some form of particular protection before submission for consideration as a PSSA. This is not a prerequisite for the recognition of a PSSA, though this will be taken into consideration.[42] No PSSAs are currently in place in ABNJ, though two MARPOL special areas have been declared in ABNJ in the Mediterranean and Antarctic.

Key points

Measures taken by the IMO are sectoral and only cover shipping activities.

PSSAs can be designated in marine areas which meet at least one of the criteria listed by the IMO Guidelines, are vulnerable to damage by international shipping activities and where measures can be adopted by IMO to provide protection to the area from these specifically identified international shipping activities.

No PSSAs are currently designated in ABNJ.

2.3.2. Areas of Particular Environmental Interest

Manganese nodule deposits have been the subject of interest since the 1960s,[43] while the relatively recent discovery of polymetallic sulphide deposits associated with hydrothermal vent systems and cobalt crusts associated with seamounts have spurred renewed interest in deep seabed mining (Halfar and Fujita, 2007). The International Seabed Authority (ISA) is the competent international organisation responsible for regulating and controlling activities

[38] Paragraph 4.3.

[39] This PSSA covers a large area within the 200 nautical mile sea limits of Portugal, Spain, France, UK and Ireland in the North Atlantic Ocean, the whole strait of Dover, the Belgian EEZ and the adjacent UK waters, as well as the waters around the Shetland Islands.

[40] Though article 211(6) of UNCLOS refers to ''a particular, clearly defined area of their respective EEZs'', DOALOS was of the opinion that this phrase did not include the entire EEZs and that there is no maximum restriction on size: IMO, LEG 87/17, Annex 7, 2.

[41] A list of declared PSSAs is available on the IMO's website: <http://www.imo.org/ourwork/environment/pollutionprevention/pssas/Pages/Default.aspx>

[42] Paragraph 6.2.

[43] E.g., see the seminal speech by Mr. Pardo in 1967: United Nations General Assembly. United Nations General Assembly twenty-second session official records, agenda item 92, <http://www.un.org/depts/los/convention_agreements/texts/pardo_ga1967.pdf1967>.

associated with the exploration for, and the exploitation of, the mineral resources[44] of the deep seabed in ABNJ ("The Area"). The ISA is constituted pursuant to the provisions of UNCLOS and the Part XI Agreement.[45] Article 136 of UNCLOS provides that the Area and its resources are the common heritage of mankind: all rights in the resources are vested in mankind as a whole, and the ISA acts on its behalf.[46] In this role, the ISA has entered into 26 exploration contracts in the Atlantic, Indian and Pacific Oceans.

Deep seabed mining will directly impact the seafloor, with potentially wide-ranging impacts on species and ecosystems (Halfar and Fujita, 2007). These impacts could be very long lasting, with the possibility of the impacts reverberating to shallower ecosystems. UNCLOS requires the ISA to adopt and apply rules, regulations and procedures for the exercise of its functions in relation to "mining standards and practices, including those relating to operational safety, conservation of the [mineral] resources and protection of the marine environment".[47] The provisions of the Part XI Agreement have further elaborated these requirements, requiring the ISA focus on the adoption of rules, regulations and procedures incorporating applicable standards for the protection and preservation of the marine environment.[48]

The ISA has since adopted the Regulations on prospecting and exploration for polymetallic nodules, polymetallic sulphides, and ferromanganese crusts in the Area,[49] paving the way for the first exploration contracts. These regulations provides that "prospecting shall not be undertaken if substantial evidence indicates the risk of serious harm to the marine environment",[50] defined as "any effect from activities in the Area on the marine environment which represents a significant adverse change in the marine environment determined according to the rules, regulations and procedures adopted by the Authority on the basis of internationally recognized standards and practices".[51] These regulations apply to prospecting only, and it remains to be seen whether eventual regulations on the exploitation of these resources will contain similar provisions.

[44] Resources are defined as "all solid, liquid or gaseous mineral resources in situ in the Area at or beneath the seabed, including polymetalic nodules". The resources to which the ISA's mandate for exploitation extends do not include the biological and genetic resources of the Area.

[45] Agreement relating to the implementation of Part XI of the United Nations Convention on the Law of the Sea of 10 December 1982, on 28 July 1994.

[46] UNCLOS Article 137 (2).

[47] Annex III, article 17, paragraph 1(b) (xii)

[48] Part XI Agreement, Annex, Section 1, paragraph 5 (g).

[49] Decision of the Council of the International Seabed Authority relating to amendments to the Regulations on Prospecting and Exploration for Polymetallic Nodules in the Area and related matters ISBA/19/C/17 and Decision of the Assembly of the International Seabed Authority regarding the amendments to the Regulations on Prospecting and Exploration for Polymetallic Nodules in the Area ISBA/19/A/9; Decision of the Assembly of the International Seabed Authority relating to the regulations on prospecting and exploration for polymetallic sulphides in the Area ISBA/16/A/12/Rev.1; Decision of the Assembly of the International Seabed Authority relating to the Regulations on Prospecting and Exploration for Cobalt-rich Ferromanganese Crusts in the Area ISBA/18/A/11. See <http://www.isa.org.jm/mining-code/Regulations>.

[50] Regulation 2(2).

[51] Regulation 1(3)(f).

In 2012, as part of its Environmental Management Plan for the Clarion Clipperton Zone,[52] the ISA designated 9 Areas of Particular Environmental Interest (APEI) to the marine environment in the area.[53] No mining is permitted in these areas. These designations were made in advance of contractor-designated "Impact reference zones" and "preservation reference zones".[54]

Key points

The ISA is the competent international organisation responsible for regulating and controlling activities associated with the exploration for, and the exploitation of, the mineral resources of the Area.

ISA can designate APEI to protect marine environment from sea-bed mining activities.

Exploitation of deep seabed resources has not yet commenced; there are currently no regulations in place covering exploitation.

3. Key issues to be discussed in the Western Indian Ocean

Table 1 highlights the key issues that should be discussed in the Western Indian Ocean when considering the different approaches identified in Section 2.

[52] ISBA/17/LTC/WP.1, Draft environmental management plan for the Clarion- Clipperton Zone , 28January 2011 adopted 22 July 2012 ISBA/18/C/22; ISA. Decision of the Council relating to an environmental management plan for the Clarion-Clipperton Zone. 2012. ISBA/18C/22. <http://www.isa.org.jm/files/documents/EN/18Sess/Council/ISBA-18C-22.pdf>.

[53] Decision of the Council of the International Seabed Authority relating to amendments to the Regulations on Prospecting and Exploration for Polymetallic Nodules in the Area and related matters. 2013; ISBA/19/C/17; Section V.31.6.

[54] Impact reference zones are "areas to be used for assessing the effect of each contractor's activities in the Area on the marine environment and which are representative of the environmental characteristics of the area". Preservation reference zones are "areas in which no mining shall occur to ensure representative and stable biota of the seabed in order to assess any changes in the flora and fauna of the marine environment". Regulation 31(7).

Approach	Type	Current status in the WIO	Key issues for the WIO
Approach based on regional organisations	**MPAs within regional seas programmes**	Nairobi Convention currently limited to areas within national jurisdictions.	Study the opportunity and feasibility to extend the Nairobi Convention geographical coverage in ABNJ. If opportunity and feasibility established, consider legal and policy process to develop. Consider opportunities and modalities to develop cooperation and coordination with competent international and regional organisations.
	High seas bottom fisheries closures established by Regional Fisheries Management Organisations	Competent RFMOs covering ABNJ in the region: the South Indian Ocean Fisheries Agreement (SIOFA) and the Indian Ocean Tuna Commission (IOCT). No HSBFCs established so far. SIOFA in the early stages of development. 13 Benthic Protected Areas (BPAs) established by the Southern Indian Ocean Deep Sea Fishers Association (SIODFA), an association of commercial fishing operators in the region.	Study the level of implementation of UNGA Resolutions 61/105 and 64/72 in the WIO. Use grey and scientific literatures to identify VMEs in the WIO (locations, human uses in these areas). If necessary, establish a process towards the establishment of new HSBFCs. Consider modalities of cooperation between SIOFA and the Nairobi Convention.

Coalition-based approach	**Pelagos Sanctuary early phase and Sargasso Sea Alliance and Commission**	Many regional partnerships (e.g. WIO-CC, WIO-C, GLISPA…) but no specific and coordinated actions developed in ABNJ.	Consider the opportunities to build coalitions of States or/and broader stakeholders to develop initiatives in ABNJ. Identify possible "champions" and actions to collectively develop.
Approach based on regionally-based sectoral measures adopted by international organisations	**Particularly Sensitive Sea Areas (PSSA)**	No PSSA and APMs established in the WIO, including in ABNJ.	Study if there are specific threats from shipping activity in the WIO ABNJ. If so, assess the eligibility of the identified area to the PSSA designation and identify possible associated protective measures.
	Areas of Particular Environmental Interest (APEI)	Exploration contract for polymetallic nodules signed with the government of Indian (2002-2017). Exploration contracts for polymettalic sulphides signed with the governments of China (2011-2026), Korea (2014-2029), India (2014-2029) and Germany (2014-2029). No APEI established.	Study the opportunity and feasibility to establish APEI.

Cross-cutting requirements	Make the case, by cross-checking data on sensitive ecosystems (using literature and scientific assessments, such as the EBSAs process) and threats to these ecosystems. Identify the best approach to respond to the threats, by securing the legal and policy processes. Champion the process, by building coalitions of link-minded countries and stakeholders. Anticipate the challenges related to the cooperation and coordination between international and regional competent authorities. Secure funding to develop the agreed activities.

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